INNOVATION TO IMPROVE EQUITY: EXPLORING HIGH-QUALITY PATHWAYS TO A COLLEGE DEGREE

HEARING

BEFORE THE

COMMITTEE ON EDUCATION AND LABOR U.S. HOUSE OF REPRESENTATIVES

ONE HUNDRED SIXTEENTH CONGRESS

FIRST SESSION

HEARING HELD IN WASHINGTON, DC, JUNE 19, 2019

Serial No. 116-29

Printed for the use of the Committee on Education and Labor



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INNOVATION TO IMPROVE EQUITY: EXPLORING HIGH-QUALITY PATHWAYS TO A COLLEGE DEGREE

Wednesday, June 19, 2019
House of Representatives,
Committee on Education and Labor,
Washington, D.C.

The subcommittee met, pursuant to call, at 10:36 a.m., in Room 2175, Rayburn House Office Building. Hon. Robert C. "Bobby" Scott

[chairman of the committee] presiding.

Present: Representatives Scott, Davis, Courtney, Sablan, Wilson, Bonamici, Takano, Adams, DeSaulnier, Norcross, Harder, McBath, Schrier, Underwood, Hayes, Shalala, Levin, Trone, Stevens, Lee, Trahan, Foxx, Roe, Walberg, Grothman, Stefanik, Allen, Smucker, Walker, Cline, Taylor, Watkins, Wright, Meuser, Timmons, and Johnson.

Staff Present: Tylease Alli, Chief Clerk; Emma Eatman, Press Assistant; Christian Haines, General Counsel; Stephanie Lalle, Deputy Communications Director; Andre Lindsay, Staff Assistant; Jaria Martin, Clerk/Assistant to the Staff Director; Richard Miller, Director of Labor Policy; Max Moore, Office Aid; Jacque Mosely, Director of Education Policy; Katherine Valle, Senior Education Policy Advisor; Banyon Vassar, Deputy Director of Information Technology; Claire Viall, Professional Staff; Taylor Ware, Education Policy Fellow; Joshua Weisz, Communications Director; Courtney Butcher, Minority Director of Coalitions and Member Services; Cate Dillon, Minority Staff Assistant; Bridget Handy, Minority Communications Assistant; Amy Raaf Jones, Minority Director of Education and Human Resources Policy; Hannah Matesic, Minority Director of Operations; Brandon Renz, Minority Staff Director; Alex Ricci, Minority Professional Staff Member; Chance Russell, Minority Legislative Assistant; and Mandy Schaumburg, Minority Chief Counsel and Deputy Director of Education Policy.

Chairman SCOTT. The Committee on Education and Labor will

come to order. I want to welcome everyone and note that a quorum is present. The committee is meeting today on a legislative hearing to hear testimony on innovation to improve equity, exploring high quality pathways to a college degree. Pursuant to rule 7c, opening statements are limited to the Chair and Ranking Member. This allows us to hear from our witnesses sooner and provides all mem-

bers with adequate time to ask questions. I now recognize myself

to make an opening statement.

Today the committee will hold its fifth and final bipartisan hearing on the Higher Education Act to discuss the role of innovation in improving student outcome and advancing equity. I would like to thank Dr. Foxx and her staff for their partnership during this entire process.

Throughout our hearings, we have established Congress's responsibility to restore the intent of the HEA and to provide all Americans no matter their background with a quality college education that prepares them for the modern workforce. More than 95 percent of jobs created since the recession went to workers with at least some college education, and we expect growing demand for skilled workers to continue for years to come.

Our higher education system must give every student the opportunity to be on the right side of this trend but this is not the case today. State disinvestment in higher education has forced students and families to shoulder more of the cost of college. Declining state funding accounts for well over a third of the rise in tuition costs since 2008.

This trend has also left institutions serving our most vulnerable students including community colleges, HBCU's, tribal colleges and universities to try to do more with less. Simultaneously, the Federal investment through student financial aid—student Federal investments in student financial aid have failed to keep up.

In 1980 the maximum Pell grant covered 3/4 of the cost of attending a public four-year college. Today the maximum Pell grant covers less than 30 percent of that cost. Because of the rising costs of college, the weakening power of Pell grants, too many low-income students either cannot afford to enroll in post-secondary education or cannot afford to complete their programs. Pell grant recipients – Pell grant recipients are 18 percent—18 percentage points less likely to graduate than non-Pell recipients.

Students of color also suffer disproportionately lower graduation rates. White students also complete college degrees at more than

one and a half times the rate of Black students.

In short, those who benefit the most from completing college are the least likely to do so. To address this trend, we need structural reforms in our higher education system that not only lower the cost of college but also better serve today's diverse students.

Innovation, backed by rigorous evaluation, plays a key role in this reform. Today we will hear about institutions pioneering strategies that empower students to access and complete college programs that fit their needs.

Our witnesses, including my fellow Virginian, Tomikia LeGrande of Virginia Commonwealth University, will share their experiences with new approaches that help achieve the goals of quality and equity

For example, investing in wraparound supports for students, including career counseling, financial assistance and employment support has proven to help students complete their programs on time. When we identify such successful innovations, our role as Federal policy makers is to support and expand them.

A college—in the college and high school programs known as dual enrollment help students gain college credit while still in high school and can help reduce the cost of college. Research shows that these benefits are particularly important for underserved students who may be discouraged from enrolling from college because they believe they cannot afford to do so or do not—just don't see themselves as college students. Yet dual enrollment programs continue to be accessible to primarily affluent students compared to low incomes students and students of color.

Similarly, we must ensure that programs offering learning beyond the traditional classroom provides students with flexibility to learn at their own pace. Programs like online courses and competency-based education can provide an opportunity to drive down the cost of college and accelerate learning, but research is clear that these aren't outcomes are not evenly experienced by today's students.

We must be careful to not only promote and expand policies that we know, based on evidence, will benefit all students.

Congress has a responsibility to explore innovative strategies that provide more students the support they need to complete college and reach their full potential. But as we pursue new pathways for students to earn a quality degree, we cannot sacrifice our commitment to quality and equity.

And so, today's hearing will help us balance these compelling interests and we want to thank our witnesses for being with us today and yield now to the Ranking Member, Dr. Foxx, for her opening statement.

[The information follows:]

Prepared Statement of Hon. Robert C. "Bobby" Scott, Chairman, Committee on Education and Labor

Today, the Committee will hold its fifth and final bipartisan hearing on the Higher Education Act to discuss the role of innovation in improving student outcomes and advancing equity. I would like to thank Dr. Foxx and her staff for their partnership during this entire process.

Throughout our hearings, we have established Congress's responsibility to restore the intent of the HEA and provide all Americans, no matter their background, with a quality college education that prepares them for the modern workforce.

More than 95 percent of jobs created since the recession went to workers with at least some college education, and we expect the growing demand for skilled workers to continue for years to come.

Our higher education system must give every student the opportunity to be on the right side of this trend. But, this is not the case today.

State disinvestment in higher education has forced students and families to shoulder more of the cost of college. Declining state funding accounts for well over a third of the rise in tuition costs since 2008. This trend has also left institutions serving our most vulnerable students—including community colleges, HBCUs, and Tribal Colleges and Universities—to try to do more with less.

Simultaneously, federal investments in student financial aid have failed to keep up. In 1980, the maximum Pell Grant covered three-quarters of the cost of attendance at a public four-year college. Today, the maximum Pell Grant covers less than 30 percent of the cost of attendance at public four-year colleges.

Because of the rising cost of college and weakening power of Pell Grants, too many low-income students either cannot afford to enroll in postsecondary education or cannot afford to complete their programs. Pell Grant recipients are 18 percentage points less likely to graduate than non-Pell recipients.

Students of color also suffer disproportionately lower graduation rates. White students also complete college degrees at more one-and-a-half times the rate of Black students.

In short, those who benefit the most from completing college are the least likely to do so. To address this trend, we need structural reforms in our higher education system that not only lower the cost of college, but also better serve today's diverse students.

Innovation, backed by rigorous evaluation, plays a key role in this reform. Today, we'll hear about institutions pioneering strategies that empower students to access and complete college programs that fit their needs. Our witnesses, including my fellow Virginian Tomikia LeGrande of Virginia Common-

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College in high school programs, known as "dual enrollment," help students to gain college credit while still in high school and can help reduce the cost of a degree. Research shows that these benefits are particularly important for underserved stu-

dents who may be discouraged from enrolling in college because they believe they cannot afford it, or just don't see themselves as college students. Yet, dual enrollment programs continue to be accessible to primarily affluent students compared to

low-income students and students of color.

Similarly, we must ensure that programs offering learning beyond the traditional classroom provide students with the flexibility to learn at their own pace. Programs like online courses and competency-based education can provide an opportunity to drive down the cost of college and accelerate learning, but research is clear that these outcomes are not evenly experienced by today's students. We must be careful to only promote and expand policies that we know, based on the evidence, will benefit all students.

Congress has a responsibility to explore innovative strategies that provide more students the support they need to complete college and reach their full potential. But as we pursue new pathways for students to earn a quality degree, we cannot sacrifice our commitment to quality and equity.

Today's hearing will help us balance these compelling interests.

I want to thank the witnesses for being with us today for this important discussion. I now yield to the Ranking Member, Dr. Foxx, for an opening statement.

Mrs. FOXX. Thank you very much, Mr. Chairman, and I want to thank our panelists for being here with us today.

For too long we have believed in the stereotype of college students as being young, bright-eyed youth, fresh out of high school,

lounging in their dorms before heading to class in the quad.

While true for some, this traditional image of post-secondary education is no longer the case for the majority of American students. Today, 37 percent of college students are 25 or older. 49 percent are financially independent from their parents and 64 percent are working while taking classes.

And yet the Federal Government and the higher education sector too often continue to cater to an outdated vision of post-secondary education. This stubbornness in policy has resulted in mountains of debt, low student completion rates, dissatisfied employers and a lock of accountability for pooling and professional institution.

lack of accountability for poorly performing institutions.

The overall national secure completion rate regardless of starting

institution type and enrollment intensity is just 58.3 percent. That is unacceptable. The old ways are hurting American students and

businesses and something needs to be done about it.

We sit on this committee because we agree that it is time to broaden our horizons in addressing the needs of all students. We have had several hearings already this Congress that demonstrate our shared commitment to reform post-secondary education. And today, we will hear about some promising interventions that provide students more options in pursuing post-secondary pathways.

Options such as dual enrollment, competency based education and apprentice style earn and learn programs have proven pivotal in propelling many students to success when they may have otherwise been ineffectively served by the post-secondary education sys-

I forgot my show and tell. Riding to the airport on Monday, I was reading weekly newspapers and there is an ad in the paper for the community college that I used to be president of and it said Mayland Community College invites high school students to enroll in the early college program and gain their AA degree at the same time they gain their high school diploma. That is the kind of thing we are talking about and I was so proud to read that. It is just exactly what is happening all over North Carolina.

These promising and innovative initiatives seek to define pathways from high school to college and finally to fulfilling high paying jobs. Committee Republicans acknowledge that post-secondary education market place has many strengths but we also recognize colleges, universities must step up to produce qualified graduates to fill the millions of open jobs available in our booming economy.

Today I hope to hear of several innovative practices that bridge the job skills gap linking students to affordable, practical pathways that direct them toward lifetime success. In order to aid all Americans, these innovations must work in such a way as to push for the success of all students including minority students and students from low income households.

Innovation is not and cannot be a loophole that avoids high quality. And schools experimenting in delivery models must not exacerbate the challenges currently facing the post-secondary system today.

But we also all need to embrace the change that is necessary in the post-secondary education system and work to support new, high quality paths to continued learning.

As we strive to work towards reauthorizing HEA, it is critical that we don't just rubber stamp an outdated, failing policy. Bold reforms are necessary to put the post-secondary system on track to meet the needs of students.

Last Congress, we worked hard to move forward with comprehensive HEA reform to unleash innovation and prepare students for a dynamic economy. To ensure all Americans have the opportunity to prosper, this committee must pledge to reimagine antiquated concepts of post-secondary education.

If we do that, I am confident Congress can support students in completing an affordable, post-secondary experience that prepares them to enter the workforce with the skills they need for lifelong success. Thank you again, Mr. Chairman, I yield back.

[The information follows:]

Prepared Statement of Hon. Virginia Foxx, Ranking Member, Committee on Education and Labor

For too long, we've believed in the stereotype of college students as being young, bright-eyed youth, fresh out of high school, lounging in their dorms before heading to class in the quad. While true for some, this traditional image of postsecondary education is no longer the case for the majority of American students. Today, 37 percent of college students are 25 or older; 49 percent are financially independent from their parents; and 64 percent are working while taking classes.

And yet the federal government and the higher education sector too often continue to cater to an outdated vision of postsecondary education. This stubbornness in policy has resulted in mountains of debt, low student completion rates, dissatisfied employers, and a lack of accountability for poorly performing institutions. The overall national six-year completion rate, regardless of starting institution type and enrollment intensity, is just 58.3 percent. That's unacceptable The old ways are hurting American students and businesses, and something needs to be done about it.

We sit on this Committee because we agree that it's time to broaden our horizons in addressing the needs of all student We've had several hearings already this Congress that demonstrate our shared commitment to reform postsecondary education, and today we'll hear about some promising interventions that provide students more options in pursuing postsecondary pathways. Options such as dual enrollment, competency-based education, and apprenticeship style ear and-learn programs have proven pivotal in propelling many students to success when they may have otherwise been ineffectively served by the postsecondary education system.

These promising and innovative initiatives seek to define pathways from high school to college and finally to fulfulling, high-paying jobs. Committee Republicans acknowledge the postsecondary education marketplace has many strengths but we also recognize colleges and universities must step up to produce qualified graduates to all the millions of open jobs available in our booming economy. Today, I hope to hear of several innovative practices that bridge the job skills gap, linking students to affordable, practical pathways that direct them toward lifetime success.

In order to aid all Americans, these innovations must work in such a way as to push for the success of all students, including minority students and students from low-income households. Innovation is not and cannot be a loophole that avoids high quality, and schools experimenting in delivery models must not exacerbate the challenges currently facing the postsecondary system today. But we also all need to embrace the change that is necessary in the postsecondary education system and work to support new, high-quality paths to continued learning.

As we strive to work toward reauthorizing HEA, it's critical that we don't just rubber stamp on outdated, failing policy. Bold reforms are necessary to put the post-secondary system on track to meet the needs of students. Last Congress, we'll worked hard to move forward with comprehensive HEA reform, to unleash innovation and prepare workers for a dynam economy. To ensure all Americans have the opportunity to prosper, this Committee must pledge to reimagine antiquate concepts of higher education. If we do that, I am confident Congress can support students in completing an affordable postsecondary experience that prepares them to enter the workforce with the skills they need for lifelong success.

Chairman SCOTT. Thank you very much and without objection, all other members who wish to insert written statements in the record may do so by submitting them to the committee clerk electronically in Microsoft Word format by 5 p.m. on Tuesday, July 2. I will now introduce our witnesses. Dr. Judith Marwick is Provost at William Rainey Harper College, a two-year institution in Chicago, Illinois. She—her career includes teaching and administrative positions at several Illinois community colleges.

Tomikia LeGrande serves as Vice Provost for Strategic Enrollment Management at Virginia Commonwealth University where she leads, develops and implements strategies that enrich college access, affordability and student success. She has over 15 years of higher education experience focusing on improving college access, retention, graduation, and student satisfaction rates to institutions with a strong commitment to serving underrepresented groups.

with a strong commitment to serving underrepresented groups.

Charla Long is the founding Executive Director of the Competency Based Education Network, a national consortium with more than 120 institutions of higher education and statewide systems seeking to design, develop and scale new models of student learning. She has more than 20 years of higher education experience in both public and private institutions in the United States including the Founding Dean—including as Founding Dean of the College of Professional Studies at Lipscomb University.

Mr. Sameer Gadkaree is the Senior Program Officer at the Education and Economic Mobility Team at the Joyce Foundation, a Chicago based foundation focused on advancing racial equity and economic mobility in the Great Lakes region. He leads the organizations grant making and higher education and the future of work.

Appreciate all of our witnesses for being here today and look forward to your testimony. Let me remind the witnesses we have read the written statements and they will appear in full in the hearing record.

Pursuant to committee rule 7d and committee practice, each of you is asked to limit your oral testimony to a 5 minute summary of your written statement. We remind the witnesses that it is illegal to knowingly and willfully make false statements, representations, writing, and documents or material fact to Congress or otherwise conceal or cover up a material fact.

And before you begin your testimony, please remember to press the button on the microphone in front of you so that it will turn on and the members can hear you. As you speak, the light in front of you will turn green. After four minutes, the yellow signal will come on indicating you have one minute remaining. When the light turns red, your 5 minutes have expired, and we ask you to wrap up as soon as you can.

We will let the entire panel make presentations before we move to member questions and when answering a question, please remember once again to turn your microphone on. I will first recognize Dr. Marwick.

TESTIMONY OF JUDITH MARWICK, ED.D., PROVOST, WILLIAM RAINEY HARPER COLLEGE

Ms. MARWICK. Thank you. Chairman Bobby Scott, Ranking Member Virginia Foxx, and Members of the committee, thank you for the opportunity to testify today about using innovation to improve equity in higher education through dual credit programs.

My name is Judy Marwick. In 2010, Harper College engaged in a transformational partnership entitled the Northwest Educational Consortium for Student Success or NECSS, to ensure that every high school student will have the opportunity to attend college and be prepared for 21st century careers. NECSS is a regional, educational collaborative comprised of Harper College and three high school districts totaling 12 public high schools to serve 23 communities.

Together, we created an intergovernmental agreement and a statement of goals and objectives, a shared organizational design, and specific accountability measures. The goal of the partnership is to improve curriculum alignment and early college opportunities to increase the percentage of students who graduate ready for college and to create pathways that lead to post-secondary credentials.

One of the most significant initiatives of NECSS is called the Power of 15, which we developed based on an analysis of college data showing that attainment of 15 college credits is a tipping point predicting student persistence in completion. The Power of 15 was founded on the premise that most high school students should be able to graduate from high school having earned 15 hours of college credit in combination of AP, dual credit and credit by exam.

Senior year should be a time for students to catch up if they are not yet college ready or to speed up and begin college level course work while still in high school. Dual credit courses compliment and expand early college opportunities for students in subjects where AP courses are not available as well as help lower remediation rates.

Additionally, the results speak directly to the effectiveness of collaborative partnerships like NECSS. Not only do such collaborations promote post-secondary education, but dual credit classes empower students to believe they can achieve at the college level by already completing such courses.

There were approximately 6500 high school graduates in June 2018 among the 12 NECSS high schools. While the early college attainment rates remain lower for low income and minority students, they are increasing across all demographic groups. Of the low-income high school students, 19 percent or 335 students graduated with at least 15 hours of college credit, up from 13 percent just two years ago. Among all students, 32 percent are graduating with at least 15 hours of college credit.

Further, when we consider students who receive a C or better in at least one dual credit course, the low-income students, 928 of them, are attaining this mark at the same percentage as all district students. 54 percent.

Further, as we have developed the Power of 15, and expanded dual credit, most dual credit classes are now being taught at the high schools during the high school day. This is important because it eliminates the need for transportation costs and time.

In 2012, approximately 1100 students were enrolled in a dual credit course at Harper College. In 2017, over 6,000 high school students took a dual credit college course. 95 percent of these students were taught at their local high school during the school day.

While the Power of 15 has achieved significant success, the initiative encountered some implementation challenges including cost of tuition, data sharing among secondary and post-secondary districts and credentialing of high school teachers to qualify them to teach college courses.

There are opportunities for Congress to help address some of these changes especially as it relates to cost. We recommend making Pell grant funding available for qualified high school students. We also recommend that college—Congress establish grants or incentives for institutions of higher education to—and school districts to form partnerships such as NECSS, to align curriculum, reduce remediation and offer dual credit courses.

Additionally, data sharing is an important component of such partnerships to establish the need for alignment and to share results.

We recommend that Congress review FERPA to address challenges that deter such collaborative partnerships which still protect the privacy of students.

Thank you to the committee for the opportunity to testify. [The statement of Ms. Marwick follows:]

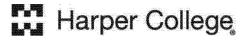
COMMITTEE ON EDUCATION AND LABOR

BIPARTISAN HEARING ENTITLED:

"INNOVATION TO IMPROVE EQUITY: EXPLORING HIGH-QUALITY PATHWAYS TO A COLLEGE DEGREE"

June 19, 2019

WRITTEN TESTIMONY OF JUDITH MARWICK, PROVOST WILLIAM RAINEY HARPER COLLEGE



Innovation to Improve Equity: Exploring High-Quality Pathways to a College Degree

Chairman Bobby Scott, Ranking Member Virginia Foxx, and Members of the Committee, thank you for the opportunity to testify about using innovation to improve equity in higher education through dual enrollment programs. My name is Judy Marwick, Provost at William Rainey Harper College

Located in Chicago's northwest suburbs, Harper College is one of the nation's larger community colleges, serving approximately 15,000 credit students each semester and approximately 35,000 total students annually. The College's academic programs prepare students for rewarding careers and for transfer to four-year universities., I, Dr. Kenneth Ender, President of Harper College, and my colleagues are honored to share with you some of the best practice models Harper College has created to ensure students enroll in an institution of higher education college-ready and complete a high-quality degree or certificate. We are also encouraged that the House Education & Labor Committee is seeking the input of stakeholders such as us to inform the reauthorization of the Higher Education Act.

The Northwest Educational Consortium for Student Success

In 2010, Harper College engaged in a transformational partnership, entitled the Northwest Educational Consortium for Student Success (NECSS), to ensure that every high school student and college graduate will have the opportunity to be prepared for 21st century careers and postsecondary success. NECSS is a regional educational collaborative comprised of Harper College and three high school districts (a total of 12 public high schools) to serve 23 communities. Together, we created an intergovernmental agreement with a statement of goals and objectives, a shared organizational design, and specific accountability measures.

The goal of the partnership is to improve curriculum alignment and early college opportunities to increase the percentage of students who graduate ready for college and to create pathways that lead to postsecondary credentials. The primary reason for the regional partnership's shortand long-term successes is a strong, consistent, and focused collaboration through innovative practices and a unified process for data collection, accountability, and transparency.

The early work of the partnership was to reduce the need for high school graduates to enroll in a developmental mathematics class upon college matriculation. In 2010, only 46% of the recent high school graduates who attended Harper College were qualified to enroll in a college-level mathematics course. In 2018, 82% of those students were so qualified. We achieved this result through data sharing to establish the need for the work, curriculum alignment, and an expansion of college placement methods and practices.

We determined that all high school seniors should be enrolled in either a calculus or precalculus course, a general education dual credit math course, or an aligned Algebra III course to prepare the student for college-level mathematics. The high schools recommended one of these three options to all seniors and Harper offered the dual credit math course at the high schools, taught by high school teachers who held the credentials to teach introductory collegelevel mathematics.

Following the successful collaborative work in mathematics, we shared additional college data showing that attainment of 15 college credit hours was a tipping point to predict student persistence and completion. Using this data in discussion with our high school partners, we decided to launch our next major project, The Power of 15.

The Power of 15

The Power of 15 was founded on the premise that most high school students should be able to graduate from high school having earned 15 hours of college credit in a combination of AP, dual credit, and credit by exam. Senior year should be a time for students to catch up if they are not yet college-ready or to speed up and begin college-level course work while still in high school.

The Power of 15 represented a dramatic expansion of our dual credit offerings, particularly those taught at the high schools during the school day. In 2012, 1,121 high school students were enrolled in one or more dual credit classes at Harper College. In 2017, over 4,000 students were enrolled, more than tripling the impact. Additionally, one of the local school districts extended their dual credit offerings by partnering with institutions other than Harper College, resulting in a total impact of over 6,000 students district-wide who were enrolled in at least one dual credit course in the 2017-18 academic year.

Dual credit classes are delivered in several formats. In some cases, high school students travel to the community college campus for class. This happens most frequently when the high schools either do not have the laboratory facilities needed for the class or when they do not have a qualified teacher. More often, the dual credit classes are able to be offered at the high schools.

As we have developed the Power of 15 initiative and expanded dual credit, most classes are now being taught at the high school during the school day. This is important because it eliminates the need for transportation costs and time. In 2012, 295 dual credit students attended class on Harper College's campus, while 855 students took college classes at the high schools. In 2017, slightly fewer students were coming to Harper College's campus, while 3,865 were taking a dual credit college course taught at their local high school during the school day. We are also currently offering one class in an online format that is delivered by a college instructor to several high schools.

At Harper College, dual credit classes were traditionally in career areas. In 2012, 82 dual credit students were enrolled in a class designed to transfer to a baccalaureate program at a

university, while over 1,000 students were enrolled in a class that was a part of a career pathway leading to employment. The Power of 15 initiative served to expand career education options (currently 1,900 students are enrolled) but had a more dramatic impact on general education offerings designed to transfer. In 2017, 2,539 students were enrolled in transfer classes expanding early college opportunities for students.

Power of 15 expanded rapidly and, like any new project, encountered some challenges. Initially, college faculty were concerned about less enrollment on campus and less control of academic standards in the high school classroom. High school teachers were concerned about being assigned to teach college courses rather than elective courses that they had enjoyed teaching in the past. These challenges were addressed by a focus on student pathways and the cost of post-secondary education as well as the reality that at each institution, the administration sets the schedule. The data sharing agreement was difficult as both high school and college administrations worried about FERPA and other data sharing restrictions. It was also important to design timelines, requirements, and processes that were transparent to all concerned. High school staff learned a great deal about college requirements, processes, and standards. Similarly, college staff developed a better understanding of high school operations and requirements.

A commitment to dual credit for students and compromises were necessary and ongoing. We developed a dual credit handbook and a chart of what classes were being requested, when classes had been approved, and when they would be offered. While this process was time consuming and sometimes difficult as we expanded, there is much to be said for a closer alignment between secondary and postsecondary systems. Students often fall through the cracks in the educational pipeline and it is easy for one system to blame the other for students' lack of achievement. When we agree as a community that we are all responsible for the students and make seamless the educational pipeline, everyone benefits.

The Impact of Our Dual Credit Program

Collaborations such as NECSS not only promote post-secondary education as a necessary path to a job with a wage supporting a middle-class life style, but completion of a dual credit class shows students that they can achieve at the college level. Dual credit courses compliment and expand early college opportunities for students in fields where AP courses are not available, as well as help lower remediation rates.

There were 6,488 high school graduates in June 2018 among the 12 NECSS high schools, with 46% of the students identifying as not white and 27% are low-income. While the early college attainment rates are lower for low-income and minority students, they are all increasing. Of the low-income students, 19% graduated with at least 15 hours of college credit up from 13% two years ago. Among all students, 32% are graduating with at least 15 hours of college credit. Further, when we consider students who received a "C" or better in at least one dual credit

course, the low-income students attain this mark at the same percentage (54%) as all district students.

Overarching Implementation Challenges

Costs

The most significant barrier to broad expansion of dual credit programs is the cost. Different states and districts have varied approaches to this issue. Some colleges charge full tuition for dual credit students, while some charge a flat fee or nothing if the course is taught at the high school. Harper College initially charged full tuition because most of the courses were taught by our faculty on the college campus. We then moved to charging tuition only for on-campus classes taught by college faculty and no fee for classes taught by high school teachers at the high school. However, we found that scaling up dual credit offerings necessitated hiring a full-time staff member and, in many cases, we provided stipends to college faculty for collaboration with high school teachers. We are currently charging \$50 per student per course for classes taught at the high schools, with one of the districts passing this fee on to the students. Another district pays the fee on behalf of the students — and at their request, we are considering reducing this fee.

Credentialing

A second barrier that also has a relationship to cost is the credentials of high school teachers. High school teachers are generally required to have a baccalaureate degree in the subject, and those who have master's degrees quite often have them in the field of education. However, the credentials to teach at the freshman and sophomore college level are generally a master's degree in the discipline or in a related field with a minimum of 18 graduate hours in the discipline. Thus, many high school teachers are not qualified to teach dual credit courses.

NECSS has addressed this issue through a collaboration with a local university to offer the necessary graduate hours to a cohort of teachers. The university was willing to offer the classes to the cohort of teachers at a reduced tuition and taught at one of the high schools. In one case, the district paid the tuition for the teachers. Another district did not offer this benefit and few of their teachers enrolled. As the NECSS high schools hire new teachers, they are adding teachers with the credentials to teach dual credit classes. Generally, teachers with master's degrees are paid a higher salary. This could be a barrier for some school districts.

Legitimacy of Dual Credit Courses

A third barrier involves college course standards and retaining the legitimacy of dual credit courses. When dual credit began in Illinois, some universities did not accept college credit if it was taught at the high school and counted for high school credit. We have come a long way since then and dual credit is widely accepted. However, it is important that colleges retain control of the curriculum, learning outcomes, and standardized assessments for dual credit courses. The courses need to be the same, whether offered on the college's campus, at the high

schools, or online. Course prerequisites and instructor qualifications must be the same. In an effort to provide more dual credit opportunities to students, it is tempting to overlook some of the course standards. This is a danger we must guard against, for if we do not truly provide college-level courses to high school students, we do them no favors as they will not have learned what they need to be successful when matriculating to college and the courses will soon cease to be accepted by the universities and industry. Dual credit must be an opportunity to take a college course while still in high school. It cannot be college credit for a high school course.

Policy Considerations

Early college credit whether in the form of dual credit, AP credit, credit by exam, or middle college experiences reduces the cost of education and promotes college enrollment and pathways to certificate and degree completion. Policies should promote and expand these opportunities by doing the following:

- Make available Pell Grant funding for students to enroll in dual credit courses.
- Establish and offer grants or incentives to institutions of higher education and school districts to offer dual credit courses taught by qualified high school teachers.
- Establish and offer grants or incentives to institutions of higher education and school districts to support educational models such as NECSS to ensure alignment of course work, accelerated coursework, and methods to address remedial education.
- Review provisions in the Family Educational Rights and Privacy Act (FERPA) to address
 challenges that deter institutions of higher education and school districts from
 collaborating through partnership models like NECSS, while still fully protecting the
 privacy of students.

Chairman SCOTT. Thank you. Dr. LeGrande.

TESTIMONY OF TOMIKIA LEGRANDE, ED.D., VICE PROVOST FOR STRATEGIC ENROLLMENT MANAGEMENT, VIRGINIA COMMONWEALTH UNIVERSITY

Ms. LEGRANDE. Good morning, Chairman Scott, Ranking Member Foxx, and committee members. I am proud to be with you on behalf of Virginia Commonwealth University, an urban public research university of 31,000 students which also includes a nationally premiere academic health system. Together, we are an economic engine with more than \$6 billion impact on the Commonwealth of Virginia.

I have spent my career ensuring that colleges and universities deliver on their promise to transform student lives and enable them to pursue their American dream. I see it happen every day. And I have lived it. I am the first person in my family to graduate college. My education from three outstanding public universities transformed my life and inspired me to ensure that every student has that very same opportunity. That's what we focus on at VCU.

All of our students have great potential and capability, but they have not all had equal access to power or to information with respect to how to succeed in college. This means that some students get lost in the academic enterprise and must figure it out for themselves. So at VCU we have transformed our approaches to meet the needs of our diverse student population.

Our student body looks much like America. 43 percent of our students are from minority populations. One third are the first in their families to go to college. And 30 percent are Pell eligible.

Over 86 percent of our students are residents of Virginia and our commitment to helping students succeed is evident in the fact that our Latinx, African American and Pell eligible students graduate at nearly the same rate as their peers from more privilege.

We believed that we can completely eliminate this gap by the time our current incoming freshman class graduates. Something few universities have done.

But this follows a larger trend at VCU. For all of our students, both four- and six-year graduation rates have increased by more than 14 percentage points since 2012 and now are higher than the National average. More importantly, 17 percent of our students move up two or more income quintiles after they graduate.

A student born in the bottom quintile of family incomes has a 27 percent chance of reaching the very top quintile after graduating from VCU.

It is critical that colleges and universities move beyond the simple academic checklists that existed when we were students and rethink our approaches putting the needs of our students first.

Through several innovative strategies and tools focused on guidance and support, student faculty engagement, and college access and affordability we work to meet our students where they are.

Our intrusive advising model proactively guides students through a reflection of experiences identifying purpose and setting goals as they focus on their educational outcomes. We have invested significant resources to lower the student to advisor ratio and increased focus on connecting with students to ensure their fit in their chosen academic program.

We also use technology and predictive analytics that allows for well-timed advice and guidance to promote timely progress to gradation.

Our definition of student success extends beyond graduation. We've implemented Major Maps, a unique tool that combines academic and career planning. Students create an individualized plan focusing on their goals after graduation and work backwards to determine how to succeed through skill development such as undergraduate research, internships and networking.

We have also modernized first year courses through interdisciplinary community based and inquiry-based learning experiences. Our students develop traditional academic skills in an environment that

fosters connectedness, creativity and engagement.

Our REAL initiative, relevant, experiential, and applied learning lets students apply knowledge from the classroom into action and service. And students in these high impact experiences are more likely to persist and graduate on time. So, we are committed to providing a real experience for all of our students. That's the VCU promise.

We know student success begins in many places, so we partner with every community college in Virginia through guaranteed admissions, articulation agreements, co-enrollment options and reverse transfers and we have developed transfer maps to connect to over 22 high need programs.

Lastly, we have prioritized affordability investing more than \$35 million over the last eight years to build up our institutional aid and award completion grants to cover small outstanding balances to help students.

I am grateful to work in this kind of environment and I am proud of our record of student success. Thank you for your time for listening this morning and I look forward to answering any questions

[The statement of Ms. LeGrande follows:]

Testimony Provided to the
U.S. House of Representatives Committee on Education and Labor
"Innovation to Improve Equity: Exploring High-Quality Pathways to a College Degree"

Tomikia P. LeGrande, Ed.D. Vice Provost for Strategic Enrollment Management Virginia Commonwealth University

June 19, 2019

Chairman Scott, Ranking Member Foxx, members of the committee....good morning to you all.

I am proud to be with you this morning on behalf of Virginia Commonwealth University in Richmond, Virginia, a nationally prominent urban public research university that serves more than 31,000 students from all 50 states and 101 nations around the world. We are a bridge to prosperity for—as of last month—more than 200,000 alumni living, working, innovating, creating, and healing in the U.S. around the world. VCU also includes a nationally premier academic health system and, added together, we are a vital economic engine with a more than \$6 billion impact on the Commonwealth of Virginia. That's the largest of any university in the Commonwealth.

Chairman Scott and Congressman Cline certainly know well our enormous impact on the Commonwealth they serve.

I have spent nearly two decades in higher education strategic leadership in North Carolina, Texas, and now Virginia. I have spent that time ensuring that the colleges and universities in which the American public invests deliver on their promise to help students succeed in ways that transform their lives and enable them to pursue their American Dream.

I believe in American public higher education. I believe that it is a catalyst—maybe <u>THE</u> catalyst—to transform our society and the next generation of scholars and visionaries who will lead it. I believe this because I see it every day. And because I've lived it.

I am the first person in my family to graduate college. I am here with you this morning because the education I received from three outstanding public universities transformed my life and inspired me to ensure that every student has that same opportunity. Especially students from underrepresented and often disenfranchised communities, like students from first-generation, economically disadvantaged families and people of color.

As a scholar, I have studied how we empower people from these communities to succeed, and how universities can enable such achievement. That's because I recognize that our nation is strongest and best when ALL of its people have the same chance to succeed, no matter where they're starting from. Education is the greatest form of social justice.

And this is exactly what we focus on at VCU.

VCU is one of America's top urban, public research universities. We are among a very few that have Carnegie classifications as both an R1: Highest Research Activity and a communityengaged university. Which is to say, we are focused simultaneously on building America's future, serving America's people, and positively impacting America's communities.

We recognize that all of our students have great potential and capability, but they have not all had equal access to power or information with respect to how to succeed in college. We understand they do not all start from the same place. Unequal access to power and information means that some students get lost in the academic enterprise and must figure it out for themselves, as best they can, as they pursue their goal of obtaining a college education. So at VCU, we have worked to transform our approaches to meet the needs of our diverse student population.

I will describe some of these changes in detail shortly. But first, I want to tell you about who we serve.

A Record of Student Success

Our diverse student body looks like America: 43 percent of students are from minority populations, one-third of freshmen are first-generation college students, and 30 percent are low-income Pell-eligible. Our commitment to helping our students stay and succeed at VCU is evident in the fact that our Latinx, African-American, and Pell-eligible students graduate at nearly the same rate as their classmates from more privilege. This success puts us in rare company. By creating approaches to improve equity by meeting the students where they are, we believe we will completely eliminate this gap by the time our current first-year class graduates—something very few universities have done.

This follows a larger trend at VCU. For ALL of our students, both four- and six-year graduation rates have increased by more than fourteen percentage points since 2012. Even more importantly, 17 percent of our students move up two or more income quintiles after they graduate, among the highest of any university in the Mid-Atlantic. A student born into the bottom quintile of family incomes has a 27 percent chance of reaching the very top quintile after graduating from VCU.

VCU is a place where we embrace the idea that equality of opportunity is available to anyone, allowing the highest aspirations and goals to be achieved. VCU is the place where American dreams come true.

Achieving these outcomes is a result of several strategies and tools focused on meeting students where they are. These strategies can be grouped in three broad categories: guidance and support, student-faculty engagement, and college access and affordability.

Guidance and Support

VCU utilizes an "intrusive advising model" that proactively guides students through a reflection of experiences, identifying purpose, and goal setting as they focus on their educational outcomes. We invested significant resources to provide a consistent student-advisor experience—no matter a student's classification or major—and to lower the student-to-advisor ratio. This has allowed for early intervention when students are struggling academically. We have also developed technology that allows for well-timed advice and guidance to promote satisfactory and timely progress to degree completion.

We also recently implemented Major Maps (example attached), a uniquely designed tool that combines academic planning with strategic career planning. Working with their university guides—such as academic advisors, career advisors, faculty, and mentors—students create a plan that is individualized to them and that focuses on their end goal. They work backward to determine which experiences, connections, and skills will best position them to succeed as working professionals after they graduate.

Student-Faculty Engagement

VCU has increased student-faculty engagement, redesigned the traditional approach to teaching some first-year courses, and increased focus on ensuring students' fit in their chosen academic program.

By challenging the traditional approach to teaching first-year courses, which are so important and can benefit from a new 21st century approach, VCU faculty pique their students' curiosities about the world through interdisciplinary, inquiry-based, community-engaged, and experiential learning—all while developing writing and critical thinking skills. This cohort-style learning model offers small class sizes with consistency in the students and the faculty member during the entire first year, fostering connectedness, creativity, and engagement. This matters, because we know that when students participate in high-impact learning courses, and when they have this network of support around them, they are more likely to stay enrolled and graduate.

We have also been very intentional in providing students with impactful and engaging experiences with their faculty mentors. This includes deliberately promoting engagement between students and faculty through high-impact learning experiences. We have an initiative called VCU REAL—REAL is an acronym that means "relevant, experiential, and applied learning." Through REAL, students engage in meaningful hands-on work that allows the application of knowledge from the classroom into action and service. These experiences are both directly relevant to their personal interests and address social, scientific, and economic challenges that our society faces.

The REAL initiative is now VCU's promise to our students. This promise is one of the most valuable experiences students have at VCU, as we know that students who participate in these types of high-impact learning courses are more likely to persist and graduate on time than their peers who do not. To ensure access to opportunity is equally distributed, all VCU students are required to have a REAL experience that allows them to apply their classroom learning in a reallife setting to better prepare them for their careers. And we know first-hand that those who would employ our students value their critical reasoning abilities applied outside of a classroom or laboratory setting, which the REAL initiative affords.

There's a reason we call this REAL, other than convenient nomenclature. At VCU, our motto is Make it Real. That means we prepare students for the real world, to do important things, to solve real problems. We are not an ivory tower; we are gritty and scrappy and real. Our students are, too. There is no such thing as an average VCU student.

As we think about educating the next generation of Americans, it is critical that colleges and universities move beyond the simple academic checklists that many of us remember from our days as students years ago. We need to provide pathways to career and professional success that blend success in the classroom with other important experiences.

Indeed, our definition of student success extends beyond graduation, so we are also preparing our students for the world of work. That is why Major Maps include a developmental scheme for assisting students to work through major choice and change, career choice, and university preparation beyond the classroom. They help students prepare for their careers, which is why we have moved our Career Services Office under the auspices of the Student Success Office, and why we are connecting the Major Maps to student experiences and skill development such as undergraduate research, service learning, practica, internships, and networking.

It is our responsibility—and our privilege—to serve our students with the same intensity and passion that they bring to us.

College Access and Affordability

Our commitment to student success is further apparent by ensuring that students can access VCU through many doors, including by transferring to us from community colleges across Virginia and the nation. That's why we partner with every community college in our statewhether by guaranteed admissions agreements, articulation agreements, co-enrollment options, and even reverse transfer credit agreements. We also have grant-funded programs supported by federal and non-profit agencies that allow us to hire transfer coordinators who support students throughout their journey to completion.

And I mentioned Major Maps earlier...we also have Transfer Maps with several community college partners that provide students seamless access into 22 high-need degree programs at VCU. We are working to expand these Transfer Maps beyond our current community college partners to cover every community college in the state. We expect that these partnerships and initiatives will make it easier to earn a VCU degree with less wasted time and less debt.

This is one of the many ways VCU is committed to access and affordability. Because none of the great things we do matter if they are inaccessible or unaffordable for ALL the students we serve. We were very pleased to join our fellow public universities across Virginia in not raising tuition this year, and we are grateful for the partnership of our state's General Assembly in making that possible. I hope we can continue to operate with the kind of partnership and leadership that focuses on the needs of the people we serve.

VCU has also made affordability an institutional priority. That's why VCU has invested more than \$35 million in institutional funds over the last 8 years to build up our need-based aid. This past academic year, we awarded almost \$80 million in institutional-based scholarships and grants to our students, a 45 percent increase over where we were in 2011.

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In parallel, in 2013, VCU began awarding completion grants—essentially, "micro grants"—to help students cover small outstanding balances and/or unmet need that, though small in the scheme of things, are tremendous obstacles for too many of our students and would have otherwise prevented them from completing their last year at VCU on time.

Not coincidentally, in that same time frame, we have seen our 6-year graduation rate jump by 8 percent—with even larger gains for students of color (+9%) and recipients of the Federal Pell Grant (+13%).

Conclusion

In closing, I want to emphasize that a more equitable student experience is happening at VCU because so many of my colleagues have made it their professional and personal commitment to make it happen. This is the result of a very deliberate strategy, and it has taken every one of us.

When we educate students, we prepare them to achieve their American Dream. And that's particularly true for many of the students we serve who come from backgrounds where higher education outcomes have not been modeled for them. So when they succeed, it's a tremendous advantage for them, their families, their communities, and America.

I am grateful to work every day in this kind of environment. And I'm so proud of our record, which is the tremendous success of our students.

Thank you for giving me a few minutes to speak with you about it this morning. I would now be pleased to answer any questions you may have.

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set majormaps you edu for the online version with tinks. Sponsored by the Office of the Provost Chairman SCOTT. Thank you. Ms. Long.

TESTIMONY OF CHARLA LONG, J.D., EXECUTIVE DIRECTOR, COMPETENCY-BASED EDUCATION NETWORK

Ms. LONG. Mr. Chairman, Ranking Member Foxx, and members of the committee, thank you for holding this hearing and for allowing me to testify about the role competency-based education plays in creating high quality pathways to post-secondary education. We really are serving our Nation's diverse learner population.

While not defined in Federal law, the field often defines CBE as being focused on actual start-student learning and the application of that learning rather than the time spent in class on material.

Learners, their progress is measured when they demonstrate their competence through a system of rigorous assessments meaning they much prove they have mastered the knowledge and skills necessary for their required program of study.

Higher education institutions using competencies as the currency of learning are able to connect, compare and validate learning across multiple contexts and create pathways for learners.

For example, Tracy. She is a 43-year-old daycare worker who had completed over 170 professional development hours, yet she had not one college credit.

By focusing on competencies, she enrolled at Hartland Community College's program for the child care credential where they held their expectations of learning constant but the way in which she acquired that learning to be flexible.

The time it took Tracy to demonstrate the competencies and the context from which she learned it was variable. Tracy progressed towards her credential at a personalized pace, demonstrating mastery of her required competencies.

She earned 16 hours of credit and 2 industry recognized certifications and she did so in an affordable, accessible manner that was 25 percent less the cost—was only 25 percent of the cost of a traditional offering.

Tracy is not alone. In my written testimony I share story after story of folks that are military personnel, from those that are incarcerated, to those that find themselves unemployed and unskilled in today's economy.

Typically, institutions develop their CBE programs with common goals in mind such as how do we lower student costs or increase quality or the transparency of learning outcomes. Or make it faster to completion or increase work force preparedness or use desired leverage all the learning a student brings.

We wanted increased access for underserved learners. These are some of the reasons that CBE programs exist. The landscape has seen tremendous growth in recent years and C-BEN recognizes new members each month as they join this sector. However, beyond a handful of studies, data on the effectiveness of CBE programs is not yet plentiful. Although much of the research is limited to small samples and single institution case studies, which my written testimony shares, the results achieved by individual institutions is quite promising. But looking across institutions there is still much to learn.

With so many new entrants and such rapid expansion underway, we believe we need to test, validate, iterate, on the outcomes of CBE under an entirely new Federal structure, one that's not based on the credit hour. This will enable established CBE programs to experiment with new flexibilities and for Congress to understand the outcomes while ensuring the quality of learning.

While tempting to fully open up requirements to allow CBE to grow, we believe it is still too soon to take that step. We must protect students, assure quality learning and safeguard tax payer investments. Therefore, we call on Congress to authorize a demonstration project for CBE programs in particular to create a definition for CBE.

Under this demonstration projects, colleges should be allowed flexibility with Federal financial aid rules to assess how a new system would work under a controlled manner that protects students and tax payers while ensuring quality.

Finally, Congress should require the collection and the publication of accurate, comprehensive, and robust data to support the rigorous assessment of the demonstration project success in serving students.

We hope Congress will take this next step towards responsible innovation, so our providers can continue to develop promising pathways for students. And if you do that, we hope you will leverage our quality framework for CBE programs.

Thank you again for allowing me this time and to be with you

[The statement of Ms. Long follows:]

Written Testimony of

Charla Long, J.D.

Executive Director

Competency-Based Education Network

before the

Committee on Education and Labor

United States House of Representatives

Innovation to Improve Equity: Exploring High-Quality Pathways to a College Degree

Biography

Long is the founding Executive Director of the Competency-Based Education Network, a national consortium of more than 120 higher education institutions and statewide systems seeking to design, develop, and scale new models of student learning. Additionally, she leads C-BEN's Consulting Services, which is dedicated to helping institutions create competency-based offerings, based on C-BEN's Quality Framework for CBE Programs. Long frequently facilitates workshops nationally and internationally on CBE and co-authored the book titled "A Leader's Guide to Competency-Based Education: From Inception to Implementation" (Bushway, Dodge, & Long, 2018). In 2016, Long was recognized by The Chronicle of Higher Education as one of the Top 10 Most Influential People in Higher Education for her work in competency-based education. Each year, Long plans CBExchange, the foremost conference on CBE, where leaders from hundreds of institutions gather to learn how to build and bring to scale high-quality programs. Prior to her work with C-BEN, Long served as the founding dean of and tenured faculty in the College of Professional Studies, an innovation incubator, at Lipscomb University, where she created their nationally acclaimed competency-based education (CBE) model and badging ecosystem. Long has 20+ years of higher education experience at both public and private institutions in the United States. Long has an undergraduate degree from Northeastern State University in Oklahoma and her Juris Doctor from Oklahoma City University. Long is married to Allen, a business executive turned elementary school teacher, and they have four children, two of whom are in college.

Introduction

Mr. Chairman, Ranking Member Foxx, and Members of the Committee. Thank you for holding this hearing and for inviting me to testify about the role competency-based education (CBE) is playing in creating high-quality pathways to college degrees and post-secondary credentials. As the Executive Director of the Competency-Based Education Network, I represent a community of educators who believe CBE is an essential component in increasing access to high-quality, post-secondary educational opportunities for our Nation's diverse learner population. Our Network is comprised of regionally accredited colleges, universities, higher education systems, and service providers who work together to address shared challenges to designing, developing, and scaling high-quality CBE programs. Today, CBE is one of the fastest-growing approaches for individuals to access a college education with more than 500 programs across the country being designed or launched. In the last two years, our Network has grown from 30 institutions to over 120 member entities with more institutions joining the competency-based movement each month.

In order for our country to compete in the global economy, we must have the right employees in the right positions at the right time with the right credentials. This requires a better understanding of and appreciation for today's learners and our Nation's workforce needs, as well as an enhanced learning ecosystem to support this objective. We all have a role to play in increasing the availability of efficient, effective, high-quality pathways to post-secondary education that leads to meaningful employment and enhances our nation's standing in the world. In today's testimony, I will share with you how CBE pathways can help increase credential attainment rates and reduce present inequities in the higher education system.

Understanding Today's Learners and Workforce

Today's learners are older, more diverse, working, raising families and often struggling to balance all of life's demands. In a recent study released by Lumina Foundation, a summary of today's learners reveals statistics, which may surprise some. When describing learners overall, 37% of college students are 25 or older. 46% are first-generation college students. 42% of college students are students of color, and 9% are first-generation immigrants. Today's learners must balance many work-life-college demands. 64% of college students work, with 40% of them working full-time. 57% live independently – away from parents or campus housing, with another 24% having children or other dependents. Today's learners face significant financial and social challenges. 36% reported not knowing where their next meal was coming from with 9% reporting homelessness within the past year. 31% come from families at or below the Federal Poverty guideline and 53% of college students come from families at or below twice the poverty level.

A study from the Georgetown University Center on Education and the Workforce tells us that low-income working learners are disproportionately Black (18%) and Latino (25%), women (58%), and first-generation college-goers (47%), while higher-income working learners tend to be White (73%). Knowing that students from low-income households are 5x more likely to move out of poverty if they earn a college degree, Lumina's work further reveals only 11% of young adults from low-income families earn a bachelor's degree by age 24, compared to 58%

from high-income families. Given that tuition has increased 503% (5x) more than inflation over the past 35 years and 68% of bachelor's earners graduate with student loan debt, owing an average of \$30,100, today's higher education system is clearly failing to meet the needs of all Americans.

Employers spend hundreds of billions of dollars each year on work-based and higher education, including through tuition assistance programs. Yet, in recent surveys by both the National Association of Colleges and Employers and the Association of American Colleges and Universities, employers do not believe college graduates are well-prepared in competencies employers believe are most important for workplace success. Today, 3.3 million Americans hold an industry-recognized certification as their terminal credential. These credentials enable workers to find jobs in-field, with earnings significantly more than the average high school diploma attainer, but often provide no pathway to a post-secondary degree or credential.

Now is the time to review the higher education system and make the needed modifications to serve a broader, more diverse learner population, including those who have historically been underserved, and to address our workforce preparedness disparities. Failure to make these changes will lead to the continuation of equity gaps like those I have just shared. It is imperative for policymakers and institutional leaders to commit to expanding the design and delivery of high-quality pathways to post-secondary credentials that better meet the needs of today's learners. These pathways must be accessible, affordable, and efficient. I sit before you representing a growing number of forward-thinking institutional leaders who are diligently building and scaling competency-based pathways to high-quality degrees and credentials that serve a more diverse student population. Their work is essential to our Nation's success and our Network stands fully committed to working with Congress on a solution to our equity challenge.

Building a New Learning Ecosystem Based on Competencies as Currency

Today's higher education system recognizes and validates primarily learning that occurs within the confines of a college or university. Yet, we know learning occurs in multiple contexts, such as at work, in the military, and through community service. Higher education has been slow to recognize learning that occurs outside of a classroom environment, which creates an inequitable system that disadvantages those who have been unable to access or afford formal, structured learning opportunities. Part of the reason for this challenge is our inability to compare learning across multiple contexts. Higher education institutions speak in the course and credit hour language, while the vast majority of other contexts speak in terms of competencies. When higher education institutions use competencies as the currency of learning, we are able to connect, compare and validate learning across multiple contexts through the use of a shared competency language.

The transition to competencies as the currency for learning, instead of today's currency of the credit hour, is a major undertaking. Such a transition requires a new learning infrastructure to be built, where competencies can be exchanged freely across contexts and not limited to only those in the higher education system. Building a new learning infrastructure is not an impossible task; just a challenging one that requires careful planning and execution. The U.S. Chamber of Commerce Foundation, Credential Engine, Lumina Foundation, and many other leading

organizations have made significant progress on the creation of a public-private data and technology infrastructure based on open, linked competency data. As envisioned, this technology-enabled talent market system will be interoperable across higher education, K-12, human resources, military, and many other contexts, and will allow for information to be freely used and shared to connect competencies and credentials for learners, credential providers, and employers. Through the T3 Innovation Network™, data will be shared seamlessly across all vendor tools because of interoperable data standards. The Job Data Exchange™ will help employers better signal their needs regarding job requirements, skills, and credentials via their HR information systems which allows higher education institutions to more quickly recognize and respond to workforce needs. Using comprehensive digital learner records, individuals will have a secure way to share their education and employment portfolios digitally. Finally, the Credential Engine™ will help education providers better signal the competencies learned via credentials.

Truly, significant progress is being made toward *Cracking the Credit Hour*, as Amy Laitinen from New America so masterfully described in her 2012 article, but this comprehensive learning ecosystem that transcends contextual settings is still under development or early in the implementation phase. As much as it disappoints me to say so, I believe the current risk of a wholesale repeal of the credit hour outweighs the benefits of creating a conducive environment for innovation. Without having a fully developed and tested alternative ecosystem based on competencies as the currency of learning, students may experience transferability issues, inconsistencies in competencies across institutions, and a myriad of other complex issues. At this point, more time is needed to lay this essential foundation and gather necessary evidence of CBE's effectiveness. Although I know my beliefs may frustrate a number of our more established members, I cannot in good faith recommend more aggressive Congressional action for fear it may harm learners and jeopardize the overall CBE movement.

Competency-Based Education as a Solution

Despite many challenges, Network members and other institutions are designing, building, implementing, and scaling CBE programs that offer high-quality pathways to a college credential, often within the confines of the course and credit-hour structures. Although there is no standardized definition of competency-based education in federal statute, the field has created many definitions of what CBE is and is not. In fact, most institutions have their own definitions of what competency-based education looks like, too.

C-BEN defines CBE as follows:

Competency-based education combines an intentional and transparent approach to curricular design with an academic model in which the time it takes to demonstrate competencies varies and the expectations about learning are held constant. Students acquire and demonstrate their knowledge and skills by engaging in learning exercises, activities and experiences that align with clearly defined programmatic outcomes. Students receive proactive guidance and support from faculty and staff. Learners earn credentials by demonstrating mastery through multiple forms of assessment, often at a personalized pace.

Many other organizations, including regional accreditors through the Council of Regional Accrediting Commissions, have issued CBE definitions. The vast majority of the existing definitions include several distinguishing features, which Dr. Deborah Bushway shared with the U.S. Senate HELP Committee during her testimony on January 18, 2018. I repeat them here with her permission:

- Intentional backward design. In CBE programs, the educational journey is designed with the end in mind and the student at the center. Faculty begin by answering the question: "What ought a graduate of this program know and be able to do?" From this starting point, teams of faculty members, employers and instructional designers develop a set of clearly specified competencies that illustrate what the learner must know and be able to do in order to progress in and complete a credential. These competencies are integrated and scaffolded so that the integrity of the academic credential is maintained.
- Outcomes emphasis. Competency-based education is an approach to teaching and learning that focuses on the competencies that students must master rather than the amount of time they have spent in class, as measured by credit hours. This allows students with some existing knowledge or skill to spend their time on new content rather than reviewing already mastered material.
- Agnostic regarding learning source. Because well-defined competencies mandate the
 integration of knowledge (theory) and practice (application), CBE programs can be
 agnostic as to the source of students' learning. A student may have learned the practice or
 application component of a competency in a work setting and the theoretical component
 in a traditional classroom, but what matters is the student's ability to knit this together
 and demonstrate the competency as required by the credential being earned. The
 institution enrolling the student and offering the credential must provide the student with
 proactive, relevant, and substantive educational support that leads to this demonstrated
 learning.
- Rigorous requirements. Many people wrongly assume that CBE programs are easier or
 shorter, but, in reality, a high-quality CBE program offers a very rigorous instructional
 model in which students must demonstrate the acquisition of all the competency sets
 required to master a program of study. In fact, for some students, CBE programs will take
 longer to complete than traditionally structured programs. Yet, a high-quality CBE
 program will guarantee the learning outcomes or competencies of the students, unlike
 most traditional programs.
- Students at the center. In CBE programs, the student educational journey becomes a
 primary organizing principle. Rather than enrolling in a series of courses taught by
 individual faculty members, the CBE student is engaged in a carefully designed set of
 learning experiences and assessments built to allow the student to demonstrate the
 required competencies when she or he is ready to do so.

- Modularization. Rather than on the traditional method of clustering chunks of learning
 into a "course," CBE disaggregates courses based on competencies demonstrated as a
 result of learning. Each competency is clearly articulated, and demonstration of each
 competency is assessed and transcribed. Modularization not only allows for more
 transparency; it also supports stacking of competencies into diverse credentials.
- Personalization. Such modularization allows for more precision and personalization in
 developing the student learning journey. For each student, the path to a credential can be
 customized by acknowledging where competencies already exist and "prescribing"
 additional learning where competency is absent or incomplete.
- Transparency. Student learning outcomes, or competencies, are clearly articulated and
 transparently transcribed so that students, employers, and the public can all know what
 any given credential means. This is much more meaningful than the traditional "grade"
 offered for a course.

In high quality CBE programs, these features are interwoven to produce value for the students in unique ways, including increased transparency of learning outcomes, potential lower costs of both tuition and time for some students, and the ability to personalize each student's learning pathway with increased precision and intentionality.

Although the field is working on a common typology for CBE programs, there is a vast range of CBE models in the U.S. today. Each institution uses these features as a guiding framework and decides, based on the specific needs of its learners and institution, how to design its CBE program model. More data needs to be collected to see if one model or some combination of distinguishing features leads to better learner outcomes, but such research does not exist today. As Congress considers policy in this area, it is important to remember the wide variety in CBE models. Additionally, the lack of a common definition complicates policy making efforts, and we believe Congress should define CBE within the Higher Education Act (HEA) in a way that correctly emphasizes its focus on learning outcomes and differentiates it from prior learning assessment, distance education and correspondence courses, while creating flexibility for model variation.

High quality CBE programs meet the needs of a diverse group of learners, as captured by these actual learner stories from perhaps some lesser known institutions working in the field.

Nicolet College: Elena lives in a community of a few hundred people in northern Wisconsin. She has a High School diploma and worked in nearby Rhinelander at a warehouse and distribution center for a national pet supply retailer. The pay was not great, but she had health insurance and could make ends meet. Then, on January 9, 2019, her employer, one of the largest in the area, announced the facility would close. Elena would be out of work by mid-March. What would she do? How would she pay her bills? She is not afraid of hard work, but good jobs in this rural community of about 8,000 are rare, especially for people without a college education or indemand skills.

Elena and other soon-to-be dislocated workers attended informational meetings where they learned about the State-supported services available to them, including a re-tooling education benefit. Elena was fearful. It had been a long time since she had been in school. How could she manage a class schedule and all of her other obligations? Besides, going back into a classroom full of students twenty years younger was not at all appealing. Then she heard about Competency-Based Education (CBE) at Nicolet College. There, she learned that CBE programs were made for people like her. She could start right away. She would not spend time and money being forced to repeat what she already knew. She could move through her program as quickly as she was able, and she could slow down when she needed a little more time.

Nicolet College, one of Wisconsin's public technical colleges, is already highly affordable, but it is the only one accredited to offer Competency-Based Education programs. For Elena, that made all the difference. Called "Nicolet My Way", CBE offered her scheduling flexibility she had to have, the variable pacing she needed to save money and feel confident, and the learning she knew was in demand by employers.

Elena took the plunge and enrolled in one of Nicolet's CBE programs, IT-Computer Support Specialist. She immediately connected to an IT Faculty member, who helped her understand the structure of the program and gave her advice on how to be successful in the program. Though not required, she came to campus regularly at first. She actively engaged her instructors as she worked on her courses, and she discovered that going back to school as a non-traditional student was not so frightening after all, at least not with the adult-friendly design of CBE.

Through hard work and determination, Elena mastered her spring competencies faster than would have been possible in a semester-based calendar. She is currently enrolled for summer and well on her way to reinventing herself in a new career. She has her sights set on starting out in a Help Desk role, then moving up on the hardware side of IT. Because of Nicolet's My Way and CBE pathways, Elena has a roadmap to a better life. A roadmap that leads to the job she wants, gives her the flexibility working adults need, and will not leave her under a mountain of debt.

<u>University of Maine Presque Isle</u>: Bradford is part of the University of Maine Presque Isle's (UMPI) YourPace CBE program. As an active military member, Bradford believes the best part of the YourPace program is his ability to jump in and out of the program based on his deployment schedules. Because of the modularized nature of the 8-week sessions, with multiple start dates spread out over the academic year, he can step out when being deployed and seamlessly return when he is back home. This flexible pacing has allowed him to be able to take time off without fear of falling behind or missing deadlines, especially because his assigned success coach helped him develop a personalized completion plan. The New England Commission of Higher Education (NECHE) just completed an on-site visit and the review team shared this learner feedback:

UMPI CBE faculty work closely with students as they progress through the competency milestones and the summative assessments. In addition to faculty, CBE students have dedicated success "coaches" who work with them to maintain a high level of engagement and to make progress toward their goals. Students described high levels of satisfaction with the responsiveness and effectiveness of their coaches, and credited the faculty and coaches with their success, especially during challenging times. One student, who had attended three different institutions of higher education and had not been able to finish a program at any of them because of juggling a career and children, reported that he was seeing the benefits of CBE in his career already, before finishing the program. He noted that "everything is applicable" and expressed appreciation for a program that did not weigh him down with "busy work" and spending times "learning things he already knew". Another student shared that she was so grateful for the professors and coaches who "are there for me when doubts creep in and convince me that I can do it". She mentioned being out of school for 30 years and remarked, "I don't know why all schools are not doing this". Another CBE student described "immediate faculty response when needed", and a single working mother shared, "I don't have to have things done at a specific time and it's the only reason I can do this".

Lipscomb University: Lipscomb University is leveraging CBE to educate those who are incarcerated. Established in 2007, Lipscomb's LIFE (Lipscomb Initiative for Education) Program introduced an innovative education format that brought up to 30 Lipscomb's traditional students ("outside students") to the Tennessee Prison for Women (TPW) each week to study alongside residents of the prison ("inside students"). Both the "inside" students and the "outside" students earn college credit for the course. Each Wednesday night, the LIFE Program provides Lipscomb University students an academic and service-learning experience like few others. On these nights, professors and enrolled outside students travel to TPW where they are scanned in through security and learn side-by-side with inside students. The first cohort of inside students graduated with their bachelor's degree in organizational leadership, a CBE program, in December 2017. Erika, one of the recent graduates, wrote: "We are wiser because [Lipscomb has] taught us that we aren't broken or thrown away. We have learned that our identity has risen above the prison culture." Several of these 2017 graduates have since been released and have been able to secure meaningful employment post-incarceration, with their CBE credential in hand.

Quality Framework for CBE Programs

C-BEN shares Congress' desire to protect consumers, ensure quality, and hold institutions accountable for results. In 2015, it became clear to the leaders of C-BEN that efforts to grow demand, build capacity, and remove barriers for CBE were hindered by the lack of a quality definition. In response to this need, C-BEN created a Quality Standards Task Force, and this group began an iterative and inclusive process, developing principles and standards universal enough to apply to all CBE programs regardless of model variations. The resulting Quality Framework is both attainable and aspirational. For each of the eight elements of quality, the framework provides an overarching principle, detailed standards, and a development guide that institutions can follow when building new or scaling existing programs.

The 8 elements of quality which should be present in every CBE program are:

- 1. Demonstrated Institutional Commitment to and Capacity for CBE Innovation
- 2. Clear, Measurable, Meaningful and Integrated Competencies
- 3. Coherent Program and Curriculum Design
- 4. Credential-level Assessment Strategy with Robust Implementation
- 5. Intentionally Designed and Engaged Learner Experiences
- 6. Collaborative Engagement with External Partners
- 7. Transparency of Student Learning
- 8. Evidence-driven Continuous Improvement

Since the Quality Framework's release in September 2017, C-BEN institutions collaborated to create a User's Guide, an additional resource to help institutions make the most of the Quality Framework. Today, C-BEN conducts program reviews and provides institutions with guidance on how to enhance the quality of program offerings. C-BEN encourages Congress and our accrediting bodies to embrace and leverage the Quality Framework if you seek to define CBE, determine quality, or consider guardrails for innovations in this space.

Data on Effectiveness of CBE Programs Today

Institutions develop their CBE programs with many goals in mind, such as lower student costs, higher quality, faster completion, better workforce preparedness, allowing students to leverage all learning, and increased access for underserved or not well-served learners. It is important to assess how CBE is able to deliver against these important goals, and institutions want and need to have evidence of the impact these programs are having in meeting these goals.

A study conducted by the American Institutes for Research (AIR) in 2015 looked at six institutions offering CBE programs to understand the characteristics of students enrolled in CBE and their outcomes, as compared to traditional programs. AIR found that the CBE programs were beginning to fulfill their value propositions of broadening access, offering paths to credentials, and improving cost and quality for students. A further study released by AIR this year evaluated the student outcomes at a larger number of institutions and found that, although some were still in the early stages of CBE program implementation, CBE is performing at least on par with traditional programs and can, in some cases, result in lower total costs of credentials for students.

Beyond a handful of studies such as these, data on the effectiveness of CBE programs is not yet plentiful. There is a need to establish a relationship between distinguishing features of CBE programs and the student outcomes achieved. Although much of the research is limited to small samples or single institution cases, the results achieved by individual institutions with CBE programs are promising. A sampling of data from a range of institutions not as often in the spotlight is included to illustrate the data that institutions are currently collecting and to share institutionally reported results:

Sinclair College: Sinclair is an open access, urban community college of around 20,000 students in Dayton, OH with institutional core mission focus areas of access, equity, and alignment. Sinclair's equity initiatives are designed to bring college to all learners and focus on breaking down barriers to access and success. Sinclair has over 5,000 high school students across the county studying at Sinclair while in high school. Additionally, they have more than 1,500 incarcerated students who are pursuing certificates as they near release, in fields where they can be employed post-incarceration. Sinclair has an African American male mentorship program designed to pair African American male students with mentors and focuses on graduation within 2-3 years. Also, the institution has low or no-cost childcare for students with economic challenges.

Sinclair's online and CBE programs broadly support the equity goal as well, by ensuring that students have solutions to both the "time" and "place" barriers that lock so many students out of traditional education. Particularly with CBE, being able to start and finish classes on their own timeline, and study and make progress in a way that is completely customized to the individual student is extremely important for our post-traditional learners. Sinclair has 12 CBE programs (associates and certificates) in IT, Business, Criminal Justice, Advanced Manufacturing, and UAS. CBE programs are branded to students as the FlexPace program. Sinclair also has general education courses and is piloting work this year in Developmental Education acceleration to college-level coursework within a single term through CBE.

Sinclair has enrolled more than 2,300 students since 2013 in its CBE programs, with adult learners comprising nearly 75% of enrollment. 70% of the CBE learners are new students or students who stopped out two or more years from Sinclair. To date, Sinclair CBE students have earned over 1,200 credentials. CBE student credential rates are 15% higher than traditional students across all CBE programs (and higher in the technical programs), and students average a first credential within 4 terms of entry (as opposed to a traditional student pace of 6 terms). CBE students still finish CBE courses at Sinclair an average of 35% faster than their traditional semester counterparts. Enrollment in CBE programs has more than doubled in the last academic year. Upon entry, the average annual income of a Sinclair student is below \$17,000. Within one year of graduating from Sinclair with an associate degree, that average annual income jumps to over \$37,000 annually.

Texas A&M University Commerce (TAMUC): TAMUC offers a CBE program for working adults that is a flexible and afford pathway to a degree. The program started with only seven students and is now the third largest program on the TAMUC campus with over 400 students as of Spring 2019. Although the program is not yet minority-majority, those identifying as Hispanics/Latinx students comprise 23% of the learner population with those identifying as Black students at 14%. This accelerated program is offered year-round in six, seven-week terms for a flat rate of \$750 per term. The average CBE cost to a degree is \$6,000, as compared to \$14,000 in a traditional program. This model allows only 37% of its learners to graduate with student loan debt, in comparison to 65% in their traditional program. Nearly 62% of all learners complete within two years, up from 42% in traditional programs.

Salt Lake Community College (SLCC): The SLCC School of Applied Technology and Technical Specialties administered a TAACCCT Round 4 institutional grant, called the Adult Competency-Based Education Design (ACED). ACED had a primary goal of applying CBE to a wide range of career and technical education and applied technology programs. By the end of this grant, SLCC converted 24 of its programs of study to a CBE format. Enrollment in these programs exceeded projections and attracted a more diverse student population than SLCC's previous student population, with nearly 24% of students identifying as Hispanic/Latinx. In an impact analysis completed for the TAACCCT grant by a third-party evaluator, learners in SLCC's CBE programs showed increased odds of program completion at 44.7% over the baseline. Controlling for multiple variables, program participation was associated with an average post-program quarterly wage increase of \$675. Incumbent workers' quarterly wages were, on average, higher compared to non-incumbent workers to the magnitude of approximately \$550.

Capella University: Offering the Nation's first CBE direct assessment bachelor's and master's programs approved by the Department of Education for federal financial aid, Capella's FlexPath program allows learners to progress at their own pace, with no set semester or quarter system. This allows learners to move on to new courses as soon as competencies are mastered. Over the past five years, over 7,000 students have enrolled in FlexPath with a combined graduate total in excess of 5,000 learners. The median time for learners to complete Capella's direct assessment bachelor's programs was 59% faster than similar learners in equivalent credit-hour bachelor's programs. The median time for learners to complete Capella's direct assessment master's programs was 42% faster than similar learners in equivalent credit-hour master's programs. Capella's use of a flat rate subscription model allows learners to save money, the faster they master content. The median tuition billed to a FlexPath student was \$10,548, which is 59% less than a similar learner in an equivalent credit-hour program. The median federal financial aid borrowed by a FlexPath student was \$11,739. This is 45% less than a student in Capella's equivalent credit-hour programs. In the last quarter of 2018, the two-year persistence rate for FlexPath learners was 23 percent higher than in equivalent credit-hour programs.

As you can see, the results achieved by individual institutions with CBE programs are promising.

Responding to Workforce Needs through Innovative Work-Based Partnerships and Industry Credential Recognition

The C-BEN Collaboratory, the Network's research and development arm, deepens and extends the organization's founding commitment to collaborative work, creating time-bound and field-advancing projects aimed at accelerating progress and furthering at least one of the organization's priorities: grow demand, build capacity and remove barriers. The 2019 project is focused on allowing C-BEN members to advance specific strategies designed to ensure that those with industry-recognized certifications and work-based postsecondary-level learning have guaranteed pathways into further education.

By helping institutions better understand and recognize work-based learning and industry-recognized certifications, this project will allow more individuals to pursue competency-based postsecondary credentials and encourage employers to more closely align workforce

development initiatives with institutions engaged in the CBE movement. In order to help millions of adults have pathways to high-quality, competency-based credentials, the project seeks to create transparent pathways that recognize competencies as currency and allows adults to leverage work-based learning and industry recognized credentials during the acquisition of credentials.

At C-BEN's CBExchange conference, held October 21-25, 2019, Collaboratory members will release the following new field-facing resources:

- An employer partnerships toolkit designed to help institutions effectively collaborate with organizations on workforce needs;
- A return-on-investment tool which allows institutions to measure the financial impacts of the recognition of non-institutional learning; and
- A comprehensive pathways report that will explain the various methods institutions can
 use to create high-quality degree pathways for industry-recognized credentials. This
 report will highlight work completed by Collaboratory participants from 28 different
 U.S.-based institutions, when they examined industry-recognized credentials in four
 different industry sectors (technology, advanced manufacturing, service sector, and
 healthcare).

The following examples highlight a range of work-based learning and higher education partnership models being utilized by institutions and state systems of higher education.

Walmart & Brandman University: In addition to the Collaboratory project, many C-BEN institutions are proactively seeking and securing business-to-business partnership agreements with some of the Nation's largest employers. As you have probably heard, Walmart unveiled a new associate education benefit aimed at removing barriers to college and graduation. Brandman University, a C-BEN founding member, is one of three higher education institutions chosen to provide this benefit. Walmart's Live Better U education program enables the company's associates to earn a college credential in a number of high-demand fields for just a dollar a day. Walmart operates its Academies at exemplar stores throughout the country, and provides education for frontline supervisors, department managers and assistant managers. Hundreds of thousands of Walmart associates have gained education through the Academies. Working in partnership with colleges and universities, like Brandman University, Walmart has intentionally connected Academy education to further postsecondary learning. Associates participating in Live Better U can receive significant college credit, up to a semester's worth, for their Academy learning that meets quality academic standards. This not only benefits Walmart, which leverages its investments in employee education while, more importantly, helping the company's associates get on a solid path to a postsecondary credential.

Illinois Network of Child Care Resource and Referral Agencies (INCCRRA) & Illinois Board of Higher Education: Illinois is engaged in a statewide effort, involving the Governor's Office, multiple state agencies, and more than 45 public and private, two- and four-year institutions of higher education, to create a competency-based system of early childhood educator preparation, credentialing, and professional development. This is part of a strategic effort to equitably advance knowledge and skills of the state's large and diverse workforce of early childhood professionals, creating a competency-based pathway beginning with basic health

and safety courses to college coursework that leads to the state's industry-recognized Gateways to Opportunity credentials for the field, as well as associate-, baccalaureate-, and master's level degrees. In Illinois, hundreds of success stories exist where people have been able to leverage professional development when starting on a competency-based pathway to a college-level credential. Tracey, a child care provider, had completed more than 170 hours of community-based professional development offerings, yet those hours never applied to a degree or credential. At the age of forty-three, she enrolled in a newly designed competency-based credential for Family Child Care providers at Heartland Community College. By leveraging the competencies she had developed through prior community-based professional development offerings, Heartland was able to offer her a streamlined and personalized competency-based pathway. After engaging with new college-level, competency-based content, Tracey was able to earn 16 hours of college credits and complete two Gateways to Opportunity credentials in an affordable, accessible online program at 25% the price of traditional tuition.

The Bureau of TennCare and the Tennessee Board of Regents: In order to build a more competent workforce which will lead to an increase in the quality of care and quality of life for those receiving long-term healthcare services and supports, Tennessee's state Medicaid agency, the Bureau of TennCare, commissioned the creation of a statewide competency-based credentialing program and workforce registry. This comprehensive program and its resulting credentials were designed to be worthy of college credit and eligible for the State's last-dollar scholarships, made available through the Tennessee Promise and Tennessee Reconnect initiatives, which allow Tennesseans to return to higher education to gain new skills, advance in the workplace, and fulfill lifelong dreams of completing a college degree or credential, at no cost to the learner. By connecting the work-based credentialing program to the higher education system and the Tennessee Promise & Reconnect initiatives, 60,000 to 100,000 frontline direct care service workers, many living at or below the poverty level and with no prior higher education experience, will be eligible to complete the work-based designed program through participating community colleges and colleges of applied technology at no cost and for college credit. Upon completion of the credentialing program, learners will have earned an 18-credit hour post-secondary credential, which could be applied to a wide range of possible associatelevel degree programs, and will be more competent to handle daily work-based assignments. Additionally, TennCare will connect credential completion to its value-based purchasing model, which will result in higher reimbursement rates for providers with competent employees. Providers will then be required to pass on these additional funds to their low-income workers in hourly pay increases. Simultaneously, this program will allow individuals to earn a postsecondary credential while boosting personal earnings. It is anticipated that this program will begin statewide rollout in early 2020.

Establish a Demonstration Project to Support Innovation in CBE

These stories illustrate the promise and potential of competency-based education to change students' lives and increase their educational opportunities, particularly for adult students. However, retrofitting these programs to the existing federal financial aid system carries its own set of challenges, for colleges and students alike. We appreciate the enthusiasm of so many

Members of Congress interested in helping competency-based education to thrive and succeed on behalf of students.

The emerging world of competency-based programs has taught us, though, that CBE brings a wide range of diverse experiences and opportunities to the higher education landscape. Programs use different models for financing, instruction, assessment, delivery modality, faculty, and more -- and they work with a patchwork of states, accreditors, governing boards, and others to ensure the quality of those programs every day. Some CBE providers bring decades of experience; others are still launching their first programs. They serve all types of students, all with different backgrounds, experiences and incomes. In short, there's still much to learn about how to responsibly expand students' access to high-quality competency-based education.

To support further innovation in this space, we need Congress to approach competency-based education with the same level of rigor and attention CBE providers give their students. While it is tempting to fully open up requirements to allow CBE to grow, we believe that it is still too soon to take that step. There is still much to learn on how to do this so that we protect students, assure quality learning, and safeguard the taxpayers' investment. We have therefore been vocal in calling on Congress to authorize a demonstration project for competency-based education programs.

Careful, cautious legislation that takes a responsible approach to innovation will enable us to learn how best to incorporate new educational models into the higher education system without up-ending the entire federal aid model. In particular, lawmakers should **create a definition of a competency-based education program that applies to CBE programs participating in the project**, rooted in the valid assessment of students' outcomes. C-BEN's Quality Framework provides what we believe is a rigorous framework for such a definition. Congress should also ensure a demonstration project provides straightforward, clear expectations for participating institutions, to ensure those institutions are able to serve as a reliable test case for future policymaking.

Under a demonstration project, colleges should be allowed flexibility with federal financial aid rules to assess how new things work in a controlled manner that protects students and taxpayers. While time-based learning leaves much to be desired, there is not yet a widely accepted replacement for the credit hour. A well-controlled experiment can help to identify the possibilities—and pitfalls—of awarding federal aid on the basis of other measures, and to determine the definitions and guardrails that will be needed to protect students and taxpayers under such a system. We must do this thoughtfully to protect the students and the field from a race to the bottom, fueled by federal financial aid.

Finally, Congress should **require the collection and publication of accurate, comprehensive, and robust data** to support a rigorous assessment of the demonstration project's success in serving students and spending taxpayer dollars well. A demonstration project will be of little use if we don't learn how to responsibly expand access to competency-based education moving forward. CBE providers themselves are clamoring for better information to help them prove their value to students and other stakeholders--and to ensure that CBE programs help close, rather than exacerbate, equity gaps. The data on students' outcomes are woefully inadequate across

higher education; but in educational programs premised on career-relevant coursework and the assessment of student learning, it could not be more important, to providers, to policymakers, and to students and families themselves. Congress can help us fill in critical data gaps about student outcomes.

The landscape has also seen tremendous growth in recent years, and C-BEN recognizes new institutions entering the CBE sector each month. With so many new entrants, and such rapid expansion underway, we need to **test, evaluate, and iterate on the outcomes of those programs under an entirely new federal structure**. This will also enable established CBE programs to experiment with new flexibilities and for Congress to understand the outcomes of those new flexibilities. Congress should take the next step toward the responsible innovation of competency-based education programs in the form of a demonstration project, so that CBE providers can continue to develop promising pathways through higher education for the students who need it most.

Chairman SCOTT. Thank you. Mr. Gadkaree.

TESTIMONY OF SAMEER GADKAREE, SENIOR PROGRAM OFFICER, JOYCE FOUNDATION

Mr. GADKAREE. Chairman Scott, Ranking Member Foxx, and members of the committee. Thank you for inviting me to testify. I lead higher education grant making at the Joyce Foundation. I previously led the adult education division for Chicago's community colleges.

The Joyce Foundation seeks to advance racial, equity, and economic mobility in the Great Lakes region. The foundation gives \$50 million annually to public policy nonprofits and have assets of \$1

billion.

For decades, the foundation has worked to improve education and workforce development programs. Educational attainment is a key determinant of an individual's lifetime earnings and of our Nation's global economic competitiveness. That's why it's troubling that gaps in college attainment are widening by race and wealth.

In 1990, White young students were 13 percentage points more likely than Black young adults and 18 points more likely than Latinx young adults to have a bachelor's degree or higher. Those gaps are wider today. For Black young adults, it is worsened to 19 points. For Latinx young adults, it has worsened to 24 points.

Shockingly, students from wealthy families are 48 points more likely to hold a bachelors than students from poor families. Also,

a worsening gap.

The Joyce Foundation hopes this committee will support changes to our college system to close racial and wealth gaps in college attainment.

A good place to begin is community colleges since half of first time Black, Latinx, and low-income students start there. I have five points to cover today.

First, well-targeted investments in community colleges can yield significant increases in graduates. Currently only 39 percent of students who start in a community college complete a certificate or degree.

But four randomized control trials tested programs that were able to double graduation rates with more intensive advising and

student supports.

This evidence led a bipartisan group including two former Chairs of the Council of Economic Advisors to recommend a direct investment in community colleges which would produce 3.6 million more young graduates in 2030 and 28 million more older graduates.

Thus, Federal policy makers should provide funding to scale com-

munity college evidence-based programs.

Second, investments can connect community college graduates to good jobs. Overall, well-paid jobs are shifting to people with bachelor's degrees. In the last 25 years the economy added 18 million well-paid jobs for bachelor's degree graduates, 3 million for associate's degree graduates and 300,000 for certificate holders. We lost 2 million well-paid jobs for high school graduates.

Because that shift worsens economic equality, the Joyce Foundation supports employers who hire associate's degrees. The associate

degree graduates for good jobs.

In Chicago, Aon, Accenture and other leading employers have hired community college graduates. Joyce and others are building

the public sectors capacity to meet those employer needs.

Federal policy makers could similarly support college's capacity. For example, they could build on the learnings from the pack effort, the Trade Adjustment Act community college career training effort. As the audit of that program suggested, better Federal data collection would be required to track efficacy.

Third, states can improve the community college pipeline to fouryear degrees. Fewer than 20 percent of students who start in a community college will earn a bachelor's degree. States can improve this pipeline, so we and other philanthropies are investing in

stronger state policy.

The racial representativeness of public flagship colleges in the Great Lakes region is declining. Enrolling and gradating more community college students can address this problem and thus Joyce is supporting individual universities efforts to do so. Though states and colleges need to lead in this arena, Federal policy makers should create stronger incentives for colleges especially wealthy colleges to enroll minority and low-income students.

Fourth, increasing employer skill needs may mean that community colleges should offer technically-oriented bachelor's degrees. 25 states now allow this and allowing community colleges to grant work aligned four-year degrees. Though this is mainly a state

issue, it seemed germaine to today's topic.

Finally, I want to touch on education technology. Joyce funded research to see if technology can increase GED and English learner outcomes and got mixed results. Those findings add to a mixed research base generally about technology and college onramps. Technology alone may not be able to solve our completion challenges.

As this body considers how to improve higher education, I hope you will consider programs that meaningfully close race and income-based gaps in attainment and build a more equitable society for all.

Thank you again for inviting me to testify. I would be happy to answer your questions.

[The statement of Mr. Gadkaree follows:]

Testimony Before the House Education and Labor Committee

Innovation to Improve Equity: Exploring High-Quality Pathways to a College Degree

June 19, 2019

By: Sameer Gadkaree Senior Program Officer The Joyce Foundation Chairman Scott, Ranking Member Foxx, and Members of the Committee:

Thank you for inviting me to testify.

I lead higher education grant-making at the Joyce Foundation. I previously led the adult education division of Chicago's community college system. The Joyce Foundation funds state and federal policy development and advocacy to advance racial equity and economic mobility in the six-state Great Lakes region. The Foundation distributes a total of \$50 million to non-profit organizations annually and has assets of \$1 billion. For decades, the Foundation has worked to help people get better jobs through education and workforce development programs.

Educational attainment is a key determinant of an individual's lifetime earnings and stable employment. And it is a key factor in increasing the economic competitiveness of regions, communities, and states vis-à-vis other nations. That's why it is troubling that gaps in college attainment are widening by race and income.

In 1990, 26% of white 25-29 year-olds held a bachelor's degree or higher while 13% of black young adults did – a gap of 13 percentage points. Since then, that gap has gotten worse and now is 19 percentage points. For Latinx young adults, the story is the same: in 1990, 8% had a bachelor's degree or higher, for a gap of 18 percentage points. Since then, the gap has gotten worse and is now 24 points.¹ Similarly striking is the gap by wealth: students from wealthy families are now 48 percentage points more likely to hold a baccalaureate degree than students from poor families. That gap, too, has widened.²

Our Foundation's goal is to foster racial equity and economic mobility to increase the vitality of Great Lakes communities. These college attainment gaps must be narrowed to make that possible. We hope this committee will support the changes to our college system that would move us in that direction.

A good place to begin is in the community college system. Half of first-time black, Latinx students, and low-income students start in community colleges.³ So it's especially critical that these students complete their degrees and find a job that helps them move up the economic ladder. That's one reason the Joyce Foundation has supported the Aspen Prize for Community College Excellence since its inception. Although community colleges serve the students with the greatest need, they do so while spending far less per student than other types of colleges, as Dr. Susan Dynarski noted in a previous hearing.

¹ NCES data. Accessed at: https://nces.ed.gov/programs/digest/d17/tables/dt17 104.20.asp

² Top 20% vs bottom 20% in net worth. Pfeffer, Fabian. "Growing Wealth Gaps in Education" Demography, 2018. Accessed online at: http://fabianpfeffer.com/wp-content/uploads/Pfeffer2018.pdf. Also covered in the New York Times: https://www.nytimes.com/2018/03/25/opinion/college-graduation-gap.html?module=inline . See also Bailey and Dynarski. "Gains and Gaps." National Bureau of Economic Research. 2011

³ Community College Research Center at Columbia University. Accessed at: https://ccrc.tc.columbia.edu/Community-College-FAQs.html

I have five points I'd like to make in my testimony.

The first area I would like to focus on with the committee is that well-targeted investments in community colleges can yield significant and measurable increases in college completion.

Currently, only 39% of students who start in a community college will complete a certificate or degree from any institution within six years. And that number is lower for black and Latinx students. But on a positive note, a growing body of evidence has shown that it is possible to increase graduation rates in community colleges. Randomized control trials on four programs show colleges can double and even triple graduation rates if they invest in student supports and more intensive advising. In some cases, those programs are increasing graduation so much that they actually reduce the number of dollars spent per college graduate, proving that investments in higher education can be both effective and efficient.

This evidence led a bipartisan group of two former Chairs of the Council of Economic Advisors, Austan Goolsbee and Glenn Hubbard, and Aspen expert Amy Ganz to propose a new \$22 billion per year federal investment in community colleges, which they estimate would produce 3.6 million incremental college graduates from 18-24 year olds in 2030 and add 28 million older workers with college credentials by 2030. While \$22 billion is a very large number, it points to the growing ability of the field to link targeted investments to clear outcomes in community colleges. Many philanthropies are trying to scale these programs up, but it is unlikely that we will achieve significant scale without federal or state funds.

Federal policymakers could help by providing funding to scale up these evidence-based programs.

The second area that I want to mention is connecting community college graduates to good jobs.

What we see now is that well-paid **jobs are shifting to people who have bachelor's degrees**. In the last 25 years, the economy added 18 million well-paid jobs for people with bachelor's degrees, 3.2 million well-paid jobs for associate's degree graduates, and added 300 thousand well-paid jobs for certificate holders, and – over the same period - lost 1.8 million well-paid jobs for high school graduates.⁷

 $^{^4}$ National Student Clearinghouse – 2018 National College Completion report. Accessed at: $\underline{\text{https://nscresearchcenter.org/signaturereport16/}}$

⁵ The four programs are CUNY ASAP (evaluator: MDRC), One Million Degrees (evaluator: University of Chicago); Arkansas Career Pathways Initiative (evaluator: College Counts); and Stay the Course (evaluator: Notre Dame Lab for Economic Opportunity)

⁶ Goolsbee, Hubbard, and Ganz. "A Policy Agenda to Develop Human Capital for the Modern Economy." Aspen Institute (2018). Accessed at: https://assets.aspeninstitute.org/content/uploads/2019/01/1.1-Pgs-16-39-A-Policy-Agenda-to-Develop-Human-Capital-for-the-Modern-Economy.pdf* ga=2.84399641.1092312820.1560193520-719562301 1559839133

⁷ See Figure 5 in Carnavale, Strohl, Ridley, and Gulish. "Three Educational Pathways to Good Jobs." Georgetown Center on Education and the Workforce (2018). Accessed at: https://cew.georgetown.edu/cew-

To reiterate – the well-paid jobs are increasingly moving towards requiring bachelor's degrees or higher. Because under-represented minorities or individuals from less-wealthy families are increasingly behind in getting those degrees, that move to bachelor's degrees is increasing economic inequity in our society.

We thus support those employers bucking the trend and hiring associate's degree graduates for jobs that typically require four-year degrees. One such effort is happening in Chicago. Aon, Accenture, and other leading employers have hired, retained, and promoted community college graduates in their firms, working closely with the City Colleges of Chicago and Harper College. At the request of the employers, philanthropic investment from the Joyce Foundation, the Pritzker-Traubert Foundation, the Chicago Community Trust, the MacArthur Foundation and the philanthropic arms of Salesforce and JP Morgan Chase has focused on building the capacity of community colleges and non-profit partners to meet employer demand.

Federal policymakers could similarly support colleges' capacity to respond to employer partnerships. One way of accomplishing this is to build on the Trade Adjustment Act Community College and Career Training effort. As the audit of that program suggested, better data collection, including at the federal level, would be required to know whether such an effort is producing the desired employment and wage outcomes.

But given the growing employer demand at the bachelor's level, a third area worth exploring is improving the community college pipeline to four-year degrees. Unfortunately, fewer than 1 in 5 students who start in a community college will earn a bachelor's degree within 6 years. That reflects both structural barriers and a student population that may be part-time due to work or family obligations.

State policies could be designed to reduce the need to repeat costly college credits and to smooth the path to a four-year college. This is a good example of how philanthropy can help support innovation. Together with the Kresge Foundation, the ECMC Foundation, and Ascendium Education Philanthropy, the Joyce Foundation is supporting technical assistance to Virginia, Minnesota, and Texas to dramatically improve statewide transfer outcomes.

Public universities can also make a difference by strengthening their commitment to recruiting and admitting community college transfer students. We know, based on Joyce-funded research from the Institute for Higher Education Policy, that the share of black and Latinx students in Great Lakes public flagship universities is declining relative to their share of the population. We need to ensure greater equity in public universities. The same is true for students from

<u>reports/3pathways/</u>. The authors define "good" jobs as those that pay \$35k or more for workers between 25 and 44 and \$45k or more for workers between 45 and 64.

⁸ National Student Clearinghouse report. Accessed at: https://nscresearchcenter.org/signaturereport13/

⁹ See the Institute for Higher Ed Policy research at <u>www.ihep.org/equitysnapshots</u>

lower-income families. They are significantly under-represented relative to their share of the population. 10

On a positive note, the best universities in the country are tackling this issue; at UCLA, community college transfer students make up a third of the incoming students each year. ¹¹ Given the imperative to do better, the Joyce Foundation supports Ohio State in its work to improve its pipeline and success with community college and regional campus transfer students.

Much of the work to address effective transfer must be done by individual institutions and states. But federal policymakers could also play a role by creating stronger incentives for selective institutions to enroll under-represented minority and lower-income students.

As I mentioned earlier, well-paid and stable jobs increasingly require bachelor's degrees. Thus, my fourth point is that changing skill needs may mean that **community colleges should offer technically-oriented baccalaureate degrees**. Twenty-five states allow community colleges to grant work-aligned four-year degrees to fill specific employer needs. Together with the Lumina Foundation, the Joyce Foundation is funding research on the efficacy and scale of these offerings. Across the country, we see programs in microelectronics, cybersecurity, and early childhood education, among others. These degrees may simultaneously be able to improve equity, address challenges with transfer, and serve an employer need that is not addressed adequately by the higher education system.

Progress in this area, too, appears to belong in the domain of states. But I thought it was an issue worth tracking for this committee.

My fifth and final point is that investments in education technology may not improve outcomes as much as we initially hoped, especially if implementation is not carefully managed. A couple years ago, Joyce funded research to see whether high school equivalency and English language learner outcomes for adults could be improved through the use of technology. Our research failed to find an impact, adding to a mixed research base on education technology for adults in college preparation. 12 I'd be happy to provide more information on our effort if it is of interest.

¹⁰ See for example: https://www.washingtonpost.com/news/answer-students-from-the-top-1-percent-than-the-bottom-60.html and <a href="https://www.washingtonpost.com/news/answer-sheet/wp/2018/08/06/the-talent-is-out-there-so-why-dont-elite-colleges-enroll-more-low-income-students/?utm_term=.c3a90c1fb373

¹¹ See "The Talent Blind Spot" by Ithaka S+R and the Aspen Institute. Accessed at: https://sr.ithaka.org/publications/the-talent-blind-spot/

¹² More details on that effort and its findings is here: https://www.joycefdn.org/news/educational-technology-can-it-improve-job-prospects-for-adults-who-need-stronger-math-and-english-skills. A survey of the landscape by Sandy Baum and Spiros Protopsaltis may also be helpful: https://mason.gmu.edu/~sprotops/OnlineEd.pdf.

As this body considers how it will support innovation in the higher education system, I hope you will consider programs with the potential to meaningfully close the race- and income-based gaps in baccalaureate attainment and help build a more equitable society for all.

Thank you again for inviting me to testify. I would be happy to answer questions.

Chairman SCOTT. Thank you. Under Committee Rule 8a, we will now question witnesses under the 5-minute rule. And as Chair I have decided to go at the end so recognize the Chair of the Higher Education Subcommittee who will—oops. Who has switched places with the gentlelady from Florida who will be now recognized as Secretary Shalala.

Ms. SHALALA. Thank you very much, Mr. Chairman. I want to address the elephant in the room and that is AP courses versus dual enrollment courses because it seems to me that there is data now that shows that we may be able to move faster with dual en-

rollment courses than we ever were with AP courses.

Though, for parents they are confused about the two. And so, I want to ask you whether you believe that higher education as opposed to the College Board, higher education taking over the responsibility of offering students courses, high school students courses is going to move the needle faster and what your experience has been as opposed to the narrower focus of AP courses. That is my number one question.

And number two, what are these dual enrollment courses? Can someone take a science course and actually move to upper division that has been a challenge? I understand the math courses, but what are the mix of courses in which we know that a student can move when they go to college to the next level? And any of you can

answer these questions.

Ms. MARWICK. Perhaps I'll start. We are offering dual credit courses where AP is not available with one exception and that's English 101. The reason is in our school districts, they—students have the availability of AP courses. And yes, they have to pass the test in order to get credit. Universities generally accept AP courses readily.

In Illinois, they also accept the dual credit courses that are articulated for transfer. We have something in Illinois called the General Education Core Curriculum at the state level so all the transfer dual level courses we are offering are in that general education—

Ms. SHALALA. So you have got an articulation agreement that allows them to transfer directly?

Ms. MARWICK. That's correct.

Ms. SHALALA. Into the Illinois.

Ms. MARWICK. So we are offering over 40 dual credit courses. We are offering them in the arts, in the sciences, we are offering biology, we are offering anatomy, we are offering English 101, we are offering speech, we are offering several math courses just to name a few. And they do transfer.

On the career side of the house, there is no AP credit for our career track college students. And so, I see those courses as giving college credit to career students to get a head start on their college education and also show them that they can complete successfully college courses and by the way, they're already halfway there when they graduate.

Ms. SHALALA. Dr. LeGrande.

Ms. LEGRANDE. I agree with you. The questions around dual enrollment seem to focus on transparency of information for stu-

dents and their parents and consistency of application across insti-

tutions and then students' preparedness for the next set of courses. So, a few of the things that we have done in Virginia is really working with other institutions to create greater transparency. So right now, there is a 30-credit hour certificate for General Education where the dual enrollment courses are offered. They normally are general education courses. But those courses are often times prerequisite to courses in the major to upper division

Secondly, there is also the development of a new 15-credit hour passport because it is likely that all students won't be able to take 30-credit hours while in high school, so the 15-credit hour passport will allow a very similar transparency for families to understand what courses students are eligible to take in the dual enrollment status and—with a—how they will transfer to the university and how they fall into the degree programs of the students interests.

I think the next step for the preparedness of the next set of courses, I think there is mixed results across the Nation. Whether students are prepared for that next set of courses but one of the things that we want to do in understanding that a majority of our students are coming in with dual credit is to make sure that we have those wraparound supports for those students.

And so, in courses where we realize there are already barrier courses at the upper division level, we want to make sure that we are connecting students with the appropriate academic support tutoring, supplemental instructor, instruction to make sure that they are leveraging that credit and making it work for them so they pass the next course.

I think one thing I will mention in Virginia that we realize we are working toward in furthering this initiative is to create a true pipeline for families and their students to understand how dual enrollment courses apply to the institutions they're interested in attending and to the majors that they want to pursue by creating an online portal for them to search this information and get that ac-

Ms. SHALALA. Unfortunately, my time has run out, so I can't listen to the next to answer the question. Mr. Chairman, I just want to make a point that we have put a lot of money into AP courses. We need to solve the problem of how to finance—both the Federal Government and the State Government need to solve the problem on how to finance these dual enrollment courses because they may have just as much promise if not more promise. Thank you. I yield back.

Chairman SCOTT. Thank you. Dr. Roe.

Dr. ROE. Thank you, Mr. Chairman. I also thank all of you all for being here today and, Dr. LeGrande I could not agree more. I associate my feelings with what you said.

The best investments I ever made in my life was I have four years of undergraduate school and you have friends, relationships, basic knowledge and skills that will teach you to lifelong learn.

And, Mr. Gadkaree, I did learn, I noticed in your testimony about the soft skills. I have learned at age 15 I did not want to be a dishwasher when I washed 350 dishes three times a day at a Boy Scout camp. It taught me that.

Two, in a tobacco patch one hot summer it convinced me that organic chemistry was not that hard. So you, that is the skills that

you learn elsewhere are also extremely valuable.

I passed a, helped pass a bill with my colleagues called the Forever GI Bill which is where you now can use your GI Bill the rest of your life when you get out of the military and the reason I thought that was important was because technology and things are changing so fast, the skills are changing so fast so you are going to have to go back and learn other skills. And in our State of Tennessee we recognize that one of the biggest deterrents to an education for low income people is cost. They couldn't afford to go.

So now you can attend any community college in our State for free. You can attend any technical school for free. If you make less than 50—if you family makes less than \$50,000 a year, the University of Tennessee at Knoxville, Chattanooga and at Martin if you meet the criteria to go there will make sure that they pass the pass along those last dollars. Once you have used your Hope Scholarship which we provide in Tennessee we do not want—we understand that economics is a barrier to many low income people. It is not in our State. We also have a technical school within 50 miles of every person that lives in the State and we graduate about 8,000 people. Almost 100 percent of them get placed in their specific area.

And one of the criticisms I hear when I talk to employers in my State is that we are educating people on things they don't need so I think the—Ms. Long, I want you to comment on competency based education and then Dr. Marwick, just for you, Northeast State Community College which is in my district has had success

working with high school students to prepare for college math.
In the Northwest Education of Consortium Student Success which your college participates in has helped high school students prepare for college math. What has been the biggest lessons you have learned from the consortium and the work in this area because that is where a lot of kids just drop out. They can't figure the math out. Start with Dr. Marwick and then to Ms. Long.

Ms. MARWICK. Thank you. Well, being a former math professor at college, I saw students misplaced in college level math and when we did the research with our school districts at Harper, we showed them that about 60 percent of their recent high school graduates were needing developmental mathematics. They said that can't be

true, we are doing a good job.

But what we found is a lot of students weren't taking mathematics senior year and they then tested at developmental level when they didn't really need it. So, we worked with the high schools and now 98 percent of their students are taking math senior year, even though in Illinois only three years of math is re-

quired.

And we have said there's three tracks. There is AP calculus and pre-calculus, they've always been doing a good job with that. There is a general education math course which meets the requirements in Illinois and most schools for people who are not in STEM fields in their math requirement for college. Take it now, don't skip a year. So, we are offering that as dual credit when they're seniors.

For people not ready for college level math, we're giving placement tests in the junior year to see. We helped them devise an algebra three course which is a deeper dive into problem solving and algebraic thinking skills rather than going on and given them trigonometry which most of them are not going to need.

We have now have over 80 percent of the students, recent high school graduates coming to Harper College, college ready in mathe-

matics.

Dr. ROE. Just a personal step, I get hives when I go in a math class. Ms. Long.

Ms. LONG. Thank you so much my fellow Tennessean. I appreciate the question. In a high-quality CBE program, we start with asking what is it a person needs to know and be able to do if that is the credential.

In our quality framework one of the eight quality elements are your competencies clear, meaningful, measurable and integrated and what we mean by that is are we putting students, are we preparing students with the right kind of competencies?

So, look at what is it that's needed today, how do we design a program to ensure that is the knowledge that they're going to have when they leave that they can demonstrate that knowledge and they'll be workforce ready when they exit the program.

Dr. ROE. Thank you all, you are just a great panel and I yield back.

Chairman SCOTT. Thank you. The gentleman from the Northern Mariana Islands, Mr. Sablan.

Mr. SABLAN. Thank you very much, Mr. Chairman. Good morning everyone. One challenge that we often hear about is the misalignment of high school graduation requirements and college entrance requirements.

It is concerning that a student can gradate from a public high school and arrive at a college, public college in that same state only to be told that they need to take remedial coursework before entering a credit bearing program. We hear that this morning from some of you.

Dr. Marwick, I understand that Harper College has made intentional efforts to bring the K12 and post-secondary systems into better alignment. Can you tell us about what motivated this and what results you have seen from them?

Ms. MARWICK. Yes. We, 10 years ago our college president reached out to the high school superintendents and we determined that these are all our students. Our high schools are very good high schools and the teachers are preparing students for high school graduation by offering dual credit in the high schools, the teachers in the high schools are now preparing their high school students for college level courses.

They didn't know that not taking math senior year was a real problem when students took placement tests at any college. They didn't know that senior year English courses need to be writing based, not literature based for all students.

And when we shared that, they changed what they're doing in the high schools and the vast increase in dual credit means the high school teachers focus is to get students in one of those dual credit courses their senior year, so they are preparing them for college level courses in addition to high school graduation.

Mr. SABLAN. Yeah and yeah, I-so I see that and, you know, like we also have AP classes where you can but is—would this correlation between K to 12 and college, preparation for college, would it work also for say someone going to a vocational training pro-

Ms. MARWICK. Absolutely. Because the truth is for people going into vocational curriculum in post-secondary education, they have to know, be able to write, they have to be able to compute as well.

So that's important.

By giving them the appropriate dual credit courses in their career program, we can start their pathway towards a certificate and a degree in the career programs that they're interested in and show them that they've already completed college education and they don't have perhaps very much more to do in order to get at least their first certificate.

Mr. SABLAN. Okay. So, I guess it does, you know, make a difference, tremendous difference for students to have a clear pathway to a degree and career so they are not left guessing what courses to take or how those courses connect to future jobs, employment professions.

But again, Dr. Marwick, I understand that Harper College is starting a pilot that gives high school students access to healthcare pathway programs. In my district provider shortages and filling these healthcare jobs continues to be a challenge. Really big challenge. Also, can you tell us a little bit more about this effort and what led to its creation and please?

Ms. MARWICK. Yes. We decided to start with a healthcare pathway and we do several things. We offer CNA in our high schools as dual credit. That is the first credential necessary to work and

to take the licensed professional nursing or the RN program.

Then we ask the high schools to identify students who were interested in our RN program and they came to the college in the afternoons. We only had four of them the first year that we did this, and they took anatomy and physiology, their English course, microbiology on the college campus and then passing those courses we reserved seats for them in our RN program, so they didn't have to wait to take the prerequisites.

Mr. SABLAN. So yeah, in my district, we have a 2-year college that has a two year nursing program. Those students graduate from the 2-year take the NCLEX class, the NCLEX...

Ms. MARWICK. Yes.

Mr. SABLAN. and become qualified as registered nurses. Unfortunately, they can only practice in the northern, in my district not anywhere else. But this relationship between the K to 12 and the college, the State government is very much involved, the State of Illinois if I am correct, right? That agreement between this different, the schools-

Ms. MARWICK. This agreement is between Harper College and

Mr. SABLAN. And our, and your high schools. Oh, okay.

Ms. MARWICK. Other colleges in Illinois may have similar agreements however.

Mr. SABLAN. Right. My time is up and the reason I am asking this is because we are trying to work—I am trying to convince our schools that high schools and our community college needs to align the career vocational education programs. Thank you, Mr. Chairman, my time is up.

Chairman SCOTT. Thank you. The gentleman from Michigan,

Mr. Walberg.

Mr. WALBERG. Thank you, Mr. Chairman, and thank you for this hearing. This is an exciting hearing and I think we are starting to get the concept around here that our education institutions ought to be serving the best interest that we have for careers and jobs and people being prepared and ready to fill exciting job situations, career opportunities and oh, by the way, be responsible citizens and earn a paycheck. That makes a difference.

So thank you to the panel for being here as well. Dr. Marwick, the dual enrollment credits that you offer to students may be part of a career pathway leading to employment. Could you provide fur-

ther example of one of those career pathways?

Ms. MARWICK. Certainly. We offer career pathways in law enforcement, in our fire science program, in our fashion design program, in our advanced manufacturing program to name just a few.

Mr. WALBERG. Okay. And they are leading to jobs, actual jobs

in those career areas?

Ms. MARWICK. They lead to actual jobs in the career industry. On the other end, we have partnerships with the businesses in our community.

Mr. WALBERG. Okay.

Ms. MARWICK. We are expanding our apprenticeships programs and have apprenticeships in some of those fields so that students graduate from high school, can be hired into the apprenticeship program. They earn a salary, they go to school and three years later they have a degree without any debt plus they've had a salary.

Mr. WALBERG. That is exciting to hear, and I wanted to hear more about that. Adron College for instance in my district, in conversation with Google came up with a plan developing a network now where Google said, you know, we love all of the IT students

we get but we have to retrain most of them.

They don't fit. They don't work in Google and so we have to take on all sorts of educational and training opportunities for them again. And so why don't we work with you, why don't we prepare your curriculum, work with your professors and do it in such a way that it can be transferred to other schools as well so we can get the 5,000 coders or IT professionals that come online immediately when they get to Google and see this with Olivetti College. And with Michigan State University. Working with major insurance corporations and providing jobs for the students as they are working toward a degree as well.

How do you develop that relationship with business and industry so that they actually work with you and oh by the way, maybe pay

the students as they are going through the internships?

Ms. MARWICK. Our first advanced apprenticeship program was with Zurich Insurance and we are just now graduating our second class of students with the AAS degree in business with an insurance focus.

Zurich pays for each of the students, pays for all of their books and they work at Zurich three days a week and they come to college two days a week and that's part of their employment agreement. Zurich has been really happy with the program.

We are also doing a lesser number of students with Aon. We have started working with Northrup Grumman now on an elec-

trical technology program.

We as leaders of the college particularly our president, Kenneth Ender, he reaches out to the community, invites them over to our college to see what we are doing, asks them what their needs are and we are willing to adapt curriculum to produce those degrees and give students those skills.

Mr. WALBERG. Wow, listening to industry, that is pretty neat.

I am sure that is why you are having success there.

Dr. LeGrande, in your written testimony, you state that 17 percent of your students rise two or more income quartiles after graduation. To what do you attribute that success and does VCU also have particular employer partnerships that help contribute it to that outcome?

Ms. LEGRANDE. When we think about the economic mobility of our students and looking at our strategies, we don't attribute it to one thing. We do attribute the success of our students able to move income quartile, quintiles truly because of the advantages that a VCU education has afforded them.

The fact that students get to engage in a hands-on curriculum and engage with competencies in learning 21st century skills of critical thinking and problem solving, through our REAL experiences, students are able to really apply those hands-on strategies through undergraduate research or internships and work study op-

The students really are able to apply the knowledge in the classroom to the real world. And we find that employers in Virginia because so many of our students are from Virginia, many of them stay in Virginia and the employers share the success stories of our

students in that way

With the new Major Maps that we have, one of things that we realize is that many of our students come to us saying they want to get a good job. And so, we want to help those students identify early what career options exist in a plethora of opportunities because often times students major in, want to major in disciplines for the careers they know but they are not aware of all of the careers that exist.

And so the Major Maps allows students to be exposed to those concepts and share that information with their families who may also need to know about a broad range of careers that we can help prepare them for in the classrooms and outside of the classroom so that they can be competitive applicants for that job.

Mr. WALBERG. Good. I wish you continued success. I am way

over time so thank you, I yield back.
Chairman SCOTT. The gentlelady from Oregon, Ms. Bonamici.
Ms. BONAMICI. Thank you, Mr. Chairman. I just had the honor of speaking at the commencement at Clatsop Community College in Astoria, Oregon on Friday and I noted that a significant number of the graduates were continuing on to a four-year institution and

I also want to note the importance of the TRIO programs to places like Clatsop Community College and other community colleges in

Northwest Oregon and across the country.

So, nobody on this Committee is going to be surprised to hear me talk about the Federal role in education being about equity. We know that many of the Federal education laws passed in President Johnson's administration with that focus on equity of opportunity and that means a couple of things. That no student should be denied the opportunity to go through higher education because of lack of resources but it also should mean that the higher education is quality higher education.

And until those are fulfilled, I think we haven't met the promise of the Higher Education Act because we know how important, what a powerful force education is and especially for first generation stu-

dents and students of color. We have some work to do.

Dr. Marwick, we know more low-income students and students of color are enrolling in college, but they are still lagging behind peers. Mr. Gadkaree noted this as well. Low- and middle-income individuals are significantly less likely to enroll in college than higher income peers. And Federal data released last month showed up to 50 percent gap in college enrollment between low income students and their wealthier peers.

So, could you expand just a bit on the dual enrollment programs and how do you see those making a difference and I do want to

have time for another couple questions.

Ms. MARWICK. Sure. We still see gaps in low income and minority students and dual credit attainment but, what we find is they are 11 percent more likely to enroll at Harper College and they are 11 percent more likely to graduate than their peers without dual credit. So, we think it is making a difference for those groups.

Ms. BONAMICI. And is that with any dual enrollment class or

do you need to take a certain number of classes?

Ms. MARWICK. We are measuring different amounts but that is

with any dual enrollment.

Ms. BONAMICI. Terrific. Dr. LeGrande, I was so glad you mentioned critical thinking and problem solving. I am the founder and co-chair of the Congressional STEAM caucus with Representative Stefanik. We know that integrating arts and design into STEM fields is building a more inclusive environment in classrooms and it supports a greater diversity of students interested in STEM including girls and people of color. We are seeing a lot of success especially at the K12 level.

And I want to note, we don't know today what the jobs are going to be when the students who are in school now enter the workforce.

So, Dr. LeGrande, a couple things. What are you doing to diversity the workforce and to educate students to be flexible, creative thinkers?

And I am going to ask my second question as well just to in the interest of time. Many of my constituents attend Portland State University which like VCU is a large urban institution so what are you doing to address the additional challenges of urban institutions and I know this isn't just an urban issue but things like food inse-

curity and the challenges of affordable housing which make a big difference in being able to complete.

Ms. LEGRANDE. Thank you so much for the question. Your first question about diversifying the workforce and preparing students for the jobs that haven't even been invented yet, it's the important of the general education and making sure that we have a strong

curriculum around our general education.

We are currently at VCU working on our general education redesign to make sure that we are really fully engaging students around those concepts of critical thinking and written oral communication. The transferable skills that will go with you regardless of what your career path is but to make sure that we are preparing students to be lifelong learners with actual functional skills to get that first job and then to be able to move on to that next suite of

I think again that's where the real experiences are important because we serve such a large population of students who are first gen and low income, they don't come to us with the social capital to network and to understand all of the pieces to help you land that first job in your next job and so those are important to make sure in addition to the hands on technical skills that those students often have—also have those soft skills.

The second question about the urban institutions and the challenges that come along with serving high need populations, we currently at VCU do have a food pantry and we also have an off-campus support program and office that helps students who have home—house insecurity and food insecurities to connect them to local resources including SNAP benefits, emergency housing, and our food pantry on campus.

Ms. BONAMICI. Thank you so much. My time is about to expire,

I yield back. Thank you. Mr. Chairman Chairman SCOTT. Thank you. The gentleman from Kansas, Mr. Watkins.

Mr. WATKINS. Thank you, Mr. Chairman. I believe the objective of post-secondary education must be to prepare students to enter the workforce with the skills needed for lifelong success.

In my conversations with Kansas employers and businesses, one of the top concerns always mentioned is the significant labor shortages that our industries across the board are facing. Higher education is the pivot point into a well-paying job and our students need to be equipped to step into this back log of existing jobs.

From Congress our focus should be to smooth the way by enhancing-by enticing pro-growth policies that allow educational institutions the room to be innovative and partner with local employers.

However, Congress tends to look at Federal laws authorizing education and workforce development programs as separate initiatives. But this is a fragmented approach that results in programs that fail to interact.

Dr. Marwick, in the Northwest Educational Consortium for Student Success that sounds like an entity looking to bridge the gap in this policy. Why did Harper College decide to join the consortium and what organizational changes did you have to make to better serve student because of your participation?

Ms. MARWICK. We started the consortium. The superintendents of the three high school districts and the president of the community college said let's do this. And with leadership from the top, we designed a structure, data sharing, and we started talking about what our students needed.

They start talk about careers in high school. We show them the pathways to get there. Our first success was with remediation in math. Eliminating most of the remediation in mathematics when students go to any college.

We consider that a big win and then we move forward with more dual credit, a vast expansion with the idea that everyone in high

school should be able to get some college credit.

Mr. WATKINS. Thank you and, Mr. Chairman, I yield back. Chairman SCOTT. Thank you. The gentleman from California, Mr. Takano.

Mr. TAKANO. Thank you, Mr. Chairman. I am delighted about the bipartisan interest in issues surrounding dual enrollment. I served 22 years on a community college board as an elected trustee and was delighted to see the expertise of a former university president in Congresswoman and former Secretary Donna Shalala.

So, you know, I want to—as a trustee I recall and you were—and I gather Harper College is public community college in the Chicago system. Is that correct?

Ms. MARWICK. It's not part of the Chicago system. We're in the suburbs of Cook County.

Mr. TAKANO. So, but you are a public community college?

Ms. MARWICK. We are a public community college.

Mr. TAKANO. Can you tell me in what ways—I remember, I recall the challenges in getting these programs started is the planning resources. Is that still true?

Ms. MARWICK. There are certainly resource challenges for community colleges, yes. What we started off with is we limit the cost for the dual credit. One of our districts passes some cost on to students, the other district covers the cost for their students.

Mr. TAKANO. So the—whether a funding model they use for the K12 and there is different segment for higher ed, this attempt to blend these two functions is a source of I think confusion for how state governments do the funding.

Ms. MARWICK. It is. And it's a little bit tricky. In Illinois, when you have dual credit in the high schools, the high schools get credit for those students in attendance and the college gets credit for credit hour reimbursement for those hours.

Mr. TAKANO. And so what I am getting at is that to get these programs started, even though they have tremendous benefit in terms of diversifying higher education and the ways in which not over utilizing the traditional AP path to, you know, get those extra credits, the advantages that we see for low income and minority students to be able to succeed and move into higher ed, getting these programs started then to expand the number of programs I see as related to these—the confusion over how we are going to fund them but also the planning resources available for community colleges and the high schools to be able to work together. But how much money do you think it takes to get a program started if you are to start from scratch as a new community college?

Ms. MARWICK. We have tried to think about that. It's pretty difficult to think about the faculty time, the teacher time, the administrative time that goes into setting up one of these programs.

But with the outcomes we have seen, we were committed that this was part of our strategic plan and that we were all committed

to do it together.

Mr. TAKANO. I had a, I don't know if I ever put this idea to a bill but I, there was a way which I was thinking about how we could maybe look at the Pell grant being made available to an early college high school program or a dual enrollment program so that money could increase—so if everybody who was low income and qualified for a Pell grant say in a high school cohort or an early college high school could be qualified for that Pell grant, that would be a way for us to make sure that we had the seminar, the smaller class size for seminars for example. You know for seminars style

What do you think about the possibility of finding ways for the

Federal Government to assist these programs in that way?

Ms. MARWICK. I think that's an excellent idea. You could do it in the same way that adult education students are allowed to use Pell if they qualify when they're simultaneously taking a career

course while finishing up their adult education.

Mr. TAKANO. And so I think probably two things, maybe the Federal Government would maybe help you out with is to help you with some of this planning money so local school districts and community colleges could work together on that but also to find a source of money, if you are delivering dual credit and these kids are getting actual college credit, why shouldn't they qualify for Pell if they are low income?

Ms. MARWICK. I agree with you.

Mr. TAKANO. All right. Well, I yield back Mr. Chairman. Chairman SCOTT. Thank you. Gentleman from Texas, Mr.

Wright.

Mr. WRIGHT. Thank you, Mr. Chairman, and thank all of you being her today. It has been a really interesting discussion. I wanted to start with you, Ms. Long. I am very intrigued by your CBE program.

But I wanted to see if you could elaborate a little bit because I think the more innovation the better an education. You mentioned that you talked about the assessment, talked about the measures and they have to prove, you know, that they got the material.

Can you talk just a little bit about how that is done? In other words, to what degree is that subjective and are there tests? Can you elaborate on that just a little bit?

Ms. LONG. Be delighted to do that and Texas is really leading the way in the CBE effort.

Mr. WRIGHT. Yes we are.

Ms. LONG. You know, when you look at the Texas affordable baccalaureate degree, you look at the results that we see out of Texas A&M Commerce, where folks that are completing their CBE program are doing that at about \$6,000 versus 14,000—

Mr. WRIGHT. Right.

Ms. LONG.—for a typical Texas student, so good things are happening in the state of Texas and you should be proud of that.

Mr. WRIGHT. Right, thank you for that.

Ms. LONG. So, I would say when it comes to assessment, we really believe that assessment needs to be authentic and what we mean by that is that if the learner, you're going to say that this is what you need to know and be able to do. We need them to assess in a way that is as similar as possible to what it looks like when they graduate.

So, if we are thinking about critical thinking skills or problemsolving skills what does that look like post-graduation? It's probably some sort of a project, it's some sort of an applied activity in which they're having to look at things from different angles and figure out how it works, right.

And so that is exactly what we ask our CBE programs to design. Assessments that mirror as closely to—as possible what that looks like in application post-graduation. That is typically not a pen and paper test.

Mr. WRIGHT. Right.

Ms. LONG. I have never gone to work and been asked to complete a multiple choice test, right. And so, in a CBE program you are going to see a different kind of assessment model that's really based on this more authentic assessment strategy.

Mr. WRIGHT. And in terms of the critical elements that you would want to see in the Federal policy, you mentioned flexibility.

Is there something else?

Ms. LONG. Yeah, so I think there is a whole long list of things that constrain us when we are having to measure everything by the credit hour.

So much of what we want to be able to do is have that flexibility from time. Why should time measure learning? Shouldn't learning measure learning? And so being able to disconnect that from time is really important.

But every Federal financial aid regulation is somehow tied back to that credit hour and to time. So, when we look at satisfactory academic progress, when we look at the academic year, when we look at weekly engagement, all of those pieces just keep tying back

to time and it's limiting CBE innovation.

Mr. WRIGHT. Right. Dr. Marwick, I could ask this of all of you, but I am going to start with you. In my district, you know, the students are blessed to have a lot of opportunities, a lot of educational opportunities. We have one of the largest universities in the state. We have a very robust community college system, some very large school districts and that's just in Tarrant County, part of my district. And they all work together.

They came together a few years ago during what has already been discussed here but they brought in the high schools. They brought in the school districts. And so they have this dual credit program which I am proud to say my oldest granddaughter is part of. She is going to graduate next year probably with an associate's

But the university has committed to accepting the credit hours of these dual credits that they're going to get in high school. And that is one of the reasons, it is not the only reason but it is one of the reasons that the University of Texas at Arlington has the lowest—when students graduate, the lowest student debt of any university in Texas and one of the lowest of any public university in the country.

And that is one of the reasons and in the last 17 years, the number of students that are doing this in Texas has increased 1100 percent. I mean, it is having a huge impact on education in Texas.

There are a lot of different models for this and the one I wanted to ask you, starting with you but kind of go down the line, I don't have much time. Is what do you see as the most successful model?

Ms. MARWICK. I think when we can smooth the educational pipeline by having all of the educational units work with each other, secondary, post-secondary, community college, university, that's when we do the best job for our students. And we should incentivize those kind of partnerships because there's not enough of them and when we have them they're very effective.

Mr. WRIGHT. How would you do that incentivizing? When you

say incentivize, how would you do that?

Ms. MARWICK. I would say that advising is very important both in the high schools and also at the colleges. We are using a case managed advising system. We are making sure that every student has an education—a pathway to degree completion in their first semester and we are seeing higher persistence rates and graduation rates since we began that.

Chairman SCOTT. The gentleman's time has expired.

Mr. WRIGHT. Sorry.

Chairman SCOTT. Is, Dr. LeGrande, if you want to very briefly respond.

Ms. LEGRANDE. I agree that smoothing the pathway will be important for students who choose to start with dual enrollment com-

munity college in the institution.

One of the things that we have done is partner with the community college for example to have advisors at the community college and at the university that share clear articulation agreements and degree pathways that move beyond these handshake agreements but really allow students to understand exactly what we—will be counted so that they can make a four year plan so they do their two years at the community college and two years at the university.

Mr. WRIGHT. Thank you. And thank you, Mr. Chairman, for the

extra time.

Chairman SCOTT. Thank you. The gentlelady from Florida, Ms. Wilson.

Ms. WILSON. Thank you, Chairman Scott, for holding this hearing on improving equity in higher education through innovation and thanks to the witnesses for testifying this morning.

Although African American and Hispanic students have made tremendous academic strides since the Civil Rights Era, graduation

and dropout rates suggest that substantial barriers persist.

For example only 40 percent of African American and 54 percent of Hispanic students who go to college complete their degree. Moreover, although high school incompletion rates are improving, at 22 percent and 20 percent for African American and Hispanic students respectively they are still high. Therefore the innovative ideas we will be discussing today such as dual enrollment in high school and additional students support services in two and four year colleges

among many others have the potential to significantly decrease the equity access gap in higher education.

Some very innovative educational programs are in my Congressional district in Miami, Florida. Florida International University, the Nation's largest Hispanic serving university has a number of successful programs that really stand out.

Among them are the universities dual enrollment as an accelerated program offering credit for previous work experience, a seamless transfer pathway from high school to college program and pre collegiate programs to increase college going students, focus on quality engagement with high school populations and summer bridge activities.

FIU has also partnered with area high schools to help accelerate time to college completion and since 2009, has helped thousands of high school students obtain college credits to reduce the amount of

time and money required to obtain a college degree.

Another innovative program at FIU is the Golden Scholar Summer Bridge Program which provides an alternative admissions pathway for 65 to 85 minority first generation students and I was proud to hear that this program is helping to support 8 Wilson scholars who will enter FIU in the fall.

I have a couple of questions for Mr. Gadkaree. What are the major barriers holding back low income students and students of

color and why have they proven so difficult to remove?

Mr. GADKAREE. Thank you. One thing that I will note is that our Nation spends \$5 billion less educating students of color in the higher ed system than it does White students. And that is from a study by the Center for American Progress and that ties into some of the supports that we are talking about.

In the community college settings where we have, where there are fewer resources, students are getting less support. There is less money for instruction, and that is certainly a contributor to the gap

although it's not the only reason.

Ms. WILSON. And now what are the implications of these persistent access and success gaps on intergenerational mobility and

income inequality?

Mr. GADKAREE. So certainly because we are seeing college become more and more essential, we are getting to a well-paid job. As I noted there is significant growth in well-paid jobs for bachelor's degree graduates and there is some growth for associate's degree and certificate graduates.

But as a result of that, if we aren't able to get students of color and low income students to that baccalaureate level, its exacer-

bating the racial and economic inequality in our country.

Ms. WILSON. We have heard during our last hearing the different institutions have vastly different funding levels and that the institutions serving the largest share of low income students and students of color are often the same institutions that struggle to provide the support students need because they are chronically underfunded.

Do—you just explained to us those differences and how does that underfunding impact the ability for these children to receive a quality education and what can we do as Congress to help support that? Mr. GADKAREE. One of the things I mentioned in my testimony was that there are these programs like CUNY ASAP, like 1 Million Degrees which works with Harper College as well as some of the community colleges in Chicago, the Arkansas Career Pathways Initiative.

And in these programs we are seeing both financial support and levels of student services and advising that are at dramatically higher intensity than community colleges typically can provide and that four year colleges can typically provide.

So just to give you an example, in the Stay the Course program which is in run by Catholic Charities in Dallas Fort Worth, they have caseloads of 34 student per a, per social worker. That's, you know, more than 10 times more intensive advising and support than students would get in a community college setting.

And so that's the kind of thing that community colleges can't afford and partly as a result, I would wonder whether these programs that have shown that they can double graduation rates, if we are trying to scale them, we may need to get that kind of support to more students.

Ms. WILSON. I yield back, my time is up.

Chairman SCOTT. Thank you. The gentleman from South Dakota, Mr. Johnson.

Mr. JOHNSON. Yeah, I think I will pick up the ball and continue to ask questions about this advising issue. I just, I loved the intrusive advising model that you have talked about. I mean, talk about truth in advertising, right. I mean, it is intrusive what you are talking about because people need those extra supports and they are from an evidence based perspective, proven to work from the information you shared.

Talk to me a little bit was there an ah-hah moment, Ms. LeGrande, where it just, you guys decided to drastically change how you approached advising?

Ms. LEGRANDE. Well, I think as an institution when we think about the students we serve in meeting them where they are which we often know is that sometime students don't know what they don't know and so they don't know where to start. And so we have to be there to make sure that we offer them that support.

And I think when our leadership at the institution realized that we had advising ratios as high as 1700 to 1 advisor that did not allow us to be able to offer the kind of intrusive experience that these students need.

And so the institution leadership, our president and provost invested the resources, making some hard decisions to allocate new advising positions across the institutions to lower that advising load from that number to closer to about 350 to 1. Now that's still a large number for any group, any advisor to see 350 students but that's where the technology comes in with some predictive analytics to really help the advisors understand and to prioritize the student populations early to intervene to help students before they get into trouble but also to identify the students who really need the most intensive conversations to help them stay on that right track. That was our ah-hah moment that we needed more individuals to be able to create this culture of care and support at VCU.

Mr. JOHNSON. So I love the use of technology because it is easy to imagine it as a force multiplier and so, you know, Dr. LeGrande, talk a little bit about, I mean, Mr. Gadkaree talked, he raised concerns about scaling and expense and cost. Would institutions, I mean, it has got to be a little difficult to imagine finding the resources to integrate this technology into the advising network, right?

Ms. LEGRANDE. Yes. The technology is expensive, right. But I will say for institutions that find themselves in a place not ready to procure technology, I would suggest that you look at the data, right, because the technology is grounded in the data. And let the

data guide the conversation.

Who is really disadvantaged by the support structures that currently are not working for them? Right. And go beyond just race and ethnicity, go beyond that to look at the intersection in what majors, in what departments, first generation students and then engage the students in that conversation to learn of their experi-

ence letting the data guide you.

Then you can identify and develop support mechanisms and approaches to implement with an assessment plan. And so if data is the foundation of that work, what we will—what you will find is that you're continually assessing yourself as an institution, identifying what is working, what is moving the needle and what is not moving the needle and then being courageous enough as an organization to decide to stop doing things just because we have always done it that way if it's not working for the students.

Mr. JOHNSON. Yeah, I just love this data driven approach you are talking about, I mean, it just, we should be ringing bells all over Capitol Hill today because that is exactly what is going to help move the ball down the field. So how much of this advising framework, I mean, clearly it is about matriculation, it is about edu-

cational progress and it is about course selection.

Is there a financial component to this as well? And while you are answering, if there are things that Congress can be doing or that the Higher Education Act can be doing to help with that financial advising let us know.

Ms. LEGRANDE. So definitely. When we think about advising, intrusive advising, it has to be about the whole student because non-cognitive variables and things outside of the classroom really

impact that student experience and finances is one of them.

And that's how completion grants came to be at VCU. We found through advising conversations and looking at the data that we had students who were running into small financial barriers that prevented them from persisting and so we were able to develop completion grant programs for students who have 90 credit hours.

So they're just within 38 credit hours shy of earning that degree but they were stopping out, going to work and never returning. And so engaging advisors with students we were able to identify

that to be a problem.

We are now moving to a more intensive financial advising structure in the next coming year for that reason where we will model very similarly the academic advising case management model on the financial side. Because we realized that our students not—need more than just financial literacy. They need financial engagement.

They need a partner in this conversation to help them understand how they can finance their education, what resources to leverage across the institution and how to make good financial decisions so that they can then accelerate their time to degree and graduate with less student loan debt.

Mr. JOHNSON. Well said, doc, thanks very much and, Mr.

Chairman, I yield back.

Chairman SCOTT. Thank you. The gentlelady from North Caro-

lina, Ms. Adams.

Ms. ADAMS. Thank you, Mr. Chairman, and thank you as well to the ranking member and thank you for your testimony today. It has been very enlightening and I want to just say that at our last bipartisan hearing, we heard about the important role that historically Black colleges and universities, tribal colleges and Hispanic serving institutions play in supporting students of color.

I am a proud two-time graduate of North Carolina A&T State University the largest HBCU in the country, public HBCU, I taught at Bennett College for 40 years so I have a tremendous in-

terest here.

But most of the conversation that we had focused on the importance of fostering a sense of belonging and elevating the communities of cultures of enrolled students as well as setting the importance of setting high expectations and examples for diverse students to follow.

Dr. LeGrande, let me ask you, first of all it is good seeing you again. Given these significant gaps across the Nation and persistence and completion between students of color and their White peers, can you speak to what you think predominately White institutions can learn from minority serving institutions when it comes

to better serving students of color?

Ms. LEGRANDE. Well, I think if we were to distill that down, it would probably rise to two broad topics. One is that a sense of community matters so that help students understand that the institutions care about them, that the institution is committed to designing structures that are just for them. Right. Understanding their cultural backgrounds and their needs.

Not seeing students from the deficit perspective or the things that they don't bring to the table but leverage their experiences to understand the strengths and components they do bring to the

table build on that to develop the necessary skills.

And the second thing I would say is that representation matters. Having models in the classroom and in leadership, will help students understand the possibilities that exist, possible mentors for them and that ensures that leadership around the table reflect diverse thought and contributions to the conversation of helping all students succeed.

Ms. ADAMS. Thank you. Ms. Long, would you like to comment on that issue? Yes.

Ms. LONG. I think one of the things that we often do is hide learning from learners. And we are not very transparent about what it is that we hope they are going to learn in a particular course or in an area of study. And by hiding learning, it makes it very difficult for learners that might be first generation, learners that don't have a sense of community to find their way.

It's one of the things I like most about competency based education is that learning becomes transparent. Students are told this is what you will learn, this is what you are going to be able to do, this is how you can apply that knowledge. They see immediate applicability and a desire to continue to learn because they know what they can do with it.

Being able to create a sense of culture and community. If you're creating a whole program that might be delivered distance learning for example what are we doing to create a sense of community for those learners and institutions we have in our quality framework we ask them to integrate that as well.

Ms. ADAMS. Okay, thank you very much. Let me touch on the importance of examples for diverse students and how cohort based students support models peer mentors towards affinity groups can help students of color thrive which also creates a sense of community.

Dr. LeGrande, you mentioned that your office has developed the you first at VCU to provide targeted supports for the first generation students. I was a first generation student myself. Can you tell us a little bit more about this effort and the results that you have seen from it?

Ms. LEGRANDE. Sure. Our you first effort is really an effort to create a network of programs and initiatives across the institution that focus on first generation students.

The goal is really to increase their retention and academic success, to help them understand habits of successful students because they may not have anyone in their family that have a college going history. And the third is to make sure that they have opportunities to be engaged in the experience.

And we do this, we start at orientation with the students and their families identifying first generation students and bringing them together so that they realize they are not alone.

We have a summer scholars program in which we have a bridge program for students where they can earn six credit hours in the summer to get a jump start on their college education. This allows the students to get familiar with the campus and understand resources available to them and build community among their peers.

We have an all TRIO scholars program which is a delayed scholarship gratification program because we really help the students the first two years with peer mentoring support with other students who are first generation college and in their junior and senior years we provide them upper division scholarships to encourage them to persist and move forward. This network really takes under an umbrella all of our efforts for first generation college students so students have one centralized resource to understand everything that exists for them.

Ms. ADAMS. Thanks very much. I am out of time but, you know, I think it would be great if we could replicate some of these things in our workforce as well. Mr. Chairman, I yield back.

Chairman SCOTT. Thank you. Gentleman from Georgia, Mr.

Mr. ALLEN. Thank you, Mr. Chairman, and, you know, one of the things that I have learned here is one of the benefits of a growing economy is we also are creating lots of jobs and lots of opportunity.

Because of our success and the hard work of the American people, there is—I see more opportunities for young people today than I have seen in my lifetime. In fact, we have many more jobs available than we have people looking for jobs and I want to applaud you as educators obviously you have taken on this challenge because for whatever reason, we have had a disconnect for some time between the job creators and those of you who educate.

You know, when I go into the district, I have college graduates who have come to me with student debt and they said they can't find a job in their field. Yet when I visit all the job creators, the institutions, you name it, businesses, they all need a skilled workforce. And of course we have made some efforts to from the-this level, the Federal level to try to mend that disconnect that we

Because again I believe the only thing from keeping this economy from growing even faster is the skilled workforce out there.

And, Ms. Long I see you shaking your head. So I will start with, you know, your competency based model and, you know, are there particular programs that are easier to develop and if so, do you have some—could you tell us about those programs and any correlation between those programs, technical skills, and the in demand high paying jobs that are available out there today?

Ms. LONG. Yes, so I believe that you can develop a CBE program in any area in which they need employment, right. Where there is a need for a skilled workforce because we always start with the end in mind. What is it that you need and then how can

we help build that, right.

So higher education owning that part of the role in making sure we have a skilled workforce. So starting with that backward design model, a lot of times we see programs in IT in business, in healthcare fields, in advanced manufacturing, in some of those really in demand jobs, programs across the country try to modularize and by that I mean they take knowledge, skills, and abilities, and those intellectual behaviors and break them down and can offer them in discreet courses so they can more quickly stack various modules together to create a new program for a new workforce need.

To your point earlier, many of the jobs we are going to have tomorrow haven't been created. So thinking about lifelong learning not as I'm one and done, I have my degree, but I'm going to have to continually retool myself and as an institution I also need to think about its not just one and done but it is about this how do we stack these modules together.

I think that is one of the benefits of competency based education

is helping to create that more skilled workforce.

Mr. ALLEN. Exactly. And I know in our business we look for people with experience. In fact, my mom, my dad went off to war and she was a sophomore in college and she committed to work for the war effort and never quit working. And she graduated from college when she was 42 years old.

Ms. LONG. That's terrific.

Mr. ALLEN. And I was so proud of her and she is, she is a long time school teacher. An amazing, amazing lady. So she had the op-

portunity to work her way to what she finally wanted to do.

But as far as the modularization of CBE, you know, as far as the decentralization capabilities and competencies and the ability of schools to from innovative programs outside the traditional hierarchal structure, what is the benefit of stackable credentials and how can more schools incorporate this model in the future?

Ms. LONG. Yeah, it's really about responsiveness to the need. It's about trying to say what is it that our workforce most needs? What can we do in order to create a program more quickly to re-

spond to those needs?

If you listen to governors, you listen to folks that are doing economic development for states, for our Nation, it's about how do we

get that workforce prepared?

By being able to stack competencies designed to develop problem solving, decision making looks like problem solving decision making. In a different context, we still can add that specific contextual knowledge but that to us is key.
Mr. ALLEN. Yes, I'm about out of time but—

Ms. LONG. Yes.

Mr. ALLEN.—you know, we are a global economy—

Ms. LONG. That's right.

Mr. ALLEN. And the number one thing that every business looks for out there is when they locate their business is a skilled workforce. Thank you for accepting this challenge and I commend you and I yield back, sir.

Chairman SCOTT. Thank you. The gentlelady from Washington,

Dr. Schrier.

Dr. SCHRIER. Thank you, Mr. Chairman. First, I would like to submit for the record the Western Governors Association Policy Positons and recommendations related to post-secondary education and workforce development as they are eager to engage with us on higher education issues.

Chairman SCOTT. Without objection.

Dr. SCHRIER. Thank you. And thank you to the witnesses today for testifying. You all mentioned some great and impactful initiatives to increase higher education student access, enrollment, and completion.

And as I was reading your testimony I found some really nice parallels and similarities with what you are doing or investing in

and what Washington State is doing.

The Running Start program in Washington is a dual enrollment program for high school juniors and seniors to take tuition free college credit bearing courses at several public four year institutions at any of our State's career and technical colleges.

In fact, I am a pediatrician and many of my patients have enrolled or are part of the Running Start program and that have gone on to University of Washington or other universities right after high school as sophomores or juniors and that is incredible and a

way to save money.

Washington community and technical colleges also have a universal articulation agreement with the state public four year institutions similar to what you described, Dr. LeGrande, regarding VCU. And Washington State University has a similar program called Invest in Cougs, Washington State Cougars, which provides students an incentize to save money while they are at college and in return provides financial management counseling and an opportunity to quadruple their savings up to \$4,000 to pay for every day expenses.

And these are great initiatives but they could be improved and I was hoping to hear from your experiences about opportunities for improvement.

Rural areas face challenges funding transportation for running start students and it is harder for high school students and the teachers in these areas to gain the necessary credentials to teach credit bearing college courses in high school.

So my questions is how do we ensure that rural communities have the same access to these great opportunities especially after hearing from Mr. Gadkaree that investments in technology may not be effective?

Ms. MARWICK. I worked at a rural community college earlier in my career and I started a partnership there with the school districts. Some of which only gradated 60 students a year.

And it is a—teacher credentials are a problem across the country and it is certainly across the state of Illinois. I would like to see the Higher Education Act incentivize and pay for high school teachers to get the necessary credentials to teach more dual credit courses.

I think what we have done in a number of cases where our high school teachers haven't had it, we have reached out to partner four year universities who have agreed to offer the classes at one of the high schools after the high school day.

In one case, the high school paid for their teachers to take those courses, the other district did not and not many teachers enrolled. So that is a cost issue.

Dr. SCHRIER. That is a great idea and certainly on a teacher's salary, having the universities pay is, that is an incredible resource. Thank you. Any other? Yes.

Ms. LEGRANDE. And so I guess I think about the opportunities we have as we are preparing students for their careers. I think about our social work program, our education program where students really have a lens towards social justice and equity really making sure that we are connecting those students and possible opportunities to impact rural communities as well.

We have lots of access oriented approaches when we are recruiting students to the institution and those rural communities but wanting to make sure that we are connecting our students back to the communities that they serve is an important part of our experience at VCU with making sure we are directly impacting rural communities is an important part of the work too.

Dr. SCHRIER. Thank you. And I was actually going to ask about the micro grant efforts and their successes in increasing graduation rates.

Washington State University's Invest in Cougs is similar but as mentioned today a quarter of student are parents and nearly 10 percent are homeless which means they have needs that are far beyond what even \$4,000 would pay for, fixing a tire or paying off

outstanding fees. I wondered are there some successful efforts that have addressed these larger life costs?

Ms. LEGRANDE. Well, you're right. Completion grants are small, impactful for the immediate. I think a few things that would impact longer term is really thinking about how do we incentivize progress to degree. Are there opportunities for us to give students additional funds as they're making timely progress to degree to reward them for this work.

There are some institutions that have found opportunities to do retention grants and its one of the things that we are pursuing at

VCU looking into that direction.

But I think the other thing is as we think about our Title IV programs for example, opportunities to make sure that they are adjusting for the cost of inflation like the Pell grant program and our Title IV programs right now when we think about the cost of education, between Title IV programs, state grants, and institutional grants, we still have students with so much unmet need, unmet need toward the total cost of education.

And so as we are thinking about the reauthorization of the Higher Ed Act, how we can shore up our Federal resources as states also think about how they can contribute and invest more holistically I think those kinds of things will help students stay on par and cover the cost of education.

Dr. SCHRIER. Thank you so much and thank you to all of you and I yield back my time.

Chairman SCOTT. Thank you. The gentleman from Wisconsin,

Mr. Grothman.

Mr. GROTHMAN. Ms. Long. With regard to competency based education, I hope one of the goals of this Committee is to get out of here or pass something that is going to reduce the cost of education which is one of the reasons why we have this huge student loan debt and quite frankly I think anybody part of the higher education system ought to go to bed at night just wondering what they did wrong that we have so many young people so in debt.

Can you talk a little bit about competency education both the effect it would have on student loan debt as well as the effectiveness in measuring whether somebody has actually learned something in

a class?

Ms. LONG. Yep. Two questions there. One you asked also about cost, right. So for a lot of CBE programs, they've been able to lower the cost of the degree and often times that's done by the amount of time it takes to get to degree. So if you think about some use what we call a subscription model where you pay one price and you learn as much as you can.

It's like being at a buffet line, right, and you eat more than you really should have but it was free or it was included and you just keep eating? And learners in subscription models tend to take more and be able to go more quickly which is in essence reducing the

cost of that degree.

In addition to that, recognizing learning that has occurred from being agnostic as to the source of learning and recognizing leaning that has occurred in a non-classroom based setting, but validating that learning as being college level has also yielded those kinds of cost savings. Mr. GROTHMAN. Would you rather hire somebody who passed out of the, a competency based education or somebody who just you know—

Ms. LONG. You're asking a very biased question of a person like me.

Mr. GROTHMAN. I know.

Ms. LONG. I would take a competency based person because that institution is standing behind that learner and saying we know this person can demonstrate and has demonstrated their competencies. They may actually have a transcript in which you can see what that looked like, what that demonstration looked like. If that's some sort of a performance, a simulation, what have you.

But you know what you are getting versus they got a C and I'm not sure what that C means. I don't know what is taught in that class. So I do think competency based education gives employers, gives the learner and gives the government as the payer and in

most cases more assurance of learning.

Mr. GROTHMAN. Right. A C in a 19th century literature class, you don't know what it means, correct? You don't know if that has got value or no value whether than just that some university charged somebody for it. But in competency based education you know you have something of value so it is a superior way of judging whether you had value for your education isn't that true?

Ms. LONG. It's a way of articulating what it is that you know you can do. So your knowledge, your skills abilities, and your intellectual behaviors in a way that is very transparent not just to the learner but to anyone else that would see that learner's record.

Mr. GROTHMAN. And you feel because different people learn at different rates, that you could wind up reducing the cost of tuition and reducing the size of student debt with a more competency based education?

Ms. LONG. Let me give you my feeling is yes. I would love to see more data that backs that feeling up, right. So what we see in early data is that it's showing promise that it can reduce costs. I would like to see more data to prove that out but that would be my personal feelings since you asked about my feelings. So yes, that's how I would answer that question.

Mr. GROTHMAN. I am—the University of Wisconsin, my alma mater is aware that they can produce maybe better students at less cost with competency based education but they have some problems

with Federal regulations.

Do you want to comment on the Federal Government standing in

the way of better education and lower student debt?

Ms. LONG. So when you look at a direct assessment program, University of Wisconsin extension has a direct assessment model. When you look at that model that's completely untethered from course and time, any of those programs and there is really less than a dozen of them across the country had to go through a two-step approval process, not just through their regional accreditor but also through the Department of Education. And then everything they do must still tether back in some way to time. Those are constraints.

Mr. GROTHMAN. You, the rest of you, you are all part of what I would call the educational establishment. Do you see a lot of guilt

out there on the part of administrators and academia's as far as the huge amount of student loan debt and the degree to which they have crippled these young people? Is there a sufficient amount of guilt out there among these folks?

Ms. MARWICK. I don't know if I can comment about guilt, but I will say that we watch very closely our tuition and at community colleges the tuition is quite low. We have tied it to the CPIU or to

increases for-

Mr. GROTHMAN. Are you guilty when say you run across a 35 year old with \$40 grand in debt? Does that make you feel guilty? Ms. MARWICK. Yes.

Mr. GROTHMAN. Good. Good, good, good, good. Thank you.

Chairman SCOTT. Thank you. The gentlelady from Connecticut,

Ms. Hayes.

Ms. HAYES. Good afternoon. Thank you, Mr. Chair, and thank you to all of the witnesses who are here today. Just very briefly, as a very high performing classroom teacher, I value public education and the work that we have done and the investment that we make in children every day and I have no guilt about that.

Dr. LeGrande, I just want to thank you for your comments earlier about transferrable skills and those critical thinking skills that I don't think people have value enough as we are preparing young people for the job force, the workforce. Those are the things that really identify high performers in the workforce, you know, so we—I think we maybe need to reevaluate our measure, you know, and do more capstone projects and internships and getting students out into the world because those are the things that employers have told me in my experience that they are looking for.

I am glad to see that dual enrollment is being included as a core part of the conversation in equity and affordability today. My daughter started college with a full semester of credits as a result

of dual enrollment and AP classes taken in high school.

And my own students at Kennedy High School benefited greatly from dual enrollment programs through college career pathways and Naguatucket Valley Community College and the University of Connecticut's early college experience. In fact, our UCONN ECE is the oldest continually operating concurrent enrollment program in the Nation. I am proud to be from a state who has led the field in that area.

As we continue to have this conversation, I think it is important to talk about how we improve dual enrollment to better serve students from all backgrounds and income levels and effectively scale up these programs by strengthening the educator workforce.

So, Dr. Marwick, in your experience, what specific support services should successful dual enrollment programs provide to their students, particularly students from families where they may be the first in their family to go to college or are not having these conversations at home?

Ms. MARWICK. We are piloting hiring an advisor at the college to work with dual credits students in the high schools to help them understand how their dual credit leads to a college degree and what they have accomplished.

Secondly, dual credit in high school allows students to take a challenging college level course while they still have the supports of their high school teachers and advisors around them. And I think that is a great way to start college because some students have trouble in the first semester adapting to a different structure of education.

Thirdly, I think it's really important that the high school counselors helps students get into appropriate dual credit and AP classes for them and they also need to reach out to the parents of those students and explain what dual credit does and does not do.

Ms. HAYES. Thank you. Also I want to follow up on a question that Dr. Shrier asked, started to ask about getting teachers who

are willing to be dual certified.

I am someone who pursued dual certification to teach our college courses at my school and I can tell you from my own experience that the touch point has to be earlier because I don't think what people realize is that when you teach a dual certification class, you become an adjunct professor of the university. Which means that most—often times or all the time your masters has to be in that concentration area and that is something that many educators don't realize who get masters in curriculum or education or academia but not in the core content area.

So I think a valuable route to go is to have that touch point much sooner in an educators career to say as you are considering your master's degree, these are some of the things you need to know if dual certification is a pathway that you would like to pursue.

So my question is do you, can you think of any ways, I guess I just answered my question. Of how to incentivize teachers to pursue dual enrollment much earlier because what ultimately ends up happening or in my experience from what I have seen is that teachers then go and have to get a second masters in order to then qualify to be a dual enrollment certified teacher.

Ms. MARWICK. You're correct. That is a big problem and what we find is as you suggested too many teachers if they have masters degrees have them in education. So our school districts are trying as they hire new teachers to get teachers to—who are already certified for dual credit but I think a bigger outreach might be to education programs in universities to talk about this issue while students are at the university. They need either a master's degree in the discipline or a related discipline with at least 18 graduate hours in the discipline for entry level, to teach entry level dual credit classes.

Ms. HAYES. Thank you and my time has expired but I think therein lies the problem because if people are not getting the information at the beginning of the journey, they've taken classes, taken on debt and then have to reroute back in order to get on the right path to where it is they are trying to go. Thank you. With that, Mr. Chair, I yield back.

Chairman SCOTT. Thank you. The gentleman from Pennsyl-

vania, Mr. Smucker.

Mr. SMUCKER. Thank you, Mr. Chairman. This has been a great hearing. Thank you to all the witnesses, it has been fascinating to hear the work that each of you is doing with your organizations, your institutions to improve student outcomes and improve our higher education system.

Ms. Long, I would specifically like to take some my time and talk—allow you an opportunity to talk just a little bit more about competency based education and may have a question or two.

And when I am thinking about education, I look to some—the K through 12, some of the school districts in my area who have established some really innovative programs that allow them to meet the students sort of at their level of learning and then they receive almost constant feedback primarily through the use of technology where they are getting almost real time feedback on the student specific knowledge on the topic.

And then implementing strategies within the classroom to sort of allow students to learn at the pace that they can learn and advance at the pace they can learn. They are still within the structure of the classroom so sometimes limited by that in terms of allowing a student to move beyond that particular topic but is that what you are talking about in competency based education? Are you talking about universities changing the way they deliver education and potentially using technology as a part of that?

Ms. LONG. Yeah. So yes. And I think that's a good example from the K through 12 sector and we see more K through 12 school systems exploring competency based education because of that ability to personalize that learning experience. And allow learners to pursue education at their own pace and with the customization that

they need.

In higher education, it's pretty similar, in the fact that we look at common characteristics we would expect to see. Obviously the robust assessment but that availability to personalize the learning journey to look at say for example when they completed a quiz how sure where they of their answer or if they're doing an activity and they reflect back on the project they completed, you're able to adjust the entire learning pathway according to that particular learner which is helping to yield the kinds of results that institution are seeing in CBE programs.

So yes, it has that kind of personalization and the ability to real-

ly take a path that's specific to the needs.

Mr. SMUCKER. Sure. Thank you. I was particularly interested in your proposed demonstration project. How would that look and what are—how would it be structured and what are some of the outcomes that you would like to see from that? What would you like us to be measuring? What would you like us to be looking at?

Ms. LONG. Yeah, absolutely. What we say to our member institutions all the time is what are your value propositions? What is it that you say you're hoping to achieve with your program and now go prove it. Maybe it's the attorney in me but I don't believe it unless I see proof of it and so where's your proof, right?

And so if an institution is saying we can allow a learner to go as fast as they can go through the curriculum and also allow them to slow down when they need time, where is the proof that people speed up and slow down? If it's about we can do this faster or at a lower cost, where is my proof of cost?

So we think about a demonstration project we would be asking institutions to play by a certain set of rules and if they do, they would have the luxury of not having to comply with some of the financial aid requirements that make it pretty difficult for CBE to

really grow and expand.

In exchange, they would need to collect the kind of data that would prove whether or not these programs work and then for what learners and in what context, right. So we would look at the value proposition. It would be great to have that student level data so that we can really drill down specifically on what kind of learner did it work for? Was this a first gen, were they in their first semester, or was this a person at this kind of experiences, is it in this type of a program that it works better—

Mr. SMUCKER. And I am sorry, I am running out of time.

Ms. LONG. Yep.

Mr. SMUCKER. But so is it your recommendation or do you believe that we would here at the Federal level change the rules essentially to allow for that demonstration project so as we are looking at HEA, is that a potential opportunity for us to do that?

Ms. LONG. That, within HEA you would create a safe space for that kind of innovation to occur with the guardrails so what we can really check the outcomes and make sure. I think the data is light right now on the effectiveness. That would give us time to prove it. It would also give us time to test a model that's not based on the credit hour. We would love to throw the credit hour but I don't have an alternative tested and ready to replace it.

Mr. SMUCKER. Sure, thank you.

Chairman SCOTT. Thank you. The gentlelady from California, Ms. Davis.

Ms. DAVIS. Thank you. Thank you, Mr. Chairman, and thank you to all of you. I have actually wanted to wait through all my colleagues' questions because I think it is really helpful and you have all been great in respending

have all been great in responding.

One of the things that I think is always important with the panel and you have covered so many issues that expand and help us see why sometimes programs don't work very well because we don't have the services in place to be able to support the student, to take

them exactly right where they are.

And so, Ms. Long, you have—I think expanded on the competency based education but I wanted to ask first, Mr. Gadkaree, and the others, what is the downside of that? You know, what should be the concerns that we don't go down a road and find out that, you know, we haven't really been as focused on outcomes as we could be, that there are some issues that whether in the scaling or in the process have been ignored. Mr. Gadkaree, could you speak to that a little bit? I know that you deal with equity issues.

Mr. GADKAREE. Sure. I'll start with that. And I'll say that, you know, I think the process that Ms. Long was outlining in terms of a pilot where we test outcomes really well makes a lot of sense.

I will say that, you know, sometimes there are things that are innovative like education technology that if done poorly don't do well for students but if done well they do. And, you know, there is a recent AEI study on online education technology that kind of found that it exacerbates gaps that on average it may not be a vehicle for closing those gaps.

And so I think it's—it's really a question of implementation. That's what we were finding in our study as well. How can we en-

sure that these programs are set up in a way that promotes high quality?

Ms. DAVIS. Thank you. And, Ms. Long, you want to comment

quickly?

Ms. LONG. I was just going to say that is the exact reason why we created a quality framework for CBE programs because we had this concern that if institutions with rapid growth came in and they did it poorly, it's going to damage learners and it's going to damage a movement that has a lot of promise.

So we really created a quality framework early. We are trying to hold institutions to that framework. Do you have these eight elements and are you playing it out in this manner so that we are

not having those kind of disparities that—

Ms. DAVIS. Yeah, thank you, Ms. Long. I mean, in many ways that is sort of something that we need to be thinking about as we talk about apprenticeships, as we talk about different kinds and how we do that because we, they have to be accountable.

And I think sometimes when you offer something new everybody kind of rushes to implement something without having the founda-

tion and you speak to that well.

Mr., if I could just go back to you for a second too, Mr. Gadkaree, because we realize that you haven't had a chance to respond as

much and I wanted to get your wisdom as well.

On the issue of Pell grants and dual enrollment, what is really critical here is that low income students benefit from that because we know they don't have as much exposure in their lives and it is very important that there be some focus. Again, what concerns do you have, how do we make sure that if in fact Pell grants are used for that, that we don't end—we don't have programs that students end up paying for but aren't getting what they need out of them.

Mr. GADKAREE. Well, one thing that would be important is making sure since we actually even at the community college level, even at the four year level, sometimes I have students who change their minds about what they want to do and that concern also ex-

ists of course in dual enrollment, dual credit programs.

So it would be important to make sure that students don't use up all of their Pell eligibility before they are able to get to a degree. It would also be important to address issues around college readiness which is one of the big barriers that students might have to in doing dual enrollment programs.

Ms. DAVIS. Yeah, absolutely and the readiness issue and I think there have been a lot of good ideas talked about, certainly wrap-

around services and mentoring is important.

Dr. Marwick, you talked particularly about the partnerships and I am just wondering quickly about the challenges in doing that? What is the Federal role? How can we do something different perhaps and you have been very helpful in thinking about the reauthorization. What is critical to you in terms of the Federal role in incentivizing?

Ms. MARWICK. I don't know exactly how to incentivize these partnerships but I urge that we find a way because I know for sure that we have better outcomes for our students because we are

working together and its hard work.

A number of colleges and high school superintendents have come to us and said how are you doing it, what are you doing and

they've been unable to do it. It takes a lot of effort.

Ms. DAVIS. A lot of effort, yes. Thank you. In my remaining minute I just wanted to put a plug in and I really appreciate my colleagues on the other side of the aisle as we are talking about advising. I think we need a better infrastructure in high school as well as in college for supporting and exposing our counselors to the kinds of information that they have available that will help our students. Thank you so much. And really appreciate your being here, you have been very helpful.

Chairman SCOTT. Yes, the gentleman from Virginia, Mr. Cline. Mr. CLINE. Thank you, Mr. Chairman, for holding this hearing on innovation and higher education. You have got a lot of great examples in the commonwealth to choose from. I am glad, I want to thank our witnesses for appearing but I am glad we get the oppor-

tunity to show off a little bit of Virginia innovation.

And, you know, in Virginia I worked really hard to add to that. At the State level we created the online Virginia network partnership between Mason and ODU and online Virginia.net where people who are pursuing nontraditional degrees can get course work online through a common portal, a shared network between institutions.

A lot of times you get competition from higher institutions of learning rather than collaboration and cooperation. And so encouraging that cooperation is helping Virginia to lead the way in innovation.

But I am very proud in my own district of James Madison University, the great program they have called JMU X-Labs where students are given real and complex problems from the defense and intelligence communities and then they are tasked with prototyping solutions and working with the state department and other agencies.

Programs like these simulate work that students may do during post graduate employment and Virginia serves as an example of innovation and of a statewide community effort to better opportuni-

ties and access.

Dr. LeGrande, welcome and I want to thank you for your testimony today and the work that you are doing and I want to applaud you and VCU for the graduation rates that you are discussing today, the fact that low income first generation and minority students are graduating at nearly identical rates as their peers.

I know that you through your partnerships with community colleges can attribute some of that to that success. What other best practices can you speak to that you have implemented that helped you achieve these results and specifically to closing that gap?

Ms. LEGRANDE. Well, when we think about specifically closing that gap, we have talked about creating the systems for guidance and support for those students and using data to determine who really needs support early but the other piece would be about financial assistance to students who are in need and timely financial advice as well as making sure that we have a true support system for those students with transition.

Oftentimes when we think about coming to college we think students transition one time from high school to college for the first time. But students transition year after year. They are constantly assessing what is the purpose of this education and why am I here.

And so it's important that we have experiences along the way that help students not to just develop those competencies that we are talking about but to be able to articulate what is this college degree teaching me? And what product do I have that allows me to showcase that skill?

And so these applied learning experiences we really believe have contributed to our higher graduation rates because students are now connected and invested in their education and they have a tangible product of experiences to showcase employers about what they have learned.

Mr. CLINE. Are you encouraging externships, programs outside in cooperation with career services that are giving students a real world example of how they can use that knowledge in the workforce and actually make money with that degree when they graduate?

Ms. LEGRANDE. Yes. Externships, internships, undergraduate research, you know, we have even found how we can leverage work study opportunities for example to help students do undergraduate research.

The greatest challenge that we find in that though while we know that these experiences are important is that we find a vast majority of our students need to work. And when they find themselves competing with interests of participating in this internship that is often times unpaid, and taking a paid job they go with the paid job.

And so we are trying to identify ways to help incentivize for students to take the opportunity for that hands on learning and making difficult choices.

Mr. CLINE. I know this might not be your department but is VCU being aggressive in their attempt to cut costs and not just to paper over the costs of providing that degree but all actually to reduce costs internally, you know, dropping courses that aren't used, shedding some of the maybe excess in the administrative departments, focusing on classroom expenses, things like that to help make the cost of education more affordable?

Ms. LEGRANDE. Yes. In fact when I mentioned the fact that we have been able to raise our institutional aid over the past 8 years, it has been largely about the institution having to make—having to make some hard choices, right.

It's not just been about increasing revenue through enrollment and tuition gains but really trying to find efficiencies across the institution. Just in fact in this last year in an effort to ensure our commitment to our priorities and increasing institutional aid, we made about \$5 million in budget cuts. And identifying efficiencies and place where we could reallocate funds to really invest it in our students understanding that college affordability is one of our highest priorities as well.

And in this year, we were able to partner with the general assembly in Virginia, thank you to our general assembly to be able to hold tuition at a zero percent increase. And so tuition is flat because the State identified resources to invest in the State institutions, the Virginia public institutions and that partnership so that students now have a predictable tuition rate for the next year.

Mr. CLINE. It is truly a partnership. Thank you, Mr. Chairman. Chairman SCOTT. Thank you. The gentlelady from Massachusetts, Ms. Trahan.

Ms. TRAHAN. Thank you, Mr. Chairman. Thank you to all the panelists, this has been very informative. So before running for Congress, I was in public service for about a decade and then I worked in the tech industry for another 13 years and I guess my experience in both sectors taught me that we can definitely do a better job leveraging technology to identify issues and improve outcomes in any system. Technology like predictive analytics certainly allows our leaders to better understand and address the individual needs of students.

And I believe this technology is particularly important because today's students hail from increasingly diverse backgrounds, communities and experiences and too often find themselves adrift in a system that wasn't designed to support them.

I think, Dr. LeGrande, you gave great testimony about the data that you used to improve completion rates at VCU. I am really

wanting to probe on more of those types of examples.

And, Mr. Gadkaree, I am wondering if you can share with this committee and it is always open to anybody who can add to it, what promising models you have seen nationally when it comes to leveraging technology, predictive analytics or anything else to im-

prove some of these student incomes—outcomes, outcomes.

Mr. GADKAREE. Sure, thank you. Well, Georgia State has been a leader in terms of a number of innovations to close their equity gaps and increase graduation rates and they have been using predictive analytics to help them in their advising models and to try to figure out when students might be in trouble, what might be barriers that the institution has created perhaps inadvertently, and taking those barriers down. So I think that that's a good use of paring technology with some of the people who can help in advising and support and keep students on track.

Ms. TRAHAN. Great. Anyone else?

Ms. MARWICK. I would just say that we are moving, we have moved to a case managed advising program and we were able to get a Title III grant which allowed us to purchase technologies. We have redesigned the student portal. We—so that students can see their progress towards degree completion. They all have an electronic plan. Their advisor can also see that.

They can run a program called Degree Works to see how close they are to completion and if they change their major, what will that mean towards getting that new degree? They can do that

themselves.

We have a starfish early alert system that lets faculty flag students to the advisor who is—are struggling in class at four weeks and eight weeks in the semester. And we are using predictive analytics to note when a student may be going off the path, may be getting themselves in trouble and advisors reach out proactively to those students to help them.

Ms. TRAHAN. Great, thank you. Any—

Ms. LEGRANDE. We have identified at VCU a few things. One of the things is in addition to the academic support system that our students really enjoy engaging with the technology because the data is accurate, it's on time and they can access it at 2 in the morning.

Ms. TRAHAN. Yeah.

Ms. LEGRANDE. And so one of the things that we have really thought about in engaging is how can we use the technology to influence student behavior and so we have launched an app through our predictive analytics tool that allows us to nudge students at the right time.

Instead of sending students an email communication with 10 steps that says do all of these things, we can nudge them and say we need you to complete this one step. You've been selected for verification for example on your financial aid application. Complete this one step and you're 90 percent of the way there. And those nudges can help us improve our student behavior.

Ms. TRAHAÑ. Yes.

Ms. LEGRANDE. Right, to help them move through that process. Another piece of technology that we are implementing that we are excited about this year is really connected to early indicators for at risk populations.

So for example, class attendance is important, right. In order to make good grades you need to go to class. But oftentimes at large universities, faculty are unable to take attendance, right, regularly.

So we are implementing new technology to use GPS software to really understand where our students are in proximity to class. And that data then feeds in, will feed into our predictive analytics software really to inform advisors to help students understand the importance of going to class just as getting early grades from faculty and indicators but to identify possibly students are homesick and they are not leaving their dorm room.

And so all of those cognitive and non-cognitive aspects of the student experience, leveraging the technology to inform the conversation is important.

Ms. TRAHAN. Great. Thank you. I am, I had one more question but I think I am going to be respectful of time. Thank you so much.

Chairman SCOTT. Thank you. You are setting a new precedent.

The gentlelady from Michigan, Ms. Stevens.

Ms. STEVENS. Thank you so much, Mr. Chairman, and thank you to our distinguished panelists for joining for today's hearing. We are so proud of you and so delighted to engage in this conversation.

Before being in Congress, I was a workforce development professional and helped to spearhead STEM education initiatives particularly in the digital manufacturing and design technology space where I helped to launch along with the assistance from the Federal Government, the Manufacturing USA Program, the country's first online training program specific to digital manufacturing design technologies that supported credits in working with universities and university partners so I love this idea about innovating and meeting students where they are at to complete their post-secondary degrees and what so many of you have been a part of.

I represent a district in southeastern Michigan and college promise programs which cover student's tuition and fees have become increasingly popular in recent years. Students in Michigan have been given incredible opportunities through the Kalamazoo Promise and the Detroit Promise.

And college promise programs do a great job of expanding college access but not all of them address college success when students enroll in college. And research done by the MDRC in Detroit has found that adding evidence based support services such as coaching and financial incentives on top of existing promise programs is an effective way to help students not only enroll in college but stay in school and accelerate their progress toward earning a degree.

And so, Dr. Marwick, I would love to ask you what impact has the Harper College Promise Scholarship had on students and would it be useful to provide additional support services to Harper

College promise students?

Ms. MARWICK. The first Harper College promise class begins in the fall. We started registering students getting them to sign up for it when they were freshmen in high school. So the first students

have gone through four years of high school.

We asked them to earn the scholarship by doing a couple of things, having really good attendance in high school, doing a little bit of community service, taking rigorous college high school classes and being college ready when they graduate from high school. We will see, we have 600 students still eligible that we expect to enroll next year.

As far as the supports, absolutely. They would be very essential. We probably—we hope the students have in our promise program have habits of mind through the promise program that will make them successful at any college.

The—we have used 1 Million Degrees in the Chicago area which is very much like what is being done in the Detroit promise ASAP

and what was done in some of the Ohio schools.

We have found and University of Chicago Urban Labs is doing a controlled randomized study of the outcomes and we still need to wait a couple years to see but right now we have significance in graduation rates, significance in persistence. And Harper College has found we have a 60 student per advisor ratio in that and students in the program are also given \$250 in incentives three times during the college year if they have done all the right things that they were supposed to do. See tutoring, attend your classes, meet with your advisor, et cetera. We have had really good outcomes.

Ms. STEVENS. Yeah. Well, I and I admire and just love the work that all of you do so much and I was just wondering if we could kind of open this up to the rest of the panel to chime in about designing support programs or supports that go beyond just covering the cost of tuition. We can start with you, Dr. LeGrande.

Ms. LEGRANDE. So at VCU we do have some support systems. We mentioned the food pantry for example and off campus support services to really help students with housing insecurity to connect them to the right resources as well as Federal and state resources to help students who find themselves in emergency circumstances.

There is one unique institution that has a program, a food scholarship program for example in Texas. That's partnered with the

food bank and it allows students to get a food scholarship that connects with the—based upon the number of credit hours they're enrolled in the institutions. And they use that food scholarship in the food pantry on their campus where it's a declining balance. That food pantry is just as fancy as a grocery store. They have produce and canned goods and meats.

As we think about the complications we have with our student population and needing resources beyond just tuition and fees, we won't be able to just food pantry our way out of this. Right. We have to think of new innovative strategies that really show the students that we have support mechanisms for them on our campus, and we are connected to the community and so I think the more

creative we can get as institutions allow us to do that.

Ms. STEVENS. Well, I am over time but I just want to thank you, you all and I would also now like to just ask for unanimous consent to enter into the record an evaluation of the Detroit Promise Path published by the MDRC, a research organization known for its rigorous evaluations which shows the impact and importance of approaches that combine financial aid and wraparound supports. Thank you all. Thank you, Mr. Chairman.

Chairman SCOTT. Without objection.

Ms. STEVENS. I yield back the over time. Thank you.

Chairman SCOTT. Thank you. The gentleman from Pennsylvania, Mr. Mueser.

Mr. MEUSER. Thank you, Chairman Scott, and thank you, Dr. Foxx. Thank you all very, very much for being here with us today.

I did serve on Pennsylvania State System of Higher Education PSSHE where we did focus very much on affordability, accountability, transparency, and innovation. And that certainly continues after my departure.

There is a serious need as we are discussing here for innovation in higher ed, traditional higher education is not working as nearly as well as we would like to it be. The completion rates are not necessarily-not satisfactory. Costs are extremely high. Some would phrase through the roof.

For those who are graduating, many are not skilled, not ready for the jobs that are available. Graduates and those who don't graduate are very much in some deep debt very often. The skills gap does exist as our country we do have 7 million unfulfilled jobs. So there is certainly work to do.

My questions today will focus on the importance of accountability from an academic and financial advising standpoint. And ensuring that any innovation in higher ed continues to be accessible to students in rural communities as my district, Pennsylvania's 9th, is relatively rural although we have really some terrific higher education schools both traditional and career institutes.

So my first question will be based upon I have concerns that many college students are not well informed about how the decisions they make can have long lasting financial impacts. For example, just taking an extra elective or two as we all well know can derail a student's path to graduation by a semester or more which of course is very, very costly.

PSSHE has a focus and a concept of holistic advising.

A student centric approach that accounts for all aspects of a student's academic experience, financial aid, what their major path is, are they fulfilling the requirements for that major? Are they doing it in a timely manner? If they are not, are they being informed in an honest way? Is even perhaps the payer, not necessarily parents, but who the payer is, are they being notified—perhaps there was a waiver allowed to be signed that they could be notified if they are not fulfilling the requirements that were being paid for which I think would, could create a higher level of commitment.

So, Dr. LeGrande, in your testimony you talked about VCU's intrusive advising model which does sound somewhat familiar and I read the details to the holistic advising. Can you describe what you are doing there a little bit further than you have and regarding

this model and the benefits that are coming from it?

Ms. LEGRANDE. Sure. Through the intrusive advising model, we really focus on two groups that we are leveraging. One is the intrusive advising directly to the student, right. Identifing what their needs are early on and connecting them with resources and we use the tool that we talked about in the written testimony, the Major Maps to help students do that. Right.

So in addition to just the degree plan, right, the outline of courses a student needs to take, how do we ensure that students are able to maximize this four years to participate in all of the opportunities including pursuing a minor by leveraging their financial aid. And so an advisor is able to have that conversation with

students early on about lets plan out these four years.

That Major Map we found because it works backward from the career plan has really been interesting to parents. Because it helps them see exactly what the plan is for their students for the next four years. And they have then found that they are able to have a more intellectual conversation with the student who is interested in studying psychology, right. And that way the parent understands that there are career paths available beyond just being a psychologist.

The second group that we work to leverage with our advising is faculty. Faculty buy in is important in this intrusive advising model for a few reasons. One, students spend 60 percent of their time with faculty and so they are really most informed about a stu-

dent's behavior in the classroom as far as academic ability.

So for example in courses where we have high D, W and F rates, we work with the faculty to understand what are some of the challenges the students are experiencing, understanding the syllabi so that the advising conversation can help inform the student and help them prepare. So those two groups we are really working with through advising.

The last thing I would say is that it is truly a partnership. All right. Engaging the students in that effort, advising is not just giving a student a map. It is really helping them understand what their interests are and if they don't know, then we are giving them the tools to explore that through career inventory tools that help them understand what their interest are and what possible career options and help them making choices if they're not quite ready.

But by the time they reach 30 hours we really want students to have a pathway in mind because we realize that four years will be over before they know it and we want to make sure that they're maximizing their introductory courses into applicable majors to end with a fruitful career.

Mr. MEUSER. Wow, that is terrific. I can see why VCU is doing so well. Thank you very much for your testimony and, Chairman, I yield back

Chairman SCOTT. Thank you. The gentleman from Maryland, Mr. Trone.

Mr. TRONE. Thank you, Chair, Mr. Chairman, and Ranking Member Foxx for your leadership in looking for innovative ideas.

I want to reiterate I really appreciate the comments by Ranking Member Foxx and I couldn't agree with more what she had to say and especially struck by the 58 percent. That is just so unacceptable. It is mind boggling.

I serve on three college boards and I can see it firsthand. It is disappointing. You know, I grew up on a farm and the farm went bankrupt and because of that, I went back to get a graduate degree to move on and Pell grants were there. And were able to pay them off and I got through and that led to moving forward in life.

Now with Pell grants picking up 75 percent down to 30 percent, that opportunity is just not there. So we have to keep thinking of

innovative ideas and that is why we are here today.

And the dual enrollment I think is a really good step in that direction. Over 10,000 folks in Maryland work in dual enrollment at our high schools. And the question, the problem is that the enrollment seems to benefit those in the higher income strata and they benefit with the college attendance and they participate. And the folks in the lower incomes they don't do as well.

So it has become more focused for white, for middle to upper income. So this racial disparity in dual enrollment is a missed opportunity. And we need to find models to close this equity gap because these programs clearly lead to higher attainment of low income students.

So, Mr. Gadkaree, how can policy makers and other stakeholders create a system that fosters more equitable treatment for dual enrollment?

Mr. GADKAREE. Sure. I'll start this and I suspect a couple of my panelists might have other thoughts as well. I think that certainly two of the challenges in doing so are one is around affordability and resources for both the students and the districts and college that are involved.

We as we mentioned or as I mentioned earlier, some of the districts and community colleges that have the most students of color have the fewest resources. So I think that is one element of it.

And then college readiness is certainly an issue as well and one of the compelling models that Dr. Marwick has talked about is having high schools and colleges work together to try to address that dev ed need early on so that students can become college ready and then take advance of some of these early college opportunities.

Mr. TRONE. Go ahead.

Ms. LEGRANDE. One of the models that we have employed at VCU is a partnership with specific high schools for dual credit that align into a particular pipeline.

So for example, our health services academy really seeks to take students who come from lower income communities to help them understand and identify broad based careers in the health field.

But that dual enrollment courses really help them beyond just taking college credit, they also get college preparedness skills, they explore health careers and we have seen an increase in students participating in those programs and those students actually continue on to higher education, earn baccalaureate degrees, some in the STEM health professions, several in the health connection, health field and then go on to pursue graduate degrees.

So as we think about dual enrollment, there are opportunities for us to impact communities by partnership with specific high schools

as well.

Mr. TRONE. One more quick area I want to touch on. Every year three is 600,0000 folks that should be graduating and they would have graduated but instead they are coming out of incarceration.

And they are average education fourth, fifth grade.

And I know there is a lot of innovative, high quality programs around the country but this is an area that I am focused on and I think is of great importance. Do you know of a particular institution states where you have really seen a connectivity point with the community colleges and business also because when they are coming out, if they have got some education, if they don't move to a job, they are going right back in again. The cycle goes right around.

And 60 percent one year later don't have a job. Have you seen

any best practice that I should dig into more?

Ms. LONG. I would encourage you to take a look at Sicklier Community College. I included them in my written testimony, the work that they are doing in prisons, working in particular in their CBE offerings and thinking about how in those last—that last period of time of incarceration how do I get them prepared for a career in which they are going to get hired. Right. We know that a lot of employment opportunities will be closed to those that are coming out of that incarcerated environment.

I was at Lipscomb University, we also did a program at the Tennessee Prison for Women in which our competency based program was offered to inside students. Our outside students, students from our campus would go once a week and collectively we had class to-

gether.

Our outside students, the folks that are on our campus everyday as traditional learners were really paying for our inside students to be able to get that education. We have seen incredible results from that.

A number of those learners initially we started only as an associate's level. I got a letter in the mail from one of the inmates asking for the opportunity to bring our baccalaureate program there and they did that. And they've graduated and with their CBE base degree and as they're getting back out in the workforce, they're getting those jobs that they need which we hope will lead to a reduction in recidivism.

So encourage you there's a couple there I would say Sinclair, I would also ask you to take a look at the LIFE Program, L—I-F—E, at Lipscomb University as well as two models.

Mr. TRONE. Thank you.

Chairman SCOTT. Thank you. The Ranking Member, Dr. Foxx. Mrs. FOXX. Thank you, Mr. Chairman, and again I want to thank our witnesses for being here today. Dr. Marwick, I appreciate the comment in your testimony that we must make sure dual credit is an opportunity to take a college course in high school and cannot be a college credit for high school course.

Academic rigor is critical to preparing students for college level course work and the jobs that follow. To what extent do you interact with your accreditor to maintain the quality of concurrent course offerings and do you have any recommendations for how accreditors can help you expand college offerings in high school settings?

Ms. MARWICK. Thank you for bringing that up. I feel really

strongly about the standards for dual credit courses.

Mrs. FOXX. And I do too.

Ms. MARWICK. We work very closely with the high school teachers. They come and meet with the college faculty, they talk about the syllabi and then we follow dual credit students who come to Harper College and take sequential courses. And we have found that they do as well and often better that the typical students that test into those courses. With our accreditor, we make sure that we follow the same standards. We treat our dual credit high school teachers as if they are adjunct faculty on our campus. Our HR office has all of their credentials, their transcripts. We use the same credentials for teachers to teach whether it is on our campus in that course or whether they are teachers in the high school.

Secondly, any prerequisites that are required or showing that you're college ready for the students, every student in that course must have those, met those standards and they must show evidence of that. And we, that is what our accreditor suggests.

Also assessment of student learning. If there is a final exam or other assessment, it's given to every section of the course on campus then that also must be given in the high schools as well. And we look at the outcomes of those assessments and then the teachers and the faculty get together because we are giving the same on campus and they share effective practices.

Mrs. FOXX. Thank you. Ms. Long, I am encouraged that C-BEN is dedicated to providing a high quality learning experience to students. To what extent do accreditors take into account your quality framework guidance and are there particularly, a particular accreditation provisions in statute that make it needlessly difficulty to

start and grow CBE programs?

Ms. LONG. Yes, thank you very much. So with accreditors, we invited the creditors to the table early on as we were designing the quality framework. We continued to have accreditors who will come to convenings, who will breathe into kind of the way we are think-

ing about best practices as a national network.

So I think we are really trying to continue to foster good relations with all the accreditors. As you know, every one of them require something a little bit different and so you can see patchwork of different approaches around this Nation and how different schools have different models and one might require a substantive change as you know about, another one might not. And so there is a lot of differences from one accreditor to the next. Right.

When CRAC issued its consistent definition of what CBE is, I think that was very helpful. Before that, they all kind of looked at it in a little bit different way and how they defined it so that consistent definition was helpful.

Our member institutions have asked for and we will be responding at our next National convention with time just by regional accreditor and we are asking our regional accreditor to join us so

that the can better illustrate.

We are looking for one pagers that would help capsulate what is it that you really require? Because there is a lot of institutions who find themselves confused about is this a substantive change or is this not? Do you really disincentive this innovation or are you really in support of it? I hear one thing from other institutions but maybe I hear something different from you.

So we are getting ready to do a road trip to all of our regional accreditors, myself with a board member from each of those regional accrediting bodies to try to work on the consistency of language to make it clearer for institutions what the expectations are and kind of that accreditor view on CBE innovation. Does that

help?

Mrs. FOXX. Yes. Thank you. Mr. Gadkaree, a footnote in your testimony highlights four programs, CUNY ASAP, 1 Million Degrees, Arkansas Career Pathways Initiative and Stay the Course proven to double or triple graduation rates for students.

Could you tell us very quickly how one or two of these programs operate and what evidence based practices they engage in to pro-

mote student success?

Mr. GADKAREE. Sure. And let me talk about Arkansas since that's the one we probably heard the least about. In Arkansas, they have served 30,000 students over a decade using TANIF dollars.

It's a program that's running in 22 community colleges across the state and they have intensive case load mentoring and advising on the order of 40 to 80 students per caseload. They provide employment support services like resume help. They provide financial support for text books, calculators, and supplies and they provide some financial support for childcare and transportation so it's again this mix of intensive advising and some financial supports.

Mrs. FOXX. Thank you, Mr. Chairman, and thanks for your in-

dulgence.

Chairman SCOTT. Thank you. The gentlelady from Nevada, Ms. Lee.

Ms. LEE. Thank you, Mr. Chairman, and thank you Ranking Member Foxx for having this important hearing today about im-

proving equity.

I have spent my career working in the K to 12 realm with wraparound services which is why I am particularly interested in talking about that. You know, Nevada the majority of our students in our public school system live in poverty so having that type of program where we provide robust wraparound services is incredibly important.

And now we are finding that as those students move on to college and we have one of the most diverse higher ed programs in the country, continuing those wraparound services is important to their

success.

A specific program that we have talked about CUNY's ASAP program is as we know innovative and effective model that provides those wraparound services. And an evaluation by MDRC shows that ASAP nearly doubled graduation rates for students and at a lower cost per degree as well. And recent evaluations show that it is replicable, that we can replicate that model in Ohio for instance.

And in my home state, I am proud of the Napontla program which is helps our first generation college students navigate their college experiences by accessing those key wraparound resources, community services and programming. This model is effective because it leverages that experience and expertise of shareholders but also helping walking students through their education program.

And, Mr. Gadkaree, I wanted to ask you, what do you think the biggest barrier is to expanding this model to all community col-

leges? Or all colleges for that matter?

Mr. GADKAREE. I think the biggest barrier is cost. We are seeing that these programs and we have talked about four of them, they are probably about \$1500 to \$2500 per student per year. Some might fall a little bit outside that range.

But that is just a cost that private philanthropy is not going to be able to support at scale so it's going to have to be up to either states or the Federal Government to figure out how do we support that cost?

I'll note that cost gets recouped in the MDRC CUNY ASAP model, they actually produced more graduates per dollar than students outside of that program because graduation goes up so much that it's more effective from that standpoint.

Ms. LEE. And yes, speaking of our Federal role, you mentioned that there could be a role. Do you have any specific ideas in particular?

Mr. GADKAREE. I think that given this body of evidence, a program that is scaled up evidence based approaches around community college supports, perhaps some kind of funding that was kind of in that vein, it may be along the lines of I3 or something like that, but I don't know exactly what it would look like unfortunately.

Ms. LEE. Okay. I would like to ask unanimous consent to enter in the record this MDRC evaluation.

Chairman SCOTT. Without objection.

Ms. LEE. And I agree, I mean, having the evidence is so important to making sure and we know that this type of investment definitely has a return on investment.

Ms. Long, I want—I appreciate your willingness to share your assessment on what we know and what we still don't know about competency based education. I have had the opportunity to learn about Western Governor's University in Nevada. It is a model that's attracted over 3300 current students and 3,000 alumni in my State

And I believe that when we explore innovation and different models within our higher education system, we need to consider how these will effectively serve the students of the future. Could you share a little bit more about the variation of CBE's impact on cost and time that it takes students to complete their degree?

Ms. LONG. Yes, and again what we would see is mostly institutional case studies about, you know, specifically how has that happened. In my written testimony, I include information from Salt Lake Community College that's just redesigned 24 of their traditional programs into a CBE format and I have shared with you kind of the results that they saw both with time but also the cost as well as salary data from learners that completed those programs and where they saw salary gains.

So there is data from Texas A&M Commerce, a number of institutions that show that they're actually saving both cost and time. What I would point out is that there are a lot of different models of CBE at the country. Western Governors is probably one of the

most well-known, obviously the largest of the models.

But various programs design their CBE according to what the specific needs of those learners are that they're wanting to reach. Some of them are online, some of them are not. Some of them target a traditional 18 to 24 year old learner and the vast majority of them target something that's not that. Right.

And so you see a huge wide model variation around the country. And because of that, we also see very different results. Some aren't as saving as much on time because they want their people to slow down when they, you know, really need that. Others are seeing, you know, more advances in money because they're using a subscription model.

So I'd encourage you as you all begin to really look at the outcomes data to think about what's that model because we are still trying to build that data that says if you have these elements that's what's driving this, you know, outcome result or this set of elements, that's what's getting this outcome result if that makes

Just want to be transparent. I don't have great, you know, cross multiple institution data on what those results look like, just institutional case studies.

Ms. LEE. Great. Well, I look forward to working together on

Ms. LONG. Absolutely.

Ms. LEE. In the future. Thank you. I am past my time. Thank

you, Mr. Chair.

Chairman SCOTT. Thank you. I recognize myself now for 5 minutes. And asking, Dr. Marwick, you were asked about the \$40,000 debt that people come out of community college with. Is that typical?

Ms. MARWICK. I don't know any community college where people come out with \$40,000 of debt. At Harper College, you can get a two year degree for about \$16,000. Also we give students advice not to take loans unless they have to and we have a less than 8 percent default rate now.

Chairman SCOTT. Thank you. Mr. Gadkaree, you mentioned the programs that you talked about had been studied on randomized trials and it significantly increased graduation rate. Did you talk about how much these programs cost?

Mr. GADKAREE. Yeah, the costs range from about \$1500 to about \$2500 per student per year. So that's a pretty significant investment but again it appears to pay off.

Chairman SCOTT. Thank you. Ms. Long, in developing the competencies, is that a—the each institution does their own com-

petency?

Ms. LONG. Yeah, usually they would start with some sort of a competency framework so they're going to look and see is there already a framework in existence? So you might look at the Department of Labor building block model. You might look at DQP for example, the Degree Qualification Profile.

They'll look first to say is there an established set of competencies for this particular degree or credential that we can leverage? Then they would typically involve employers to breathe in with faculty what is it that needs to go into the composition?

They'll benchmark against other institutions as well to try to

keep create that list.

Chairman SCOTT. And the oversight is with the accreditors. They will accredit the list of competencies that you've created?

Ms. LONG. Absolutely. Absolutely. You explain to the accreditor how you derived your list of competencies, what is that based on. Chairman SCOTT. And how do you determine how many credits

you get for certain competencies?

Ms. LONG. Yes, so the regulations would require us to think about that in the context of a traditional offering. So you're, you have to what we call course walk that or cross walk that back to what you would offer in a normal program. So if you thought about in a typical communications class, you might have a module that's on written communication, oral communication, on these different areas, how much time is spent, and that might be the way in which an institution would decide to allocate-

Chairman SCOTT. And when you allocate—

Ms. LONG.—competency work

Chairman SCOTT.—when you allocate the credits, does the accreditor get to oversee that?

Ms. LONG. The accreditor, they would be given the information on how they set that information, that would be given to the accreditor during a substantive change process.

Chairman SCOTT. And if you come in and show your competencies the first week, do you have you pay for the whole course?

Ms. LONG. It depends on what kind of a model but typically if you're on a subscription model you would just keep going to the next model to the next competency to the next to the next if it's on a subscription model.

Chairman SCOTT. Does that mean you have to pay for the whole course?

Ms. LONG. You are paying for that period of time of learning in a subscription model. So you're paying say for example a six month model and it is a learn as much as you can during that six months. So you're trying to demonstrate as many competencies as you can.

So it's not like there's a course per say that you're paying for. You're paying for that block of competencies. It's one of those

places in which language can get in the way, right.

Chairman SCOTT. And so but if you—if you show that, if you show all of those competencies the first week, do you have to pay for the whole course?

Ms. LONG. You would be then be opened up to new content that you could continue to keep moving onto new competencies.

Chairman SCOTT. Dr. LeGrande, can you say a word about the effect that TRIO programs have on the pipeline and completion?

Ms. LEGRANDE. Sure. TRIO programs are important for pipeline and completion. TRIO has two suites of programs, college access based programs that affect the recruitment of students in preparation of underrepresented populations of students, low incomes, students of color, and students from disadvantaged backgrounds.

Preparing them for college preparedness to come to the institution and then once they get to the institution, there's a suite of programs, TRIO support services programs. We have TRIO support services at VCU that really complements that wraparound services in addition to that academic advising model to make sure those students have everything they need. In fact, programs like TRIO programs create really good evidence based approaches for institutions in a small scale because those populations are typically 1 in 200 students that then the institution can think about how do we take this same evidence based approach and then apply it more broadly across the population. We have seen those evidences at VCU and in other populations, other institutions as well.

Chairman SCOTT. Thank you. This ends the questioning.

I remind my colleagues that pursuant to committee practice, materials for submission to the hearing record must be submitted to the committee clerk within 14 days following the last day of the hearing. Materials submitted must address the subject matter and only a member of the committee or invited witness may submit materials for inclusion.

Documents are limited to 50 pages each. Documents longer than 50 pages will be incorporated by way of an Internet link that may or may not be—work in the future.

I want to thank our witnesses for participation today. What you have said is very valuable and helpful as we develop the Higher Education Act reauthorization. The committee may have additional questions for you which we will submit in writing and we would ask you to respond in writing. The record will be held open for 14 days in order to receive those responses. I remind my colleagues that pursuant to practice, witness question for the hearing must be submitted to the majority staff within 7 days. The questions submitted must address the subject matter of the hearing.

I now recognize the Ranking Member for her closing statement. Mrs. FOXX. Thank you, Mr. Chairman, and I want to thank our

witnesses for their expert testimony.

Previous hearings this Congress exposed how the post-secondary education system is falling short. 1.5 trillion in outstanding student loan debt. Fewer than 60 percent of students complete their programs in six years. Fewer than 2 in 5 managers believe graduates are prepared for a job in their field of study.

Wow, do we need competency based education. All education in my opinion should be competency based. Many programs across all sectors of post-secondary education are failing to prepare students to succeed in getting a job that will help them repay their loan debt

and rise up the socioeconomic ladder.

Bold reform is necessary to reverse these trends and the hearing today highlighted a few ways colleges can better serve their stu-

Dual enrollment can increase graduation rates and reduce costs. Intrusive counseling keeps students on track to pursue a degree pursue a career related to their academic program. However, I do wonder as we sit here and talk about the amount of handholding that is required to do as to whether or not we are dealing with adults or not. The term helicopter college comes to my mind as I hear the comments being made.

CBE can provide nontraditional students a quicker and less expensive route to gain skills and enter the workforce to fill in demand jobs. Earn and learn opportunities help students apply lessons in the curriculum—in the classroom to real world jobs.

I do think we missed an opportunity today to learn more about some of the innovations that are happening outside what we call

traditional higher education system.

There are providers working to give students skills that are in high demand with employers. Some of these providers are working with colleges, some are working with employers, but all of them are turning the idea of quote higher education end quote on its head in a positive way for learners.

We must broaden—therefore I think we must broaden our ideas of what post-secondary education looks like to truly meet students

where there are in their lives.

At the same time, Congress must encourage innovation that helps all students regardless of their background. It does not shirk

away from providing a high quality learning experience.

The Federal Government does not have all the answers. And policy makers need to have a little bit of faith in the good actors and creative teachers—thinkers on the ground to try new methods to serve students currently being left behind.

I wonder what is the purpose of publicly funded colleges and universities if not to meet the needs of the community. Why should we ask Federal tax payers to pay in some states for what other states are providing with state funding? Such as dual enrollment, such as helping faculty gain a Master's degree in the field without saying why should Federal taxpayers again be paying for that?

There will always be an unmet need because the higher we raise financial aid, the higher are the costs for attending colleges and universities. We will never get rid of the unmet need as long as

Federal tax payers are paying for people to go to college.

I want to thank Chairman Scott for beginning this bipartisan process. I want to affirm my commitment to continuing this conversation to reform the HEA in the best interest of students and taxpayers. And I yield back, Mr. Chairman. Chairman SCOTT. Thank you. I now recognize myself for the

purpose of making a closing statement.

And comment that, Dr. Foxx, you mentioned the-a lot of programs that are short term that can lead to a good job. We are going to be dealing with those as we reauthorize the WIOA, and that is up for reauthorization next year so I look forward to working with you on that to make sure that those short term programs that can

lead to a—that aren't leading to a degree but can lead to a good job are fully available.

I would like to thank again the witnesses for joining us today in the discussion on innovative strategies to advance quality and equity in higher education. This hearing was an important opportunity for us to understand promising approaches to higher education that can help today's diverse students succeed.

It is also a reminder that we must ensure that innovation closes rather than exacerbates existing equity gaps and higher education.

Today marks the last of five bipartisan hearings which will inform the Committee's efforts as we try to pass the reauthorization of the Higher Education Act. Over the last three months we have heard nearly 20 hours of testimony from experts, educators, students on how to solve the most urgent challenges in our education.

There are several things that we heard that the Federal Government must invest in making college more affordable, student loans easier to pay off, that the Department of Education, state authorizations, and accreditors must do a better job at ensuring that only quality programs receive Federal funds and tax payers dollars.

Especially vital for those entities to hold sectors who consist—who which with consistently low student outcomes to additional

oversight.

We have to provide students with the support they need to complete their education and not just enroll in college. We must invest in chronically underfunded institutions that educate our most underserved communities.

And finally our hearing today showed that while scaling innovative practices can expand access to higher education for underserved students, innovation cannot come at the expense of quality and equity

With these principals in mind I look forward to working with our colleagues in the coming months to introduce in advance a comprehensive overhaul of the Higher Education Act and invest in

communities, families and students.

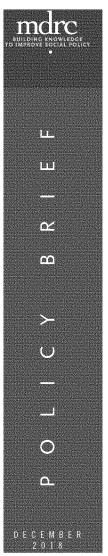
And finally I want to thank Ranking Member Foxx and her dedicated staff for engaging in this process. Working across the aisle is not always easy and we have had our policy differences from time to time. Yet because of this bipartisan process, each member has had the opportunity to examine research and evidence and have open conversations about needed reforms in higher education.

These conversations will be critical and passing a comprehensive Higher Education Act reauthorization that provides every Amer-

ican the opportunity to earn a quality college degree.

Is there any further business to come before the Committee? If not, Committee stands adjourned.

[Additional submission by Ms. Lee follows:]



Doubling Graduation Rates in a New State

Two-Year Findings from the ASAP Ohio Demonstration

Colleen Sommo, Dan Cullinan, and Michelle Manno, with Sean Blake and Erick Alonzo

hile the United States has made strides in increasing college access among low-income students, college completion has remained low. Graduation rates are particularly low at the nation's community colleges, which enroll a disproportionate percentage of low-income and nontraditional college students. Only 20 percent of full-time, first-time, degree-seeking students at public two-year colleges earn degrees within three years. 3

Seeking to address this problem, in 2014 three community colleges in Ohio — Cincinnati State Technical and Community College, Cuyahoga Community College, and Lorain County Community College — undertook a new strategy to help more of their lowest-performing students succeed academically. The highly successful Accelerated Study in Associate Programs (ASAP) developed by the City University of New York (CUNY) provided a model.

ASAP is a comprehensive program that provides students with up to three years of financial and academic support and other support services to address multiple barriers to student success, with the goal of helping more students graduate within three years. MDRC's random assignment evaluation of CUNY ASAP found that after three years, 40 percent of ASAP students graduated compared with just 22 percent of control group students. After six years, ASAP students continued to outperform the control group, with 51 percent of the program group earning degrees compared with 41 percent of the control group.4

The Ohio programs are based closely

on the CUNY ASAP program with a few adjustments. Like the CUNY ASAP model, the Ohio program model as designed required students to enroll full time and encouraged them to take developmental (remedial) courses immediately; provided comprehensive support services such as intensive advising; provided financial support to help students meet participation requirements; and offered blocked courses and condensed schedules. See Box 1 for a list of program components with some definitions of terms.⁵

This brief presents academic effects after two years for the pooled, full study sample in the ASAP Ohio demonstration. The findings show that students in the program group clearly outperformed the control group with respect to persistence in school, credit accumulation, and graduation. Graduation rates more than doubled: 19 percent of the program group earned a degree or credential after two years compared with 8 percent of the control group. The brief also presents some findings from analyses of the programs' implementation and costs.

ABOUT THE EVALUATION

The demonstration launched in 2014 and included the three Ohio colleges, CUNY, MDRC, and the Ohio Department of Higher Education.⁷ The three colleges began operating their own programs in 2015 based on the CUNY ASAP model: CState Accelerate at Cincinnati State, Degree in Three at Cuyahoga Community College, and Students Accelerating in Learning at Lorain County Community

BOX 1: SUMMARY OF OHIO PROGRAM MODEL COMPONENTS

| Student Support • Enhanced advising • Enhanced career- development services • Enhanced tutoring | Requirements and Messages Full-time and summer enrollment Taking developmental education courses early Graduating within three years |
|--|---|
| Financial Support Tuition waiver Textbook assistance Monthly incentive* | Course Enrollment • A consolidated schedule and blocked courses! • First-year seminar! |
| Program Management - Managed locally within each college - Dedicated staffing | |

NOTES: "The monthly incentive of \$50 (in the form of a grocery/gas card) is for meeting advising, tutoring, and career-development-service requirements.

1Blocked courses are seats held in specific courses to allow for the condensed schedule.

1The first-year-seminar is a student success course taken in the first-semester, designed to introduce new students to strategies for being successful at college that could include goal setting, study skills, and career and academic planning.

College.8 The Ascendium Education Group provided anchor funding, supplemented by grants from a consortium of other philanthropies, including the Bill & Melinda Gates Foundation, the ECMC Foundation, the Ford Foundation, the Greater Cincinnati Foundation, Haile U.S. Bank Foundation, KnowledgeWorks, the Kresge Foundation, the Laura and John Arnold Foundation, and the Lumina Foundation. CUNY provided in-depth technical assistance, while the Ohio Department of Higher Education coordinated knowledge sharing among college leaders and program staff members at the three colleges. MDRC provided operational support, led the evaluation, and oversaw the demonstration.

evaluation, and oversaw fire denriforstration.

The evaluation of the Ohio programs uses random assignment — a lottery-like process — to place interested, eligible students into either a program group eligible to receive the programs' services and benefits or a control group who receives regular services. The differences between these two groups' outcomes represent the estimated effects of the opportunity to participate in these programs. Random assignment ensures that student characteristics are not systematically different at the start of the study, allowing differences in later outcomes to be attributed to the new program.

THE STUDENTS IN THE STUDY

Students who met the following criteria were eligible for the study:

- They were from low-income families (that is, they were eligible for Pell Grants).
- · They were seeking degrees.
- They were willing to attend full time.
- They were majoring in degree programs that could be completed within three years.

New students were eligible for the study, as were continuing students with up to 24 credits. Students were enrolled into the study just before the start of the spring 2015, fall 2015, and spring 2016 semesters, for a total of 1,501 students (806 in the program group and 695 in the control group). As part of the study intake process, students completed a baseline information form that captured their demographic information. Roughly half of the students in the sample are considered nontraditional.9 Approximately three in four had at least one developmental education course requirement at the time of random assignment. About 60 percent were employed when they entered the study, with about onefourth of those working full time. For a full

table of baseline characteristics, see Appendix A. (All of the supplementary appendixes are online only.)

IMPLEMENTATION FINDINGS

This brief presents findings on how each of the program components was implemented.10 Data sources include interviews with program staff members, administrators, and students; program records; and college records. Together these data show that across the three colleges, most of the components were implemented as planned. While all colleges had advising and financial support in place as expected, they all struggled in getting students to make full use of the career development services and tutoring, and in implementing blocked courses as planned. Over time, each college adjusted its approach to delivering career development services and tutoring, in particular, to ensure students had various ways to get those forms of support. More detail on the implementation of each component follows. For tables presenting program components and participation data, see Appendix B.

REQUIREMENTS AND MESSAGES

Students in the program were required to enroll full time in the fall and spring semesters, and summer attendance was encouraged. According to interviews with program staff members and students, program advisers emphasized these messages. Over 80 percent of students who enrolled, enrolled full time in their first two semesters, though this proportion dropped to 57 percent by the fourth semester. Program advisers could continue to support students who did not comply with the enrollment mandate, although these students were not eligible for monthly incentives. Program advisers encouraged students to take their developmental courses as soon as possible and to aim to graduate within three years; they helped students reach these goals by planning their schedules with them. About two-thirds of students needing developmental education were enrolled in such courses in the first semester.

STUDENT SUPPORT SERVICES

Student support services are the heart of the Ohio programs and participation in these services earns students a monthly incentive. Of the three components of student services, advising was implemented with the highest fidelity to the program model and had the highest participation rate among program

Advising

Students are required to meet with their program advisers twice a month in the first semester. Starting in the second semester and extending through the end of the three-year program, advisers sort students into low-, medium-, and high-need groups, for which the advising requirements differ. Program advisers, many of whom already had advising experience at the colleges, have low caseloads (typically around 125 students). Advising was implemented as expected across the three colleges, with caseload sizes as planned. Ninety-five percent of enrolled program students met with their Ohio program advisers at least once during the first semester; more than 60 percent met with their advisers six or more times. In later semesters high percentages of students continued to meet with advisers at least once, while on average each student met with an adviser less often. This decline in the average number of meetings was expected once students were separated into groups based on need, since the medium- and low-need groups were required to meet with advisers less often. Program students who were interviewed for the study credited the advising more than any other program component for their success and persistence in college. See Box 2 for one student's explanation of her program experience and all the ways her adviser provided support.

Career Development Services All program students were required to complete one career-services activity per "They really look out for you ... it's like if you do your part they'll do theirs so that definitely helped."

BOX 2: PROFILE OF A PROGRAM STUDENT

In her 40s, Sally had been out of school since graduating from high school 25 years ago. She was a stay-at-home mom to her children. who were in their 20s with their own children when she returned to college. Sally had tried finding a job, but none paid a wage high enough for her to support herself so she decided to go college. She joined the Ohio program in spring 2016 and graduated in spring 2018. Sally describes the wide-ranging support she received from her Ohio program adviser: scheduling classes, picking out books. going to the food bank together, sharing contact information for personal resources, and other forms of help. The financial support - especially the money for books and the monthly incentives was very helpful to her since she relied on financial aid for daily living expenses. Sally describes herself as "clueless" when she started school. "When I first started I had no clue because I was out of school for 25 years. So this was a big adjustment. And now I'm rolling right into it. I know what I'm doing," However, she worries about how she'll manage without her adviser when she begins classes at a four-year university

semester. Approved activities took a variety of forms and the number of options grew as the colleges struggled to get students to fulfill this requirement. Options included meeting individually with a career services staff member; taking an online career assessment; engaging in an internship experience; or attending a résumé-building, interviewing-skills, or jobsearch workshop. All of these options were also available to students in the control group. It nevertheless remained difficult to get all students to participate in this program component, although participation improved over time. (Participation ranged from 45 percent to 69 percent over the first four semesters.)

Tutoring

Program students in developmental education courses were required to attend at least three hours of tutoring per month." From the start, it was a challenge to get students to participate in tutoring as required. Students and program advisers noted that many students had multiple responsibilities outside of school (such as work or family commitments) and found it hard to make time for tutoring. In response, the colleges allowed students

several options to fulfill the requirement: using on-campus tutoring resources, accessing online tutoring, working with an instructor, using a peer or family member, or using a tutor exclusively available to the program students. Expanded options helped the schools increase participation rates among students enrolled in developmental education from 58 percent in the first semester of the program to 72 percent in the second.

Course Enrollment

The programs planned to help students with course enrollment by offering priority registration (meaning program students were able to register earlier than other students) and formal blocked courses to ensure program students took courses together. While priority registration was implemented as planned. all the colleges struggled to implement the planned approach to blocked courses and the first-year seminar, in large part because students had competing demands and complicated scheduling needs. Rather than working with the registrar to reserve seats in specific sections, program advisers encouraged program students to enroll in certain sections during an early-registration period.

FINANCIAL SUPPORT

As planned, all program students whose financial aid packages did not fully cover tuition and fees were granted waivers that covered the difference. Program students also received financial assistance to cover the costs of textbooks at the campus bookstore (at least \$300 during each of the fall and spring semesters and about half as much for summer semesters).\(^{12}\) These financial-support components were implemented as expected across the three colleges.

For the monthly \$50 incentive, each campus disbursed gift cards from stores in its area where students could purchase groceries or gas. This component was implemented as planned. Among students who stayed enrolled in college, at least 45 percent received three or more payments in each semester.

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DECEMBER 2018

PROGRAM MANAGEMENT

A program director at each college managed the program advisers and reported to the provost or a vice president. In these first two years of operations, the advisers and program directors were fully dedicated to the program. Of the three colleges in the study, one experienced little staff turnover, one experienced a modest amount, and one experienced a significant amount.

Each college used a data-management system to record program participation and generate reports about participation benchmarks that the program staff and senior college staff reviewed monthly. Each college also used its own enrollment and graduation records to track student progress toward program goals each semester and annually.

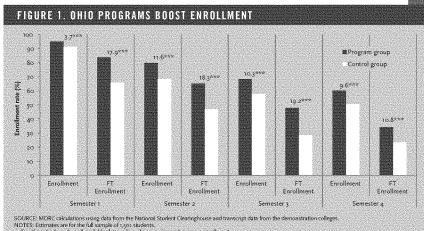
Collectively, the three colleges convened either in person or over the phone at least quarterly, in meetings often facilitated by

the Ohio Department of Higher Education. These meetings allowed college leaders and program staff members the opportunity to connect with each other and the CUNY ASAP technical assistance team, discuss their progress toward important benchmarks, and solve problems together. Program advisers sometimes also had separate conversations to share their experiences and exchange advice.

THE PROGRAMS' EFFECTS ON ACADEMIC OUTCOMES

After two years, the program group in this study clearly outperformed the control group with respect to persistence in school, credit accumulation, and graduation.

IMPROVED PERSISTENCE Figure 1 displays enrollment at any postsecondary institution and full-time



SOURCE: MDRC calculations using data from the National Student Clearinghouse and transcript data from the demonstration colleges.

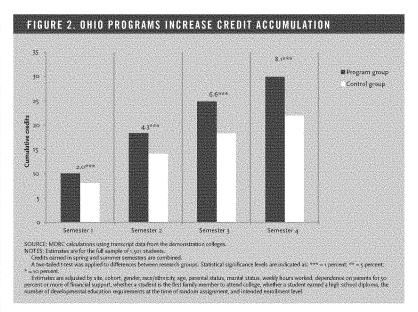
NOTES: Estimates are for the full sample of 1,501 students.

Enrollment is based on all available data and combines spring and summer enrollment.

F1 = Mil-time, defined as enrollment in 12 or more credits and based on data from the college of random assignment only.

A two tailed test was appled to differences between research groups. Statistical significance levels are indicated as *** = 1 percent. *= 10 percent.

Estimates are adjusted by site, colors, gender, race/ethnicity, age, parental status, maintal status, weekly hours worked, dependence on parents for 50 percent or more of financial support, whether a student is the first family member to attend college, whether a student is the first family member to attend college, whether a student is the first family member to attend college, whether a student is the sime of random assignment, and intended enrollment level.



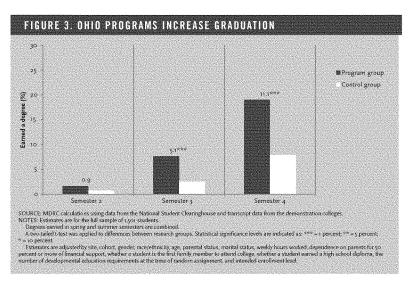
enrollment rates at the study colleges during the first two years after students were randomly assigned. Beginning in the first semester, there is a statistically significant estimated effect on enrollment of 4 percentage points. The effect on enrollment grows to 12 percentage points in the second semester and remains above 9 percentage points through the end of the four-semester follow-up period.

The effect on full-time enrollment, a requirement of the program, is even larger. In the first semester, there is an estimated 18 percentage point effect on full-time enrollment. The effect on this measure remains large and significant throughout the rest of the follow-up period, ranging from 11 percentage points to 19 percentage points. This finding shows that there is a sizable group of students who currently enroll part time but would enroll full time with the right requirements and support.

The program advisers actively encouraged program group students to enroll in courses during the summer, an activity that increases momentum and has been correlated with college completion. Summer course tuition was covered and monthly incentives were available to students during this time. There was an estimated 24 percentage point increase in summer course enrollment during the first summer after random assignment (an increase from 31 percent to 55 percent), and a 12 percentage point increase during the second summer (from 25 percent to 35 percent; see Appendix Table C.1).

Increased Credit Accumulation

Figure 2 represents cumulative total credits earned (both developmental and college-level) during the first two years after students were randomly assigned. ¹⁴ The program group earned roughly two credits more than the control group per semester, for a total increase



of eight credits at the end of four semesters. This effect represents a 37 percent increase in credits earned after two years. To the authors' knowledge, this is one of the largest increases in credit accumulation — an important indicator of academic progress — that has been observed in a rigorous evaluation.

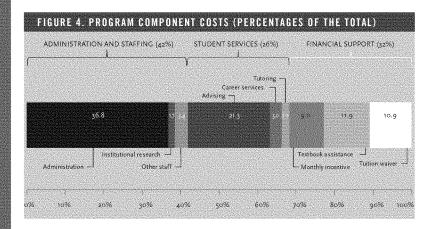
Increased Graduation Rates

As shown in Figure 3, after two years (or four semesters), 19 percent of the program group had earned a degree or credential, compared with 8 percent of the control group, a statistically significant increase of 11 percentage points. This effect means that two-year graduation rates more than doubled (increasing by 140 percent). Nearly all graduates earned associate's degrees.

THE EFFECTS OF THE OHIO PROGRAMS COMPARED WITH CUNY ASAP CUNY ASAP achieved dramatic effects on academic outcomes including persistence in college, credit accumulation, and degree completion. A comparison of the two-year

results from the Ohio evaluation with MDRC's evaluation of CUNY ASAP shows that the Ohio programs were largely able to achieve the same net effects as CUNY ASAP, and in some cases were able to exceed them. The Ohio programs' effect on credits earned after two years (8.1 credits) is similar to CUNY ASAP's effect (7.6 credits). The effect on degrees earned after two years is larger in Ohio (11 percentage points compared with 6 percentage points at CUNY).

The overall outcome levels on measures are different in Ohio than they were in the CUNY ASAP evaluation, which may be a result of differences in the types of students served in the two evaluations, as well as the different structures, resources, and services available to students outside the program. The Ohio colleges and CUNY have different political leadership, governance structures (CUNY is centralized and the Ohio programs operate at three different colleges that are not), and student populations, as roughly half of the students in the Ohio study were nontraditional compared with about a third at CUNY.



EFFECTS AMONG SUBGROUPS In addition to estimating the overall average effect of the Ohio programs, the study measured whether the program was effective for various types of students, or subgroups. Of special note, the study confirms that the Ohio programs were effective for students who were "collegeready" and for students who were required to take developmental education courses. Also explored were effects for the three study colleges; for students of different genders, races, ethnicities, and ages; for students who had and had not earned high school diplomas before enrolling in the study; and for traditional and nontraditional students. The Ohio programs had large positive effects for all the subgroups examined, as shown in Appendix C. MDRC's evaluation of CUNY ASAP also found that ASAP improved academic outcomes for a range of students. Together, these findings provide strong evidence that this program can be effective for many types of students, including groups that traditionally have low success rates.

THE COSTS OF THE PROGRAMS

Figure 4 breaks down the direct costs of the Ohio programs, which include administration and staffing, student services, and financial support.17 The total annual direct cost per program group member is \$2,331 (a total that includes program group members who did not enroll). About 42 percent of the direct cost of the program comes from administration and staffing, mostly from senior leaders and the fully dedicated program directors who managed the program and provided quality control. This percentage is high in part because the program was small. Administration would probably be a smaller proportion of the total cost if the program were larger.

Financial support — including the monthly incentives, textbook subsidies, and tuition assistance provided to program students — makes up 32 percent of the programs' cost. Textbooks are the biggest expense in this category, accounting for just over a third of the costs, followed by the

8

tuition waivers. Tuition waivers, accounting for \$254 per program student on average, were applied to tuition not covered by Pell Grants or state aid, and most students did have Pell funds because Pell Grant eligibility was an eligibility requirement. Targeting the program in this way enabled the colleges to keep this cost down. Monthly incentives averaged \$210 per program student per year. (A student could earn three to four monthly incentives per semester, but the average includes students who did not enroll or complete all requirements.)

Finally, about 26 percent of the direct cost of the program comes from the student services provided, mostly from the fully dedicated advisers. Tutoring and career services costs are quite minimal, probably because the colleges were able to use their existing resources in these areas.

These costs are much lower than the those found in MDRC's evaluation of CUNY ASAP, in part because salaries are lower in Ohio, in part because of the lack of blocked or linked courses (which had costs associated with them in the CUNY ASAP evaluation), and in part because the Ohio colleges' monthly incentives were valued at about half of CUNY's MetroCards (used for travel in New York City's mass transit system). The Ohio colleges also used fewer advisers to serve an equivalent number of students than CUNY's original model, and may have further reduced costs by using existing career services and tutoring. ¹⁸

Appendix D provides additional cost calculations, including base costs, indirect or induced costs, and net costs, as well as alternate calculations of direct costs (see the appendix for definitions of all these terms). All cost estimates are based on data through the end of 2017. The final report will include an additional year of cost data and will present a cost-effectiveness analysis, comparing the cost per graduate in the program and control groups.

CONCLUSION AND NEXT STEPS

The three colleges in Ohio were largely able to implement programs based on CUNY ASAP, and these programs dramatically improved students' academic outcomes over two years. Thus far, they more than doubled graduation rates.

Historically, attempts to replicate effective programs find that replications rarely achieve results similar to the original.19 The Ohio demonstration has been an exception. The leadership and commitment of the three colleges, the Ohio Department of Higher Education, and the Ohio Governor's Office contributed to the successful results, as did the strong technical assistance provided by CUNY. Additionally, the Ohio demonstration provides evidence that the model can work in a different context and with a different student population, as many more students in Ohio were nontraditional. These findings further validate the effectiveness of the CUNY ASAP model and add to the growing body of evidence on effective strategies for improving the educational outcomes of low-income students.

Much has been learned from these three colleges' experiences implementing their programs. Additional colleges — Westchester County Community College in New York and Skyline College in California - have begun implementing similar programs with technical assistance from CUNY. Meanwhile, in Ohio, one of the three colleges in the current study is sustaining and expanding its program with a goal of making it available to most eligible students in the coming years. A second college is still considering how to sustain the program and meet the financial requirements needed for implementation. And the third college is taking lessons from its experience with this program and embedding them into other broad-reaching programs and policies.

MDRC's evaluation will continue tracking longer-term academic data. A future report will present effects after three years, a cost-effectiveness analysis, and the full implementation story.

NOTES

1 The three-year graduation rate at two-year, degree-granting institutions averages 30 percent nationally, while the six-year graduation rate at four-year, degree-granting institutions averages 60 percent. See McFarland et al. (2018).

2 National Center for Public Policy and Higher Education (2011).

3 In Ohio, only 15 percent of first-time, full-time, degreeseeking students at public two-year institutions earn degrees within three years. See Ohio Department of Higher Education (2014).

4 Weiss, Ratledge, Sommo, and Gupta (forthcoming).

5 For more background on the origins of the demonstration see Sommo and Ratledge (2016). For a fuller comparison between the Ohio programs and CUNY ASAP, see Appendix B in the accompanying online supplementary appendixes.

6 While random assignment occurred at the college level, the main analyses in this brief pool outcomes across the three colleges.

7 For more background on the origins of the demonstration, see Sommo and Ratledge (2016).

8 Degree in Three operates at two of Cuyahoga Community College's four campuses.

9 Nontraditional students are defined as those who were 24 or older, who worked 35 or more hours per week, who had children, or who had not received a high school diploma and were not enrolled in high school at the time of random assignment. Nontraditional students are considered to be at higher risk of not completing degrees.

10 The final report will compare the services received by the program group and the control group.

11 The data analysis does not account for summer enrollment or for tutoring required of students not performing well in their courses. It also does not account for the fact that the colleges eventually relaxed tutoring requirements for students who were receiving As or Bs in their courses at midderms.

12 One college chose to allow students to spend the textbook funds before they used up their Pell Grant funds. As a result, students could get a refund for some Pell Grant funds they had not spent. The other colleges applied the textbook funds to student accounts after they exhausted their Pell funds, which meant those colleges may have spent less on textbooks.

13 "Momentum" refers to the intensity at which students initially progress through college, for example, the number of credits students complete in their first year of college (including summer). Research has shown that academic momentum is positively correlated with degree completion. See Attewell, Heil, and Reisel (2012).

14 Developmental credits are those earned by passing developmental courses. They do not count toward degree requirements.

15 To compare the current Ohio program results with those found in the CUNY ASAP study for a given outcome at a particular time after random assignment, one can calculate the difference between the estimated effects for each intervention. The standard error of the difference in effects is calculated as the square root of the sum of the squared standard error associated with each intervention's estimated effect.

16 This subgroup was prespecified as "confirmatory" in an analysis plan. See Schochet (2008).

17 Cost data were collected from October 2014 through December 2017.

18 CUNY ASAP's costs have come down significantly over time as the program has evolved, implementing tiers of advising need similar to those used in Ohlo and realizing efficiencies of scale, CUNY ASAP's costs are now estimated to be approximately \$3,400 per student per year. 19 Hedges (2018).

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Doubling Graduation Rates in a New State

Two-Year Findings from the ASAP Ohio Demonstration

Colleen Sommo, Dan Cullinan, and Michelle Manno, with Sean Blake and Erick Alonzo

raduation rates more than doubled for program participants at three Ohio colleges that replicated the City University of New York (CUNY) Accelerated Study in Associate Programs (ASAP) program. ASAP requires students to enroll full time and provides comprehensive

financial and academic support and other support services. This brief presents two-year impact, implementation, and cost findings on the ASAP demonstration in Ohio. The random assignment evaluation shows that students in the program group clearly outperformed the control group with respect to credit accumulation and graduation. Graduation rates more than doubled: 19 percent of the program group earned a degree or credential after two years compared with 8 percent of the control group. Additionally, most of the Ohio program components were well implemented, and the total annual direct cost per program group member was roughly \$2,300, with some variation across colleges. Replications rarely deliver results comparable to those of original programs, but the Ohio demonstration has been an exception, achieving results similar to those of the original.

[Additional submission by Ms. Long follows:]

Quality Framework for Competency-Based Education Programs

Released September 2017

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University of Maine at Presque Isle

University of Maryland University

College

University of Michigan

University of Texas System

University of Wisconsin-Extension University System of Georgia

Walden University

Westminster College

Quality Principles and Standards for Competency-Based Programs

Released by the Competency-Based Education Network with support from Lumina Foundation. Available online at www.cbenetwork.org. Copyright © 2017 Competency-Based Education Network.

The C-BEN Quality Framework for CBE Programs was developed in response to a growing need for definitions of quality relating to competency-based education. Led by the C-BEN Quality Standards Task Force, this work drew from the Shared Design Elements and Emerging Practices of Competency-Based Education, and brought together leading program designers and system administrators from C-BEN institutions representing an array of models. This task force worked together over 2016 to create the first edition of Quality Principles & Standards for Competency-Based Education Programs through an iterative and inclusive process, developing principles and standards universal enough to apply to all CBE programs, regardless of model variations. In the future, we envision these universal principles and standards will be augmented by additional stackable principles and standards based on research as well as model-specific, programmatic features.

Our aim with this work is to provide guidance to the field, allowing institutions to draw on these principles and standards to inform the design, implementation or scaling of high-quality programs. The principles and standards also can provide guideposts and assurances to policymakers and accreditors tasked with regulating this vibrant, and still emerging, field of practice. The process of developing these standards has been inclusive of both the entire C-BEN community and the wider field. Not only did C-BEN members from 30 institutions and four state university-systems offer feedback, but over a hundred other individuals from around the country provided guidance that informed this final version. In addition, a convening of roughly 40 C-BEN members and more than a dozen national experts and regulators was held in late 2016 to finalize the standards and begin ongoing work on development guides.

The goal of the task force was to provide principles and standards that are at once accessible and aspirational. This is achieved by the use of performance indicators embedded in the Development Guides designed to make the principles and standards multidimensional. The performance indicators for each of the principles were also released in May 2017, and feedback was gathered from Spring, 2017 C-BEN convening attendees as well as through an online portal established to solicit feedback from the field. This feedback has now been incorporated into the Development Guides which are available on the C-BEN website.

As evidence emerges regarding the efficacy of CBE program design, it is time to put a significant stake in the ground around quality. The future of the movement depends on our ability to do so. But C-BEN knows full well that the evolution of the field and the growth of the evidence base will require that these principles and standards be regularly revisited and updated to reflect the state of knowledge. This edition of the Quality Framework for CBE Programs is intended to inform strong program design, ease accreditation, and build the confidence of regulators working to create safe space for responsible innovation. Ongoing refinement and revision from the field at-large will be necessary to ensure its' use and relevancy in building and refining quality competency-based education programs.

Key Definitions to Aid Understanding

Elements, principles, standards, performance indicators and development guides form the backbone for this work. The Quality Framework focuses on the program as the unit of analysis, and begins by articulating elements, principles, and standards of quality for CBE program design and implementation.

For clarity's sake, the terms used in this document are defined below:

Element: The label or shorthand for the principle being described

Principle: A fundamental proposition that serves as the foundation for a system of belief, or behavior, or for a chain of reasoning

Standard: A level of quality or attainment, and an idea or thing used as a measure, norm or model in comparative evaluations

Performance Indicators: A measurement that describes how effectively an institution is achieving the principle and standards.

Development Guides: A set of scaffolded performance indicators intended to allow programs to understand stages of development for a CBE program. Each stage (from "Initial" to "Highly Developed") is intended to build on and include the expectations from the previous stage.

Download a digital copy of the Quality Frameworks for Competency-Based Education Programs at chenetwork.org

Quality Framework for Competency-Based **Education Programs**

Eight Elements of Quality



Demonstrated Institutional Commitment to and Capacity for CBE Innovation



Clear, Measurable, Meaningful and Integrated Competencies



Coherent Program and Curriculum Design



Credential-level Assessment Strategy with **Robust Implementation**



Intentionally Designed and Engaged Learner Experience



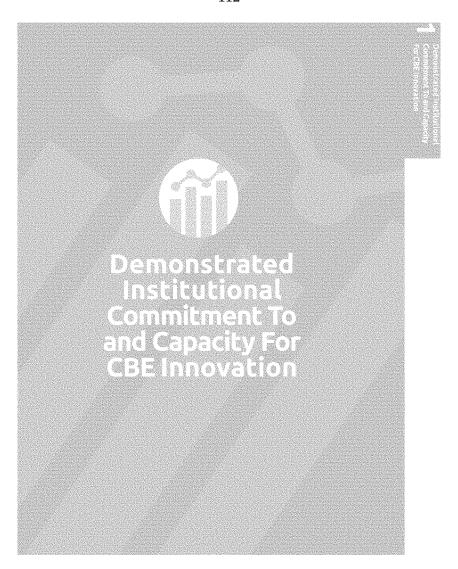
Collaborative Engagement with External Partners



Transparency of Student Learning



Evidence-driven Continuous Improvement



Demonstrated Institutional Commitment To and Capacity For CBE Innovation

PRINCIPLE

n order to produce a high-quality CBE program, the institution must build a foundational infrastructure in support of competency-based education. This includes the development of a CBE philosophy and commitment as it relates to the institution's mission, the design of the (including people, policy and process supports). The institution must also make appropriate financial investments in the program, understanding that the returns on investment (ROI) for CBE programs are generally longer-term, and recognizing that such investments are often necessary both to achieve regulatory and accreditor compliance and to provide learners with an adequate and appropriate support structure.

- The institution's senior leadership and board members understand the role CBE programs play in furthering or enhancing the institution's mission, and support the creation, continuous improvement and ongoing growth of CBE programming.
- 2. The institution has defined its approach to competency-based education, including the degree of autonomy given to programmatic-level design and delivery.
- 3. The institution has developed and adopted a faculty and staff model that meets the unique needs of its CBE program and complies with internal governance processes and controls while efficiently utilizing institutional resources.
- 4. The institution has developed policies and procedures for its CBE program that support learning and the learner experience while maintaining compliance with regulatory requirements.
- 5. The institution maintains, across relevant academic and non-academic departments, sufficient administrative capability and commitment to manage and support competency-based education
- 6. The CBE business model, including the tuition structure, has been analyzed to determine feasibility and sustainability.
- 7. The institution has evaluated the technology needed to support the learner lifecycle (such as student information systems, financial aid delivery systems and learning management systems) and, where appropriate, made investments.
- The institution has a plan for data collection and reporting regarding the learning experience and the efficacy of the CBE program. These data form the basis for examination and discovery of needed improvements in areas such as learner performance across diverse groups, graduate success and employer satisfaction.

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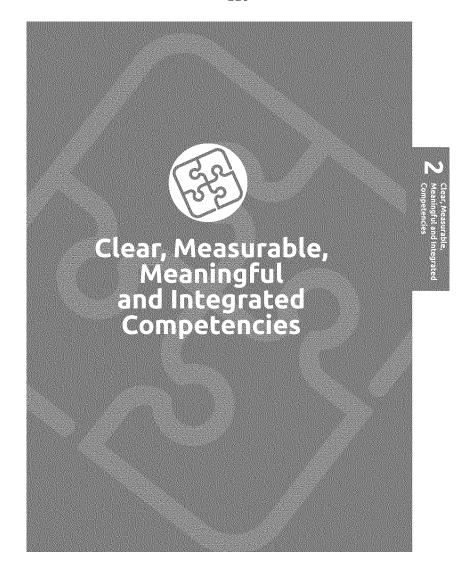


| C=Criteria | Initial | E=Emerging | D=Developed | H=Highly Developed |
|--|--|--|--|--|
| The institution's senior leadership supports the CBE program. | Institutional lander-(e.g., carrier lander-thy and boost manniers, have been informed of a competency based advance program at the institution, and the program administration and eacily may have a plant in place for program lames. | Institutional leaders have been informed of a competency-based education program at the institution (via boord meetings, accodenic leadership meetings, accodenic and initial action steps or a plan is in piace for program funch and sustainability. | Institutional leaders understand how the CBE program Spopers (the program spopers in the Institution's meson, and advances for altacation of despress for the program. Clear ordion steps tree in place for program asstantially, including program design, a growth olar and a continuous improvement place. | The institutional feadership team has orticulated the long-term RoO Fer CRE; approved a long-term action plan, and made investments in the launch, scoling and sustainability of the institution competency-based education program. |
| 2. The institution has defined its CBE philosophy. | Institutional diversionals of and tay in the commission to commission to read the control of the | The institution is unitively covered ring a composition of covered and a composition of the control of the cont | This institution clearly, articulates and agrees prime a common definition for samplement definition for samplement, his set according to the samplement for samplement for the sampleme | The multiviors actively shores in clearly structured estatutional electric structured estatutional definition of companies; because advantured by the structure of with estample portrain. Focuse convenations read in an increasingly clear comment understanding of the institution CBT, philosophy, and incisen- satistiction wide changes in support of in (e.g., structured) is appropriately of a proper structured or companies. |
| The institution has adopted a faculty and staff structure that supports the unique needs of the CBE program. | A readilismal travity and staff incided in in-place. Now-modelis in-place. Now-modelis file tempton: Now-modelis file tempton: Learning the CRE program how been criticalised. Action seps, bound films now tradelis and/or passeclarized rotate for grossvaramat specialists, nativational designer; search jore defined. | Faculty and staff position descriptions reflect an intentional model designed to support the CBE learner effectively. | Control meds to support and well independent out for a facility and facilities for a facility and soft facilities for a facility and soft facilities for a pacific facilities for a specialized holes and where of, favor participated in training lay, and agree on that roles and representations. | The institution continues to refine the faculty and stoff structure to support the CEB program based on data, including learner satisfaction and performance data. |
| 4. The institution has CBF policies and procedure in place to support learner success and meet regulatory requirements. | The policies and proceedors required to support the CBE program (e.g., relevations, unless and less, transfer policies, recognitions, and less, transfer policies, proceedings, and one being consistent of the policies, proceedings, and proceedings of the policies, proceedings from the proceedings proceedings proceedings procedured to the policies, proceedings procedured to the policies, proceedings procedured to the procedu | As Jeous hull of the inflament policios. & this alternation processes (a) a consideration processes (a) a consideration processes (a) and the processes (a) and the processes (a) and the processes (a) and the processes (b) and the processes (b) and the processes (b) and a consideration (c) and | This politions and proceedures that one unique to the institutions of SDE programs (e.g., orthodorrow, tribun) und less programs (e.g., orthodorrow, tribun) und less prospher politics, companiesly mastery orthodorrow, sublimately to sudmine, pro-greed are early factor to the contract of the program and program power to the program approved for its magnetics of the program approved to its magnetics companiesly made to program approved to its magnetics companiesly more to the program approved to the program | The CBE program uses the information glorined in its systematic process for improvement to inform its budgeting and project information in the processes, and house for the program of the property of the program of th |

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PERFORMANCE INDICATORS (CONTINUED)

| C=Criteria | Ishikal | E=Emerging | D≈Developed | H=Highly Developed |
|---|--|---|--|--|
| 5. The institution maintains sufficient capability and commitment to manage and support its CBE program. | The inalitation has identified the resources needed to support as CEE incomes effectively, including teachy, and information technology and other administration. | The institution has a realistic and viable plan to supply the required resources as its C&E program launches and grows. | The institution has approval to implement its plan to supply the engined seconces as to CBE program lumphes and grows. | The institution has integrated its resource plan with its business model and is committed to incremental resource addition and modification as the program scales. |
| 6. The CBF busi- ness model has been analyzed for feasibility and sustainability. | A business model has been dorted and series well with key internal tabletic flag. See the tabletic flag, what licensed office, been members, A by pobletic ally leases his and suddiviolate because plan has been commed. | A feasible and sostumable draft byteness model has been approved by key inter- nol stately letters. | The inclination is insentiering the parlomentum of its CEE program opening the principal feet in the f | The inelitation has adequate date to continuously and years (200 business model including the business model including the business model including the business model including the business what their existing to shore what it has learned with other CBE institutions. The CBE program is financially self-customing. |
| 7. The institution has evaluated the technology needed to support the CBE learner experience, and has invested as needed. | Technology systems is g., IAS, SIS, CRM. Examination and Billing) have been evoluted to plain for CEE program needs and functionality. | The institution has identified gaps in current technical systems' and processes' abilities to support the CBE program, and has created a roadmap to fill those gaps (which could include using a blend of current and new systems). Initial changes have been made. | This highlytton has reviewed will be be so a possible of the possible of the components of the compone | The institution has developed on integrated set of technology systems to support the CBE learner ecosystem. It actively shares its processes with other CBE institutions and uses its data to help them improve their solutions. |
| 6. The institution has a data sallection plan that supports a continuous improvement effort. | The prolitation less identifyed program statues interest includes interest includes in the large program statues in the key performance indications lie g., program statues less includes in the large performance across disease groups, errollment, gradiates accress, employer softssection). | The institution has developed and resourced or plan for data collection (e.g., footby and stuff effort fearner success, cost model) that along the talkings to the CDE program's success measures and key performance indicators. | Program ancess measures are clearly defined and agreed spen by the faculty. A data collection process is established Data are travel to reaching program affectivement and efficiency as well as to inform strength and posted in programmatic and posted in programmatic across is variety of areas to gram and process in variety of areas to gram and process in a content of the programmatic across in variety of areas to grammatic across in variety of areas to grammatic across diverse groups, employer contribution). | The institution have adequired a section possibility gian is host is spread upon by institutional leadership as well as by program furally and stelf. The institution has dedicated resources to the continuous improvement of the CEE program, and shares its learnings with the broader CEE community. |



Clear, Measurable, Meaningful and Integrated Competencies

PRINCIPLE

Each competency is explicitly stated and provides unambiguous descriptions of what a learner must master to complete a program of study. Each competency includes the theory and the application of theory required for mastery at the appropriate level for the credential being earned. Each competency connects to content and learning activities designed to support learners in developing the proficiencies required by the program to award a credential. Each competency is measurable and can be reliably and validly assessed.

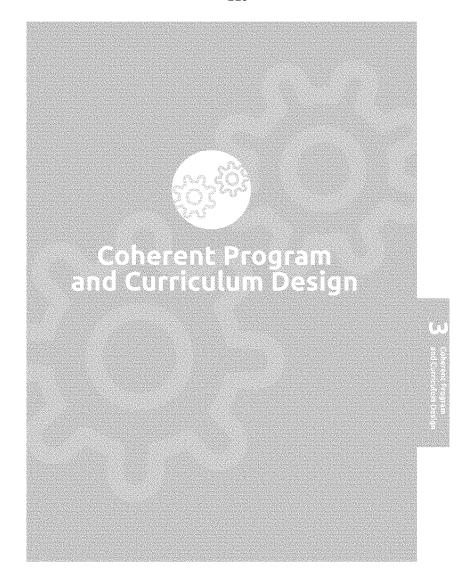


- 1. Competencies represent explicit knowledge, skills, abilities and intellectual behaviors, balancing theory and application in a demonstration of mastery.
- 2. Competencies are co-constructed with input from diverse communities such as employers, expert practitioners, subject matter experts, faculty, learners, advisory committees, recent graduates and professional or licensing bodies.
- 3. Individual competencies are relevant, current and accurately depict the needs of employers and
- 4. Competencies are capable of anchoring, specifying and guiding the learner experience, including curricular design, the development of instructional content, activities, remediation offerings and the assessment strategy.
- 5. Individual competencies are aligned to cognitive levels of learning using recognized taxonomiessuch as the DQP (Degree Qualifications Profile), or Bloom's Taxomony—and/or industry standards

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| C=Criteria | l=Initial | E=Emerging | D=Developed | H=Highly Developed |
|---|---|---|--|--|
| Competencies represent required knowledge, skills, abilities and intellectual behaviors, and balance theory and application. | Credential-leval Competences are defined | Competency definitions explicitly include the knowledge, skills, abilities and intellectual behaviors required to demonstrate competency. | Credentici-level compolency definitions include application standards, and clerely state which is required for demonstration of competency. | The institution gathers date regarding learner performance on each of the competencies. External validation data (from employers, licensing exams, etc.), are used to strengthen learner performance. |
| 2. Competencies are co- constructed with input from diverse stake helders, including employers, expert practitioners, subject matter experts, faculty, fearmers, advisory committees, vaccint graduates and professional or ficensing bodies. | Input from an advisory group is soleum as into the competitively development process. | Competencies are reviewed by aspects in the field for relevance and clearly, Fauls such as the DOF ore used in enauls, the opproprieté terral of ingor for the crade that being sant est. | Statisticoloses (such as imployers, expert pressioners, subject mater experts, Truchly, featners, advices y committees, recent gradiaties and prelessional or its analysis bodiesi participates in defining randemial level computations. | The program has a pincess, to confirmately remewher the review competences as the place place of the program of the program of the properties of the place of the provided feedback regarding whether his competences yield better prepared graduotes. |
| 3. Individual competencies are relevant, current and accurately depict the needs of employers and society. | Individual compe- sercies are defined to reflect corrent needs | Individual competencies are aligned to stated employer and community needs. | Individual companions is refract the current accessed needs of holls employers and accessing | The institution has a process through which it assesses the changing needs of employer and society in order to maistain the currency, relevancy and occuracy of the CBE program's stoted competencies. |
| Competencies anchor, orient and guide the learner experience. | Compalenties are defined aleniny and specifically providing learning a brossing flear dearning journey | The compensive framework is well-contented and defined so that the fearning tourney can explorit compalancy development. | The Learning journey and the executions initially are well-integrated with and disprect to file groupstencies. | There is a continuous imprevament model in place that clarifies any ambiguous competencies, supporting a classes pathway to the credwind for learners. |
| 5. Individual competencies are aligned with the cognitive and behavioral levels of learning appropriate for the credential being earned, as well as with recognized toxonomies (such as the DQP or Bloom's) and/or industry standards. | Comparencies on defined appropriety for the tradential level being somed | The competency framework supports a scaffolding of compatency levels that aligns with learners' entry level capabilities and credential-level requirements. | The competency framework is cliqued, as cliqued, as cliqued, as cliqued, as cliqued, as cliqued framework with recognized frameworks and two movements and for movements and for movements and for movements. | The competencies and competency framework are varied as external standard and frameworks evolve as a that they mointain the frameworks evolve finkage to the capative level appropriate to the credential being earned. |



Coherent Program and Curriculum Design

PRINCIPLE

Competency-based education programs use an intentional and transparent approach to curricular design that provides a learner with the full range of competencies necessary to meet post-graduation demands. These programs intentionally seek to reduce racial, ethnic, socioeconomic, gender and other potential bias in their design, delivery and implementation. This academic model, which provides clear pathways to completion, builds a unified body of knowledge that leverages frameworks, disciplines, standards, national norms, workforce and societal needs. Learners are at the core of the program's design, and the logic of the program (as well as its associated assessment strategy) supports flexibility in pacing. The curricular design ensures that the level and complexity of the competencies are congruent with the achievements required for the academic level of the credential.

- The set of competencies is clearly specified and provides easy-to-understand pathways that illustrate what the learner must know and be able to do in order to progress in and complete a credential.
- 2. The program encompasses an integrated curricular sequence that scaffolds learning at appropriate cognitive levels leading to mastery while affording the learner flexibility in the time spent to reach
- 3. The set of credential-specific competencies, chosen through a co-constructed process, represents the complete taxonomy of the knowledge, skills, abilities and intellectual behaviors required by academia, the workforce and society to evidence a prepared and proficient credential holder.
- 4. Learners can articulate what they should know and what they should be able to do upon completion of the program.
- Learners have meaningful access to faculty subject matter experts who play an active, central role in the design and delivery of the program.
- Learning environments, content, communications, activities and assessments are accessible to and inclusive of each learner, based on identified needs.
- Learners are offered varied learning exercises, activities and experiences to promote their engagement and provide multiple opportunities for the development of competency mastery.
- 8. The program is designed to support individual learners with personalized learning pathways as they develop and master competencies.

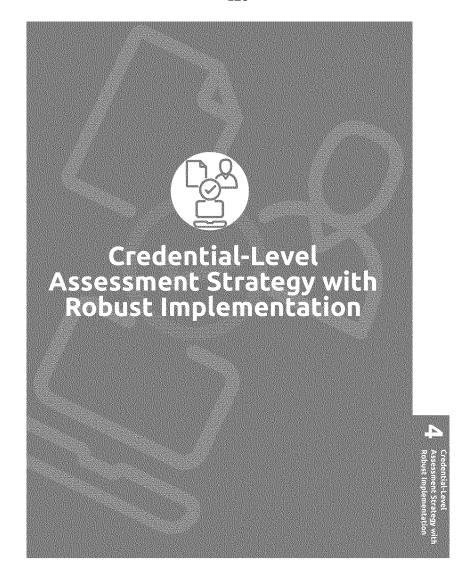


| C=Criteria | I=Initial | f=Emerging | D=Developed | H*Highly Developed |
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| The entire set of competencies is clearly specified and provides pathways for learners. | Condential level competencies are clearly and transportintly articulated for bearinery fundity, staff and other stakeholders | Pathways for credenticl completion are clear and shared with learners, faculty, staff and other stakeholders. | Along with credential-level competencies and clear pathways, it is clear how libertan progress to ward and complete a credential, even when hey recy straggle with a component. | Data regarding learner progression are collected through the pothways, and curricular improvements are made when barriers are identified. |
| 2. The program has an integrated curricular sequence that scaffolds learning of appropriate cognitive and behavioral beviews for each credential while also supporting flexibility for learnings. | Learniew in the program- oillain and desirconstrate competitioned throughout are integrated particulars. | The integrated correction scotlistic bearing a clong the pathways has lead to demonstration of comparison at the appropriate sogiether and horizontal insert for the conduction of the scotling of the scotlin | The integrated exprinciples ordered his learnest like shally in the like appet to reach making which we shall be scaled in the like appet to reach making while scaled large licensing a the rippinguistic logitation and behavioral leave for this createstimit. | the program collects and onelyses data regarding learners and sell progression through the correction with an eye to our program of the collection of the co |
| 3. The set of credential- specific competencies represents the complete textonomy of knowledge, skills, abilities and intellectual behaviors required for success. | The codenitol level and of completeness is completeness to completeness or completeness or completeness or completeness or completeness or completeness of the codenitol being granted. | The credenticl-level set of competencies has been myleved and volisitated by stakeholders such as employers, community leaders and faculty for representing a complete textonomy of required competencies. When appropriate, the set of competencies is validated against established tools such as the Degree Qualifications froitile (DQP). | The credential level set of compilements is a constitution of which is a constitution of which standarder to repre- sent the samplete toponomy of two wheeling white, oblittee and indirected behaviors required by constemis, the workforce and society to evidence or propored and proficient mediantly likely. | The set of credential-specific competencies is validated us ing ampleyer data as well as other achievement data, and changes to this set of competencies are made based on data, changing external requirements and learner performance following credentia. |
| 1. Learners an articulate competencies. | Learners can arise take what they should know and what they should be able to do upon completion of the program. | Econors can describe the componenties for the readental for which they are studying. | bearings are this to interpret their own obta to understand their progression inward knowing and their pale to do the defined competencies upon gradianton. | At graduation, learners are oble to demonstrate what the know and are able to do |
| 5. Learners have neaningful access to and can engage with faculty to senefit from their expertise. | Faculty are readily available to leaguest as day progress though the progress. | Learners have meaningful access to faculty subject matter experts who play an active, central tole in the design and delivery of the program. | Family are secilly available, followings: Systems and processes are but to further support surport sur | Engagement is monitored to ensure that meaningful access to foculty works to support both engaged learning and "meaning-making" related to the campelencies and credentials being earned. |
| 6. Learning environments, policies, contert, communications, activities and assessments are accessible, inclusive and equitable. | Listating environments, politices, coolers, correlections, activities and observants are old soughout to be equilibrities for a device series for farmers segardless of rock affecting status, religion or absorbling | policies, content commu- escularis, oclivities and ussessments are critically aspessed by both internal and selected expects for inequilles. | Entring anisonments, pateurs, communications, cordinate, communications, activates and cases substantial provides resources to learness who have not implementally resourced than the considerable and inclinately are solidated by servers in mach creek of clokesity. | Engapement is monitored to assure that menningful grows is faculty works to support both anguiged leading and menning-include control of the |

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PERFORMANCE INDICATORS (CONTINUED)

| C=Criteria | 1=tritial | E=Emerging | D=Developed | H=Highly Developed |
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| 7. Varied opportunities promote learner engagement and the mastery of competencies. | The CBE program is designed to offset becomes multiple apportunities to develop mostery of the defined competencies. | The learning journey for the CBE program provides more than one learning resource in support of competency attainment. | betriers are offered varied exercises, activities, experiences and formative assessments to promote their engagement and provide multiple apportunities for the development of competency mastery. | Data are gathered about learner engagement and the relative efficacy of the given opportunities to develop mastery. These data are used to enhance and improve the learning experiences offered |
| 8. The CBE program is designed to support learners with personalized learning pathways. | Pathways to dredsetted completion are developed based on the needs of each learner. | Each warner understands the pull-whys to earning the credented for which s/ha is registering | The program is destined to proceedingly support sufficient for conditional surfaces with personalized learning pollutory as they develop and master competences, possibly through a bland of sechnology and faculty and staff authorities. | Dato regarding learners' progression through various pathways are reliacted and monitored, then used to personalize the learner experience and improve pathway articulation and support. |



Credential-Level Assessment Strategy with Robust Implementation

PRINCIPLE

Authentic assessments and their corresponding rubrics are key components of CBE, which is anchored by the belief that progress toward a credential should be determined by what learners know and are able to do. The overarching assessment strategy is comprised of assessments designed both to inform the learning journey (often referred to as "assessment for learning" or formative assessment) and to validate mastery (often referred to as "assessment of learning" or summative assessment). In CBE models, assessments are intentionally aligned to competencies and cognitive levels, and use a range of assessment types and modalities to measure the



- Authentic assessments are built within and aligned to an overarching assessment strategy for the competency being measured and the credential being earned.
- The assessment strategy clearly articulates how the set of assessments supports the learning journey for learners, matches the cognitive level of the competencies being demonstrated and determines mastery at the appropriate academic level.
- 3. The set of authentic assessments is designed to provide learners with multiple opportunities and ways to demonstrate competency, including measures for both learning and the ability to apply (or transfer) that learning in
- The assessment strategy and each of the assessments and their corresponding rubrics equitably measure learning outcomes across diverse learner groups, while guarding against bias in the formative and summative assessments.
- Faculty understand their role in the overarching assessment strategy for the credential and are trained in and can articulate the critical function played by each assessment in validating mastery of a competency.
- Each authentic assessment is transparently aligned to program competencies and their corresponding rubrics. Each authentic assessment is rigorous, has clear and valid measures and is approved by faculty and assessment professionals.
- Formative assessments serve as a tool for learning and provide feedback for reflection and refinement while also offering a feedback loop that is timely and appropriate to the competency and intent of the assessment.
- Summative assessments' ability to measure application (the "can do" aspect of a competency) is validated by a subject matter expert (SME), ideally one external to the program design team,
- $The \ assessment \ design \ accommodates \ personalization \ for \ learners \ by \ of fering \ flexibility \ around \ when \ assessments$ will be administered. This ability is often supported by technology.
- 10. The timeliness of feedback from assessments enables learners to proceed with an absolute minimum of delay. Technology is used wherever possible to facilitate and expedite the timeliness of feedback.

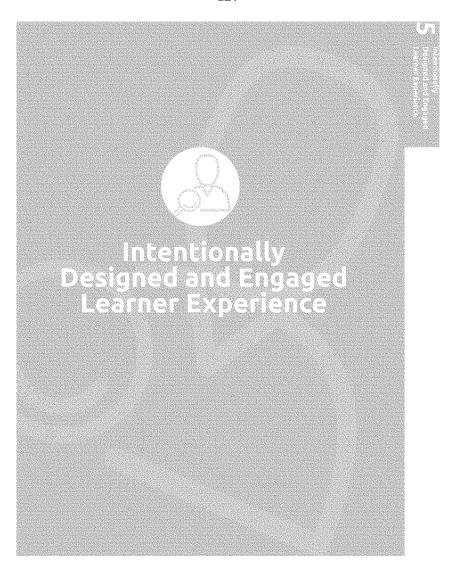


| C=Criteria | I=Initial | E=Emerging | D=Developed | H=Highly Developed |
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| . Authentic ssessments re built within and aligned to an overarching ssessment trategy. | An assessment strategy is sharry articulated and its contentiony is defined. | Assessments (designed to measure both theory and the ability to apply the theory) are suthentic and transparently oligned to competencies. | Assessment one partnormer-based when appropriate for the competences being assessed, and aligned to requirement in the decipies and probession as well as to the overarching assessment attribute. | External SMEs review the assessment stadegy for relevance and clarity. These reviews inform improvement in the assessment strategy is transparent to learners and other constituents. |
| 2. The assessment strategy circlustess over assessment integrate with the earning journey med marches the competencies being demonstrated to determine massary at the experience accordance level. | Assessments offer all fleatiness he apportunity to discovariate the nestery required by the resemble to the property required by the read-unital being granules (see all costs A.A. &/S). | Assessments are disagried to roller the cognitive level of the completive level of the completive year, number chosen for reasonablesian and case studies for rapplying 1. | Assessments have reliefly dots to support claims should the cognitive towal heigh measured. Fairfur managered fairfur managered fairfur managered fairfur managered fairfur managered to research in the base experienced to research in susquiries in Searching Schedulines. | Agescheeth have volidity dots to auspert stores and storest cognitive level being ness werd. These data mobile aguity coross diverse groups and are used for commissions injury consent of agescant are used for commissions injury consent of agescantering. |
| 3. The set of cutheritic assessments provides learners with multiple opportunities and ways to demonstrate competency, | The program offers learness store from energy proteinity to demonstrate competency. | The program offers fearmets more than one modality (type of assessment) and more than one opportunity to demonstrate competency. | The period unjeasurement is designed to provide learners, with enabling sopportunities, and ways to authentically demonstrate competency, including measured for both hearning and the other to supply or transfer that bearing, in leavel connects. | Each competency is assessed through a diverse set of opportunities, each of which is valid and reliable. The set includes wecauses for both learning and the obility to apply or transfer that fearning in owel contexts. Assessment are personalized based on learner profile and needs. |
| 4. The set of assessments equitably mea- sures learning outcomes across diverse learner groups while purifying against oias in structure or accessibility. | Appenient are tacknessed by dissenting expents for any seals of the consents and other transportations are transported and ADA (Antonicons with Dashabilities Ad) compliant. | The resilition for an astablished position regarding equity in assessment, and faculty are framed to hiss relies on well as as in his institution's equity goods. | Broading data regarding seasons over these permutative bear permutative bear permutative bear permutative bear operations of accessoring white, resigner or describing these performance and unicontent of subsection and unicontent of subsection of subsection of subsection of subsection of subsection of subsections. | Data me gathered, analyze and neviewed for equity in a transporter process, then analyzed as reveal carry gaps in factoring outcomes are well as any fined in the assessment works a granding practices. Analyses result in improvement and earning pathways, assessment took and approaches, and approaches and approaches are seen and approaches are needed. |
| 5. Faculty are trained in and understand the role of each casessment in validating mastery of a competency, | Faculty maining—results in leanuilly members, ability to culticable the casesament strollegy. | Faculty training results in faculty members' ability to articulate how each assessment aligns to competency definitions. | Foculty froming results in faculty members' ability for infection that work of the corresponding pays a critical role in validating mattery of a compelency. | Faculty can articulate how each assessment plays a critical rale in validating mastery of a competency. Faculty participate in a continuous improvement process for the assessments with which they work. |
| 6. Authentic assessments are aligned to program competencies, are rigorous, and are approved by faculty and assessment professionals. | The controller map ofliges stack exceptioner to reliefed competitives of the creditions have a definition of unbased possessioner. | Each assessment is manifored for its alignment to competencies, is level of fundamentary and its analysis of the properties of the propert | Forth obsessioners as modelated for its disjonant to accordanced for its disjonant to accordance and its least of contractions and its least of contraction. Added, and colorably this area incorporated by appeared and are received by fourthy/assessioner, pre-feedbacks. | Data regarding the validity and reliability of assessment occase diverse groups of learness are goldsteed and tennised. Hewer data rather than taken with other relevant datas with other relevant datas representation of the essessments. |

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PERFORMANCE INDICATORS (CONTINUED)

| C=Criteria | l=Initial | E=Emerging | D=Developed | H=Highly Developed |
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| 7. Formative assessments serve as a tool for learning, offering a feedback loop that is timely and appropriate to the competency. | The CRE program is disagned to offer learners withole opportunities to develop mastery of the defined competencies. | The learning journey for the CSE program provides more than one learning resource in support of competency attainment. | Lagrans receive recommendations for learning resources to support longuing competency development: | Data are gathered about learner engagement and the relative efficacy of the given opportunities to develop mastery. Those data are used to enhance and improve the learning experiences offered. |
| 8. Summative assessments' oblity to measure application (the "can do" aspect of a competency) is validated by a subject matter expert, ideally one external to the program design team. | Every summative casess- ment measures application of the aligned competency, us well as knowledge | Internal SMEs review each, sommative assessment for its ability as nutheritically and effectively measure appli- cation. | The program is designed to proceedingly expect individual learners with personalized learning pathways as they develop and mouse computants, possibly finingly is breated at learning pathways and loculty and stoff outreach | Deta regarding learners progression through various positively are collected and monitored their used to personalize the learner experience and improve portionary articulation and support |
| 9. The timing of assessments is flexible to accommodate personalization. | Each learner understands the politic assessment of competency for his or her program, and can access assessments as appropriate | Learner pathways for both formative and summative assessments are clear yet flexible. | Assessments are personalized based on inclinidual feather experience and need | Data regarding previous performance and readiness to demonstrate competency are used to personalize assessment pathways. |
| 10. Timely feedback from casessments emables learners to progress efficiently. Technology is used wherever possible to facilitate and expedite the timeliness of feedback. | Clear institutional expec- tations about grading turner and fame are established. | faculty training and sup- part are in place to enable compliance with institutional expectations regarding leadback timing and quality | loanser support forth as tubering and supplemental instruc- tion is available if headacek is operand under the so- tion learners can progress efficiently | Technology is layeraged to notify family of new cossessments requiring feedback to track completion of feedback to track completion of feedback and to client learners that feedback is ready for their review. |



Intentionally Designed and Engaged Learner Experience

PRINCIPLE

E professionals (faculty and staff) comprehensively understand the strengths and needs of iir target learner population, and put those needs at the core of all decisions, processes and understanding and improving the entire learner lifecycle by designing, guiding and supporting the learning journey, including processes that facilitate and encourage meaningful interaction with individual learners. A full array of wraparound learner services and social supports, appropriate to the learners being served, is offered by CBE professionals through a wide range of roles and responsibilities.

- The institution invests in deeply understanding the learners to be served by its CBE program. This understanding is the foremost consideration when structuring the work of CBE professionals into specific roles and responsibilities.
- 2. The program is sufficiently resourced with faculty and staff to meet the needs of the learner. Faculty and staff roles are designed to provide differentiated support to a diverse range of learners that leverages the individual talents, strengths and competencies of the faculty and staff.
- 3. Faculty and staff performance metrics are established and monitored. One key metric is the ability of the team to support learners throughout the learner experience regardless of race, ethnicity, gender, socioeconomic status, religion, or disability.
- Clear expectations regarding institutional policies, the structure and expectations of the program, and tuition and fees are effectively communicated to the learner.
- Learners have access to and proactive engagement with the subject matter experts, robust resources, tools and other supports necessary for them to acquire and demonstrate the knowledge, skills and abilities required for successful completion of the program.
- Opportunities for engagement with peers, faculty, staff and employers who reflect the diversity of the learner population are provided throughout the learning journey.
- $7. \quad \text{Leveraging technology-enabled systems and processes when possible, faculty, staff and learners proactively}$ monitor data metrics to ensure learners are fully informed, engaged and performing as anticipated throughout the learner lifecycle.

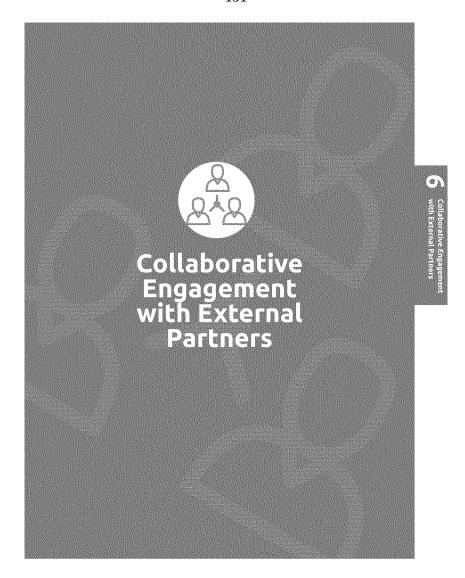


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| 1. The CBE professionals have invested in a deep understanding of their learners and used this learning as the foundation of their program design. | The target learner completes for the CAS program wall defined and described. | The institution prioritizes learners' academic and personal reade as the CBE program is designed and delivered. | the roles of shall and tacylig in the CRE program are based in well-understack and clearly articularly I wanted reach and strengths. | The understanding of learner needs and strengths is cantilities up for find a data are gathered through the program. Curriculum and roles are refined as new information becomes available. |
| 2. The CBE program is sufficiently reasourced and leverages the talents of involved faculty and stoff to support learner success. | The CDF groupsen's unique continuents for faculty and and terrorise for faculty and another working with traditional and stituted as an additional area and another faculty another faculty and another faculty another faculty and another faculty another faculty and another faculty another faculty and another faculty another faculty another faculty and another faculty another faculty another faculty and another faculty an | Resources one in place to support foculty and staff are opported and mining asymptotic flex CBE programs, design and regularisens. | rique from faculty artel steff is used to refine and indicat program resources and technique | Only live gathered inspecting the efficiency of the program in resetting the seeds of drivens easily the seed of drivens said of learness in the CEF program, and improvements are made broad on those data for exceeding for exceeding for exceeding for exceeding for exceeding the seed on data). Extend person and seed for exceeding the seed on data). Extend person and seed on the seed on the seed of the seeds of the seeds of the seeds of the seeds and the seeds and the seeds are seen plats are used to technical seeds of the seeds and personnella. |
| 3. Faculty and staff perfor- mance metrics are transpar- ent and reflect support for all learners regard- less of race, gender, ethnicity, socioeconomic status, religion or disability. | Foculty and staff part terraness expectations one clearly defined, whereast one monitored. The program has the resources to employ a sufficient number of faculty and staff who partition as expeuted. | Faculty and staff perfor- mance metrics are based on the need to equitably and diffactively support a diverse set of learners. | troully and staff performance implications established and importanced in partnership with diverse learner groups and aid the learner groups and earners are created all cases, abbricities, genders, acconsecutions statuses in migrans and disabilities throughout the learning journey. | Data regarding the obility of faculty and staff to meet performance metrics, and the impact of faculty and staff performance on learner success across demographic groups, are gathered, monitored and reported. These data are used to improve the learner experience. |
| 4. Policies, structure and other program expectations are clearly communicated to learners. | CSE program auticles and experiosions are compliant with accordance and regulatory legislations and regulatory legislations, and are theirly infludient and mentions that seeker by faculty, and and legislation and legislations. | Policies, smuchree and expectations for learners in the CSE program and delitination of enviewed with the learners price to matriculation in the program. Faculty and solid for a delinitary in the program. Faculty and solid for a delinitary with these expectations. | Chair program aspectations (including institutional policies, enrollment process, enrollment process, and pulches, the structure and expectations of the program annulus without well and talking and least time communicated to the least of in within writing induling required annulus process, and the process and the enrollment of the least of in withing the process and the enrollment of the | Information is gethered from territors regarding the clarity of finest communications. (Including by tracking complaints and other strelesson rigod), and improvements are made to the goldens and communications as needed. |
| 5. Learners have access to and engagement with learning resourc- es, including faculty expertise. | The CBE program is designed to offer proactive support its learning, and leaving sectively reach cut to learned. | Foosity reach out to learners with subject matter content, recommend additional learning resources and are available for other support as needed. | learness have occess to and productive angagement with the subject matter sequent, or business look and other supports received to the supports received to the supports received so coules and demand to the brownings still, and delities required for successful completion of the program. | Systems and processes are built to support learner access to faculty (such as "dets" for faculty, and technology-enabled contact between faculty and learners] and other learning resources stuck as adaptive and personalized technologies). |

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PERFORMANCE INDICATORS (CONTINUED)

| C=Criteria | i=tritial | E=Emerging | D=Developed | H=Highly Developed |
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| 6. Opportunities for engagement with a learning community are provided throughout the learning journey. | Learners can interact with auch other as welf as with locally and stoff. | The institution creates various pathways for learners to connect with peers as well as faculty and staff in support of their learning. | Meaningful apportunities for intragagement with peers, bookly, staff and imploves who reflect the diversity of the learner population are woven into the fearing pointies. | Learner feedback regarding the efficiency and efficacy of engagement apportunities is used to improve learners' connections with their peers and the larger learning community. |
| 7. Learners' engagement and progress toward credential completion is manitored. | tearner progress leverd, competency demonstrates can be enviribosed. | Faculty, staff and learners are all counts of learners accedenic engagement and progress toward avadenticit | Identifier anging ment and progress is monitored with digital systems and processes wherever possibile fastch as customer relationship monagement, or CRM, foreig, feetury, self-and seamers proachedly monitor progress metrics facility and learness engagement with content to ensure facility and learness engagement with content to ensure the learners of tally informed, engaged and prefer ming as customered throughout the learners in the progress of tally informed, engaged and prefer ming as customered throughout the learners into year. | The data gathered regarding technic progression and completion are used to both refine the favoring experience and reach out to fear responsible to support their continuing progress or a preservative amaner, interfaceoully supporting bearings who might be thought as well as shown who are performing well. |



Collaborative Engagement with External Partners



PRINCIPLE

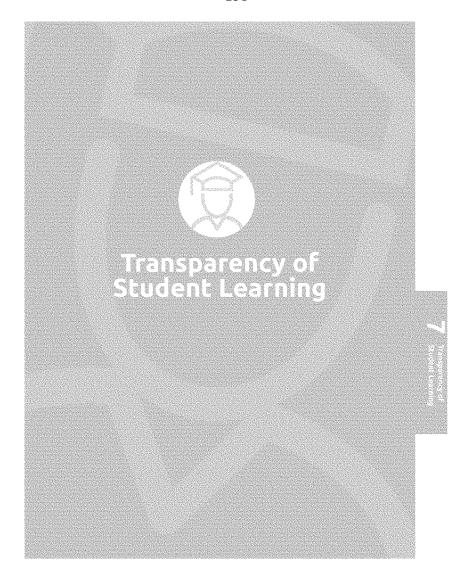
Institutions strategically identify and secure the commitment of multiple external partners to inform and support the achievement of their CBE programs' purpose and their institutional equity goals. External partners are meaningfully engaged in the design, delivery and evaluation of the institutions' CBE programs. They work collaboratively to inform and validate CBE program competencies and curriculum, and to ensure the authenticity of assessments. The result is a relevant, transparent credential and authentic learning experience that is endorsed and trusted by external partners as well as learners.



- In collaboration with faculty and staff, external partners offer their own expertise and resources, and are invested in and an integral part of the program design, delivery and evaluation processes.
- $2. \quad \text{Faculty, staff, learners and external partners regularly communicate about substantive matters, keeping} \\$ each other informed of the latest developments; sharing information with researchers, discipline and career networks, and other professional organizations; and implementing needed programmatic changes.
- 3. External partnerships are cultivated to provide real life learning, training, assessment, internship and $employment\ opportunities.$
- External partners are chosen based on their alignment to the program's purpose, the institution's equity
 goals, or field and workforce needs. When no pre-existing connections exist, faculty and staff are able to form these necessary relationships.



| C=Criteria | l=Initial | E=Emerging | D=Developed | H=Highly Developed |
|---|---|---|--|---|
| 1. External partners are invested in the CBE program's success and are an integral part of the design, delivery and evaluation of the program. | External porthers can commissionate the related to for altering the CBL pringing. | The external partners have reviewed and offered feedback on the program's compelencies, assessments, learning activities and requirements. | In collaboration with healty and staff, external partners are or integral part of the program design, delivery and evaluation processes. | The external partners provide the institution with data regarding graduates' performance on the job, allowing the institution to continuously improve the competencies, assessments and other components of the program. |
| 2. External and internal partners communicate about how new developments and program changes are implemented to maintein currency in the field. | Externel pathwes are asked for Input on one external changes the could imped the programs. | Standing and regular maning are held in which which when a real interrupt pattern consider the success and editory of the CDE program tross each partners's lens. | Faculty, staff, learners and sectional partners work collaboratively to spatial collaboratively to spatial instrustivation of the consistency of t | Dato is gathered ffrom graduate, schemol parthurs graduates, schemol parthurs and offer schemol parthurs and offer schemol parthurs and offer schemol parthurs the schemol parthurs are schemol parthurs and parthurs from the schemol parthurs are schemol parthurs for schemol parthurs |
| 3. External partners provide components of the learning journey. | External partners endestation file CR programs, capproach and philosophy as well as: its potential benefits to practners. | External partnerships are culfivented to provide real-life fearning, training, assessment, internship and employment apportunities. | Formol agreements are articlished and operated with anxieties profines to provide incuby expenses and onsite experiences (such as interesting an experiences) such as interesting an experiences (such as interesting an experienceships) as a component of the CRE program. | Information is gathered from waternal partners regarding learner performance during internships, training apportunities and ultimately employment, and these data are used to improve the curriculum and learning journey. |
| 4. External partners are selected based on institutional and programmetic mission and goals. | Possible asternal partners fisclading employees, regulators, beatween booless, crists oeglearment and interesting steps from the first of the first | Where new portreatships are required, institutions would in setablish shared goals and effective partnerships. | Elemnal pathers are chosen board on her alignment to the program's purpose. The medition's equity gents, or had end workforce needs. When no pre-existing cominishing exist, famility and doff are exported in horming the necessary relationships. | The external portine with residue or executioned in terms of the residuent insert and programmate, portine goods by your profines goods by your profines portines goods. Any gupy are identified, new appointment are employed and what to establish in working publimedup are initiated. |



Transparency of Student Learning

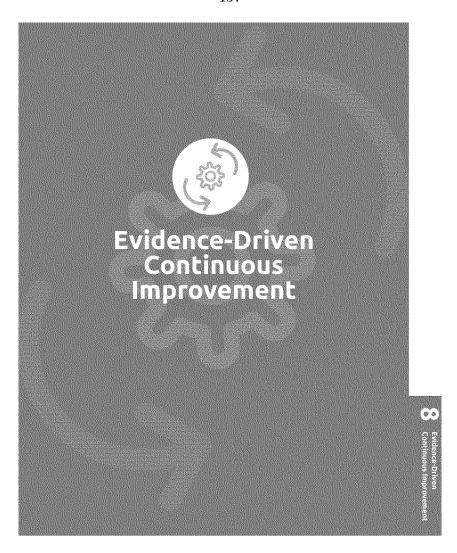
PRINCIPLE

One of the central differentiators of CBE programs is their transparency regarding the learning required to earn a credential. This means that the competencies and their alignment, the pathway to mastering those competencies, the assessment methodologies and the performance requirements for successful demonstration of competency are clearly articulated to learners and all other stakeholders. Transcription practices make demonstrated competencies transparent to learners, faculty, staff, employers, transfer institutions, accreditors and regulators, often in digital form. Transcripts are designed to support portability and transferability to non-CBE environments and include an "extended or comprehensive record"

- 1. The competencies required to earn a credential are clearly and openly articulated to learners, faculty, staff and external partners.
- 2. The alignment of competencies, content, learning activities and experiences, and competency demonstration assessments is visible to all learners and stakeholders.
- Learner progression toward competency mastery and credential completion is visible to the learner, faculty and staff throughout the learning journey.
- 4. The alignment of credentials' competencies to external requirements (licenses, transfer requirements, certifications, employer needs) is accurately and clearly communicated.
- The institutional transcription policy and process are designed to communicate what graduates can do beyond course listings and grades. They express this information in understandable and relevant ways to an expanded community of stakeholders with the input and engagement of learners, transfer institutions, graduate schools and employers.



| C=Criteria | Philip | E=Emerging | D=Developed | H=Highly Developed |
|---|--|--|--|--|
| I. The CBE program clearly articulates required competencies, | The computerious conjured for a credented are defined. | The CBE program has clearly defined the competencies required for the credental. | The competencies required to semilar a condensaria ore transported by articularist to learning, faculty, soil and a starred partners. | The competencies required for a credential are transportently articulated to learners, staff, faculty and external partners, and have been clearly transcribed for use by other institutions as needed. |
| 2. Alignment of the curriculum and competencies a visible to learners and other stakeholders. | Competencies, lectring ex- perances and assessments are aligned. | The alignment of conjugate and | The abgainent of voir peterose, currier, fearning, activates and exceptions, and competency demonstration assessments as visible to all featness and stakeholders. | Cotticular maps are technology enobled and visualized so that any interested person can understand the dispersion concentrations to suppresent as forming as parameters and transcending as parameters and transcending as parameters and transcending as parameters. |
| 3. Learner progression toward tredential completion is svisible to all stakeholders, including the learner. | Seatmer progression feward completion con the moni- tored and reported on | Learner academic engage- ment and competency demonstration is episodical- ly captured, monitored and reported for learness as well as for faculty and staff. | Learner progression toward competency mastery and competency mastery and constanted completion is recedily wishes to this termine, faculty and aloff throughout the tearning coursey. | Technology (i.e., a progression dashboard) allows all stakeholders to see a real-time visualization of learner progression through the aligned assessments and competencies. |
| The alignment foredential ampetencies o external quirements clearly ornmenicated. | Credential compatencies one ultiprod is relevant with an account with a second with an account with a sequirements. | External regularments find image to the credentials are well-andardood, manifored and aligned so that interned and external strikels/fire finduting features) can describe the objective of the control of the objective of the obj | The adignment of credential competencies to increase in quantum quantu | Viscolizations of the alignment of external requirements and condental requirements and condental standards are developed methodology with all interested products to the condental standard products and condental requirements are changed and special as external requirements and changed and special as external requirements and the sequence of the condental requirements and the condental requirements ar |
| i. Transcripts ommunicate ompetencies and support earners' needs or transfer, diffusion to other institutions and employment. | Compalencins for the coordinate of the coordinate of the symbols for their way province of the coordinate of the coordin | The institutional transcript communicates the competencies for the cordential and each learner's demonstration of competency related to the corned credential white also communicating equivalencies in a way that makes sense to external entities. | The institutional transcription policy and process ride spread receives the spread received the spread received the spread received the spread received to the spread received | The transcript utilizes visuelization and a-portfolio technology to communicate the richness of the competencies demonstrated in erring the creditation of the creditation of the creditation of the competencies of the creditation of the credi |



Evidence Driven Continuous Improvement

PRINCIPLE

An evidence-driven, continuous improvement methodology is an essential dimension of at regular intervals during the program and post-completion. These data are reported and used to inform learners and faculty, identify and prioritize improvements, evaluate and refine assessment strategy and implementation, monitor equitable learner achievement across diverse groups, optimize learner supports to impact program persistence and completion, and enable external validation of learning. Where performance gaps are identified, the institution actively

- 1. The institution has adopted continuous improvement processes for its CBE program and is committed to sharing its data and discoveries with the CBE community.
- 2. The CBE program has agreed-upon performance goals (including equitable learner outcomes) as well as effective and regular approaches for monitoring, measuring, surveying, analyzing, reporting and acting on performance data (including specific learner outcomes).
- 3. The CBE program collects feedback from learners regarding the program and its personnel and resources.
- 4. The CBE program has a systematic process for improvement based on feedback from learners, faculty, subject matter experts and external partners, and has allocated appropriate resources to support this work.
- 5. Other related data, such as measurements of post-programmatic outcomes and the enduring value of earned competencies in the knowledge marketplace, are monitored to inform larger shifts in the design of the competencies and credentials being offered.

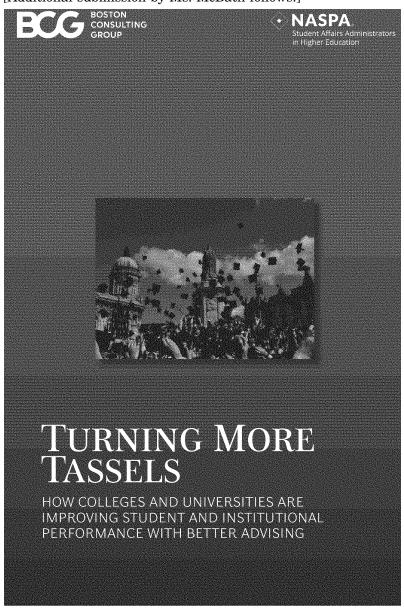


PERFORMANCE INDICATORS

| C=Criteria | l=Initial | E=Emerging | D=Developed | H=Highly Developed |
|--|--|---|--|---|
| Continuous improvement processes have been adopted for the CBE program. | The institution expresses inclusive the need for configuration of the need for configuration previously approximately of the CBE program. | The institution has set goals and metrics for the CBE program that support the identification of necessary program improvements. | The institution has adopted and resourced continuous improvement processes for the CBE program and is committed to sharing its data and discoveries with the CBE community. | The continuous improvement process results in a stronger, more effective CBE program, as evidenced by improvements in ateknholder satisfaction (including employers, learners and faculty) as well as better learning outcomes. |
| 2. The CBE program has performance goals and effective measurement and reporting tools. | Parformance goels and manace die sei for the CBE program. | The natifulian can and does measure the performance of its CBE program agricult for all the delivery posts and matrix is that set, including bendum its defined by relevant parts wherever possible. | The CSE program has agreed- very parformance gody. Including learner outcomes across diverse populational, and has effective and registe approaches for auditoring, measuring, servering, analyzing, peopling and script on professional string including, specific learner audiconsect. | Date political and sharpshopping the performance of the CBL program lead to the CBL program lead to the dawgs and implementation of improvements. Further dark are thin gothered in tegral and interest in the self-cuty of these indexes indexes indexes indexes. |
| 3. Feedback is collected from learners. | Easts serveys are sent to feathers regarding their expenience. | Learners participate in focus groups and/or other qualitative research forums to offer feedback regarding the CBE program. | Quantitative and qualitative leadback regarding the CBE program, personnel and resources is collected from learners. | The CBE program maintains on active relationship with its abunni and uses alumni feedback to inform continuous improvement. Feedback is also synthesized, reported and made available to all constituents. |
| A. The CBE program has a system of the case of the process for improvement based on feedback from multiple stakeholders. | Executance regarding the CAS program is gardinated from multiple daresholders, including features from the control of the cont | The CRE pregram biss a systematic process for yearmonic process for yorthesizing, exporting and sharing feedback from technical feedback from technical feedback from technical feedback and external partitions. | The CBS program has a sys- temptic process for improve- ment based on teachbook from facuriness faculty, subject resting resperts and exercial partners. | Crata is gathered from employees, graduales, and other attached as regarding the anguing relevance of the anguing relevance of the programs' competencies. This information is used to resolute and for a improve the programs seeming outcomed talescance. The CEE program shares in each of the larger CEE community is support confluenced in the confluence of the community of the programs of the programs and the larger CEE community is support confluenced in the confluence of the programs of the |
| 5. The CBE program team monitors external data regarding the program and uses that data for program improvement. | The CDE program beam has dentified relevant exertal across of information for improvement for the programs. | The CBE program has a plan for date-gathering to source the information identified by the team. | Other related data such as measurements of labor market outcomes for graduates and the enduring value of earned competencies in the knowledge marketplace are monitored to inform larger shifts in the design of the competencies and credentials being offered. | The program gathers data regarding the ongoing relevance of the program's competencies from employers, graduoles and other stokeholders. This information is used to realign and improve the program. |

COMPETENCY-BASED EDUCATION NETWORK www.cbenetwork.org

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[Additional submission by Ms. McBath follows:]



Boston Consulting Group (BCG) is a global management consulting firm and the world's leading advisor on business strategy. We partner with clients from the private, public, and not-for-profit sectors in all regions to identify their highest-value opportunities, address their most critical challenges, and transform their enterprises. Our customized approach combines deep insight into the dynamics of companies and markets with close collaboration at all levels of the client organization. This ensures that our clients achieve sustainable competitive advantage, build more capable organizations, and secure lasting results. Founded in 1963, BCG is a private company with offices in more than 90 cities in 50 countries. For more information, please visit bcg.com.



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TURNING MORE TASSELS

HOW COLLEGES AND UNIVERSITIES ARE IMPROVING STUDENT AND INSTITUTIONAL PERFORMANCE WITH BETTER ADVISING

ALLISON BAILEY

NITHYA VADUGANATHAN

TYCE HENRY

RENEE LAVERDIERE

MOLLY JACOBSON

JANUARY 2019 | BOSTON CONSULTING GROUP

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FOREWORD

RESEARCH CONTINUES TO SHOW that a college degree can significantly boost an individual's earning potential. For example, the Georgetown University Center on Education and the Workforce found that workers who hold a bachelor's degree earn 84% more than those who have only a high school diploma. Many of today's college students understand the value of a degree and pursue higher education as a way to improve their life circumstances. Institutions could do more to help students navigate the often complex college environment. It is now more important than ever for students to have sophisticated and timely advising, as the job market that awaits them is ever changing, the skill sets that they need are evolving, and their education costs are steadily rising.

Higher education institutions have a structure that, when intentionally and effectively deployed, can provide many types of support, all of which are needed to prepare students for life after college. Faculty and other professionals can work together to help students fully understand their academic options, connect their classroom learnings with other college experiences, and prepare for a career. However, some college students do not have that type of experience. A 2017 Gallup study reports that just over half of Americans would change at least one of their education decisions if they could. The report also shows that one in three Americans would have studied a different major. These types of postcollege reflections indicate that it is time for institutions to reconsider the process for helping students make informed choices.

The report that follows describes how four institutions are transforming their delivery of advising. The authors provide a robust discussion of how these colleges repositioned their resources, adjusted multiple processes, and used technology to give students a more holistic advising experience. The report shows how these important decisions and others can lead to positive academic benefits for the students and financial returns for the institutions.

As today's college students seek help to earn a credential, make meaningful connections, and develop the skills necessary to become employed, they need the best possible advising delivered in the most optimal ways at the most critical times. Institutions have to advise students at this level of excellence, because their success during and after college depends on it.

Amelia Parnell, PhD

Vice President for Research and Policy NASPA – Student Affairs Administrators in Higher Education

PREFACE

A LARGE BODY OF RESEARCH correlates postsecondary student success with high-quality academic advising. One scholar has even concluded that "good advising may be the single most underestimated characteristic of a successful college experience." Helping students navigate the college experience, whether by providing advice on how to sequence courses or how to adapt to campus life, frees up time and energy for students to focus on learning and progressing toward graduation.

At the same time, the success of advising solutions can, in many circumstances, be limited by poorly organized resources, underinvestment, and the ineffective use of data—all common problems at post-secondary institutions. These factors contribute to an environment where less than 60% of full-time students earn a degree within six years and less than 30% of students earn an associate's degree within three years. For first-generation college students and students of color, the probability of success is even lower.²

The research related to innovations and reforms in advising has segmented institutions on the basis of their attitudes toward advising and their use of technology. The research has also helped to provide a taxonomy of advising technologies and implementation tools. It has specifically explored the cost and funding streams of Integrated Planning and Advising for Student Success (iPASS) implementations. However, there are not many studies that look beyond the first year and explore the long-term economics of iPASS implementations.

In addition, there has been limited assessment of long-term student outcomes—such as retention and graduation rates—driven by advising reforms. The more rigorous studies that highlight outcomes also tend to focus on specific technology tools.

For example, a randomized control trial conducted at 17 institutions that implemented InsideTrack's coaching tool found that about 63% of coached students (regardless of age, gender, or ethnicity) were still enrolled after six months, compared with 58% of students who weren't coached.⁴ As another example, experimental research at Austin Community College found that students who used Degree Map—a web-based, interactive tool for planning courses, tracking progress, and evaluating degree options—were 2.4% more likely to continue for three terms than those students who did not use Degree Map.⁵ The research into long-term outcomes from advising solutions that combine both technology-driven tools and institutional changes is still nascent.

To help fill the research gaps and further the field's understanding of the return on investment (ROI) from broad-based advising reforms—those that affect all students in a particular class—we set out to do the following:

- Demonstrate the full set of institutional investments—including technology implementations as well as changes in personnel, physical space, organization structures, and processes—that maximize return
- Generate further empirical evidence related to student outcomes, such as retention rates and graduation rates
- Elevate insights from institutions at a variety of stages of reform, since previous reports primarily focused on institutions at earlier stages of reform
- Contribute to an understanding of the factors that can limit reforms' efficacy

Boston Consulting Group focused on Florida State University (FSU), Georgia State University (Georgia State), Montgomery County Community College (MCCC), and the University of Texas at Austin (UT Austin) to assess the ROI of broad-based advising reforms. Using the framework discussed later in this report, we evaluated ROI through these three lenses:

- Improved Academic Outcomes. We ascertained whether these
 institutions increased student retention and graduation rates,
 improved course success rates, or decreased the number of
 semesters needed to earn a degree.
- Improved Economics. We assessed whether these schools increased revenue while reducing operating costs—a particularly important outcome in an era of declining enrollment and dwindling public subsidies for postsecondary education.
- Improved Access. We analyzed whether these institutions'
 advising programs were able to serve a larger and more diverse set
 of students. In particular, we assessed whether the institutions that
 we studied were able to reduce the gap in graduation rates
 between students of color and the overall student population.⁶

This report presents key findings on the ROI of the broad-based advising reforms that were implemented at the four institutions we studied and highlights the unique aspects that helped these institutions improve access and academic outcomes, often at lower annual costs. The report also highlights four key takeaways for higher education leaders to consider as they devise and redefine their own student success strategies. This report is BCG's second publication that investigates the ROI of student success interventions in higher education. (See Making Digital Learning Work: Success Strategies from Six Leading Universities and Community Colleges, a BCG and Arizona State University report, March 2018.)

Our study was fueled by the following questions, around which our findings are framed:

- Which advising reforms did the institutions in our study undertake? What motivated the schools to pursue these reforms?
- Why should institutions invest in advising reforms? What kinds of academic and economic returns can institutions expect?
- What are the drivers of academic and economic returns? How can institutions maximize these returns?
- · How should an institution organize its people, processes, and technologies to ensure a successful implementation given its unique institutional context?

We hope that these findings and lessons will encourage other institutions to consider opportunities to introduce academic advising reforms on their own campus.

- 1. Richard J. Light, Making the Most of College: Students Speak Their Minds, Harvard
- University Press, 2004.

 2. Institute of Education Sciences, "National Center for Education Statistics," "Fast Facts," accessed November 5, 2018.
- 3. For example, see Crossing the Finish Line: Vetting Tools That Support Student Success,
- EdSurge HigherEd, March 2017.

 4. Eric P. Bettinger and Rachel B. Baker, "The Effects of Student Coaching: An Evaluation of a Randomized Experiment in Student Advising," Educational Evaluation and Policy Analysis, March 2014.
- 5. Learning Brief: Designing and Implementing a Transformed Advising Model—Austin Community College, Civitas Learning, 2014.
- 6. Students of color are those who have identified as American Indian, Black and African American, Hawaiian and Pacific Islander, Hispanic, nonresident alien, and

INTRODUCTION

OR US COLLEGES AND universities, the quest to deliver a rewarding, high-quality postsecondary education has never entailed such high stakes. After decades of stagnant improvement, institutions are facing growing calls for accountability and performance. At the same time, persistent achievement gaps and the rising cost of higher education necessitate a laser-like focus on student completion. Colleges and universities today must strive to deliver student outcomes despite a cacophony of external challenges, including declining enrollment, shrinking state funding, and a student population with increasingly diverse needs and demands on their time. These challenges have compelled some institutions to seek new strategies—particularly for core functions such as academic advising—to ensure student success.

Consider Montgomery County Community College (MCCC), a twoyear institution in Blue Bell, Pennsylvania. To better address the needs of its students, 70% of whom attend school part-time, MCCC embarked on a journey to transform campus planning and advising resources. In 2012, the college increased the number of advising touchpoints and extended them to the point of student admission. It also supported a cadre of professional advisors to engage on an expanded set of topics, including career and financial planning. New analytics and technology tools enabled student monitoring and tracking in real time and connected the advisors more closely to the faculty. Today, an MCCC student experiences a markedly different journey from enrollment through graduation.

BCG recently studied MCCC and three other exemplary institutions to better understand the return on investment of broad-based postsecondary advising reforms—those that affect all students in a particular class. These reforms—some of which were implemented as part of the Integrated Planning and Advising for Student Success (iPASS) initiative¹—helped simplify students' paths to a degree. The reforms also enabled postsecondary institutions to engage students early and often in a dialogue that was tailored to each individual's diverse needs. And, thanks to a suite of technology tools, such as those for workflow automation and predictive analytics, the reforms allowed advising interactions to be easily and proactively initiated.

Our study found that broad-based advising reforms significantly improved student outcomes for a relatively low annual incremental investment. Specifically, the reforms contributed to an increase in ontime graduation rates of as much as 21 percentage points.² At the same time, the reforms required a relatively modest and sustainable

annual incremental investment of less than \$100 per student—an amount that was largely driven by investments in additional advising personnel rather than technology infrastructure.

This report identifies the drivers of academic and economic returns for the institutions in our case study. On the academic side, the primary drivers of returns include simplifying students' paths to a degree or credential by using tools such as major maps (or degree maps) and increasing right-time access to advising using early-alert systems and other institutional processes. The primary drivers of economic returns include strategically allocating advisors' time and differentially lowering advising ratios for higher-need students. We also document the critical motivations for change and the strategic choices that each school made in designing and executing reform.

In addition, our study surfaced a common set of enabling factors. The first is the creation of an empowered, cross-functional student success team that helps to surface issues and generate buy-in for initiatives. The second factor is the selective use of data and analytics to strategically drive action. And the third factor is the use of software tools to inform the creation of simplified paths and keep students on track.

Throughout this report, we outline recommendations that are broadly relevant to any institution seeking to implement or expand advising reforms.

NOTES

1. IFASS refers to a 2015 grant initiative spearheaded by Achieving the Dream to provide strategic assistance to 26 two- and four-year higher education institutions. For select institutions, iPASS helped to introduce a combination of changes in institutional processes and structures, technology-driven tools, and attitudinal shifts to transform existing advising systems. This initiative was funded by the Bill & Melinda Gates Foundation and the Leona M. and Harry B. Helmsley Charitable Trust.

2. Graduation rates are defined as the proportion of students who graduate in four years from four-year institutions or in two years from two-year institutions.

INSTITUTIONS' MOTIVATIONS AND REFORMS

DEFORE WE DELVE INTO the findings from our research, it is helpful to first know how we selected the institutions in our study. (See the sidebar "About Our Study.") It is also important to understand what motivated the institutions to reform their advising programs and the types of changes that they implemented.

Revenue and Enrollment Pressures

There is a myth that institutions that reform academic advising do so in resource-rich environments with strong enrollment pipelines. On the contrary, the institutions that we studied were compelled to change in order to respond to intense revenue and enrollment pressures. For example, MCCC partnered with Foundations of Excellence, which reviewed its first-year experience during the 2005-2006 academic year. Then, during the 2007-2008 academic year, MCCC brought in an external advisory team of student success coaches from Achieving the Dream, a nonprofit focused on increasing student success. Leadership felt a sense of urgency to act given the declining enrollment in Pennsylvania's community colleges and the state's reduction in funding for higher education.

A Moral Imperative

Revenue and enrollment pressures were by no means the only motivators of advising reforms, The institutions we studied also cited a moral imperative, articulated by senior leaders and disseminated across the college or university communities, to improve student outcomes, social mobility, and satisfaction. At FSU and MCCC, leaders relied on survey results that showed below-average student engagement and satisfaction with advising to galvanize change. At Georgia State, increasingly limited admissions standards at other state universities motivated a concerted effort to grow and diversify its student enrollment. As a result, about 80% of students could be defined as at risk by some measure, Georgia State's advising reforms were introduced in large part to address the needs of this student population. At UT Austin, the president established an ambitious goal to increase four-year graduation rates by 20 percentage points (pp) in five years, starting with the 2012 academic year. In every institution we studied, the advising reforms were intended to help guide students through their academic careers and empower them to achieve long-term academic success.

What the Reforms Looked Like

Strategies to promote student success take many forms depending on the institution. (See the appendix for a detailed breakdown of the advising reforms for FSU, Georgia State, MCCC, and UT Austin.) However, the reforms implemented by these institutions fit broadly into three categories.

Organizational Changes to Support Students. The institutions we studied established professional advising teams to provide counseling and coaching. This type of reform was exemplified by FSU's satellite model: the school centrally trained professional advisors and then assigned them to specific colleges. FSU also instituted two new practices: dedi-

cating full-time employees to areas such as career counseling and enrollment and establishing cross-functional working groups to oversee the efforts.

Tools and Policies to Streamline Students' Paths to a Degree. To reduce unnecessary degree or graduation requirements and to clarify the course sequence that students should follow for on-time graduation, the institutions we studied used tools such as

ABOUT OUR STUDY

This report is the result of research carried out by Boston Consulting Group from July 2017 through January 2018. Our project, which was supported by a grant from the Bill & Melinda Gates Foundation, examined the return on investment (ROI) of broadbased advising reforms in various institutional contexts.

Our study focused on four institutions of higher education: Florida State University (FSU), the University of Texas at Austin (UT Austin), Georgia State University (Georgia State), and Montgomery County Community College (MCCC) in Montgomery County, Pennsylvania. These institutions share a strong track record of implementing both organizational and technological changes to enhance their advising programs for large, socioeconomically diverse student populations. We selected these schools from a starting list of 86 exemplary institutions that we subsequently narrowed down using input from experts and criteria for size, scale, target population, and graduation rates. It is important to note that these schools have been enacting reforms for at least five years and there fore, represent a relatively more advanced stage of reform implementation.

 FSU is a large, four-year public research university. Since 2000, FSU has implemented major maps (designed inhouse) and a satellite model of centrally trained professional advisors. FSU also recently engaged the research and technology company EAB to provide a deeper level of insight into student performance. To this end, the university implemented a risk-alert system and replaced some in-house tools to provide new calendar and note-taking functionalities. In addition, FSU developed targeted programs to support students who are most likely to withdraw or transfer. FSU serves 36,000 undergraduate students; about 31% are low income.

UT Austin is a large, four-year public research university. UT Austin created a central team focused on student success initiatives. It also developed a predictive model in-house to identify first-year students who are most in need of support from targeted programs, including its signature University Leadership Network program. The team implemented a Graduation Help Desk to remove administrative barriers to graduation, and the team introduced peer mentors in weekly small-group learning sessions for all incoming students to provide quasi-group advising for all freshmen. Today, UT Austin's advising model remains a federated one that delegates many of the responsibilities for execution to its colleges. The university serves 42,000 undergraduate students; about 27% are low-income students. Notably, the university exists in a unique enrollment environment: it must automatically admit a fixed percentage of graduating seniors from each public high school in Texas, and a

centralized calendars and major maps. Also referred to as academic maps, degree maps, and degree playbooks, major maps are term-by-term sample course schedules that specify milestones, courses, and special requirements that are necessary for completing a major in a timely fashion. The schools also redefined degree requirements and implemented "metamajors," or clusters of individual majors under one academic umbrella. Georgia State uses the latter. Each

freshman class is organized into cohorts of 25 students called Freshmen Learning Communities that are oriented around common academic interests, such as science, technology, engineering, and math; business; policy; education; and social sciences. These metamajors simplify first-year students' decision making and limit excess credit accumulation.

Technology Investments to Proactively Steer Interventions and Support Programming. To

long waitlist of transfer students supports a constant oversupply of potential students.

- Georgia State is a large, four-year public research university in Atlanta, Georgia, that has seven campuses. Since 2008, Georgia State has invested in transforming its academic advising system with four goals in mind; bring about a broad cross-functional mindset shift toward using data as the foundation for problem solving; centralize student success functions; increase the number of centralized, professional advisors: and robustly use predictive analytics to enhance student engagement. At the time of our study, Georgia State served 29,000 students, about 51% of whom were low income. Following integration with what is now called Perimeter College, Georgia State now serves 45,700 students. Georgia State has selectively extended specific advising elements (for example, low student-to-advisor ratios, predictive analytics, and metamajors) to Perimeter College. Our study focuses on Georgia State and excludes Perimeter College.
- MCCC is a two-year comprehensive college in Blue Bell, Pennsylvania.
 Starting in the 2012 academic year, MCCC undertook a series of advising reforms, including extending studentstaff touchpoints (by using enrollment coaches, for example); increasing the frequency of advising touchpoints and

the number of topics covered; and implementing a suite of technology tools, such as Colleague, Illume, and Starfish Early Alert. MCCC's cadre of professional advisors predated these reforms. MCCC serves 18,000 undergraduate students; about 70% are part-time, approximately 60% are seeking degrees, and 26% are low income.

At each institution, we conducted in-depth case studies that included qualitative interviews with leaders and practitioners In total, we interviewed more than 100 stakeholders, including presidents and provosts, directors of critical departments (such as student success, finance, and IT), and faculty and professional advisors and other support staff. We also conducted quantitative analysis of both student data to assess changes in outcomes and revenue and expenditure data to construct an economic picture of institutional reforms. Finally we reviewed relevant internal materials-such as minutes from meetings of the board of directors, memos, and committee findings-to paint a complete picture of the reform journey.

Taking a case study approach enabled us to synthesize promising practices regarding how to implement high-quality advising in various institutional contexts. It also permitted us to construct a detailed picture of institutional economics, reflecting variations in enrollment, funding, leadership priorities, and investments in technology or professional development.

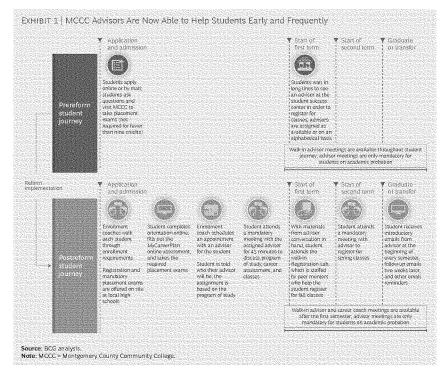
differing degrees, the institutions we studied implemented software to perform functions as diverse as degree mapping, advisor scheduling, career assessments, and automatic advisor alerting (which notifies a student's advisor as soon as the student is off track).1,2 For example, at MCCC, Colleague, an enterprise resource planning solution from Ellucian, provides advisors with a centralized platform that contains information relevant to each of their advisees-such as whether a student has completed his or her preregistration checklist and the status of each student's progress in his or her required course sequence. Advisors can also use the platform to set up a time to discuss a student's intended path of study and course load, MCCC also uses Starfish Early Alert, a Hobson product that identifies students who need attention and that helps advisors proactively schedule and manage student meetings. Technology

tools such as these enable advisors to more effectively engage with students. (See Exhibit 1.) We observed that another area for technology investments was predictive analytics. For example, at Georgia State, frontline staff participated in the selection of about 800 risk indicators that enable advisors to be proactive with students in real time and intervene on the basis of students' individual performance.

NOTES

1. Various organizations have developed guides to help decision makers identify the right technology tools to support students on their campuses. For example, see Crossing the Finish Line: Vetting Tools That Support Student Success, EdSurge HigherEd, March 2017.

2, MCCC and Georgia State participated in the iPASS grant challenge to augment their systems and tools for more effective advising. FSU and UT Austin did not participate.



THE IMPACT OF ADVISING REFORMS

A DVISING CAN BE A powerful mechanism to help students succeed. Although advising systems vary from institution to institution, there are a few characteristics common to all good advising programs. From a student's perspective, interventions are personalized to his or her unique needs and delivered at the right time and in a holistic manner, addressing a set of needs that is broader than course registration and scheduling. Additionally, advising programs are easy to navigate. From an institution's perspective, good advising programs help students thrive on campus and earn a degree or credential and are simultaneously cost effective.

Advising reforms contributed to a rise in on-time graduation rates.

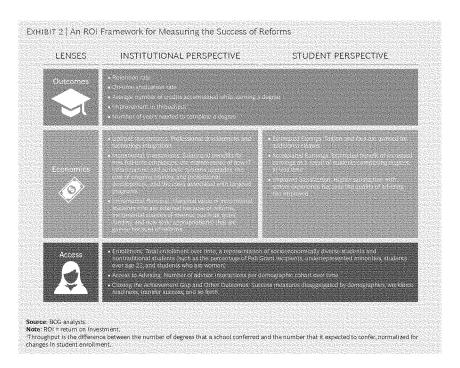
Our study found that broad-based advising reforms not only help to improve academic outcomes but also do so for a relatively low annual incremental investment. We assessed the impact in a comprehensive manner, informed by a framework that considers both academic and economic outcomes. (See Exhibit 2.)

It is important to note that advising reforms are often implemented as part of broader in-

stitutional transformation programs that are intended to improve the postsecondary student experience. It is difficult, therefore, to isolate the impact of advising reforms specifically. Our study focused on measuring the change in academic and economic outcomes by comparing prereform results with postreform outcomes. But we cannot attribute outcomes solely to advising reforms. We believe this is an area for further research.

The Impact on Academic Outcomes

Across the institutions we studied, advising reforms contributed to improved academic outcomes, such as better graduation rates and retention rates. Perhaps most saliently, the reforms contributed to a rise in on-time graduation rates.1 This improvement was highest at FSU, which saw an increase of 21 pp since its reforms were introduced in 2000, Georgia State and UT Austin also saw marked improvements since the start of their reforms in 2008 and 2012, respectively, with on-time graduation rates climbing 10 pp and 15 pp. At MCCC, the first-time freshman cohort for the 2016 academic year was the first group to experience the full suite of advising reforms, so the change in the school's two-year graduation rate before and after the reforms could not be assessed. However, preliminary findings showed an average increase of 2.7 pp in the four-year retention rate of first-time freshmen.

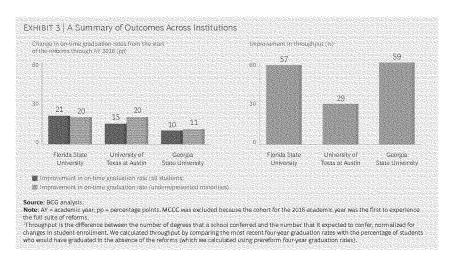


For the three four-year institutions (FSU, Georgia State, and UT Austin) we studied, we also assessed the improvement in throughput (that is, the difference between the number of degrees that a school conferred and the number that it expected to confer, normalized for changes in student enrollment).2 For each institution, we compared prereform throughput with postreform throughput and found a significant increase-as much as 59%. For example, the rise in on-time graduation rates at UT Austin represented an increase of about 10,000 degrees conferred from 2011 through 2017. At Georgia State, the rise in on-time graduation rates represented an increase of approximately 2,400 degrees conferred from the 2007 academic year through the 2017 academic year. (See Exhibit 3.)

Importantly, our findings indicate that broadbased advising reforms may have had an outsize impact on high-need student populations. Graduation rates for students of color increased at almost the same rate or faster than the rate for the general student population. For example, at FSU, the increase in the on-time graduation rate was 20 pp for students of color, compared with 21 pp for the overall student population. Georgia State's rate increased by 11 pp for students of color, compared with 10 pp for the overall population. And at UT Austin, the on-time graduation rate improved by 20 pp for students of color, compared with 15 pp for the overall student population.

The Impact on Economics

Although implementing high-quality advising requires strategic investments, we found that the broad-based reforms at the institutions we studied came at a relatively low annual net cost. One reason for this was that the institutions were able to generate new revenue from improved retention or tap previously inaccessible funding streams (such as those al-



located on the basis of performance). The institutions then used the new revenue or funding to offset implementation expenditures for personnel, technology, and operations and maintenance. For example, at FSU, new tuition revenue from improved retention (as much as \$1.9 million per year), as well as increased annual preeminence funding thanks to improved retention (as much as \$3.2 million per year), helped to offset the cost of reforms,3 As more and more states move to performance-based funding regimes, reforms that advance student success and thereby help institutions achieve state targets will prove increasingly beneficial to institutions' bottom lines.

Another reason that reforms came at a relatively low annual cost is because, in certain cases, institutions were able to minimize annual incremental expenses by repurposing existing staff and resources and by finding other low-cost, creative solutions. For example, MCCG reallocated the budget for its previous alert system to Starfish Early Alert, used automated reporting to free up IT and institutional research staff for advising initiatives, and prolonged hardware life. It also reduced the need for incremental personnel costs by shifting the activity mix of its preexisting, centralized cadre of about 22 professional advisors. Meanwhile, Georgia State en-

gaged in a co-development partnership with EAB in order to reduce the school's licensing fee for EAB's technology.

For three of the four institutions we studied, we measured the cost of broad-based advising reforms from admission through graduation by capturing both direct advising costs (for example, advisor salaries and technology licensing fees) and indirect enabling costs (such as supplemental academic supports and maintenance costs for a student success center).

Specifically, MCCC made total annual broadbased advising investments of \$3.0 million; FSU, \$4.2 million; and Georgia State, \$5.9 million. These amounts equated to about \$165, \$120, and \$200 per student, respectively. The total annual direct cost of advising reforms for MCCC was \$2.4 million (of \$3.0 million); for FSU, it was \$3.4 million (of \$4.2 million); and for Georgia State, it was \$3.2 million (of \$5.9 million). Of this, we distinguished the cost that was incremental owing to advising reforms; this equated to a per student value of about \$50 for MCCC, roughly \$70 for FSU, and about \$90 for GSU. Notably, we studied relatively large institutions; the cost of implementing these reforms maybe slightly higher for institutions with less scale, although the majority of costs we observed directly varied

with the size of the student body. (See the sidebar "The Cost of Advising Reforms.")

UT Austin's total annual cost of \$11.7 million reflected a significant focus on targeted reforms, not only broad-based ones. Its targeted reforms were designed to help the portion of each freshman cohort that was most in need

of support. UT Austin did introduce broadbased reforms focused on analytics, degree audit, and weekly small-group sessions. For those, we calculated that the total incremental cost was about \$25 per student.

As previous studies have shown, personnel to support a highly personalized student en-

THE COST OF ADVISING REFORMS

To understand the cost of broad-based advising reforms-those that affect all students in a particular class-we conducted in-depth interviews and discussions with institutional leadership at the colleges and universities in our study. Our aim was threefold. First, we sought to capture the direct annual costs to advise students-a process that begins when students are admitted to a college or university and continues until they graduate. These costs included advisor salaries, licensing fees for technologies integral to the advising process, and the salaries of other personnel (such as data analytics staff, enrollment coaches, and administrators) directly involved in the advising process.

Second, we looked to evaluate the annual indirect costs that enable successful advising at each institution. Indirect costs included supplemental academic support and operations and maintenance costs for each institution's student success center.

Third, we sought to identify which costs were incremental as a result of reforms (for example, the salaries of additional advisors who were hired to lower student-to-advisor ratios), which costs were preexisting (for example, the salaries of advisors present prior to reforms), and whether the new and existing costs were covered by new or reallocated funding.

In total, we found that the *direct* annual cost of broad-based advising reforms totaled \$2.4 million (of \$3 million) for MCCC, \$3.4 million (of \$4.2 million) for FSU, and \$3.2 million (of \$5.9 million) for Georgia State.

As an example, at Georgia State, the direct annual costs to advise students total about \$3.2 million, or about \$100 per student. Of that total, about \$2 million is incremental to the roughly \$1 million that the school spent directly on advising before it undertook the reforms in 2008. The incremental \$2 million covers more than 40 additional advisors, licensing fees for AdmitHub's chatbots, and EAB's Guide and Campus solutions.

Additionally, we identified two significant enablers of successful advising at Georgia State. The first is robust data and analytics capabilities. The second enabler is the Center for Student Success, which oversees the University Advisement Center, manages first-year programs, and provides supplemental peer tutoring. The cost of the allocated portion of these enablers plus the cost of operations and maintenance for the buildings that house the enablers total about \$2.7 million annually, or about \$90 per student. Of this, less than \$1 million is incremental

Adding together the \$3.2 million for direct advising costs and the \$2.7 million for enablers' annual costs totals \$5.9 million in annual costs, of which less than \$3 million is incremental.

Finally, we identified the costs that were covered by alternative funding sources at Georgia State, including grants and funding from the Board of Regents of the University System of Georgia. In total, \$2.2 million in annual incremental funding sources were identified, fully covering the annual incremental direct advising cost.

gagement model are the largest driver of the cost of broad-based advising reforms. For the colleges we studied, personnel costs represented at least 80% of the total annual cost of reforms. Personnel costs included salaries for professional advisors, functionally embedded analysts, and other support staff, such as enrollment coaches and tutors, as well as stipends for professional development and conference fees. Costs—typically licensing and vendor fees—to support the development and integration of technology solutions represented a smaller cost category (at most 10%). We also captured operating costs for facilities and ongoing systems maintenance (at most 14%).

Targeted programs, such as those implemented by UT Austin to address the needs of specific student subgroups, tend to be relatively expensive. For example, UT Austin provides at-risk, first-time-in-college students with academic support, such as supplemental instruction and tutoring, at a cost of \$1,200 per student, Meanwhile, the cost of FSU's Center for Academic Retention and Enhancement equates to more than \$2,000 per participating student. Preliminary evidence shows that these targeted programs are effective. For example, for the 2013 cohort at UT Austin, 54% of the students who participated in the University Leadership Network (ULN) completed at least 30 credits in their first year, compared with 13% of the students who did not participate. Grade point averages and retention outcomes were higher for ULN students, as well.

Ultimately, we found that new revenue generated from improved retention, as well as new funding from grants and state government, offset all or part of the cost of reforms. The annual net incremental economic impact of advising reforms varied across a relatively narrow range, from negative \$97 per student at UT Austin to positive \$99 per student at FSU. FSU's more economically positive result stemmed from a combination of new revenue and annual preeminence funding that was attributable to improved retention, UT Austin's slightly negative result reflects the fact that its revenue lift from improved retention was relatively low. This was because UT Austin

was at or near enrollment capacity and had a long waitlist of students to backfill student attrition. As a result, any revenue lost because of attrition could easily be replaced—rendering the incremental financial uplift from improved retention less impactful.

Second-Order Impacts

Conversations with leaders at the institutions we studied revealed several potential second-order impacts of advising reforms, many of which have been corroborated by existing research. 4 These impacts include the following:

Increasing Student Satisfaction. Regular, sustained advising support may increase student satisfaction generally and potentially generate additional revenues in the form of alumni donations.

New revenue as well as new funding offset all or part of the cost of reforms.

- Empowering Students. Students with regular and holistic planning and advising support may benefit from an increased sense of empowerment and take ownership of their academic experience with the guidance and encouragement of their advisors.
- Creating a Larger Labor Market for Employers. Reforms such as degree planning and auditing may help students earn their degree sooner, creating a larger labor market for employers. In addition, to the extent that colleges and universities help to fulfill the demands of their local labor markets, the value of a credential from the institution may also increase.
- Promoting the Use of Data and Analytics. Implementing and integrating technology tools with existing data systems may increase the use of data in decision making around student success; in addition, this can shift the role of IT from service broker to strategic partner (with

regard to the selection of and engagement with third-party vendors, for example).

- Reducing Students' Costs and Accelerating Employment. We did not conduct an in-depth study of the financial benefits of completing a degree in less time, but we calculated that the value of tuition savings plus being able to enter the workforce sooner could be worth \$4,000 to \$5,000 per student at these four-year institutions.
- Shaping Positive Changes to Academic Pathways, Requirements, and Curriculum. By gaining systematic feedback and data-based feedback on academic pain points from a school's advising staff, faculty members can rework prerequisites and pathways to majors to reduce the time it takes students to earn a degree.

NOTES

- 1. The on-time graduation rate is the percentage of all students who graduate in four years from four-year institutions or in two years from two-year institutions.
 2. We calculated throughput by comparing the most recent four-year graduation rates with the percentage of students who would have graduated in the absence of the reforms (which we calculated using prereform four-year graduation rates).
- 3. The Board of Governors for the State University System of Florida and the Florida Legislature have collaborated to "elevate the academic and research preeminence of Florida's highest-performing state research universities." Owing to its designation as a preeminent university, FSU receives about \$17 million in additional state appropriations to support efforts to improve its standing in national rankings. In order to maintain this designation, FSU must continue to meet 11 of 12 metrics, success along 3 of these metrics (retention rate, graduation rate, and national rank) can be attributed in part to student advising reforms (accounting for about 25% of total funds).

 4. See, for example, Adena D. Young-jones, Tracie D. Burt, Stephanie Dixon, and Melissa J. Hawthorne, "Academic Advising: Does It Really Impact Student Success?," Quality Assurance in Education 21, no. 1 (January 2013): 7-19.

THE DRIVERS OF ACADEMIC AND ECONOMIC RETURNS

THE ACADEMIC AND ECONOMIC impacts of advising reforms are clear and significant. Although research has shown that resources are constrained at many colleges and universities, advising reforms are within reach if they strategically maximize their resources. We recommend initially focusing on four reforms: simplifying students' paths, increasing right-time access to advising, strategically managing advising, and selectively investing in targeted programs. Carefully planning the implementation sequence of these reforms is equally critical.

Major maps provided students with clear and consistent guidance.

Simplifying Students' Paths

Simplifying a student's path to a credential requires ensuring that the student is taking only necessary courses and that he or she understands the course sequence required for on-time graduation. This reform can be implemented for a relatively low cost. For example, FSU streamlined students' paths using major maps, which it designed in-house for about \$300,000 over a two-year period—an amount that was mostly allocated to salaries

for full-time employees. FSU's major maps demonstrate the specific sequence of courses for each major and the timing for completing each course. They also describe thresholds for course performance to ensure that students and advisors can actively monitor a student's progress.

FSU's major maps were introduced in 2005 and designed by a two-person team comprising an associate dean and a representative of one of FSU's academic colleges. Over the course of two years, the team asked the faculty in each academic department to develop straw man maps for eight terms. The team analyzed enrollment and outcome trends to validate and refine the faculty's proposals. An iterative review process helped to generate buy-in across campus. The team also coordinated with FSU's Demand Analysis Numbers Group to ensure that a sufficient number of class sections were available to accommodate the demand that would be generated by major map milestones. FSU found that major maps provided students with clear and consistent guidance and reduced the volume of transactional student-advisor interactions.1

Less complexity and more clarity drives academic and economic returns for two additional reasons. First, compared with other tactics, this approach addresses the root cause of students' slow progression by eliminating structural barriers that would otherwise cap the effectiveness of parallel reforms, such as increasing advising touchpoints or targeting atrisk students. FSU attributes more than half of the increase in four-year graduation rates to its efforts to help students get on a clear degree path.

Second, simplifying degree paths lets institutions avoid or reduce costs. For example, some schools have complex degree paths that require more than four years' worth of fulltime credit accumulation for most students. If these schools cap tuition, and if students take extra credits each semester to graduate on time, the college implicitly has some unfunded credits. Institutions can avoid incurring such costs by simplifying students' paths. As an example, Georgia State reduced credit accumulation for a bachelor's degree by about 5% (eight credits). Simplifying degree paths also enables schools to scale back costs. FSU's use of major maps, for example, reduced the number of student-advisor interactions, which helped to contain costs.

Increasing Right-Time Access to Advising

Given unlimited resources, many institutions might choose to offer on-demand, in-person advising sessions to every student at every point in their academic career. The reality, however, is that resources are tightly constrained. To maximize academic returns while minimizing costs, colleges must try to ensure that students access the right advising at the right time. Practically, this means introducing multiple avenues of support and investing in processes and technology tools that enable advisors to identify at-risk students.

For example, during a student's first semester at Georgia State, the university's advising system combines mandatory engagement with periodic advisor outreach; the outreach frequency is determined by a student's progress and mediated by technology tools, including risk alerts and predictive analytics. When freshmen and transfer students enroll at Georgia State, they must declare a desired field of study and schedule a meeting with their assigned advisor in their first semester to remove a registration hold. Georgia State

subsequently tracks both students' GPAs in prerequisites and their enrollment in mandatory classes, and advisors are alerted when students are off track (for example, when students are missing a mandatory course, receive a bad grade in a nonfoundation course, or are not meeting the grade requirement for a foundation course). Advisors also use predictive analytics to intervene with students on an ad hoc basis. For example, EAB helps advisors develop a watch list-a list of students who the advisors should contact midsemester. Over the course of the rest of the semester, advisors reach out to these students periodically and in advance of class registration for the following semester.

Colleges must try to ensure that students access the right advising at the right time.

It is important to note that while predictive analytics tools can help institutions implement advising reforms and improve the quality of student-advisor interactions, in some cases, limited transparency into the criteria for risk levels has been a barrier to broad adoption by advisors and administrators. Institutions that have overcome this barrier have found ways to limit the number of variables included in risk-alert systems in order to manage to a more intuitive set. These institutions have also invested heavily to train advisors how to use the tools and have communicated clearly to advisors about the algorithms behind the tools to increase transparency. At Georgia State, for example, each risk marker is explicitly shared with advisors and students. Further, advisors have visibility into what drives a risk for a student, (For example, accounting students are deemed at risk if they receive a C in college algebra, because 75% of students who receive this grade struggle in upper-level accounting,) This practice, coupled with clear guidelines for how advisors should use predictive tools throughout the semester-both in terms of cadence and types of discussions to have with students-have been critical to Georgia State's implementation success.

Strategically Managing Advising
As we have noted, personnel investments represent the largest proportion (typically 80%) of the total cost of broad-based advising reforms. A key driver of economic returns, therefore, is strategically assigning full-time advisors. For example, a school could lower advising ratios for higher-need students, such as first-year students who have not declared a major, while increasing ratios for other populations. An institution could also supplement professional advisors with lower-cost peer mentors. Each of the institutions we studied employed the latter method.

Software tools can help manage advising costs by optimizing advisor workloads.

A growing number of software tools can help institutions better manage advising costs by optimizing advisor workloads. These toolssuch as chatbots and automated scheduling features-enable institutions to shift more transactional work off advisors' plates. MCCC, for example, created a walk-in Registration Lab staffed by peer mentors who guide students through course registration on the Ellucian platform. This model frees up advisors to answer complex questions and discuss more nuanced topics, such as students' personal, academic, and career goals. As another example, Georgia State uses the AdmitHub chatbot to address basic, procedural questions (such as those related to financial aid and enrollment) from recently admitted students.

Selectively Investing in Targeted Programs

A key investment tradeoff that institutions face is deciding whether to invest in targeted programs that address the needs of a specific student subgroup or in the other reforms that we have discussed that touch the broader student population. As we have noted, targeted programs are typically expensive (costing upward of \$1,000 per student). To maximize economic return, institutions should use these interventions only if they have a differ-

entiated student population, the capabilities to identify the students who are part of that population, and the resources to support the identified group.

Planning the Sequence of Reforms

The sequencing of reforms is an important consideration to maximize academic and economic returns. We recommend that institutions start by simplifying students' degree paths. This is because many simplification tactics require institutions to develop capabilities that are relevant to other reform tactics—an undertaking that may save institutions time and resources down the line. For example, in developing major maps, FSU ramped up its data analytics expertise so that the institution could optimize course sequences and identify processes for collaboration between central administration and academic departments. FSU, therefore, used major maps as an opportunity to build and test its internal analytics capabilities, which later became important both in implementing reforms that used predictive analytics and in scaling up professional advising.

Taking full advantage of technology tools may require reassigning or hiring full-time employees, which implies that institutions can benefit most when investments in people and processes precede technology investments. For example, risk-alert software, such as the solutions sold by EAB and Starfish, generate additional demand for student-advisor touchpoints and typically necessitate lower student-to-advisor ratios (approximately 300 to 1). For this reason, before making investments in technology, resource-constrained institutions should actively plan for changes in personnel capacity.

NOTE

1. For an example of an FSU major map, see its Academic Program Guide (https://academic-guide.fsu .edu/z-list) and select the Academic Map option.

ORGANIZING PEOPLE, PROCESSES, AND TECHNOLOGY

HEN DESIGNING AND IMPLEMENTING advising reforms, institutional leaders face many important questions about people, processes, and technology. The institutions in our study revealed promising practices that helped them accelerate progress and overcome common challenges in these areas. In some cases, these findings add to others previously surfaced in the field.

Who Should Be Part of an Advising Program?

Many different models of advising exist today; faculty-only advising, professional advising, and hybrid advising teams are just a few.1 According to the four institutions we studied, professional advising can help schools consistently and effectively serve at-risk populations while reducing the strain on faculty. One estimate for a student-to-advisor ratio sufficient to ensure individualized attention is 300 to 1, especially when predictive analytics tools are used. However, we recognize that the resources required to achieve this low ratio will be difficult for most institutions to acquire. The institutions in our study supplemented professional advisors with peer mentors to reduce advisors' transactional workload and to increase the frequency and number of touchpoints for students. In addition, these schools regularly engaged with the faculty to ensure that they were able to direct students to advising resources.

Some of the institutions in our study embedded at least one analytics-oriented role with dual reporting to institutional research and advising. Taking that step helped to improve the accuracy, transparency, and userfriendliness of the data and helped to encourage a shift toward data-driven problem solving and decision making. Institutions unable to make that investment could consider emphasizing data literacy for some advisors and for directors of the advising centers.

How Can Institutions Reduce Advisor Turnover?

Advisor turnover is a critical challenge that can stem from factors such as a lack of upward mobility, low wages, and insufficient training. To combat these factors, some of the institutions in our study implemented a career ladder that ties promotions to the development of specific skills, rewarding additional certification with advancement, responsibility, and (as financially feasible) incremental salary increases. These schools also enabled senior professional advisors to become peer leaders. In this role, senior advisors would train new advisors upfront in the specific skills required for success and create ongoing experiential learning opportunities. It is important to note that some advisor turnover may be valuable to a university's community, because advisors can move into other roles that an institution needs to fill,

Should Institutions Centralize Advising?

The institutions in our study showed that centralizing advising resources helps to reduce the amount of resouce duplication, ensure a consistent advising approach school-wide, and scale reforms faster. However, a fully centralized approach may not be feasible for all institutions. Indeed, we observed that the degree of centralization varied. MCCC, for example, has a single team that is responsible for advisors across all colleges and departments. By contrast, FSU has a satellite model of advisors who are centrally trained and embedded in individual academic departments.

A critical enabler for every institution was the creation of an empowered, cross-functional student success team or working group, Such groups allowed advisors to participate in surfacing and solving institution-wide issues and ensured that other stakeholders understood the value of the professional advising team. These teams were also charged with tasks such as generating buy-in for initiatives, encouraging collaboration (among faculty, admissions, financial aid, and the registrar, for example), and embedding cultural norms (such as using data as an input for decision making) school-wide. The most effective groups had a designated leader who was equipped with the authority and autonomy to execute key initiatives and who incorporated data and analytics into the decision-making processes.

What Change Management Efforts Are Needed?

Implementing advising reforms—and getting them to stick—requires significant transformation and coordination across disparate parts of an institution. The institutions we studied were successful in part because they anticipated this and were proactive in three ways. They aligned their reforms with their broader institutional missions and set clear goals with rewards for success. They ensured that senior leaders were visibly involved in all aspects of their reforms; for example, leaders attended working meetings and participated in ongoing communications. And the institutions made sure to include representatives from all functional areas in reform de-

sign and implementation. The latter, along with the use of experiential trainings to transfer knowledge across functions, helped to bridge organization silos and identify ways to improve reforms.

Change management for professional advisors is an especially important area. To manage change successfully, institutions should be prepared to implement a system for the professional development of advisors. Schools should also establish trainings and mechanisms to ensure that advisors consistently use tools (such as degree maps), create regular forums and accountability among advisors and other relevant departmental leads, and routinely gather end-user feedback on reforms to encourage a feeling of ownership.

What Technology Capabilities Are Needed?

To ensure careful stewardship of resources, the institutions we studied outlined the technological capabilities required to achieve their vision early in the strategic planning process. Because personnel investments tended to be significant, these schools prioritized technology tools that helped control personnel costs or make advisors more effective. The tools automated advisors' workflow (through automated scheduling and centralized note taking, for example); reduced the transactional aspects of advisors' responsibilities (by using chatbots to address basic questions, for instance); better enabled advisors and their students to monitor their progress toward a degree (by using degree audit tools, for example); and improved the quality of advising interactions (by using early alerts and predictive analytics to identify which students needed support on specific topics and to design specialized interventions).

Should Institutions Buy or Build Technologies?

As we have mentioned, previous work in this field provides a taxonomy of advising technologies and implementation tools that should help institutions navigate vendors and offerings. Still, a common question is whether an institution should buy or build technology. Because most institutions lack the technical

sophistication as well as the personnel and monetary resources necessary to successfully scale and manage custom solutions, we recommend buying over building unless an institution has the following:

- Internal capabilities such as data analytics expertise, dedicated software developers, and a robust data warehouse
- Time to develop software tools; our study indicates that third-party offerings are usually faster to implement
- Faculty or administrators to oversee the process, choose the software's features, select the variables to include in the algorithms, and so forth
- A relatively complex IT infrastructure or a substantial portfolio of legacy tools and applications that would pose integration challenges with third-party software

How Can Institutions Drive the Adoption of Technology?

After institutions have invested in technology, they understandably want to ensure its adoption. At the same time, technology adoption—particularly of risk-alert tools—is often a challenge. To address this, the institutions in our study communicated their vision for technology's role, aligning it with the institutional mission and supporting it with suffi-

cient resources. The institutions engaged frontline staff in tool design and, when selecting variables to include in risk-alert algorithms, biased the selection toward the minimum number of variables needed. The institutions also influenced how advisors, faculty, and others used and interpreted tool features through end-user training.

To encourage the adoption of workflow-focused tools, the schools also publicized relative utilization among end-user groups to identify inconsistencies and incentivize improvement. We hypothesize that institutions can enlist the support of various campus functions to champion technological change, speeding adoption. We also expect that institutions can include the willingness to use these technology tools as an explicit hiring criteria for candidates applying for advisor positions and establish regular forums (such as discussion groups) to gather feedback from end users.

NOTE

1. For further discussion of advising models and structures, see, for example, Celeste F. Pardee, "Organizational Models for Advising," Nacada, Clearinghouse of Academic Advising Resources, 2004. See also, Marsha A. Miller, "Structuring Our Conversations: Shifting to Four Dimensional Advising Models," Nacada, Clearinghouse for Academic Advising Resources, 2012.

CONCLUSION

*ODAY'S COLLEGES AND UNIVERSITIES guard our nation's future. They are uniquely positioned to deliver the skills needed for a 21st-century US workforce while closing pernicious achievement gaps. Providing a rewarding postsecondary experience-and ensuring that students earn a degree or credential in a timely, affordable manner-has never been so urgent. Interventions to support student success on campus will increasingly take center stage, and advising will be an area of continued interest for students, faculty, staff, and administrative leaders. The four most important takeaways for institutions are the following:

- Broad-based advising reforms significantly improve student access and outcomes at a relatively low annual incremental investment.
- The two primary drivers of academic returns are simplifying students' paths and increasing right-time access to advising.
- Selectively and strategically using software tools and data analytics enables more personalized and impactful advising interactions. Tools and analytics can be particularly effective when used by an empowered, cross-functional student success team.

 Personnel investments typically represent the largest proportion of the total cost of broad-based advising reforms. To maximize economic returns, institutions should strategically assign advisors and lower advising ratios for higher-need students.

To realize the full benefits of advising reforms and maximize academic and economic outcomes, institutions should consider the following strategic steps as a guide for implementation:

- Fully commit to advising reforms as a strategic priority.
- Engage a cross-functional team of faculty, administrators, and other relevant stakeholders early—at the reform design stage—and create mechanisms for regular feedback.
- Centralize advising resources, including professional advisors, to support at-risk student populations to the extent possible.
- Focus initial investments on tactics and tools that simplify students' paths, enable closer monitoring of students' progress toward a degree, and automate advisors' workflows.
- Tap outside technology vendors strategically, particularly for basic tools, such as

those that aid in calendaring and note taking.

- Engage frontline staff in designing software tools, particularly when selecting variables for risk-alert systems.
- Strengthen and invest in data analytics and reporting.

Institutions that champion advising reforms help open the door to higher education for more students at a relatively low annual investment. Additionally, advising reforms that reinforce cross-functional teaming and

strengthen data-informed decision making can have positive spillover effects to other areas of student success. Each institution's journey will be unique, but we believe that the lessons described in this report can serve as an entry point for all.

APPENDIX

A COMPARISON OF REFORMS ACROSS INSTITUTIONS

Each institution we studied took a unique approach to advising reform. This appendix summarizes the key elements of each

institution's reforms, as well as the academic and economic impacts that we observed.

| | Florida State University FSU began reforming student advising in 2000. | Georgia State University ¹ Georgia State began reforming student advising ir about 2008. |
|--|--|---|
| Key elements of reform | A Satellite Advising Structure. FSU transitioned from a faculty-driven advising model toward a centralized, professionalized, and developmentally focused model. The specific model of implementation differs slightly among FSU s cotleges for example, student-to-advisor ratios range from 100 to 1 to 550 to 1, and the use of peer advisors or faculty to supplement the professional cadre varies). Overall, FSU gradually increased the number of professional advisors during the transition to the satellite structure. FSU also created the Exploratory Advising Center (to provide intensive support to students having difficulty selecting a major) and the Academic Center for Excellence (a central hub on campus for learning supports, such as peer tutoring and supplemental instruction). A Data-Driven Approach. The university invested in the in-house development of major maps and a cohort calendar that encouraged adoption of a campus-wide, data-driven approach to student success initiatives. Targeted Programs. FSU developed programs—including the Center for Academic Retention and | |
| Enhancement and College Life Coaching—that layer on top of the standard model to support students most likely to withdraw or transfer. Third-Party Technology Investments. The university partnered with EAB to implement its foundation (or campus) platform. F3U also invested in Guide, EAB student-facing mobile app. | Other Measures. The university scaled up a supplemental instruction program and introduced adaptive courseware to support students with high rates of dropping, failing, or withdrawing from courses; it also introduced metamajors to simplify first-year students' decision making and limit the accumulation of unnecessary credits. | |

| | Florida State University FSU began reforming student advising in 2000. | Georgia State University! Georgia State began reforming student advising in about 2008. |
|-----------|---|---|
| Outcomes | The on-time graduation rate of the overall population has risen by 21 pp since 2000. Throughput has increased by 57%. | The on-time graduation rate of the overall population has risen by 10 pp since 2008, however, the impact of improvements in retention in years one through four over this period of reforms is outweighed by improved acceleration (for example, lower retention in years five through eight) Throughput has increased by 59%. |
| Economics | The total annual cost of broad-based advising reforms is \$4.2 million, of which \$2.6 million is incremental. Per student, the total annual cost is about \$120, of which about \$70 is incremental. The total annual direct cost of broad-based advising is \$3.4 million. The net impact of reforms is \$1.2 million to \$3.2 million for about \$40 to \$100 per student), due to annual preeminence funding and increased retention. | The total annual cost of broad-based advising reforms is about \$5.9 million, of which \$2.9 million is incremental. Per student, the total annual cost is about \$2.00, of which approximately \$90 is incremental. The total annual direct cost of broad-based advising is \$3.2 million. The net impact of reforms ranges from a cost of \$60 to \$50 per student. |
| | The University of Texas at Austin | NOTE: 1. All reform elements and reported outcomes exclude Perimeter College. |
| | UT Austin began reforming student advising in 2012 | Montgomery County Community College MCCC began reforming student advising in 2012 |

| | The University of Texas at Austin UT Austin began reforming student advising in 2012. | Montgomery County Community College MCCC began reforming student advising in 2012. | |
|-----------|--|---|--|
| Outcomes | Four-year graduation rates have risen by 15 pp, from \$1% to 66%, over the past five years (from the 2008 academic year through the 2013 academic year). | One-year retention has risen from 53% to 60%, despite a 4 pp increase in low-income students. First-time freshmen in the 2016 academic year were the first to experience the full comprehensive suite of reforms. | |
| Economics | The total annual cost of broad-based and targeted advising reforms is about \$11.7 million, of which \$3.9 million is incremental. Per student, the total annual cost is about \$280. | The total annual cost of broad-based advising reforms is \$3 million, of which \$0.5 million is incremental. Per student, the total annual cost is about \$165, of which \$50 is incremental. | |
| | The incremental cost of broad-based reforms, specifically, is about \$25 per student. | The total annual direct cost of broad-based advising is \$2.4 million. | |
| | We did not split direct and indirect costs for UT Austin owing to its focus on targeted programs. | The net impact of reforms ranges from a cost of about \$0 to \$18 per student. | |
| | The net impact of reforms is about \$100 per student. **The net impact of reforms is about \$100 per student.** **The net impact of | | |

NOTE TO THE READER

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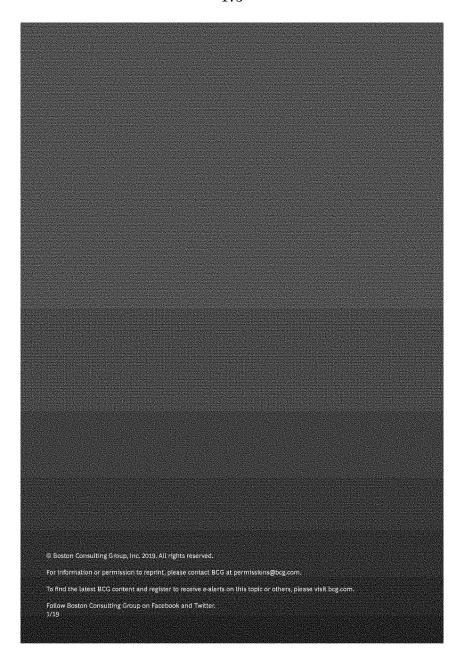
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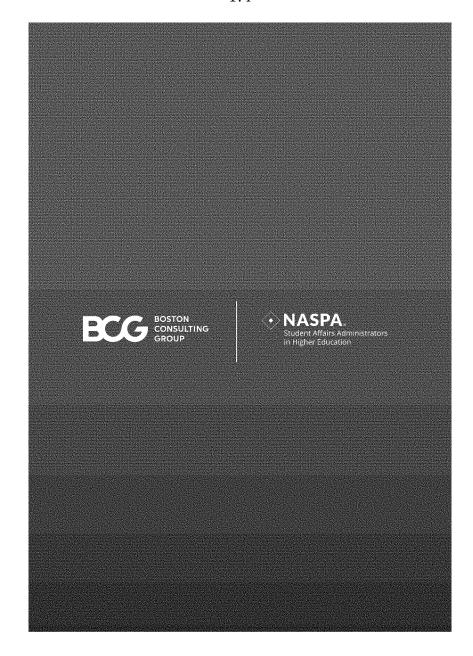
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6 Ways to Make Dual Enrollment Programs Equitable

May 23, 2019 by Kayla Patrick

<u>Dual enrollment</u> programs — which are partnerships between school districts and institutions of higher education that allow high school students to enroll in college courses and earn college credit — have become increasingly popular and an attractive talking point for lawmakers looking to demonstrate their dedication to "college and career readiness."

Participation in dual enrollment programs are correlated with <u>higher rates of graduation</u>, <u>college attendance</u>, <u>and more</u>. And <u>research</u> has even found that dual enrollment programs lead to higher degree attainment for low-income students. However, dual enrollment programs have largely been an acceleration opportunity reserved for <u>White</u>, <u>middle or higher income families</u>.

<u>Data shows</u> that 1 in 10 White students, 1 in 15 Latino students, and 1 in 20 Black students participate in dual enrollment programs. Even in Texas, where state law requires districts to offer dual-credit opportunities, Black, Latino, and students from low-income backgrounds <u>were less likely to be enrolled</u>. This is because even within schools, students of color and students from low-income backgrounds aren't given the chance to take advantage of dual enrollment programs. In far too many high school buildings, one can easily identify which class is advanced by looking at the racial makeup of the students.

The persistent gaps in dual enrollment opportunities signal a need to do more than just make the programs available; barriers that lock low-income students and students of color out of critical opportunities must be removed. Equity advocates and policymakers must take notice of discriminatory practices in the past, and focus on building racially and economically equitable schools for the future in order to ensure that students of color and low-income students have the opportunities they deserve.

Therefore, any policy to expand or increase dual enrollment programs, MUST include these six equity considerations:

 Make more students eligible to take dual enrollment classes by broadening entry requirements and giving students multiple points of entry, including but not limited to:

- ACT/SAT scores
- o high school GPA or class rank
- o fulfillment of pre-requisite requirements
- students' demonstrated proficiency in the subject for which they wish to enroll (even
 if they are not proficient in other areas)
- o or the recommendation of an academic or career adviser
- 2. Require that information about dual enrollment (including waived fees, course offerings, benefits of enrolling, and course requirements) be given to all high school students and families and be made available in the family's primary language.
- 3. Require partnering higher education institutions to establish agreements that include a plan for providing student advisement and support. This can include:
- Providing dually enrolled high school students with access to the same support services (e.g., academic advising and counseling, library resources, etc.) that are available to regularly enrolled college students, and/or
- Designating at least one person to serve as a liaison for each district and
 postsecondary institution partnership. This person would be responsible for advising
 students and families, assisting with course scheduling, and linking students to
 support services
- 4. Ensure that college and high school programs serving underserved students are held to the same standards of rigor as traditional college courses. In order to achieve this, college courses offered within secondary schools should use the same syllabi and exams as comparable courses taught on college campuses.
- Allow students to simultaneously gain high school and college credit upon successful completion of courses.
- 6. Provide more funding for a pipeline of strong and diverse school counselors. <u>Traditionally</u>, schools rely on the recommendations of counselors to identify students for dual enrollment opportunities, but schools <u>serving the most students of color have fewer counselors</u>. In addition, there is a lack of racial diversity among counselors, over <u>70% of school counselors</u> are White. Therefore, it is especially important to train counselors to address how they interact with students of color and students from low-income backgrounds.

Dual enrollment programs are just one of many learning opportunities that students of color and students from low-income families are often denied access to. To truly achieve educational equity, policymakers and equity advocates must promote <u>equitable allocation</u> of a wide range of resources and opportunities that students need to succeed such as <u>access to a positive school climate</u>, a <u>diverse teacher workforce</u> and <u>strong school leaders</u> who can seek out students of color and low-income students for opportunities like dual enrollment. Maybe then, states can start to achieve true racial equity in the pursuit of educational justice.

Georgia State University Panther Retention Grants

Executive Summary

In 2011, GSU piloted a program using catalytic funds from the university President to make relatively small, quickly accessible sources of funding available to students close to graduation who were at-risk for dropping out due to unpaid balances

 Historical data revealed more than 1k well-qualified students were dropped each semester due to the GA state mandate to pay full tuition balances by the first week of classes, and that a large portion of students dropped were seniors who had exhausted their financial aid

completion grant if they met certain eligibility criteria (e.g., upper division student, sufficient GPA, exhausted other forms of financial aid). The terms of In order to prevent these drop-outs and to enable students to receive financial advisement to manage future balances. GSU piloted a completion grant program through which students with modest (<\$2.5k) tuition balances were proactively identified following add/drop and were provided with a the grant required students to complete an online financial literacy course (free of charge to GSU)

President Becker signaled GSU's institutional commitment to the program by giving a personal donation of \$40k to support this initial intervention

Since then, the PRG program has scaled to distribute 10x the number of annual awards (>1k in AV16 vs. - 100 in 2012). The program has driven impressive student outcomes in retention and graduation, which more than offset the ongoing costs of the program

check student balances after add/drop), the per grant personnel effort associated with scaling up the program (and total costs) have been minimal (e.g., estimated 5·10 min of personnel time per grant awarded). The financial literacy component of the program has helped to reduce the prevalence of Because the process to identify, award, and monitor student recipients relies on existing personnel and reporting processes (e.g., standard practice to returnees" in need of grants, with the overall rate of "returnees" kept under 25%.

As the program has scaled to serve a greater number of students, GSU has leveraged strategic financial planning to ensure its future sustainability

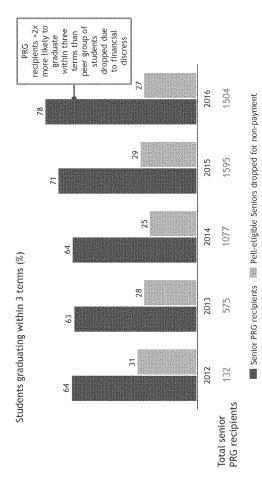
Of seniors who received a grant in AY16, -78% graduated within three semesters. In a peer comparison group of Pell-eligible seniors who were dropped for non-payment in AV16, only -27% graduated within three semesters

This improved retention and graduation among recipients translates into -\$5.4M-\$9.2M in incremental value to GSU per -1500 grants disbursed), less the costs of the grant itself and costs of grant administration this equates to a ~54M ~ 57.8M return GSU is considering several options to continue expanding the program in the future to additional populations (e.g., GPC, lower-division students) and to Program has been piloted with lower-division students with promising results (e.g., freshman offered grants in AY14 had 1-year retention rate of 88% vs. exploring ways to improve its impacts on student success and overall ROI

GSU has considered shifting its current cap on grants from a count (max of 3) to a max lifetime amount of funds (e.g., 57.5k) and has also considered university average of 83%) and UIA-funded pilot is currently underway at GPC

shifting the mission of the grant to emphasize financial incentives for academic performance GSU is incorporating financial risk indicators into the EAB platform to inform student outreach Campaigns





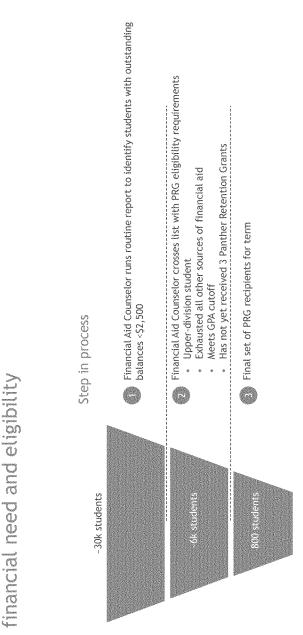
on student outcomes

has grown with impressive impacts

Grant program

Since 2011, Panther Retention 1. Control group includes Pell-eligible seniors who were dropped due to non-payment for a given fall, spring or summer term within an academic year

Students are identified for completion grants by Office of Financial Aid based on financial need and eligibility

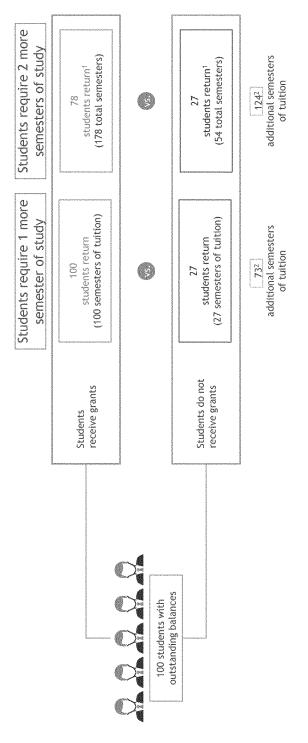


m

Process to identify grant recipients, disburse funds, and track progress

| Process to identify gram, recipients, disburse tunds, and track progress completed in days | ts Award funds Monitor progress | Financial Aid Counselor Office of Scholarships may awards funds to student follow up with student to account; sends email check progress on financial requesting literacy course acknowledgement | 5 minutes per grant 5 minutes per grant | Student responds to email Student must complete SALT online financial literacy course (offered |
|--|---------------------------------|--|---|--|
| | Identify students | Financial Aid Counselor runs reports to determine students who are eligible for completion grant | Minimal—part of existing/automated process | |
| completed in days | Add/drop period | Personnel activity | Personnel effort | Student |

From institution perspective, completion grants retain students for additional semester(s) of study



1. Based on graduation rate for student population (either PRG recipient or Pell-eligible seniors dropped due to non-payment) as defined by % of students who graduated within three terms. Assumes student requires 3 semesters of instruction to complete degree; to account for impact of acceleration due to student success interventions, can calculate a range of semesters of tuition (e.g., assume 2-3 semesters of tuition paid per student)

m

Methodology to assess ROI of completion grants considers value of retained students and costs of program

| | Return on investment for completion grants | | ~\$2.7.\$5.2k | ~\$246k-\$498k | ~\$4M-\$7.8M |
|--|---|---|----------------|------------------------|-----------------------|
| ister program | Overhead costs Cost | Fixed costs (staff time, O&M, etc.) | \$4 | ~\$400 | ~\$30k² |
| Costs to administer program. | Cost of grants grants Cost | Cost of grants disbursed (assume \$900 average) | 006\$~ | ~\$90k | -\$1.3M |
| ed students | Change in student acquisition cost | Cost to re-enroll/replace students who drop out | | Pending input from GSU | |
| -Value associated with retained students | Incremental cost to serve retained student Cost | Value of students retained for additional semester(s) due to completion grant | -\$3.6k-\$6.1k | ~\$361k-\$614k | ~\$5.4M-\$9.2M |
| Value à | Tuttion revenue from student retention, net of institution- provided aid Benefit | Value o retained for add due to com | Per grant | Per 100 students | Total value at GSU |

1. Assumes that all students who receive emergency aid would not have re-enrolled at the university on their own. 2. Includes cost of SALT online literary course (waived for GSU in recent years but shown to be illustrative for other institutions). Note: Methodology excludes revenue due to performance-based funding, since emergency aid programs are typically quite small within the suite of possible student success interventions



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<u>Home</u> > Georgia Perimeter improves graduation and transfer rates after merging with Georgia

Georgia Perimeter improves graduation and transfer rates after merging with Georgia State

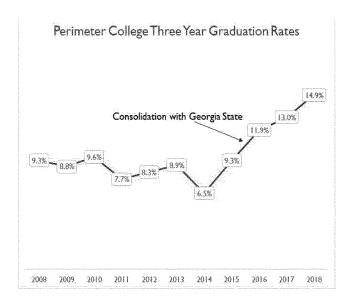
Submitted by Ashley A. Smith on February 20, 2019 - 3:00am

Three years ago the University System of Georgia Board of Regents tried to improve single-digit graduation rates at Georgia Perimeter College by <u>merging</u> the two-year college with its Atlanta-area neighbor, Georgia State University.

Georgia State had been <u>praised widely</u> [2] for improving its completion rates and closing equity gaps, and state leaders hoped that success would translate to the community college.

The merger decision appears to have paid off. Georgia Perimeter, which had a 6.5 percent graduation rate in 2014, increased that three-year rate to nearly 15 percent last year. Its completion rates, which measure graduation and transfers to four-year institutions, increased from 41 percent to 58 percent during that same time period.

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Gaps in academic achievement between students of color and low-income students and their white and wealthier peers also have closed at the college, which is now called <u>Perimeter College at Georgia State University</u> [3]. As of last year, graduation rates for white, Hispanic and low-income students are roughly the same. The 12-percent graduation rate for black students still trails the 15 percent rate for white students. But both rates have increased since 2014, when they stood at 10 percent for white students and 4 percent for black students.

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Perimeter College Graduation Rates by Population: Associate Students Pre- and Post-Consolidation

| | 2014 | 2015 | 2016 | 2017 | 2018 |
|--------------------------|------|------|------|------|------|
| 3-Year Graduation Rate | 7% | 9% | 12% | 13% | 15% |
| 3-Year: African American | 4% | 7%. | 10% | 10% | 12% |
| 3-Mart Write | 10% | 23% | 13% | 16% | 15% |
| 3-Yeart-Hisparic | 1956 | \$1% | 13% | 13% | 15% |
| 3-Yeart Peli | 35% | 8% | 10% | 1134 | 15% |

"We've seen rapid progress in retention and graduation rates," said Timothy Renick, Georgia State's senior vice president for student success. "It has been better than we thought it would be in a relatively short period of time."

The college has made other gains in student achievement. For example, more students are staying at Perimeter beyond one year. Year-to-year retention rates increased from 58 percent in 2014 to 70 percent last year, according to data from the institution.

Georgia State officials cite the introduction of <u>predictive analytics</u> [4] for helping to increase academic achievement at the two-year institution. The university has become a national leader in using predictive analytics to review hundreds of risk factors for students and to alert advisers when students get poor grades or are on the verge of dropping out. Officials at the four-year institution replicated that system for the Perimeter campuses.

Consolidating Perimeter, which enrolls roughly 20,000 students, and Georgia State, with approximately 50,000 students, saved about \$8 million in administrative expenses for the two-year college. The merged colleges no longer needed two presidents, two vice provosts or two English department chairs, for example, Renick said. Georgia State took \$3 million of that savings and used it to boost student services and to hire additional financial aid counselors and advisers.

By hiring 30 advisers, Perimeter went from 1,000 students per adviser to 400 per adviser. And students are using the service more often.

"When we took over Perimeter College back in 2015-16, there were about 3,000 students sitting down and meeting with academic advisers over the

course of a year," Renick said. "This past year over 50,000 one-on-one meetings have occurred between Perimeter students and academic advisers."

Before the merger, students typically would meet with an adviser when they felt there was a problem. Now, with predictive analytics, the college is more proactive and prompts students to talk with an adviser if, for example, they register for a class that doesn't match their degree program or if they're failing assignments in a math course.

Another intriguing aspect of the merger is the more seamless transfer process between the university and the two-year institution, said Josh Wyner, executive director of the College Excellence Program at the Aspen Institute.

"It's something we all should be paying attention to, because the majority of community college students want to transfer and get a bachelor's degree," Wyner said. "The four-year transfer rate is hugely important. They've gone from below the national average to about the national average. Those are impressive data."

About 80 percent of entering community college students say they want to earn at least bachelor's degree, but <u>only 33 percent</u> [15] transfer to a four-year institution within six years, according to the Community College Research Center at Columbia University's Teachers College.

For Perimeter graduates and transfer students, the merger also has had a positive effect on the public's perception of the two-year college.

"Seeing 'Georgia State' on a transcript will get more attention than just seeing 'Georgia Perimeter,'" said Lee Brewer Jones, an English and humanities professor at Perimeter, who has taught at the community college since 1992. "Just by being affiliated with a [research] institution, even though we're not an R-1 college, it has an impact on how people view our students."

Similar Demographics

Georgia State and Perimeter enroll students with some similarities. More than 70 percent of students at both institutions are nonwhite, and 60 percent are

low income. But students at the two institutions also tend to have different needs.

For example, about a third of students at Perimeter, an open-admissions college, need remedial math, reading or English. Georgia State converted all remedial classes at Perimeter to the <u>corequisite model</u> [6], which allows students to take college-level course work but also receive additional support such as tutoring.

Similarities in student demographics have helped Georgia State better understand how to help Perimeter students.

For example, the university expanded its microgrants to Perimeter students in 2016. The program helps cover unmet tuition and fees for students who would otherwise be dropped because of nonpayment. The university gives about 300 microgrants per semester to Perimeter students, averaging \$900 each.

The university also introduced learning communities to Perimeter, requiring all incoming freshmen to participate last year. The communities allow groups of about 25 students in the same degree program to take a few courses together. The expectation is that the communities help students establish friendships, form study groups and build peer networks.

Academic outcomes have improved for students who participate in the communities. They earn more credits and are retained at a slightly higher rate. And first-year students in learning communities earned on average a 3.18 grade point average compared to 3.09 GPA for those students not in a community.

Jones said many of the concerns Perimeter faculty had about the merger when it was first announced never occurred, such as a mandate for professors to have terminal or doctoral degrees.

And he and his peers have become more focused on encouraging students to earn their two-year degrees, even if they plan to transfer.

"I tell students, 'I hope you take time to get an associate degree before you transfer," Jones said. "I don't know if I always thought to say that before, but I

make a point of saying, 'Get your associate.' That's an emphasis that comes from the highest levels of the university."

Merging Community Colleges

Georgia isn't the only state to merge community colleges in recent years. Significant enrollment declines and budget pressures have forced other institutions to consider consolidating. For example, the University of Wisconsin System started merging of the state's 13 public two-year campuses with seven of its four-year universities last year. And the Connecticut State Colleges and Universities system had considered merging the state's 12 community colleges, but that plan was killed last year by the system's accrediting agency.

Ricardo Azziz, the chief officer of academic health and hospital affairs at the State University of New York System, was president of Georgia Health Sciences University when it merged with Augusta State University to create Georgia Regents University. That institution is now known as Augusta University. Azziz said more colleges and states will consider these types of mergers in the future.

"There are a number of trends driving this, and one is a need for continuing education or lifelong education," he said. "The second driver is pure demographics. The number of students in community colleges is decreasing. The number of high school graduates is decreasing, and the economy is improving."

Even if the economy declines, he said it wouldn't dramatically increase enrollment at community colleges.

Some researchers have been warning community colleges that enrollment is expected to plummet [10] by 2025. Enrollment in the two-year sector has already been on a decline since around 2010. And last fall, community college enrollment was down 3.2 percent from the previous year, according to the National Student Clearinghouse Research Center.

Mergers between community colleges and four-year institutions tend to be more successful when they are in the same geographic region but don't physically combine, experts say. They also are more successful when the community college retains its open-admissions policy, continues to offer noncredit programs and serves the community's work-force needs.

"Part of the reason why Perimeter and Georgia State have done better is that they're still at separate locations," Azziz said. "The community college structure is still physically different."

But mergers between two different types of institutions can be tricky. The missions and cultures of two-year or technical colleges are different from those of four-year colleges or research universities, Azziz said.

Faculty and staff initially were concerned about merging the two Atlanta-area institutions. Jones said Perimeter faculty worried that the smaller college would be taken over by the university and become a low priority to the larger institution.

"We have retained the autonomy and academic freedom that we had before the merger," Jones said.

Mergers can bring a lot of good to the institutions involved, Azziz said. But they are still complicated and difficult.

"We need to recognize that while a lot of good things can come out of them and some mergers have been quite successful, the reality is they are difficult things to do," he said. "They have to be thought out, managed well and have strong government support."

Community Colleges [11]

Source URL: https://www.insidehighered.com/news/2019/02/20/georgia-perimeter-improves-graduation-and-transfer-rates-after-merging-georgia-state

Links

- [1] http://www.insidehighered.com/news/2016/08/30/completion-rates-are-key-georgia-state-us-merger-georgia-perimeter-college
- [2] https://edtrust.org/the-equity-line/georgia-state-leading-the-way-in-student-success/
- [3] https://www.insidehighered.com/college/244437/georgia-state-university-perimeter-college
- [4] https://www.insidehighered.com/digital-learning/article/2017/07/19/georgia-state-improves-

Georgia Perimeter improves graduation and transfer rates after merging with Georgia State

student-outcomes-data

- [5] https://ccrc.tc.columbia.edu/publications/tracking-transfer-institutional-state-effectiveness.html
- [6] https://www.insidehighered.com/news/2016/01/22/new-complete-college-america-data-remediation-show-progress
- [7] https://www.insidehighered.com/news/2017/10/13/wisconsin-merger-plan-stokes-controversy-some-see-upside
- [8] https://www.insidehighered.com/quicktakes/2018/04/25/accreditor-rejects-connecticut-merger-plan
- [9] https://www.insidehighered.com/college/482149/augusta-university
- [10] https://www.insidehighered.com/news/2018/06/21/community-college-enrollment-rates-expected-keep-falling
- [11] https://www.insidehighered.com/news/focus/community_colleges

2018 Report Georgia State University Complete College Georgia

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"Georgia State is a perpetual laboratory of new ideas for using 'big data' to improve higher education and to keep disadvantaged students on track toward a degree."

-- Washington Post, October 1, 2015

"Georgia State has been reimagined, amid a moral awakening and a raft of data-driven experimentation, as one of the South's most innovative engines of social mobility."

-- The New York Times, May 15,2018

"No other institution has accomplished what Georgia State has over the past decade."

-- Bill Gates, October 2017

When it comes to higher education, the vision of the United States as a land of equal opportunity is far from a reality. Today, it is *eight times* more likely that an individual in the top quartile of Americans by annual household income will hold a college degree than an individual in the lowest quartile. Nationally, white students graduate from college at rates more than 10 points higher than Hispanic students and are more than twice as likely to graduate with a 4-year college degree when compared to black students. According to the United States Department of Education, Pell-eligible students nationally have a six-year graduation-rate of 39%, a rate that is 20 points lower than the national average.

In 2003, Georgia State University was the embodiment of these national failings. The institutional graduation rate stood at 32% and underserved populations were foundering. Graduation rates were

¹ The Pell Institute (2015) Indicators of Higher Education Equity in the United States: 45 Year Trend Report (2015 Revised Edition). Retrieved from http://www.pellinstitute.org/downloads/publications-lndicators of Higher Education Equity in the US 45 Year Trend Report.pdf

² U.S. Department of Education. Institute of Education Sciences, National Center for Education Statistics (2014) Table 326.10: Graduation rate from first institution attended for first-time, full-time bachelor's degree- seeking students at 4-year postsecondary institutions, by race/ethnicity, time to completion, sex, control of institution, and acceptance rate: Selected cohort entry years, 1996 through 2007. Retrieved from

https://nces.ed.gov/programs/digest/d14/tables/dt14_326.10.asp.

3 Horwich, Lloyd (25 November 2015) Report on the Federal Pell Grant Program. Retrieved from

http://www.nasfaa.org/uploads/documents/Pell0212.pdf.

4 U.S. Department of Education. Institute of Education Sciences, National Center for Education Statistics (2014) Table 326.10.

22% for Latinos, 29% for African Americans, and 18% for African American males. Pell students were graduating at a rates 10 percentage points lower than non-Pell students.

Today, thanks to a campus-wide commitment to student success and more than a dozen strategic programs implemented over the past several years, Georgia State's achievement gaps are gone. The graduation rate for bachelor-degree seeking students has improved 23 points—among the largest increases in the nation over this period (Chart 1). Rates are up 35 points for Latinos (to 57%), and 29 points for African Americans (to 58%). Pell-eligible students currently represent 58% of Georgia State University's undergraduate student population, and this year they graduated at a rate slightly *higher* than the rate for non-Pell students (Chart 2). In fact, over the past four years, African-American, Hispanic, first-generation and Pell-eligible students have, on average, all graduated from Georgia State at or above the rates of the student body overall—making Georgia State the only national public university to attain this goal.

Georgia State also continues to set new records for degrees conferred. The university awarded a record total of more than 7,000 undergraduate degrees over the 2017-2018 academic year. The university established new records for total bachelor's degrees awarded (4,990), as well as bachelor's degrees awarded to Pell-eligible (3,473), African American (2,035), Hispanic (557), and firstgeneration (1,375) students (Chart 3). Georgia State now awards more bachelor's degrees annually to Hispanic, Asian, first generation, and Pell students than any other university in Georgia. According to Diverse Issues in Higher Education, for the sixth consecutive year Georgia State conferred more bachelor's degrees to African Americans than any other non-profit college or university in the United States. 6 Georgia State is also ranked first nationally in the number of bachelor's degrees conferred to African Americans in a number of specific disciplines: biology, finance, foreign languages, history, marketing, psychology, and the social sciences. A year ago, Georgia State University became the first institution in U.S. history to award more than 2,000 bachelor's degrees to African American students in a single year, a feat that was repeated in 2017-2018. Since the launch of its current Strategic Plan in 2011, bachelor's degree conferrals are up 47% for African Americans, 46% for Pell students, and 89% for Hispanics (Chart 4). Just as importantly, students are succeeding in some of the most challenging majors at Georgia State. Over this period, the number of bachelor's degrees awarded in STEM fields has increased by 113% overall, 116% for black students, 153% for black males, and 275% for Hispanic students (Chart 5).

In just the third year since consolidation, we are also making exceptional progress at Perimeter College, Georgia State's associate-degree-granting unit that enrolls more than 18,000 students. While there is still a long way to go, Perimeter retention rates have increased from 58% inn 2014 to 70% in 2018 (Chart 6), while 3-year graduation rates have increased by 100%, from 7% to 14% over the same period (Chart 7). Equally encouragingly, achievement gaps at Perimeter College are quickly being closed. This past year, the graduation rate for Hispanic students (15%) was above that of the student

⁵ All charts can be found in the Appendix.

⁶ Diverse Issues in Higher Education, August 2018.

http://diverseed ucation.com/top100/pages/BachelorsDegreeProducers2017.php?dtsearch=&dtrace=&dtmajor=&dtschool=Georgia State University&dtstate=&dtpage=0

body overall, Pell-eligible students graduated at the same rate (14%) as non-Pell students, and African America students graduated at rates (12%) only 2 percentage points behind the overall rate (Chart 7). The elimination of achievement gaps based on race, ethnicity and income level has been a distinctive and much-studied accomplishment of Georgia State's Atlanta campus, and the rapid progress in this area at Perimeter lends credence to the view that Georgia State's unique data-based and proactive approach to student success—an approach now being implemented at Perimeter—helps level the playing field for students from diverse backgrounds. Despite steep declines in Perimeter College overall enrollments in the years leading up to consolidation, associate degree conferrals were also up significantly with 2,014 degrees awarded in 2017-2018—an increase of 7% since consolidation (Charts 8-9). Perimeter College is now ranked 15th in the nation for the number of associate degrees awarded to African Americans annually (970).⁷

These accomplishments have been the subject of growing levels of national attention:

- In December 2014, President Barack Obama lauded the exemplary work being done at Georgia State University to assist low-income students through its Panther Retention Grant program in his address at White House Opportunity Day.⁸
- In 2014, Georgia State received the inaugural national Award for Student Success from the
 Association of Public and Land Grant Universities (APLU), and in 2015 it received the secondever Institutional Transformation Award from the American Council on Education (ACE). Both
 awards cited Georgia State's exceptional progress in student success and its elimination of all
 achievement gaps.
- In August 2015, Georgia State was invited to provide expert testimony on strategies for helping low-income students succeed before the U.S. Senate Committee on Health, Education, Labor and Pension.
- In September 2015, Georgia State was awarded a \$9 million grant from the U.S. Department
 of Education to lead a four-year study to track the impact of analytics-based proactive
 advisement on 10,000 low-income and first-generation college students nationally.
- In 2016 and again in 2018, the standing U.S. Secretaries of Education visited Georgia State
 specifically to learn about its student-success programs and approaches. Each publicly
 credited the University as being a national exemplar, and Georgia State currently serves as the
 lead partner for the U.S. Department of Education's program to improve student outcomes at
 federally designated Minority Serving Institutions.
- In March 2017, Georgia State's student-success programs secured the second largest gift in university history, a \$14.6 million grant from the State Farm Foundation to fund innovative, data-based programs in support of college completion at Georgia State University's Perimeter College campus in Decatur.

⁷ Diverse Issues in Higher Education, August 2018.

 $[\]label{thm:com/top100/pages/AssociatesDegreeProducers2017.php?dtsearch=\&dtrace=\&dtmajor=\&dtschool=Georgia State University\\-Perimeter College\&dtsta te=\&dtpage=0$

⁸ President Barack Obama (4 December 2014) Remarks by the President at College Opportunity Summit. Retrieved from https://www.whitehouse.gov/the-press-office/2014/12/04/remarks-president-college-opportunity-summit.

- In July 2017, Bill Gates made a half-day visit to campus specifically to learn more about Georgia State's innovative use of data and technology to transform outcomes for low-income students.
- In 2017-2018, Georgia State's President Mark Becker was awarded the Carnegie Prize for
 Presidential Leadership and Sr. Vice President for Student Success Timothy Renick was
 awarded the McGraw Prize in Higher Education. The awarding bodies for these highly
 prestigious national prizes both cited Georgia State's ground-breaking work deploying datadriven student support initiatives to eliminate disparities in graduation rates based on race,
 ethnicity, income level and first-generation status.
- In December 2018, the Brookings Institution released a longitudinal data study that ranked Georgia State first in Georgia and 25th in the nation for "social mobility," i.e., taking students from the bottom quintile of Americans by annual household income at matriculation and helping them move to the upper half of Americans by annual household income fifteen years later.
- In spring 2018, The New York Times, in a full-page article, highlighted Georgia State's status as
 conferring the most degrees to African Americans in the country and labeled the university
 "an engine of social mobility," while the Harvard Business Review and NPR's "The Hidden
 Brain" both chronicled the impact of Georgia State's groundbreaking work using an A.I.enhanced chatbot to reduce summer melt.
- In fall 2018, U.S. News and World Report ranked Georgia State 2nd in the nation for its
 Commitment to Undergraduate Teaching (behind only Princeton) and the 2nd Most Innovative
 University in the nation (behind only Arizona State). Georgia State ranked 10th in the nation
 for Diversity. Georgia State's First-Year Experience and Freshman Learning Community
 programs were both ranked among the Top 15 in the nation.

Motivated by a desire to make an impact, not only in the lives of its own students but also in the lives of students nation-wide, Georgia State University has made a conscious and significant commitment of time and resources to sharing with others the lessons that we have learned. Over the past three years, Georgia State has hosted teams of administrators and faculty members from more than 200 colleges and universities seeking to learn more about our student-success programs. Visiting campuses have included almost every university in the University System of Georgia (USG), institutions from forty-seven U.S. states, as well as universities and national governing boards from the Netherlands, Great Britain, Australia, Colombia, Hong Kong, China, New Zealand, and South Africa. Major national organizations—including Achieving the Dream, the American Association of State Colleges and Universities (AASCU), the Associate of Public and Land Grant Universities (APLU), the American Council on Education (ACE), Complete College America, and the U.S. Department of Education—have also turned to Georgia State for its expertise in the area.

I. Institutional Mission and Student Body Profile



Georgia State University now enrolls more African American, Hispanic, Asian American, firstgeneration, and Pell students than any college or university in Georgia. In fact, the University set new records for the number of bachelor-degree-seeking students enrolled in *every one* of these categories in 2017-18. With Georgia State's 2016 consolidation with Georgia Perimeter College, the study body has become even more remarkable. Georgia State University enrolled 63,418 unique students this past year. This included 51,549 students during the Fall 2017 semester alone, including 18,698 students pursuing associate degrees on its five Perimeter College campuses. This means that approximately one out of every six students in the entire USG this past year was enrolled at Georgia State. This number includes a record 28,900 Pell-eligible students. (As a comparison, the entire IVY League last year enrolled 9,800 Pell students.) According to *The Chronicle of Higher Education* (August 2017), Georgia State now ranks first among all national universities for the percent of Pell students that it enrolls. The university enrolls more than 21,000 African Americans per semester (25% of the USG total enrollment of African American students) and 5,200 Hispanic students (21% of the USG total). Georgia State University is truly exceptional. According to *U.S. News and World Report*, Georgia State University is one of only two universities to rank in the Top 15 in the nation for both its racial/ethnic diversity⁹ and the percent of low-income students enrolled.¹⁰

The most foundational principle guiding our student-success efforts has been a pledge to improve student outcomes through *inclusion* rather *exclusion*. In the 2011 Georgia State University Strategic Plan, we committed ourselves to improving our graduation rates significantly, but not by turning our backs on the low-income, underrepresented and first-generation students who we have traditionally served. On the contrary: we pledged to increase the number of underrepresented, first-generation and Pell students enrolled *and* to serve them better. We committed to achieving improved outcomes for our students not merely at Georgia State but in their lives and careers after graduation. The consolidation with Perimeter College, with its tens of thousands of students who fall into federal atrisk categories, is the latest example of this deep commitment.

The central goal that we have set for our undergraduate success efforts is highly ambitious, but the words were chosen carefully: Georgia State would <u>"become a national model for undergraduate education by demonstrating that students from all backgrounds can achieve academic and career success at high rates." 11</u>

Our goals included a commitment to raise overall institutional graduation rates and degree conferrals by significant margins—graduation rates for bachelor-seeking students would climb 13 points and undergraduate degree completions would increase by 2,500 annually by 2021—and to close all achievement gaps between our student populations. As outlined in this update, we are not only on track to meet these goals, we already have met the latter two—years ahead of schedule. (See Section II for more the details.)

U.S. News & World Report (n.d.) Campus Ethnic Diversity: National Universities. Retrieved from http://colleges.usnews.rankingsandreviews.com/best-colleges/rankings/national-universities/campus-ethnic-diversity.
 U.S. News & World Report (n.d.) Economic Diversity: National Universities. Retrieved http://colleges.usnews.rankingsandreviews.com/best-colleges/rankings/national-universities/economic-diversity.
 Georgia State University (2012). Strategic Plan 2016-2.pdf
 http://strategic.gsu.edu/files/2012/09/GSU Strategic Plan 2016-2.pdf

The Strategic Plan also outlined key strategies to achieve these goals. We made a commitment to overhaul our advising system, to track every student daily with the use of predictive analytics and to intervene with students who are at risk in a proactive fashion, to expand existing high-impact programs such as freshman learning communities and Keep Hope Alive, to raise more scholarship dollars, and to pilot and scale innovative new types of financial interventions. These programs and their impacts are outlined in the next section.

II. Completion Goals and High-Impact Strategies to Attain Them



Completion Goals

In 2011, Georgia State University committed to reach a graduation rate for bachelor-degree-seeking students of 52% by 2016 and 60% by 2021. 12 We also committed to conferring 2,500 more degrees annually than we did in 2010 and to eliminating all significant achievement gaps between student populations. We now have committed to *doubling* the graduation rate of our new associate-degree seeking students from the 2014 baseline over the next five years.

On the surface, attaining these goals seems implausible. Georgia State's demographic trends—characterized in recent years by huge increases in the enrollments of students from at-risk populations—typically would project a steep *decline* in student outcomes. Georgia State University, though, has been able to make dramatic gains towards its success targets even as the student body has become far more diverse and financially distressed.

Since the launch of Georgia State University's 2011 Strategic Plan and the start of our participation in Complete College Georgia, <u>our institutional graduation rate for bachelor-degree-seeking students has increased by 7 percentage points from 48% to 55% (Charts 1 and 2)</u>. It is important to note that, due to changes in jobs and economic circumstances, low-income and first-generation students' families move more frequently than do middle- and upper-income college students. This phenomenon significantly impacts Georgia State's institutional graduation rates. Using National Student Clearinghouse data to track Georgia State's most recent 6-year bachelor-seeking cohort across all universities nationally, the success rates are even more encouraging. For the current year, a record 77.7% of the students who started at Georgia State six years ago have either graduated from Georgia State or some other institution or are still actively enrolled in college (Chart 11).

The news is equally positive for Perimeter College. In the short time since consolidation was announced, graduation rates for associate-degree-seeking students at Perimeter College have

¹² Georgia State University (2012) College Completion Plan 2012: A University-wide Plan for Student Success (The Implementation of Goal 1 of the GSU Strategic Plan). Retrieved from http://enrollment.gsu.edu/wp-content/blogs.dir/57/files/2013/09/GSU College Completion Plan 09-06-12.pdf

increased by 100%, doubling from 7% to 14%. While just a few years ago, Hispanic and Pell-eligible students were graduating from Perimeter at rates 40% to 50% lower than their counterparts, achievement gaps for both Pell-eligible and Hispanic students have now been eliminated at Perimeter (Chart 8). Despite steep enrollment declines in the years leading up to consolidation, associate degrees conferred this year reached a total of 2,014, a 7% increase from the pre-consolidation baseline.

Aided by the consolidation with Perimeter College, the record 7,004 undergraduate degrees conferred by Georgia State University during the 2017-2018 academic year represent a 2,782-degree increase (66%) over the baseline year of 2011 (Chart 3) and exceeds the Strategic Plan's target to increase degrees awarded by 2,500 annually.

The gains have been greatest for at-risk student populations. In the 2016-2017 academic year, Georgia State University conferred record numbers of bachelor's degrees to Pell-eligible, first generation, African American, and Hispanic students (Chart 4). Since the 2010-2011 academic year, the number of bachelor's degrees conferred to Pell students has grown by 46%, conferrals to African American students by 47%, and degrees awarded to Hispanic students by 89% ¹³. Time to degree is down markedly—by more than half a semester per student since 2011—saving the graduating class of 2016 approximately \$18 million in tuition and fees compared to their colleagues just five years earlier (Chart 10).

Georgia State's combination of large enrollment increases of students from underserved backgrounds and significantly rising graduation rates confounds the conventional wisdom. How has Georgia State accomplished these exceptional gains?

High Impact Strategies

Georgia State's student-success strategy has been consistent and unconventional. We do not create programs targeted at students by their race, ethnicity, first-generation status, or income level. Rather, we use data to identity problems impacting large numbers of Georgia State students, and we change the institution for *all* students. Examples include:

1. GPS Advising

High-impact
strategy

Use predictive analytics and a system of more than 800 data-based alerts to track all undergraduates daily. Create a structure of trained academic advisors to monitor the alerts and respond with timely, proactive advice to students at scale.

 $^{^{13}}$ Actual percent increases were much higher in these two categories, but we have controlled for the effects of the University implementing more rigorous processes encouraging students to self-report their race and ethnicity.

Summary of Activities and Lessons Learned

System went fully live in August 2012. This past academic year, the system generated more than 55,000 individual meetings between advisors and students to discuss specific alerts—all aimed at getting the student back on path to graduation. Since Georgia State went live with GPS Advising three years ago, freshmen fall-to-spring retention rates have increased by 5 percentage points and graduating seniors are taking fewer excess courses in completing their degrees.

In 2016, Georgia State University consolidated with Georgia Perimeter College. EDUCAUSE, with the support of the Bill & Melinda Gates Foundation and the Leona M. and Harry B. Helmsley Charitable Trust (the Helmsley Trust) and in partnership with Achieving the Dream (ATD), has awarded Georgia State University a grant to facilitate our efforts to deploy our technology solution and adapt our advising strategy in order to increase graduation rates for the 20,000 students seeking associate degrees at Perimeter. In addition to providing much needed support to students seeking associate degrees, the extension of our GPS to encompass the entirety of the new consolidated university provides us with the opportunity to better understand and support transfer pathways between two- and four- year institutions. The GPS platform launched at Perimeter in 2016-17 and the university hired an additional 30 Perimeter academic advisors in support. Early data show that GPS is equally effective in improving outcomes for associate and bachelors' students. In each context, 90% of the upfront costs have been directed to personnel, not technology.

Baseline Status

- Six Year Graduation Rate at Launch: 48% Bachelor level (2011)
 7% associate level (2014)
- Degrees Conferred: in the 2013-2014 Academic Year: 4,155 bachelor's degrees (2011) and 1,882 associate degrees (2014)

Interim Measures of Progress

The numbers we are achieving via the programs are exceptionally strong. Bachelor's:

- Credit hours at the time of graduation have declined by an average of 8 credit hours per graduating student since 2011 (Chart 10)
- Face-to face advising visits grew to a record 55,000+ during the 2017-2018 AY.
- Percent of students in majors that fit their academic abilities (up by 13 points)
- Progression rates have increased by 16 points (from 47% to 63%)
- Decline in changes of major in the sophomore, junior and senior years (down by 32%)
- Correlation between advisor visits and success markers (such as credit hours attempted and retention rates) (Chart 12)
 Associate:
- Face-to-face advising meetings with associate-degree students at Perimeter College
 increased to 42,589 during the 2017-2018 academic year (Chart 13). While there are
 no reliable baseline numbers from before consolidation, with only four to five
 advisors, it is estimated that annual visits were below 7,000.
- Bachelor's degree six-year graduation rates are up 7 percentage points and associate degree three-year rates are up 7 percentage points since their respective launches (2012, 2016)
- Bachelor's degree conferrals up 22% and Associate degree conferrals up 7% since launches

| | Wasted credit hours have declined by 8 credit hours per graduating student while average time to degree is down by half a semester, saving students roughly \$15 million a year. All achievement gaps for bachelor's students based on race, ethnicity and income have been eliminated Boston Consulting Group has determined a positive ROI for the initiative |
|---------------------|---|
| Primary Contacts | Dr. Timothy Renick (Vice President for Enrollment Management and Student Success), Dr. Allison Calhoun-Brown (Associate Vice President for Student Success) Carol Cohen (Assistant Vice President of the University Advisement Center) |

2. Summer Success Academy

| High-impact strategy | Use predictive analytics to identify admitted students for the fall freshman class who are academically at-risk and require that these students attend a seven-week summer session before fall classes and pursue 7 credit hours of college credit while be immersed in learning communities, near-peer mentoring, and a suite of mindset-building activities. |
|---|--|
| Summary of Activities and Lessons Learned Learned Program was initiated for bachelor's students in 2012 as an alternate to deferring was freshman admits to the Spring semester. Students enroll in 7 credits of college-lever remedial) courses and have the support of all of GSU's tutoring, advising, financial literacy, and academic skills programs at their disposal. All students are in freshmen learning committees, participate in community and campus projects, and worked wan near-peer tutors—all designed to increase "mindset," the students sense of belonging confidence. This year's cohort at the Atlanta campus was the second largest ever, and 332 students enrolled. The most recent cohort was retained at a rate of 94%. This compares to an 83% retention rate for reminder of the freshmen class who were, on paper, better academically prepared for college. It is important to note that these students, when Georgia State was deferring their enrollment until the spring semes is the common practice nationally), were being retained at only a 50% clip. This equation was the constant of the first application of program to Perimeter College, the Perimeter Academy, in the Summer of 2017. Am first cohort of 60 students, 92% persisted to the spring semester (compared with 70 students overall). | |
| Baseline Status | Bachelor's: Prior to the launch of the program, students with their similar academic profile had a one-year retention rate of 51% (2010). Associate: The baseline retention rate for Perimeter Decatur-campus students overall is 64.5% with 11 credit hours attempted and a first-year GPA of 2.1. |
| Interim Measures | Retention rates, GPA, hours attempted and completed |
| Measures of Success | Bachelor's: Retention rates for the at-risk students enrolled in the Success Academy (90+%) exceed those of the rest of the freshman class (82%) and the baseline of 51% in 2011. In summer 2017, the program enrolled 332 students, up 207 from summer of 2012. |

| | 62% of the students from the first cohort of the Success Academy in 2012 have now graduated, making their 6-year graduation rate higher than both the rate of the rest of the freshman class and the one-year retention rate was for the like cohort the year before the program launch (Chart14). Associate: The first cohort of Perimeter Academy students enjoyed markedly higher credit-hours attempted, GPAs, and retention rates than the rest of the Decatur campus students (Chart 15). |
|---------------------|--|
| Primary Contacts | Dr. Allison Calhoun-Brown (Associate Vice President for Student Success) Dr. Eric Cuevas (Director of Student Success Programs) |

3. Panther Retention Grants

| High-impact | Provide micro-grants to students at the fee drop each semester to help cover modest | |
|---|---|--|
| strategy | financial shortfalls impacting the students' ability to pay tuition and fees, thus preventing students from stopping/dropping out. This past fall, more than 18,000 of Georgia State's 25,000+ bachelor-seeking students (72%) had some level of unmet need, meaning that even after grants, loans, scholarships, family contributions and the income generated from the student working 20 hours a week, the students lack sufficient funds to attend college. Each semester, hundreds of fully qualified students are dropped from their classes for lack of payment. For as little as \$300, Panther Retention Grants provide the emergency funding to allow students who want to get their degrees the opportunity to stay enrolled. Last year, more than 2,000 Georgia State students were brought back to the classroom—and kept on the path to attaining a college degree—through the program. As of spring semester 2018, 11,027 grants have been awarded to Atlanta campus and Perimeter College students since the program's inception in 2011. Of these, 86.5% have gone on to graduate. The program has prevented literally thousands of students from dropping out of Georgia State. | |
| Summary of Activities and Lesson Learned | | |
| Baseline Status | A California State University study found that, among students who stop out for a semester, only 30% ever return and graduate from the institution. The PRG program is designed to prevent stop out and the negative impact on completion rates that follow. | |
| Interim Measures of Progress | Of freshmen who were offered Panther Retention Grants in fall 2017, 93% enrolled the following spring, a rate higher than that of the student body as a whole. 83% of freshman PRG recipients returned to class in fall 2017. Of the Perimeter College students receiving Panther Retention Grants during the Fall 2016 semester, 73% returned for the Spring 2017 term. | |

| Measures of | The ultimate measure of success is college completion. More than 11,000 Panther |
|-------------|---|
| Success | Retention Grants have now been awarded since the program's inception in 2011. |
| | 86.5% of students who have received the grant have graduated, most within two |
| | semesters. The program also generates a positive ROI for the institution according to |
| | a Gates-Foundation-financed 2018 analysis of the program conducted by the Boston |
| | Consulting Group, |
| Primary | Dr. Timothy Renick (Vice President for Enrollment Management & Student Success) |
| Contacts | Mr. James Blackburn (Associate Vice President for Student Financial Services) |

4. Keep Hope Alive (KHA)

High-impact With 58% of Georgia State students coming from Pell-eligible households (where the strategy annual household income last year was less than \$30,000), the Hope scholarship can be a mixed blessing. The \$6,000+ scholarship provides access to college for thousands of Georgia State students, but for the students who do not maintain a 3.0 college GPA, the loss of Hope often means they drop out for financial reasons. In 2008, the graduation rates for students who lose the Hope scholarship were only 20%, 40-points lower than the rates for those who hold on to it. Before Keep Hope Alive, gaining the Hope Scholarship back after losing it is a statistical longshot: only about 9% of Georgia State students pull this off. Keep Hope Alive provides a \$500 stipend for two semesters to students who have lost Hope as an incentive for them to follow a rigorous academic restoration plan that includes meeting with advisors, attending workshops, and participating in financial ${\it literacy training-all\ designed\ to\ help\ students\ improve\ their\ GPAs\ and\ to\ regain\ the}$ scholarship. Since 2008, the program has helped to almost <u>double</u> the graduation rates of Georgia State students who lose the Hope scholarship. By signing a contract to receive \$500 for each of the first two semesters after losing Hope, Summary of **Activities and** students agree to participate in a series of programs and interventions designed to get Lessons them back on track academically and to make wise financial choices in the aftermath of Learned losing the scholarship. Scholarship Criteria: Program is open to freshman and sophomore students with a 2.75 - 2.99 HOPE grade Students must pursue a minimum of 30 credit hours within the next academic year. Students must attend Student Success workshops facilitated by the Office of Undergraduate Studies. Students must meet with their academic coaches on a regular basis. Students are required to attend mandatory advisement sessions facilitated by the $\,$ University Advisement Center. During the coming academic year, we are exploring models for the use of KHA for our associate-degree seeking students. It is critical to identify students at risk of losing Hope as early as possible, when the interventions are far more likely to change outcomes. Good tracking data are essential. Baseline Retention rates for students receiving the HOPE scholarship were 50% in 2008. Status

| | Six-year graduation rates for students who lost their HOPE scholarship at some point in their academic career were 21% in 2008 |
|------------------------------------|---|
| Interim Measures of Progress | For students in KHA in the period from 2011 to 2017, better than 55% gained the scholarship back at the next marker, in the process leveraging our \$1,000 scholarship investment by gaining between \$6,000 and \$12,000 of Hope dollars back again. Students losing HOPE who did not participate in the program regained the HOPE scholarship at a 9% rate. |
| Measures of Success | Since 2008, institutional HOPE retention rates have increased by 50%, from 49% to 75% in 2015. Compared to 2008, the six-year graduation rate for students who lost their HOPE scholarship at some point in their academic career has almost doubled, from 21% in 2008 to 38% in 2017. |
| Primary Contacts | Dr. Eric Cuevas (Director of Student Success Programs) Dr. Allison Calhoun-Brown (Associate Vice President for Student Success) |

5. Meta-Majors/Career Pathways

High-impact At a large public university such as Georgia State, freshmen can feel overwhelmed by the strategy size and scope of the campus and choices that they face. This fall, Georgia State is offering 96 majors and more than 3,400 courses. Freshmen Learning Communities are now required of all non-Honors freshmen at Georgia State. They organize the freshmen class into cohorts of 25 students arranged by common academic interests, otherwise known as "meta majors" or "career pathways" (STEM, business, arts and humanities, policy, health, education and social sciences). Students in each cohort travel through their classes together, building friendships, study partners and support along the way. Block schedules—FLCs in which all courses might be between, for example, 8:30 AM and 1:30 PM three days a week— accommodate students' work schedules and help to improve class attendance. FLC students have one-year retention rates that are 5 percentage points higher than freshmen not enrolled in FLCs. 70% of this fall's freshmen class are in FLCs. In the first year of rolling out "career pathways" at Perimeter College, 92% of incoming freshmen were enrolled in the thematically-based block schedules. Requiring all students to choose a meta-major/career pathway puts students on a path to degree that allows for flexibility in future specialization in a particular program of study, while also ensuring the applicability of early course credits to their final majors. Implemented in conjunction with major maps and a suite of faculty-led programming that exposes students to the differences between specific academic majors during their first semester, meta-majors provide clarity and direction in what previously had been a confusing and unstructured registration process. Upon registration, all students are required to enroll in one of seven **meta-majors/career** Summary of **Activities and** pathways: STEM, Arts, Humanities, Health, Education, Policy & Social Science, and Lessons Exploratory. Once students have selected their meta-major, they are given a choice of Learned several **block schedules**, which are pre-populated course timetables including courses relevant to their first year of study. On the basis of their timetable, students are assigned to Freshman Learning Communities consisting of 25 students who are in the same meta-

major and take classes according to the same block schedules of 5-6 courses in addition to a one-credit-hour orientation course grounded in the meta major and providing students with essential information and survival skills to help them navigate the logistical. academic, and social demands of the university. Academic departments deliver programming to students—alumni panels, departmental open houses—that help students to understand the practical differences between majors within each meta major. A new career-related portal allows students in meta majors and beyond to explore live job data including number of jobs available in the Atlanta region, starting salaries, and their connection to majors and degree programs. The portal also suggests cognate careers that students may be unaware of and shared live job data about them. It is critical to make career preparation part of the curriculum, from first semester on. Doing so also promotes voluntary students visits to Career Services, which have increased by 70% since the introduction of meta majors. Baseline 48% FLC participation with opt-in model at the Atlanta campus (2010); 0% FLC Status participation at Perimeter College (2014) Retention rates of 81% for non-FLC students (2011). Average bachelor-degree graduates going through 2.6 majors before graduating (2009). In the 2017-2018 academic year, enrollment in a Freshman Learning Community according to meta-major resulted in an average increase in GPA of 8%. In the 2016-2017 academic year, enrollment in a Freshman Learning Community by meta-major was found to increase a student's likelihood of being retained through to the following year by 5%. Perimeter College retention rates were 64.5% in 2014. Interim Adopting an opt-out model has meant that more than 70% of bachelor's-degree freshmen Measures and 92% of associate-s-degree freshmen now participate in FLCs. Measures of One-year retention rates reached 84% for FLC freshmen (2016) in bachelor's Success programs. Perimeter Academy students, the first associate-degree-seeking students to start their studies in meta-major-based FLC, had a semester-to-semester retention rates 15 points higher than other Perimeter students. Changes in majors after the freshman year are down by 32% at GSU since 2011. Primary Dr. Allison Calhoun-Brown (Associate Vice President for Student Success) Dr. Eric Cuevas (Director of Student Success Programs) Contacts

6. A.I.-Enhanced Chatbot to Reduce Summer Melt

High-impact strategy

In the Fall 2015, 19% of Georgia State's incoming freshman class were victims of "summer melt." Having been accepted to GSU and having confirmed their plans to attend, these students never showed up for fall classes. We tracked these students using National Student Clearinghouse data and found that, one year later, 274 of these students (74% of whom were low-income) never attended a single day of college classes at any institution. We knew we needed to be far more proactive and personal with interacting with students between high-school graduation and the first day of college classes. Towards this end, we launched a new portal to track students through the fourteen steps they needed to complete during the

summer (e.g., completing their FAFSA, supplying proof of immunizations, taking placement exams) to be ready for the first day of college classes. We also become one of the first universities nationally to deploy a chat-bot in support of student success. Current grants from the Michael and Susan Dell Foundation and ECMC will allow for the expansion of the chatbot to all continuing Georgia State students. In the summer of 2016, we piloted a new student portal with partner EAB to track where Summary of **Activities and** incoming freshmen are in the steps they need to complete during the summer before fall Lessons classes. With the help of Admit Hub, we deployed an artificial-intelligence-enhanced texting Learned system—a chatbot—that allowed students to text 24/7 from their smart devices any questions that they had about financial aid, registration, housing, admissions, and academic advising. We built a knowledge-base of 2,000 answers to commonly asked questions that served as the responses. We secured the services of Dr. Lindsay Page of the University of Pittsburgh as an independent evaluator of the project. From these efforts, we lowered "summer melt" by 22% in one year. This translates into 324 more students, mostly lowincome and first-generation, enrolling for freshman fall who, one year earlier, were sitting out the college experience. Critical to success is building an adequate knowledge base of answers so students can rely on the system. Many students reported that they preferred the impersonal nature of the chat-bot. **Baseline Status** Summer Melt rate of 18% for the incoming freshman class of 2015. Interim In the three months leading up to the start of Fall 2016 classes, the chatbot replied to Measures 201,000 student questions, with an average response time of 7 seconds. Similar usage has been tracked each of the past two summers, with summer melt declining by an additional 4 percentage points Measures of Summer Melt has been reduced by more than 20% when compared to the 2015 baseline, Success translating into almost 1,000 more students, mostly low-income, who matriculated at Georgia State rather than sitting out college entirely Dr. Lindsey Page has published a research article confirming these results. See https://www.ecampusnews.com/topnews/gsu-summer-melt-enrollment/ https://hbr.org/2018/01/how-georgia-stateuniversity-used-an-algorithm-to-help-students-navigate-the-road-to-college Dr. Timothy Renick (Sr. Vice President for Student Success) **Primary** Contacts Mr. Scott Burke (Associate Vice President for Admissions)

7. SunTrust Student Financial Management Center

High-impact strategy

Supported by a gift from the SunTrust Foundation, Georgia State opened the SunTrust Student Financial Management Center (SFMC) in late fall 2016. Predicated on the premise that more students will persist if their financial problems are identified early and proactively addressed, the center deploys predictive analytics parallel to those critical to Georgia State's ground-breaking GPS academic advising system. In the case of SFMC, ten years of financial data were analyzed to identify early warning signs of student financial problems. We discovered that some financial decisions made before the students first set foot on campus may determine whether a student ever graduates, such as a student choosing a single dorm rather than living at home or with roommate in the summer before the freshman year. Through the SFMC,

certified financial counselors now track students daily and reach out to offer support and advice when problems are identified. In the first 18 months of operation, 56,833 Georgia State students visited the SFMC. A central objective of the SFMC is to deliver to our students the help they need before financial Summary of **Activities and** problems become severe enough to cause them to drop out. Building on a similar system that Lessons Georgia State has already deployed for academic advising, the initiative extends our predictive Learned analytics to financial advisement. In the first six months of 2017, the SunTrust SFMC conducted 72,121 in-person, online and phone interactions. 62% of the interactions focused on loans, FAFSA verification, status of aid, and HOPE Scholarship questions. We found that missing or incomplete documents, FAFSA problems, and parent loans were among the leading issues faced by students. An additional 6% of interactions focused on Satisfactory Academic Progress (SAP) appeals. Combining information currently in Banner, our student information and records system, with experiences observed during the past year, the SunTrust SFMC has identified 16 risk triggers that are aligned with the data. A new financial alert system, created in part through our engagement with the Educational Advisory Board (EAB), is accessible by campus advisors, college academic assistance staff, and student retention staff. **Baseline Status** This project represents new territory, not only for Georgia State but nationally. We have more than 1,000 students being dropped for non-payment each semester, and historically 50% of our students miss the deadline for completing the FAFSA. In the first year of SunTrust SFMC operation, 56,833 unique students visited the center. Of the Interim Measures 13.428 student who visited the center over its initial semester, 12.326 completed the Free Application for Federal Student Aid (FAFSA), and 1,104 did not complete the FAFSA. In addition, more than 2,500 first-year students received financial literacy training through their $\textit{GSU 1010 new student orientation course, primarily offered through the \textit{Freshman Learning}}$ Community program. This hour-long session provides information on maintaining financial-aid eligibility, FAFSA completion, Satisfactory Academic Progress, HOPE Scholarship eligibility, and student loan responsibilities. Students were also given information on managing credit and budgeting. These efforts had a significant positive impact on our students, as we found a more than 94% FAFSA completion rate for students re-enrolled in the spring semester compared to a general Georgia State student population FAFSA completion rate of 74%. Measures of With 93% of Georgia State undergraduates receiving federal aid, a major challenge for the university is getting students to take the steps to address outstanding financial-aid obligations Success and to resolve their balances. For the Fall 2017 semester, students who visited the SFMC were 6 percentage points more likely to complete all financial-aid requirements and bring their balances down to zero than the rest of the student body. With a campus of 52,000 students, this translates into more than 3,000 students being financially able ready to start the semester than would have been true without the assistance of the SFMC. We believe these kinds of positive impacts will only increase in the coming year, as the programs and capabilities of the SFMC reach full capacity. **Primary** Dr. Timothy Renick (Sr. Vice President for Student Success) Contacts Mr. James Blackburn (AVP for Student Financial Services) Ms. Atia Lindley (Director of the SFMC)

8. Supplemental Instruction

| High-impact strategy | Supplemental Instruction (SI) builds upon Georgia State's extensive use of near-peer tutoring and mentoring by taking undergraduates who succeed in lower-division courses one semester and deploying them as tutors in the same courses the next semester(s). Student are paid to go through training, to sit in on the same class again so they get to know the new students, |
|--|---|
| Summary of Activities and Lessons Learned | and to offer three formal instructional sessions each week. During the past academic year, Georgia State had more than 1,000 course sections with nearpeer tutors embedded in the courses. We have found that we can leverage our data to identify federal work-study and Panther Works students who have succeeded in courses with high non-pass rates and redeploy these students from their current campus jobs, thus reducing the costs of the program. We have also found that SI becomes more important with the use of early alerts to identify academic risks (as with our GPS Advising). The reason is simple: if one identifies a student struggling during week three of an Accounting course (to use one example), there needs to be support specific to that Accounting course. SI provides it. Finally, we have found that SI creates a natural and strong mentoring relationship between the faculty members teaching the course and the SI instructors (who faculty often nominate to the position), thus improving graduation rates for the tutors. |
| Baseline Status | Average GPA in courses identified prior to SI was 2.6 with non-pass (DFW) rates in excess of 20%. |
| Interim Measures | 7,939 students attended at least one SI session during the Fall 2017 semester and another 7,889 attended during Spring 2018. |
| Measures of Success | During Spring 2018, students who attended FI earned an GPA in these sections of 3.22 (when compared to 2.59 for students who did not attend) and non-pass rates were 30% lower (Chart 16). |
| Primary Contacts | Dr. Allison Calhoun-Brown (AVP for Student Success) Mr. Eric Cuevas (Director of Student Success) |

9. Hybrid Math Classes Using Adaptive Learning

| High-impact strategy | Deliver introductory courses in mathematics using a pedagogy that requires students actively to do math rather than merely to hear an instructor talk about math. Leveraging adaptive technologies, students receive dozens of bits of immediate, personalized feedback every hour that they are in class, and they spend class times with instructors and classmates in a math lab environment. |
|--|---|
| Summary of Activities and Lessons Learned | Georgia State has adopted and scaled a model for introductory math instruction on the Atlanta campus in which students meet for one hour per week in a traditional classroom and three hours per week in a math lab with classmates and instructors. In the lab, dubbed the MILE (Mathematics Interactive Learning Environment) students sit at their own computer terminals and learn the subject matter at their own pace. As they answer questions, students receive personalized feedback from the adaptive program that allows slower students time to build up foundational competencies and more advanced students to be challenged—all at the |

| | same time. Results show improvement in GPA and pass rates for all demographics, but the largest gains are for students from underserved backgrounds. Students taking adaptive classes not only pass math courses at significantly higher rates, they perform at higher levels in next-level courses reliant on math skills. We are working on a pilot with Stanford University to test open-source adaptive math courseware, as well as a project funded by the Bill & Melinda Gates Foundation to expand adaptive pedagogies to first-year courses in the social sciences (Psychology, Economics, and Political Science). |
|------------------------|--|
| Baseline Status | Before the launch of the model, 43% of all Georgia State bachelor's students attempting introductory math courses were receiving non-passing grades. These numbers are often in excess of 60% at Perimeter College, where the adaptive model is set to be piloted. |
| Interim Measures | Last year, all 8,500 seats of Introduction to Statistics, College Algebra and Pre Calculus offered at the Atlanta campus were taught using adaptive, hybrid pedagogies. Since the launch of the program, non-pass rates for these courses have been reduced by 35%. We deployed random control trials in initial semesters, having students in the lecture and hybrid sections of a given math courses come together to take the same mid-term and final, thus verifying the effectiveness of the new approach. |
| Measures of Success | 1,300 more bachelor's students annually are passing math courses in their first attempt than was the case before the launch of the initiative. STEM completion rates at Georgia State have more than doubled over the last six years, with the greatest gains being seen by underserved populations (Chart 5). |
| Primary Contacts | Dr. Guantao Gu (Chair of Mathematics) Dr. Tim Renick (VP for Student Success) |

10. College to Career

| High-impact strategy | Integrate career preparation and awareness throughout the college curriculum and experience, starting with the first semester. Onboard students through learning communities structured around career pathways/meta majors, with competencies documented by students in real time by providing all students with career-based e-portfolios. |
|--|---|
| Summary of Activities and Lessons Learned | Georgia State's new Quality Enhancement Plan, College to Career, is a campus-wide effort to get students to recognize the career competencies that they are acquiring through their curricular and co-curricular activities; to document these competencies in a robust fashion thorough archiving textual, video and audio evidence in faculty- and peer-reviewed e-portfolios; and to articulate the competencies through resumes, cover letters, and oral discourse. All students are now provided with e-portfolios upon matriculation at Georgia State. Faculty and departmental grants are awarded to encourage instructors to integrate assignments highlighting career competencies into both lower-level and capstone courses. New technologies have been implemented to share real-time job data for metro Atlanta with students, starting before they arrive on campus. All undergraduates are now onboarded on career-pathway-based learning communities in their first semester. In 2018, Georgia State became the first university nationally to partner with Road Trip Nation to create a searchable video archive of the careers of Georgia State alumni. |

| Baseline Status | In 2015, the average Georgia State undergraduate was first visiting University Career Services in their final semester before graduation. |
|------------------------|--|
| Interim Measures | Last year, Georgia State students posted more than 700,000 artifacts (evidence of their career competencies) to their e-portfolios. All students complete a first resume as part of their first-semester orientation courses. Visits by first- and second-year students to University Career Services have increased by more than 100% since 2015. |
| Measures of Success | The Brookings Institution 2017 Rankings of Social Mobility ranked Georgia State first in Georgia and 25 th in the nation for social mobility (defined as moving students from the bottom quintile of Americans by annual household income at matriculation to the top half of Americans by annual household income fifteen year later). |
| Primary Contacts | Ms. Catherine Neiner (Director of University Career Services) Dr. Tim Renick (Sr. Vice President for Student Success) |

III. Momentum Year



The high-impact practices (HIPS) outlined in the previous section are strong evidence of Georgia State's deep commitment to the principles of the Momentum Year, a program to ensure that newly enrolled students meet a series of metric-based milestones that have been shown to correlate to college completion. These HIPS are already having a positive impact on key Momentum-Year indicators.

- Georgia State students find a purpose from the outset of college through being exposed to portals with live job-data before matriculation, enrolling in learning communities organized around meta-majors/career pathways in their first semesters, and exploring career options in both curricular and co-curricular settings through the College to Career initiative as they pursue their degrees. Since our model of onboarding incoming students via career and meta pathways was implemented at the Atlanta campus, Georgia State has seen a 32% reduction is students changing majors after their first year. Students are finding the right academic fit earlier on in their academic careers, and, starting in their first semester, they are documenting their career interests, goals, and directions in their e-portfolios through curricular- and co-curricular-based assignments. This past year, students posted to their e-portfolios more than 700,000 artifacts evidencing the career competencies they have acquired. (See High Impact Practices 5, 9 and 10 in Section II, above.)
- Learning communities with block schedules for all incoming students ensure that students enroll
 in the appropriate English and math courses in their first semesters. All incoming freshman are
 required to enroll in learning communities, and, as part of their blocked schedules, all learning
 communities include English as well as the math appropriate to the career or meta pathway (HIP

- 5). For bachelor's students, 93.4% of freshmen are successfully completing college-level English and 81.1% college-level Math in the first year, numbers which need to improve and will serve as baselines for our next-level efforts in this area (Chart 17). At Perimeter College, the numbers are 76.4% for English and 68.4% for Math. Part of the challenge at Perimeter has been that, with foundations as the prevailing model for learning support, many freshmen were not even attempting college-level courses in these areas during their first twelve months of enrollment. This issue is being addressed through the move to a co-requisite approach to remedial education as well as the adoption of learning communities at Perimeter. The news is already encouraging. In part due to the implementation of structured pathways and better advising at Perimeter, the percent of freshmen who did not attempt college-level English in their first year declined from 13.5% in 2016 to 3.3% in 2017 (Chart 18).
- Learning communities with block schedules also promote the accumulation of 30 attempted credit hours in the students' first year of enrollment. In the first year that the learning community/career pathway program was initiated at Perimeter College, average credit hours attempted for incoming freshmen during the fall semester increased from 9.0 in fall 2016 to 12.4 in fall 2017. At the Atlanta campus, where the program is fully implemented, the average incoming freshman (including part time students and new transfer students with freshman standing) this fall attempted just under 14 credit hours. For academically at-risk students, the Success and Perimeter Academies allow students to earn 7 college credits before the start of the freshman fall. Student completing the first-ever Perimeter Academy, launched at the Decatur campus in the summer of 2017, earned 7 credit hours in the summer and then successfully completed an average of 19.7 credit hours during the fall and spring semester, for an average total of 26.7 credit hours earned during the first twelve months. The year before, Perimeter students averaged a total of 13.2 credit hours completed for the first year—meaning that the Perimeter Academy students accumulated 100% more credit than their counterparts from a year earlier. (HIPS 5 and 2).
- Because these learning communities are based on meta majors/career pathways, they embed
 courses specific to the academic field as well as feature an orientation course that focuses on the
 discipline, thus ensuring that students receive substantive course-tied exposure to their chosen
 academic fields in their first year (HIP 5).
- Hybrid adaptive learning classes in introductory math not only help thousands of additional students to satisfy their math requirement in their first year but provide a better foundation of math skills to promote success in subsequent courses. At the Atlanta campus, we have increased the percent of first-year students who complete college-level math in their first attempt by 35%, and the percent of students who then go on to successfully complete STEM majors has increased by more than 100% (HIP 9). We have a current proposal to pilot the hybrid adaptive model in introductory math sections at Perimeter College. With the support of the John Gardner Institute, we are also currently engaged in a major initiative to scale co-requisite remediation for all

Perimeter College students needing learning support in English and mathematics, a program that we are confident will further increase the number students successfully completing English and math in their first years (and adding to the list of HIPS in next year's report).

- Through the programming and design of the Summer and Perimeter Success Academies, supplemental instruction, and programmatic components of all learning communities (including near-peer mentors embedded in the communities, field trips, and group and service-learning projects) students develop a sense of belonging and a positive mindset from the first semester. Adaptive components of introductory math sections—as is the case with courseware we are piloting with Stanford University—are explicitly designed to address mindset issues by tracking students' levels of frustration and adjusting questions posed accordingly (HIPS 2, 5, 8, 9).
- Finally, GPS Advising has now been fully implemented at both the Atlanta and Decatur campuses. The initiative includes the use of predictive analytics to track all undergraduates daily for hundreds of data-based risk factors and immediate interventions by trained advising staff when problems are detected. Since the launch of GPS Advising on the Atlanta campus in 2012, we have hired more than 50 additional advisors to support the platform and launched more than 250,000 proactive interventions with students. Every student has a personalized, four-year academic map, and the system monitors all registration records and all grades to ensure students stay on path. GPS Advising monitors that first- and subsequent-year students are taking the right courses in the right order—including attempting required English and math courses in the first year and enrolling in courses specific to the students' academic field. It has also served as a potent boost to student credit-hour momentum. Since the program's launch, bachelor's students are completing their degrees with an average of eight fewer wasted credit hours and in half a semester's less times, saving the graduating class of 2018 \$18 million in tuition and fees when compared to the graduating class of 2012 (Chart 10). Administrative savings from consolidation were used to hire 32 additional advisors at Perimeter College in 2017. Last year, there were 42,589 proactive interventions with Perimeter College students. We have already begun to see significant increases in credit-hour accumulation, retention rates, and graduation rates among Perimeter College students. In effect, GPS Advising is the institutional tool that allows for the dayto-day monitoring and enforcement of Momentum Year parameters throughout the entire academic careers of Georgia State students (HIP 1).

Conclusion



Georgia State University is testimony to the fact that students from all backgrounds can succeed at high rates. Moreover, our efforts over the past few years show that dramatic gains are indeed possible not through changing the nature of the students served but through changing the nature of

the institution that serves them. How has Georgia State University made the gains outlined above? How do we propose to reach our ambitious future targets? In one sense, the answer is simple. We employ a consistent, evidenced-based strategy. Our general approach can be summarized as follows:

- Use data aggressively in order to identify and to understand the most pervasive obstacles to our students' progressions and completion.
- Be willing to address the problems by becoming an early adopter. This means piloting new strategies and experimenting with new technologies. After all, we will not solve decades-old problems by the same old means.
- Track the impacts of the new interventions via data and make adjustments as necessary to improve results.
- Scale the initiatives that prove effective to have maximal impact. In fact, many of the
 programs that we offer are currently benefitting 10,000 students or more annually.

Our work to promote student success at Georgia State has steadily increased graduation rates among our traditionally high-risk student populations, but it has also served to foster a culture of student success among faculty, staff, and administration. As the story of Georgia State University demonstrates, institutional transformation in the service of student success does not come about from a single program but grows from a series of changes that undergo continual evaluation and refinement. It also shows how a series of initially small initiatives, when scaled over time, can significantly transform an institution's culture. Student-success planning must be flexible since the removal of each impediment to student progress reveals a new challenge that was previously invisible. When retention rates improved and thousands of additional students began progressing through their academic programs, for instance, we faced a growing problem of students running out of financial aid just short of the finish line, promoting the creation of the Panther Retention Grant program. It also led to a new analytics-based initiative to better predict and address student demand in upper-level courses. For a timeline of where we have been and where we are going next, please see Chart 12.

Georgia State still has much work to do, but our progress in recent years demonstrates that significant improvements in student success outcomes can come through embracing inclusion rather than exclusion, and that such gains can be made even amid a context of constrained resources. It shows that, even at very large public universities, we can provide students with personalized supports that have transformative impacts. Perhaps most importantly, the example of Georgia State shows that, despite the conventional wisdom, demographics are not destiny and achievement gaps are not inevitable. Low-income and underrepresented students can succeed at the same levels as their peers.

APPENDIX

Chart 1

Graduation Rates by Year and Programs Launched: Bachelor's Degrees 2003 to Present

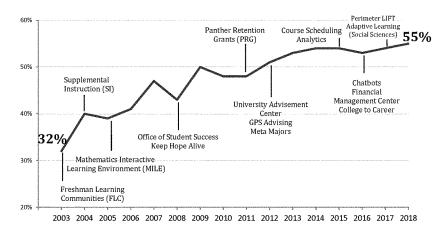


Chart 2
Graduation Rates by Population: Bachelor's Degrees
2010 to Present

| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|--------------------------|------|------|------|------|------|------|------|------|------|
| 6-Year Graduation Rate | 48% | 48% | 51% | 53% | 54% | 54% | 53% | 54% | 55% |
| 6-Year: African American | 51% | 52% | 54% | 57% | 55% | 58% | 56% | 58% | 58% |
| 6-Year: Hispanic | 58% | 48% | 53% | 54% | 56% | 58% | 52% | 55% | 57% |
| 6-Year: Pell | 51% | 49% | 51% | 53% | 51% | 55% | 52% | 54% | 55% |
| 5-Year Graduation Rate | 40% | 43% | 44% | 46% | 46% | 46% | 47% | 47% | 48% |
| 4-Year Graduation Rate | 21% | 22% | 22% | 24% | 23% | 23% | 27% | 23% | 29% |

Chart 3

Georgia State University All Undergraduate Degrees Awarded

2010 – Present

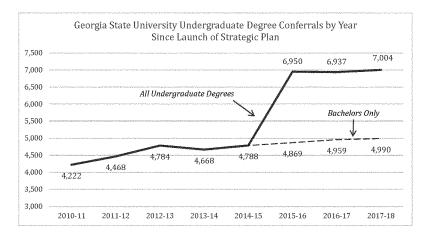


Chart 4

Degrees Conferred by Student Demographic Group: Bachelor's Degrees

2010 to Present

| | | 2010-11 | 2011-12 | 2012-13 | 2013-14 | 2014-15 | 2015-16 | 2016-17 | 2017-18 |
|-----------|-------------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|
| 2 | Adult Learners | 1,566 | 1,627 | 1,810 | 1,769 | 1,700 | 1,699 | 1,543 | 1,568 |
| Status | Pell-eligible Students | 2,403 | 2,765 | 3,140 | 3,132 | 3,280 | 3,379 | 3,428 | 3,473 |
| St | First Generation Students | 1,117 | 1,280 | 1,328 | 1,364 | 1,360 | 1,398 | 1,390 | 1,375 |
| | White | 1,890 | 2,007 | 2,013 | 1,924 | 1,856 | 1,779 | 1,662 | 1,587 |
| | Black or African American | 1,388 | 1,552 | 1,666 | 1,727 | 1,829 | 1,977 | 2,017 | 2,035 |
| | Asian | 548 | 507 | 633 | 541 | 536 | 568 | 699 | 735 |
| Race | More Than One Race | 170 | 153 | 167 | 176 | 184 | 276 | 320 | 355 |
| | American Indian or Alaska Native | 13 | | 18 | 12 | - 19 | 11 | 13 | 17 |
| | Native Hawaiian or Pacific Islander | 19 | 14 | 9 | 10 | | • | 2 | 5 |
| | Not Reported | 194 | 226 | 278 | 278 | 356 | 258 | 246 | 256 |
| ity | Non-Hispanic | 3,690 | 3,926 | 4,132 | 4,017 | 4,107 | 4,235 | 4,263 | 4,244 |
| Ethnicity | Hispanic | 294 | 339 | 394 | 409 | 435 | 443 | 501 | 557 |
| 甘 | Not Reported | 238 | 203 | 258 | 242 | 246 | 191 | 195 | 189 |
| Total | Bachelors Degrees Conferred | 4,222 | 4,468 | 4,784 | 4,668 | 4,788 | 4,869 | 4,959 | 4,990 |

Chart 5

STEM Degrees Awarded: Bachelor's Degrees

| STEM DEGREES CONFERRED | 2010-11 | 2016-17 In | crease Of |
|--------------------------------|---------|------------|-----------|
| All Students | 345 | 735 | 113% |
| African American Students | 112 | 240 | 114% |
| African American Male Students | 38 | 96 | 153% |
| Hispanic Students | 16 | 60 | 275% |

Chart 6

Perimeter College Retention Rates: Associate Students

| 2014 | 2015 | 2016 | 2017 | 2018 |
|------|------|------|------|------|
| 58% | 61% | 64% | 68% | 70% |

Chart 7

Perimeter College Graduation Rates by Population: Associate Students Pre- and Post-Consolidation

| | 2014 | 2015 | 2016 | 2017 | 2018 |
|--------------------------|------|------|------|------|------|
| 3-Year Graduation Rate | 7% | 9% | 12% | 13% | 14% |
| 3-Year: African American | 4% | 7% | 10% | 10% | 12% |
| 3-Year: White | 10% | 11% | 13% | 16% | 15% |
| 3-Year: Hispanic | 6% | 11% | 13% | 13% | 15% |
| 3-Year: Pell | 5% | 8% | 10% | 11% | 14% |

Chart 8

Perimeter College Degrees conferred by Academic Year: Associate Degrees

Pre- and Post-Consolidation

| | 2014 | 2015 | 2016 | 2017 | 2018 |
|--------------------|-------|-------|-------|-------|-------|
| Associate Degree | | | | | |
| Conferrals Overall | 1,882 | 1,895 | 2,081 | 1,978 | 2,014 |

Chart 9

Perimeter College Degrees Conferred by Student Demographic Group: Associate Degrees 2014-15 to Present (Pre- and Post-Consolidation)

| | | 2014-15 | 2015-16 | 2016-17 | 2017-18 |
|-----------|-------------------------------------|---------|---------|---------|---------|
| v | Adult Learners | 1,058 | 1,169 | 1,069 | 1,023 |
| Status | Pell-eligible Students | 1,314 | 1,477 | 1,397 | 1,422 |
| Ś | First Generation Students | 681 | 729 | 699 | 663 |
| | White | 659 | 706 | 677 | 607 |
| | Black or African American | 825 | 935 | 895 | 970 |
| | Asian | 173 | 220 | 224 | 239 |
| Race | More Than One Race | 77 | 90 | 106 | 111 |
| - | American Indian or Alaska Native | 9 | 9 | 4 | 6 |
| | Native Hawaiian or Pacific Islander | - 5 | 1 | 3 | 3 |
| | Not Reported | 147 | 120 | 69 | 78 |
| tγ | Non-Hispanic | 1,606 | 1,776 | 1,693 | 1,726 |
| Ethnícity | Hispanic | 156 | 187 | 218 | 256 |
| 盂 | Not Reported | 133 | 118 | 67 | 32 |
| Total As | sociates Degrees Conferred | 1,895 | 2,081 | 1,978 | 2,014 |

Chart 10

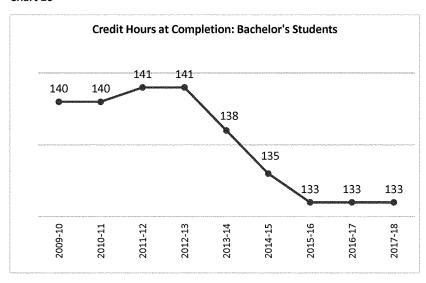
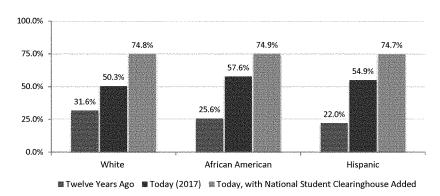


Chart 11

6-Year Graduation Rates Among First-Time Full-Year Freshman:
Bachelor's Degrees



Note: The red and blue bars in the above chart represent Georgia State institutional graduation rates and are based on institutional data. The green bars include students starting at Georgia State who have graduated or are still retained at Georgia State or another institution and are based on National Student Clearinghouse data.

Data are for fall 2017 since fall 2018 National Student Clearinghouse data are not yet available.

Chart 12

Impact of Academic Advising on Credit-Hour Accumulation: Bachelor's Students

Impact on Average Credits Attempted Based on Number of Fall/Spring Appointments

Analysis removes students who did not register for Spring term to create an equal comparison

| # Appts Registered in Fall 2017 in Spring 201 0 10.60 | 10.19 |
|--|-------|
| 1+ 12.16 | 12.00 |
| 1 11.57 | 11.19 |
| 2 12.22 | 12.03 |
| 3 12.43 | 12.44 |
| 4 12.51 | 12.52 |
| 5 12.63 | 12.65 |
| 6 12.74 | 12.76 |
| 7 12.96 | 13.28 |
| 8 12.58 | 12.67 |
| 9 12.57 | 12.87 |
| 10+ 13.05 | 13.09 |

Source: EAB

Chart 13

Perimeter College In-Person Advising Visits: Associate Students

| | | PERIMET | TER COL | LEGE U | NIVERSIT | Y ADVI | SEMENT | CENTER | (COMP) | EHENS | IVE) | | |
|-----------|--------|-----------|---------|----------|----------|---------|----------|--------|--------|-------|------|------|-------|
| | August | September | October | November | December | January | February | March | April | May | June | July | Total |
| 2016-2017 | 6233 | 1151 | 3014 | 3758 | 1928 | 1120 | 2167 | 3665 | 3824 | 3912 | 3352 | 3385 | 37509 |
| 2017-2018 | 5952 | 1630 | 4599 | 4457 | 2509 | 4231 | 2510 | 3143 | 4255 | 3256 | 2956 | 3091 | 42589 |

Chart 14 **Success Academy Student Outcomes: Bachelor's Students**

| Cohort | SA Group | Students | One Year Retention | Three-Year Graduation | Four-Year Graduation | Five-Year Graduation | Six-Year Graduation |
|--------|---------------------|----------|-----------------------|--------------------------|-------------------------|-------------------------|------------------------|
| 2012 | Success Academy | 100 | 86.0% | 0.0% | 24.0% | 50.0% | 61.6% |
| | non-Success Academy | 3,023 | 83.4% | 1.5% | 26.8% | 47.8% | 54.3% |
| 2013 | Success Academy | 173 | 87.3% | 0.6% | 19.1% | 38.2% | N/A |
| | non-Success Academy | 3,206 | 82.0% | 1.2% | 28.3% | 49.0% | N/A |
| 2014 | Success Academy | 291 | 83.2% | 0.0% | 21.3% | N/A | N/A |
| | non-Success Academy | 3,350 | 81.2% | 1.7% | 29.3% | N/A | N/A |

Chart 15

Perimieter Success Academy Outcomes: Associate Students Summer, Fall and Spring 2017 – 2018

| Acade | emic Data for PC Students | | | |
|------------|---------------------------|-------------|-----------|-------------|
| | | Summer 2017 | Fall 2017 | Spring 2018 |
| PC Decatur | Average Hours Earned | 4.52 | 6.54 | 6.72 |
| Students | Average Hours Attempted | 5.60 | 9.43 | 9.44 |
| | Earned Hour Ratio | 0.81 | 0.69 | 0.71 |
| | GPA | 2.73 | 2.27 | 2.31 |
| Perimeter | Average Hours Earned | 5.93 | 10.13 | 9.62 |
| Academy | Average Hours Attempted | 7.36 | 11.92 | 11.88 |
| Students | Earned Hour Ratio | 0.80 | 0.85 | 0.81 |
| | GPA | 2.80 | 2.68 | 2.59 |

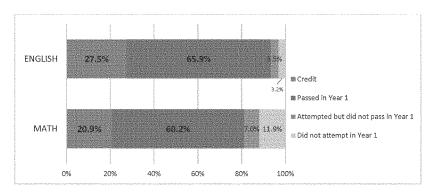
Chart 16
Impact of Supplemental Instruction on Student Outcomes: Bachelor's Students

| | Fall '17 | Spring '18 |
|--|---|------------|
| Total Enrollment (at least 1 SI session) | 7,939 | 7,889 |
| Total Students attended at least 5 SI sessions | 495 | 543 |
| GPA: | 111111111111111111111111111111111111111 | |
| Avg. Mean Grade SI | 3.12 | 3.22 |
| Avg. Mean Grade Non-SI | 2.72 | 2.59 |
| Avg. SI vs. Non-SI Diff. | 0.39 | 0.64 |
| DFW Rate: | | |
| Avg. #DFW SI | 0.55 | 0.30 |
| Avg. SI DFW Rate | 5.00% | 4.33% |
| Avg. #DFW Non-SI | 19.75 | 21.36 |
| Avg. Non-SI DFW Rate | 18.26% | 23.54% |
| W Rate: | | |
| Avg. #W SI | 0.10 | 0.05 |
| Avg. SI W Rate | 0.98% | 0.37% |
| Avg. #W Non-SI | 6.39 | 7.53 |
| Avg. Non-SI W Rate | 6.38% | 9.35% |

*A student is considered an SI attendee if they have attended 5 or more SI sessions throughout the entire semester.

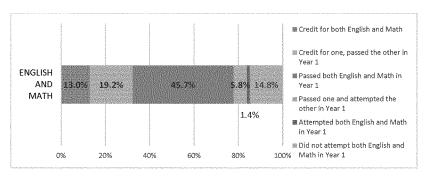
Chart 17

Full-Time Freshmen Completing Either English or Math in Year One, 2014-2017: Bachelor's Students



Note: For English, a student is counted as passed if he/she passed either ENGL 1101 or ENGL 1102 in the first year. For Math, a student is counted as passed if he/she passed a 1000 level or 2000 level MATH course in the first year.

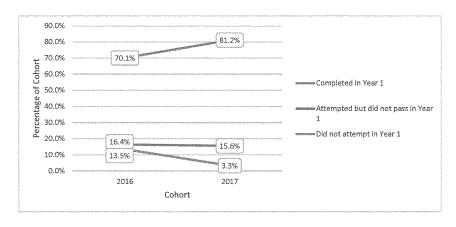
Full-Time Freshmen Completing Both English and Math in Year One, 2014-2017: Bachelor's Students



Note: A student is counted as passed if he/she passed both an ENGL course (either ENGL 1101 or ENGL 1102) and a MATH course (a 1000 level or 2000 level MATH course) in the first year.

Chart 18

Full Time Freshmen Completing English in Year One: Associate Students



Full Time Freshmen Completing Math in Year One: Associate Students

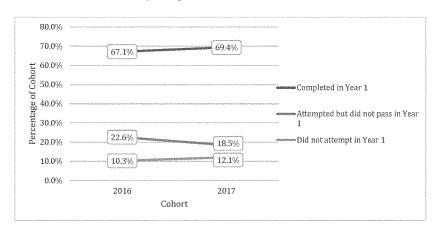


Chart 19

Timeline of Student Success Initiatives at Georgia State University

| Initiative Year Started | | Summary | Scale | |
|---|------|--|--|--|
| Freshman Learning Communities | 1999 | First-year students sorted into cohorts of 25 based on meta-major; take all courses together in block schedule. | 70% of first-year students in 2016-17 | |
| Supplemental instruction | 2005 | Students who are most successful in courses hired as peer tutors for other students in the course; many tutors sligible for work-study. | 10,000+ students in 2016-17 | |
| Mathematics interactive Learning Environment | 2006 | Redesign of introductory math courses (algebra, statistics, and pre- calculus) using a hybrid, emporium model of face-to-face and machine-guided instruction. | 8,500 students in 2016-17 | |
| Keep HOPE Alive Scholarship | 2008 | Small grants to students who lose eligibility for Georgia's HOPE ment scholarship, combined with academic and financial counseling. | 1,100 students since 2009 | |
| Panther Retention Grants | 2011 | Small grants (combined with academic and financial counseling) to juniors and seniors who are on-track academically, but are required by a state of Georgia rule to be dropped from classes because they have small outstanding behances on tuition or fees. | 9,000+ students since 2011 | |
| Graduation and Progression System | 2012 | Sophisticated dishboard for advisers that displays real-time analyses of student academic progress and raises alerts calling for intervention; coupled with conscilidating undergraduate advising and more than doubting the number of advisers. | Prompted 52,000 student- adviser meetings in 2016-17 | |
| Summer Success Academy | 2012 | Opportunity for the most academically at-risk 10 percent of incoming freshmen to take 7 credit hours and receive intensive academic advisement and financial ilteracy training during the summer before their first year. | 300+ students in Summer 2016, 1,400 students since launch | |
| Meta Majors | 2013 | Orboarding program that errols new students according to broad areas of academic interests and then delivers programming to help students understand the differences between majors within each area; has significantly reduced the number of students changing majors after their treshman years | Approximately 3,700 freshmen during the 2016- 17 academic year | |
| Course Scheduling Analytics | 2015 | Predictive Analytics deployed to determine the number of course sections and seats needed each semester; establishment of a university Strategic Courser Scheduling Committee | Capacity added in 800 courses in 2016-17 | |
| Chat Bots | 2016 | Artificial-intelligence-enhanced automatic texting platform that has been developed to answer thousands of common treshman questions immediately via texts. Has reduced summer mat by 22%. | 4,000 incoming freshman during Summer 2017 | |
| SunTrust Student Financial Management Canter | 2016 | Office using predictive analytics to proactively identify students who are at financial risk and reach out to them with help. Delivers financial competencies programming. | 31,000 in- person student visits during the Spring 2017 term | |
| College to Career | 2016 | Undergraduate curriculum that promotes career readiness each year 70 a student is enrolled leveraging new technologies, e.g. career-based poputotios for each student, career component of academic advising, popular properties of the program of the | | |
| Perimeter LIFT | 2017 | Integrated suite of 16 different student support programs to take students from high school to college graduation- program is in cooperation with Dekalb Public Schools and supported by State Farm 2017 | | |
| Adaptive Learning in the Social Sciences | 2017 | A collaborative, funded project in which faculty members in Psychology, Economics, and Political Science are converting 20,000 seats of introductory courses to hybrid, flipped classes assisted by adaptive-learning technology. | 20,000 students year by 2018 | |

Source: Building A Pathway to Student Success at Georgia State University



June 18, 2019

The Hon. Bobby Scott, Chairman Committee on Education and Labor U.S. House of Representatives Washington, DC 20515

Re: Innovation to Improve Equity: Exploring High-Quality Pathways to a College Degree

Dear Chairman Scott:

We are pleased that the Education and Labor Committee is examining the question of the role of innovation in improving equity in higher education. We write with regard to the role of external partners in facilitating access, quality and efficiency.

Partnerships with companies that specialize in particular roles and tasks can be a useful way for institutions to advance their efforts to improve student access and success, allowing them to address student needs more efficiently and to offer students a wider variety of routes to a degree. However, some of the potential gains from contracting are being undermined by tuition-sharing contracts that seem to be skewing the incentives away from access and toward high prices and student debt.

UCLA's Coding Bootcamp

A coding bootcamp affiliated with UCLA offers an example the committee should examine. In its regular undergraduate program, the University of California campuses have a strong track record of access. While racial diversity is a continuing challenge, the UC campuses have among the highest proportion of Pell Grant recipients of any top research universities in the nation. The system's approach to financial aid has resulted in lower levels of student debt than at public universities in most other states.

The UCLA program aimed at providing training in computer coding is an innovation that should be a great opportunity for promoting equity. The program's web page advertises that students can "Become a Web Developer in 3 or 6 Months" through a program that "teaches you the key skills for front-end and back-end web development, all while preparing you for success in the professional world." The contract itself promises a "turnkey package" to "position graduates for job market success" by "prepar[ing] learners for high-growth careers in the digital economy." These potentially life-changing programs are exactly the kinds of opportunities that a public

institution like UCLA should consider making available to students who do not have funds available for tuition.

However, the UCLA program seems to be designed to be unaffordable to the very population that could most benefit. The program is run by a company called Trilogy, under a contract with the Regents of the University of California (TCF received the contract, attached, in response to a California Public Records Act request). Several aspects of the contract with Trilogy raise concerns:

Maximize tuition price. UCLA has agreed in the contract that it must raise the tuition price to whatever the market will bear, rather than committing to a rate that is fair and appropriate given, say, the cost of providing the training or the anticipated gains in earnings.

For-profit control of tuition. The contract gives Trilogy, a for-profit company, the right to veto the tuition price set by UCLA.

No financial aid. The contract appears to prohibit any need-based financial aid from being provided to prospective students, offering only private loans as a financial aid option.

Forced arbitration. The enrollment contract for the program includes a forced arbitration clause, a predatory practice almost unheard of in public higher education. Further, it requires that disputes be resolved in New York City.

The contractor is paid a proportion of the tuition. In this case the precise percentage is redacted, but in other research we have found that bundled service agreements may pay contractors as much as 50 to 80 percent of the tuition in a program.2

The Bundled Contracts Problem

The UCLA-Trilogy case exemplifies the potential abuses students are open to when institutions partner with for-profit providers in the name of opening access. Online education and companies that enable institutions to innovate and provide it must function under reasonable guidelines to safeguard students and ensure true equity. One way to do this is to address the problem of "bundled contracts." These bundled contracts combine multiple separate responsibilities into one long-term agreement linking the creation and management of the program to the sign-up of students who bring in tuition, and sometimes including instructional components:

¹ See UCLA Extension Coding Bootcamp Terms of Use, Section XIV, General Terms:

https://bootcamp.uclaextension.edu/terms/
² For example, in one contract, a small public institution agrees to a provision that "For each verified enrollee, partner agrees to pay [contractor] 80% of the retail price paid by enrollee."

Program development: designing online versions of courses and optimizing them for a particular platform;

Program management: operating the online platform and help desk, producing data for ongoing management;

Providing instruction and offering academic support;

Offering other student supports to promote retention;

Admissions, recruiting, and financial aid: running some or all aspects of marketing and sales, such as the admissions recruiters, financial aid packaging, advertising and other related activities.

In the context of the online education industry, these bundled contracts, including student recruitment, are portrayed as if they are synonymous with "online program management," or OPMs. However, hiring an OPM does not in any way require the bundle to include recruiting students. There is no inherent reason that the development and operation of a school's online instruction platform should be connected to the recruitment of students. The functions are separate in time, function and skill-set.

Companies are including recruiting in the contracts not out of necessity, but to be able to pump up enrollment levels to the highest levels possible, to maximize their profits. Rather than opening access through lower tuition, the bundled programs frequently charge the same as for the in-person program. This allows the bundler to essentially run a for-profit college as an appendage of a nonprofit or public institution. This can lead to students being lured into a prestigious institution only to end up with unaffordable debt from an overpriced program that fails to deliver, as occurred with the University of Southern California's Masters in Social Work (MSW) degree managed by online program manager, 2U. The USC-2U partnership stipulates the company receive 60% of the program's tuition revenue which, at \$116,000 for the two-year program, is reportedly the most expensive in the MSW field. The payments motivated rapid growth that USC was not able to manage.

The Higher Education Act prohibits institutions from paying per-enrollment commissions to employees or contractors that are involved in recruiting.⁵ These bundled contracts certainly seem

³ For example, USC charges the same in tuition for its online master of social work as it does for its ground campus degree. Kevin Carey, "The Creeping Capitalist Takeover of American Higher Education," HuffPost, April 1, 2019. https://www.huffpost.com/highline/article/capitalist-takeover-college/

⁴ Harriet Ryan & Matt Hamilton, "Online Degrees Made USC the World's Biggest Social Work School. Then Things Went Terribly Wrong, Los Angeles Times, June 6, 2019.

https://www.latimes.com/local/lanow/la-me-usc-social-work-20190606-story.html

⁵ The statute prohibits "any commission, bonus, or other incentive payment based directly or indirectly on success in securing enrollments or financial aid to any persons or entities engaged in any student recruiting or admission activities or in making decisions regarding the award of student financial assistance."

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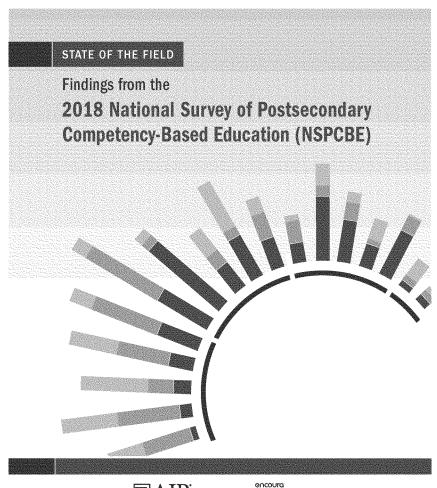
to involve an "entity engaged in student recruiting," making the contractor subject to the rule. And sharing in the tuition seems to be an "incentive payment based directly or indirectly on success in securing enrollments," making them violations of the incentive compensation rule. To be able to use these contracts, the colleges are relying on sub-regulatory guidance. The guidance may have overstepped; the committee should consider seeking a legal opinion on the question of the legality of these bundled contracts under Title IV of the Higher Education Act.

Tuition-sharing contracts that include student recruitment take too much of the responsibility for the educational program away from the institution. The result seems to be so-called innovation that undermines, rather than enhances, the goal of providing a quality, affordable education to students from disadvantaged backgrounds. As we continue to conduct research on this topic, we will update you on our findings. In the meantime, do not hesitate to reach out to us with any questions.

Sincerely,

Robert Shireman Senior Fellow and Director of Higher Education Excellence Stephanie Hall Fellow

⁶ The guidance can be found at https://ifap.ed.gov/dpcletters/attachments/GEN1105.pdf



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EXECUTIVE SUMMARY

This report is based on data obtained from the 2018 National Survey of Postsecondary Competency-Based Education (NSPCBE). It represents a collaborative effort between the American Institutes for Research (AIR) and Eduventures*, the research division of ACTM | NRCCUATM, It includes findings based on responses by more than 500 colleges and universities—the largest institutional sample to date—about their interest in, or activity related to, competency-based education (CBE). It also compares findings to those of Eduventures' 2016 CBE study, Deconstructing CBE.

The goal of the 2018 NSPCBE is to provide a comprehensive and detailed assessment of the state of postsecondary CBE. It includes data and findings that are relevant to a range of institutional stakeholders, policymakers, researchers, and educators. It includes six key findings, based on 2018 data, and, wherever possible, comparisons to the 2016 data from prior Eduventures' research. These findings include the following:

- Motivations for adopting CBE: Institutions see CBE as a way to serve nontraditional students and improve workforce readiness.
- 2. Scope of CBE adoption: Many institutions' adoption activities fall short of full CBE programming.
- Scale of enrollment in CBE programs: Most CBE programs currently serve relatively small numbers
 of students.
- 4. Role of faculty in CBE programs: Faculty are still fulfilling a broad range of roles in active CBE programs.
- Barriers to CBE implementation: Perceived barriers to CBE implementation represent both internal and external factors.
- 6. Future of CBE: Most institutions are optimistic about the future of CBE.

Each finding includes a detailed analysis of the available data and explores the implications for both schools with active CBE programs as well as those in the planning stage. Collectively, these findings suggest that although CBE remains a compelling and valuable innovation, further growth and scalable impact are hampered by a range of barriers. These barriers stem from both the federal policies and the external regulatory climate as well as those that are internal to the operations and governance of many institutions of higher education.

This 2018 NSPCBE report concludes with critical questions for postsecondary CBE implementation and scale, followed by a set of recommendations for program leaders, institutional leaders, and policymakers.

Future editions of the NSPCBE, currently planned for 2019 and 2020, will continue to address these questions and track the evolution of the field over time.

INTRODUCTION



Study Background and Rationale

Competency-based education (CBE) is a nontraditional, but not necessarily new, approach to postsecondary education. In the last decade, it has attracted considerable attention from a wide variety of stakeholders, policymakers, and institution leaders. Although exact definitions of CBE vary, several components distinguish CBE from traditional models of postsecondary education:

- Curricula are designed around specific competencies,
- Advancement focuses on demonstration of competency, and
- The time it takes to demonstrate a competency is typically allowed to vary.

Proponents of CBE argue that its "learner-centered" logic is compelling: By measuring students' learning rather than a traditional program's credit hours and grades, CBE has the potential to improve quality of learning, expand access for "nontraditional" students,1 and lower costs for students.

But compelling logic alone is insufficient; Institutional leaders interested in CBE need to know whether their peers are adopting it, how, and what the path ahead might look like. Similarly, policymakers want to know whether CBE is expanding across institution types and what barriers are inhibiting growth as they consider whether and how to design policies that support or inhibit CBE expansion.

This report summarizes findings from a survey of college and university leaders that sought to better understand whether, how, when, why, and for whom institutions in the United States are using CBE. This survey, a partnership of the American Institutes for Research (AIR) and Eduventures, a division of ACT [NRCCUA,2 was conducted in 2018. It builds upon and updates Eduventures' Deconstructing CBE report, a study of 251 institutions supported by Ellucian.³ The 2018 NSPCBE begins a 3-year study, supported by Lumina Foundation, to better understand CBE scale and adoption. Together with Eduventures' 2016-17 research, it provides an essential baseline for further inquiry into the future of postsecondary CBE.

In 2016, Eduventures found that although interest in CBE was high, outside of a few large and established schools where CBE was the dominant mode of instruction, implementation remained relatively fragmented, small in scale, and generally designed to meet the needs of working adult learners. Since 2016, a variety of factors have affected both expectations for broader CBE growth as well as the pace and scale of actual implementation. These factors include improved knowledge about CBE through hubs such as the

This report uses "nontraditional" students to rafer broadly to stodent populations that are older than students ourning directly from high school (typically age 25 or older), in line with the description provided by the Ristonal Center for Education Statistics: https://noes.org/pubs/web/915786.asp Titlese populations are reterred to as "new traditional" or today's students' as well.

The National Research Center to College and University Admissions
General, 8, 1 Line, 4 (2016). Decorative chief CES: An assessment of institutional activity, goals, and challenges in higher education. Boston, MA: Educentures

Competency-Based Education Network (C-BEN), the continued growth of prominent CBE exemplars, more specific guidance from accreditors, and inconsistent messages from the federal government regarding the use of Title IV funding in certain CBE models.⁴ Given the evolving nature of the field—and to begin tracking developments in the field longitudinally—the 2018 NSPCBE reexamines the state of postsecondary CBE with the most comprehensive study to date about implementation of CBE.

Broadly, this survey shows that although the learner-centric logic of CBE remains compelling across institution types and that more than 500 programs have been launched and are operating, significant barriers to implementation and scale remain. These barriers are often related to core functions of the higher education enterprise and lead many institutions to adopt CBE on a relatively small scale or to engage in partial efforts to implement programs. There is, however, evidence that a majority of respondents believe CBE will grow nationally.

This report highlights six key findings:

- 1. Motivations for adopting CBE: Institutions see CBE as a way to serve nontraditional students and improve workforce readiness.
- 2. Scope of CBE adoption: Many institutions' adoption activities fall short of full CBE programming.
- 3. Scale of enrollment in CBE programs: Most CBE programs currently serve relatively small numbers
- 4. Role of faculty in CBE programs: Faculty are still fulfilling a broad range of roles in active CBE programs.
- 5. Barriers to CBE implementation: Perceived barriers to CBE implementation represent both internal and external factors.
- 6. Future of CBE: Most institutions are optimistic about the future of CBE.

Appendix A includes descriptive statistics about responses to key survey questions, many of which shed further light on patterns of implementation among those who are implementing CBE. It is important to note that this study is based on a survey of institutions, so findings are based on self-reported data from institution leaders. Although this survey does not include an evaluation of student outcomes and does not incorporate the perspectives of students, employers, or other stakeholders, we recognize the importance of that information and encourage continued research in those areas.

Siguals from the federal government include a positive emphasis on CBE in legislative proposals, such as the PROSPER Act, as well as the 2017 findings from regislatory enforcement regarding Western Convence University, a well-known CBE model.
U.S. House of Representatives Committee on Giscations and the Wooldons (2017). PROSPER Act. Promoting Real Opportunity, Success, and Prosperity through Education Reform (PROSPER) Act. Washington, D.C. Retrieved from https://example.com/science/scien

Methodology

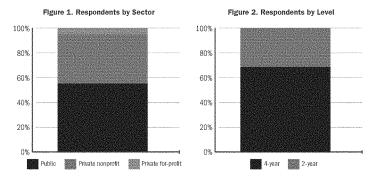
SURVEY DEVELOPMENT

To best capture longitudinal data while collecting new relevant information, AIR and Eduventures designed the 2018 NSPCBE survey instrument to build on Eduventures' 2016 Deconstructing CBE survey. This approach was guided and vetted by an advisory board of key leaders and experts involved in leading or studying CBE; the advisory board provided insight about what questions to maintain and what questions might need to change based on developments in the field.⁵ Many questions on the 2018 survey instrument are consistent with those on the 2016 instrument-particularly those related to the elements associated with CBE, the path toward implementation, and details about implementation. Changes in the 2018 instrument were primarily to solicit additional details, add clarity or updated terminology to existing questions, or remove questions from 2016 that did not yield much variation.6

SAMPLE

The 2018 NSPCBE was sent to 3,043 institutions, representing a census of 2- and 4-year institutions listed in the Integrated Postsecondary Education Data System (IPEDS).7 For most recipients, the survey invitation went to provosts and institutional research contacts with a request that the recipient forward it to the most appropriate contact on campus, which may vary by campus. C-BEN member institutions (as of 2017–18) were an exception; they provided preferred contact information for their institutions directly in advance.

Of the 3,043 institutions, 501 provided a response, representing the largest survey to date of institutions about CBE and an overall institutional response rate of 16%. Of that 501, 54% were from public institutions, 41% were from private nonprofit institutions, and 5% were from private for-profit institutions (see Figure 1). The majority—69%—were from 4-year institutions, with 31% from 2-year institutions (see Figure 2).



For a list of board members, please see the AIR CBS Research website: https://oberesearch.org/about-usebboard
For asample, edits improved wording, narrowed response options related to types of students served, and eliminated questions about implementation details (including questions about him to technology is used and details about meets; Edwardness and AIR determined that those are satisfable out more feasible for interview appealants).
The depoted institutions represented those in the PEDS universe for which we could obtain contact information from the Higher Education Directory For more information about the sample, see Appendix B.

The survey asked respondents to identify their role to clarify their perspective on CBE. Thirty-four percent identified as a chief academic affairs officer (provost or vice president of learning), 30% identified as the institutional research officer, and 11% identified as a dean. The remaining 25% of respondents identified as presidents/chancellors, vice provost/provost's office staff, department chairs, faculty members, or other (see Figure 3).

Eighty-one percent of respondents indicated that they had "institutionwide" knowledge about competency-based approaches compared with 11% who noted that their scope of knowledge was limited to a single academic unit.

Because institutions that were adopting or interested in adopting CBE may be more likely

to respond than those without interest, sample bias is possible. To mitigate this possible sample bias, weights were assigned to each survey respondent based on how likely comparable institutions were to respond to the survey. Although these weights do not affect counts (including the number of institutions and programs listed throughout this Methodology section), they are used to calculate percentages in the Key Findings section of this report and its appendices. For a more detailed description of the survey weights and overall methodological approach, see Appendix B.

34% Institutional Research Officer Chief Academic Affairs Officer Other Dean

Figure 3. Respondents' Roles on Campus

DEFINING CBE

To define CBE while acknowledging variation within CBE programs, survey respondents were asked to answer a series of questions regarding their adoption of or interest in several elements associated with competency-based approaches.8 Next, the survey asked those who had adopted those elements whether they had adopted those approaches at the course level or for entire programs of study.

For the purposes of this study, the threshold for classification as a CBE program was whether an entire program contained at least one of the following characteristics:

- 1. Learning is measured in competencies, and either quantified without reference to seat time or mapped to measures of seat time;
- 2. Students advance from the course or complete the program based on mastering all required
- 3. Courses or programs can be substantially "self-paced"9 by students.

P Respondents were grouped into categodes based on their adoption and interest, including (1) adopted or adoption in-progress, (2) interested but not adopting, and (3) not interested to CEE.

The authors acknowledge that "self-pased" can be defined differently by different respondents, and that some in the CRE field use different terminology, such as "flexible" or "personalized" pacing. For the purposes of this survey, "self-pased" was meant to encompase any situation where expectations for learning are held constant while time is allowed to vary to some degree.

These criteria were selected with input from the NSPCBE advisory board, which sought to balance (1) accounting for the key components of widely recognized definitions in the field, 30 and (2) capturing the variety of program types that exist at this point in the evolution of CBE. 11

The survey also sought to capture information about institutions that were implementing competencybased elements, but that fell short of the CBE definition threshold. This approach allows for analysis of adoption that falls short of a full CBE program, but may signal future activity. The prevalence of all elements, as well as activity at the course level rather than the program level, is discussed in the Key Findings section of this report.

This survey does not, however, attempt to include the full set of related approaches, termed "competencybased learning" (CBL) approaches. CBL may include structured and unstructured opportunities for learning and/or the assessment of learning, both self-created and those designed by employers, education institutions, and training providers, which are aligned to competencies and may lead to a recognized education credential. These approaches may include military training, apprenticeships and workforce development programs, and other related opportunities,12

KEY INDICATORS



STATE OF THE FIELD

Four hundred thirty of the 501 respondents reported being either interested in adopting CBE or in the process of adopting, 71 expressed no interest in CBE. Fifty-seven institutions reported currently operating at least one full CBE program; together, those 57 institutions reported offering a total of 512 CBE programs: 427 undergraduate programs and 85 graduate programs. The highest concentration of programs reported were in nursing and computer sciences.

See, for example, the Competency-Based Education Networks definition of CSE: https://www.obsretwork.org/competency-based-education/ in For example, this threshold allows analyses to include implementation of both direct assessment and nondirect assessment CBE programs.
For a more complete description of the distinction between CBL and CBE, see https://dbressearch.org/about-us

KEY FINDINGS



This report features six key findings from the 2018 NSPCBE. Descriptive statistics from other sections of the survey also are included in Appendix A.

1. Motivations for Adopting CBE

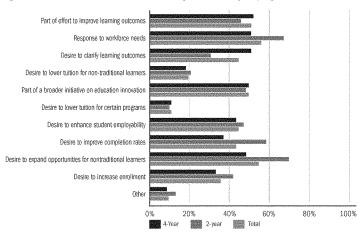
Key finding: Institutions see CBE as a way to serve nontraditional students and improve workforce readiness.

To better understand which aspects of CBE were most appealing to institutions that were adopting CBE or interested in adoption, the NSPCBE asked respondents to identify the top motivations behind program adoption or interest.

For institutions with existing CBE programs and those that have begun adopting programs, the rationale for adopting CBE focused on expanding access to certificate or degree programs and preparing students for the workforce (see Figure 4):

- Fifty-five percent reported that they considered CBE as a means to expand opportunities for nontraditional students, and
- $\ensuremath{\mathbf{m}}$ Fifty-six percent seek to better prepare their students for the workforce.

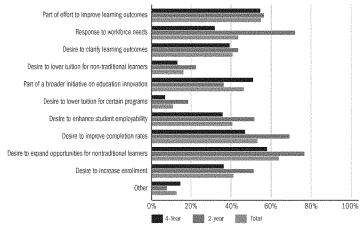
Figure 4. Motivation for CBE: Institutions With a Program or Currently Adopting



Among institutions with only interest (but no program to date) in CBE, expanding opportunities for nontraditional students and improving learning outcomes were among the top responses (see Figure 5):

- Sixty-three percent reported that CBE's potential to expand opportunities for nontraditional students was a key factor, and
- Fifty-five percent reported that interest in CBE was part of an effort to improve learning outcomes for students.

Figure 5. Motivation for CBE: Institutions With Interest in Adopting



Boosting overall enrollment was not a top priority for either group of institutions; the share reporting this as a goal was at or below 40% for both groups.

Although these priorities are largely consistent between 2-year and 4-year institutions, there are some notable differences. The focus on workforce preparation is more pronounced for 2-year institutions, likely reflecting their traditional mission of providing workplace-focused credentials.¹³

Another key difference rests in a focus on completion: A greater share of 2-year institutions reported valuing CBE for its potential to improve completion rates compared with their 4-year counterparts. This reflects the priority that many 2-year institutions have related to improving completion rates, and suggests that many may see CBE as a model that could help boost completion.

1 | 8

¹³ This difference is statistically significant.

In addition to comparing 2- and 4-year institutions, these trends were consistent across sector and institutional size

Comparison to 2016: These themes are consistent with 2016 findings; the focus on access for nontraditional learners and workforce relevance were among the top reasons cited in 2016, with improving completion rates near the top of the list as well. The desire to lower tuition was similarly the least common rationale in 2016. The consistent focus on supporting nontraditional students also may reflect increasing interest among more schools to improve their programming and support systems for working adults.

2. Scope of CBE Adoption

Key finding: Many institutions' adoption activities fall short of full CBE programming.

Two key takeaways from Eduventures' 2016 report were that (1) CBE is not a well-defined model, and many institutions were using a variety of elements commonly associated with CBE even if they were not fully adopting a program; and (2) most CBE activity remained aspirational, still at the planning or course-level implementation stage.

The 2018 NSPCBE was designed to explore how the CBE landscape may have evolved since 2016 and whether or not more institutions had moved to full programs with key components of CBE in place. To that end, respondents were asked about activity that may not meet the definition of a full CBE program, but may be close on two dimensions: (1) implementation of specific elements related to CBE and (2) CBE implementation at the course level or still in the planning phase. Overall, the trend is still similar to 2016: Much of the activity remains short of a full CBE program on at least one of those two dimensions. This section describes the activity underlying that overarching trend.

ADOPTION BY ELEMENTS

Just over half of institutions reported having adopted—or planning to adopt—at least one of the elements that would meet the minimum threshold for CBE in this survey:

- Measuring learning in competencies, either quantified without reference to seat time or mapped to measures of seat time:
- Requiring mastery of all required competencies for advancement between unit to unit or for program comoletion; and
- 3. Allowing students to substantially "self-pace" (or "personalize the pace" of) courses or programs.

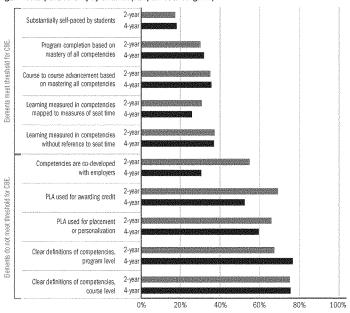
Each of those individual elements was adopted by less than half of respondents, though, indicating that many institutions are not implementing all of the above (see Figure 6); rather, they appear to be selectively implementing certain elements.

In contrast, elements *related to CBE but not independently meeting the threshold* for definition as CBE were typically more prevalent. These elements are often associated with CBE or may represent early steps toward adoption. These elements include:

 Writing clear definitions of competencies at both the course and program levels (an activity often related to accreditation);

- 2. Using prior learning assessments (PLA) for both awarding credit and for placement or personalization purposes for incoming students; and
- 3. Codeveloping competencies with employers.

Figure 6. Adoption Activity by Element (Adopted or in Progress)



The only element that had a statistically significant difference in adoption between 2-year and 4-year institutions was the codevelopment of competencies with employers or other third parties. Two-year institutions reported significantly higher adoption than 4-year institutions, potentially reflecting the traditional distinctions in employer engagement between the two segments.

Comparison to 2016: Eduventures' 2016 survey showed that institutions were selectively adopting certain elements associated with CBE. In particular, in 2016, defining learning outcomes at the course and program levels were the most commonly adopted elements, followed by options related to using PLAs.¹⁴ One difference

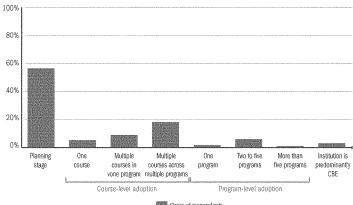
⁴ Elements included in the 2016 and 2018 surveys differed slightly The 2016 survey did not ask about mastery as the basis for advancement in this section. The 2018 survey did not include adoptive fearing or dearning or dearning or dearning extremes at the subnourse level, and it collapsed three PLA options (placement, presonalization, and credit), into two (placement, personalization and credit).

is that the use of direct assessment (measuring learning and quantifying it without reference to a measure of seat time) was among the most commonly reported adopted or adoption-in-progress elements in 2016; in 2018, however, it was one of the least commonly reported elements. This difference may be due, in part, to the different set of institutions responding to the 2018 survey.

STAGE OF ADOPTION

The 2018 NSPCBE also asked institutions that indicated current or in-process adoption of elements that met the threshold of CBE to clarify their current stage of implementation. It sought to distinguish whether institutions were still at the planning stage ("adoption in progress"), implementing elements in individual courses, or implementing full programs. As shown in Figure 7, the majority—57%—report that they were still in the planning stage. Thirty-two percent reported activity at the course level (one course or multiple), while only 11% reported having one or more full programs. Of those with at least one full program, having two to five programs was the most common category—with fewer institutions reporting that CBE was the "predominant" approach at their institution.

Figure 7. Stage of Adoption



Share of respondents

Comparison to 2016: These findings are consistent with the overall results from Eduventures' 2016 study, which found that 38% were at the planning stage and 37% were only active at the course level. Although these broad trends are not longitudinal data about the same institutions and how they have changed over time, they generally show the prevalence of course-level activity rather than full program(s) in both 2016 and 2018 as well as the concentration of institutions still in the planning phase.

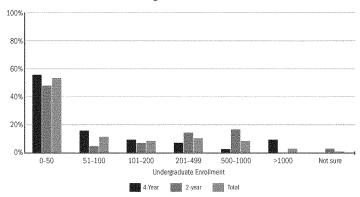
3. Scale of Enrollment in CBE Programs

Key finding: Most CBE programs currently serve relatively small numbers of students.

For those institutions offering full CBE programs, a key indicator of scale and potential impact of implementation is student enrollment. To better understand the scale of enrollment, the survey asked institutions with existing CBE programs to provide recent estimates of student enrollment.

Institutions with undergraduate CBE programs reported relatively small enrollments in those programs. In the last academic year, 53% of those reporting undergraduate enrollment in CBE programs reported fewer than 50 students per program (see Figure 8). In comparison, just 4.0% enrolled more than 1,000 undergraduate students in CBE programs. When disaggregating findings by institution level, there is a somewhat similar pattern, with approximately half of programs at both the 2- and 4-year levels enrolling fewer than 50 students.

Figure 8. Reported Undergraduate Enrollment in Active CBE Programs: Share of institutions in Enrollment Size Categories



The prevalence of small programs in the 2018 survey suggests that, except for a small set of institutions with large programs, CBE at most institutions has not yet achieved large-scale implementation. Some of the reported barriers to adoption, detailed in the finding summarizing barriers, may explain this phenomenon, or this finding may represent early stage programs that institutions are piloting at a small scale.

Comparison to 2016: Although data limitations¹⁵ make comparisons with 2016 challenging, data collected in 2016 show a similar concentration of programs with enrollment below 100 students. This was consistent among both undergraduate and graduate programs reported in the 2016 survey.

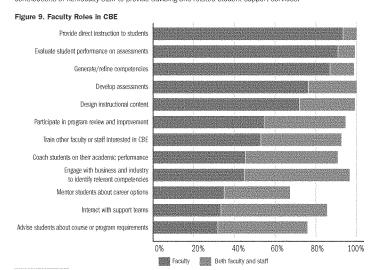
¹⁵ This finding is difficult to compare because a relatively small share of respondents have operating programs and report concilinent sizes, so estimates are based on smaller sample sizes, and the enrollment size ranges were slightly different.

4. Role of Faculty in CBE Programs

Key finding: Faculty are still fulfilling a broad range of roles in active CBE programs.

Because CBE often departs from traditional models of teaching and learning, CBE programs frequently involve restructuring typical faculty roles.46 The identification of optimal ways to structure faculty roles for successfully supporting student learning has been a key implementation challenge in many CBE programs. In addition, monitoring contact between faculty and students continues to be a core focus of the Education Department through the existing "regular and substantive" regulation, 47 To better understand what faculty roles look like in 2018, the NSPCBE included questions about the types of roles that faculty and staff filled in operating CBE programs.

Generally, responses support the notion that faculty continue to fulfill a broad range of roles across CBE programs, with the majority reporting that faculty members provide direct instruction to students, evaluate student performance on assessments, define competencies, develop assessments, and design instructional content (see Figure 9). Roles less commonly fulfilled by faculty include participating in program review, training other faculty or staff, engaging with third parties to identify competencies, coaching/mentoring students, and interacting with support teams; institutions typically reported that these roles were fulfilled by nonfaculty staff. These findings suggest that faculty in CBE programs fulfill content-driven roles but are likely to rely upon the contributions of nonfaculty staff to provide advising and related student support services.



^{**} Haranre Cleary, M. (2015). Faculty and staff roles and responsibilities in the design and delivery of competency-based education programs: A C-BEN snapshot. Franklin, TN: Competency-Based Education Network. Retrieved from http://works.bepress.com/.asaamecleary/14/
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Comparison to 2016: The 2018 findings are broadly consistent with 2016, with a few notable exceptions. Areas of consistency include the development and evaluation of assessments and the creation of instructional content. In 2018, however, institutions more commonly reported that faculty were involved in additional areas, including direct instruction activities, developing and refining competencies, and training other faculty or staff (though, generally, this was much less common than the first two roles). Faculty involvement in other areas, including program evaluation and interaction with student support teams, was generally less common than in 2016. Most notable is the lower prevalence of institutions reporting that faculty are directly involved in coaching, mentoring, and advising students on a range of topics; this finding may be due in part to the evolving ways

in which CBE programs are framing and structuring this role or splitting some elements between faculty and staff roles. ¹⁸

It is clear from both the 2016 and 2018 surveys that CBE programs use faculty in a broad range of roles. A key consideration, though, is that responses do not distinguish how and whether programs have arranged "unbundled" or "reassembled" faculty models, which would involve having specific faculty fulfill one or two roles while other faculty members specialize in another role (e.g., instructional faculty separate from faculty evaluating performance on assessments). ¹⁹ Institutions may be reporting that faculty fulfill many roles, but it may be that different faculty fulfill different types of roles. Given the potential importance of this finding, questions about this approach will be included in future years of the survey.

5. Barriers to CBE Implementation

Key finding: Perceived barriers to CBE implementation represent both internal and external factors.

Because CBE may be a less familiar approach to teaching and learning, program leaders may encounter local barriers to implementation on their campuses, ranging from institutional processes and infrastructure to stakeholder buy-in. External factors, such as accreditation and financial aid regulations, also may affect an institution's decision to implement CBE. Given the broad range of potential barriers, the NSPCBE asked respondents to share their perceptions of what barriers exist to implementing CBE on their campuses.

Across institution types and levels of program adoption, responses indicated several key barriers to CBE implementation. More than 50% of institutions responding cited three key barriers, regardless of whether the institution had adopted CBE. These included:

- 1. Federal student aid regulations
- 2. Institutional business processes
- 3. Costs associated with program start-up

¹² Navarre Cleary, M. (2015). Faculty and staff roles and responsibilities in the design and delivery of competency-based education programs: A CBEN snapshot. Franklin, TN: Competency-Based Education Network. Retrieved from http://wwwfs.bepress.com/navarrecleary/14/, Page 9 contains discussion of new ways to conceptualize the coaching.

advising, and mentoring roles.

¹³ Bushway, D., Dodge, E., & Long, C. (2018). A leader's guide to competency-based education: From inception to implementation (p. 88), Starling, VA: Stylus Publishing.

Among institutions that have existing programs or have begun building them, there were some differences between 2-year and 4-year institutions (see Figure 10). Of the 4-year institutions that responded, the top barriers to implementation included:

- 1. Faculty perceptions of CBE on campus
- 2. Start-up costs for CBE program
- 3. Federal student aid regulations

In contrast, 2-year institutions reported (1) institutional business processes, (2) federal student aid regulations, and (3) competing priority initiatives on campus as key barriers. Still, none of these differences were statistically significant.

Figure 10. To what extent is the adoption of CBE at your institution helped or hindered by the following factors?

| Factors | IPEDS Level | % Don't Know | |
|--|--------------------------|-----------------|--------------------------------------|
| Federal Student Aid regulations and processes | 4-year | 42 | |
| , | 2-year | 31 | |
| Your institution's business systems and | 4-year | 30 | |
| processes that support CBE | 2-year | 18 | |
| Other priority initiatives at the institution | 4-year | 29 | |
| | 2-year | 21 | |
| CBE program start-up costs | 4-year | 44 | |
| | 2-year | 38 | |
| Faculty members' perception of CBE programs | 4-year | 24 | |
| | 2-year | 17 | |
| Accreditors' regulations and processes | 4-year | 26 | |
| | 2-year | 21 | |
| Non-federal student aid regulations and | 4-year | 48 | |
| processes of the U.S. Department of Education | 2-year | 44 | |
| On-campus expertise for developing CBE | 4-year | 21 | |
| programs | 2-year | 18 | |
| Your institution's educational technology | 4-year | 21 | |
| resources | 2-year | 18 | |
| Program's financial sustainability | 4-year | 44 | |
| - | 2-year | 37 | |
| Senior administrators' perceptions of whether | 4-year | 21 | |
| CBE is a "fit" for your institution | 2-year | 7 | |
| Your ability to align industry standards to | 4-year | 32 | |
| programs' competencies | 2-year | 1 | |
| The support of your institution's leadership | 4-year | 23 | |
| | 2-year | 13 | |
| Demand from students | 4-year | 49 | |
| | 2-year | 44 | |
| Evidence about CBE programs' potential to | 4-year | 30 | |
| improve outcomes for students like yours | 2-year | 19 | |
| Evidence about CBE programs' potential to | 4-year | 43 | |
| reduce cost for students like yours | 2-year | 28 | |
| And recovered plates according to recover and an experience of the second and problems according to the proper are present indicates | 000 33300, 3430000000000 | -10 | 0 -50 0 50 10 |
| Significantly hindered | Somewh | at hindered | Somewhat helped Significantly helped |

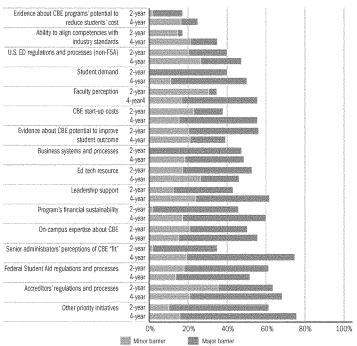
Although many of the trends were similar for institutions that were interested in CBE but had not yet begun building a program, there is one notable difference: 57% cited a lack of on- campus expertise to be a key barrier to implementation (see Figure 11) compared with 40% of institutions with a CBE program or in the process of adopting a program.

Figure 11. To what extent is interest in the adoption of CBE at your institution accelerated or slowed by the following factors?

| actors | IPEDS Level | % Don't Know | |
|--|------------------|-----------------|--|
| On-campus expertise for developing | 4-year | 30 | |
| CBE programs | 2-year | 28 | |
| Your institution's business systems and | 4-year | 41 | |
| processes that support CBE | 2-year | 30 | |
| Federal Student Aid regulations and processes | 4-year 2-year | 47 32 | |
| Faculty members' perception of CBE programs | 4-year 2-year | 38 36 | |
| Other priority initiatives at the institution | 4-year 2-year | 36 34 | |
| CBE program start-up costs | 4-year 2-year | 47 50 | |
| Accreditors' regulations and processes | 4-year 2-year | 42 29 | |
| Your institution's educational technology resources | 4-year 2-year | 29 34 | |
| Non-Federal Student Aid regulations and | 4-year | 58 | |
| processes of the U.S. Department of Education | 2-year | 55 | |
| Program's financial sustainability | 4-year 2-year | 58 49 | |
| Senior administrators' perceptions of whether CBE is a "fit" for your institution | 4-year 2-year | 30 33 | |
| Your ability to align industry standards to programs' competencies | 4-year 2-year | 49 27 | |
| The support of your institution's leadership | 4-year 2-year | 36 33 | |
| Demand from students | 4-year 2-year | 61 57 | |
| Evidence about CBE programs potential to | 4-year | 43 | |
| improve outcomes fro students like yours | 2-year | 42 | |
| Evidence about CBE programs' potential to | 4-year | 51 | |
| reduce cost for students like yours | 2-year | 44 | |
| Significantly slowed So | mewhat sl | -10 | 00 -50 0 50 Somewhat accelerated Significantly accelerated |

Of those institutions that had no interest in adopting CBE (see Figure 12), federal student aid and accreditation regulations remained at the top of the list, but senior administrators' perception of fit was higher than the other groups. It appears to be a greater barrier for 4-year institutions (74% citing it as a barrier) than for 2-year institutions (34%). This distinction may be important because those adopting and interested (above) cited senior administrators' perception of fit to be among the top factors supporting implementation or interest. Ultimately, this may reinforce the notion that institutional factors, particularly those outside of academic units or departments, are an important part of supporting CBE implementation.

Figure 12. Among Institutions Not Interested in CBE: Minor and Major Barriers to Interest



Comparison to 2016: The broad trends are consistent with the 2016 survey findings; more than 75% of institutions reported that federal student aid processes and CBE program start-up costs were either a significant barrier or somewhat of a barrier to CBE implementation. Faculty perceptions (or skepticism) of CBE and resource constraints (including constraints due to competing priorities) also were among the top-reported barriers in 2016.

6. Future of CBE

Key finding: Most institutions are optimistic about the future of CBE.

The future of CBE is likely to be influenced by the regulatory climate and the ability of schools and vendors to remove or bypass persistent obstacles to implementation. However, the willingness of institutions to expand existing CBE programs or develop new ones plays an equally important role in CBE's growth over time. To better understand this, the 2018 NSPCBE survey sought to gauge expectations among responding institutions over whether CBE would grow nationally and at their own institution. Overall, 75% of institutions reported that they expect the number of CBE programs nationally to increase in the next 5 years, 24% expected there to be no change in the number of CBE programs nationally, and just 1% reported that they expect a decrease in CBE programs nationally (see Figure 13). The findings are similar across institution type, where 80% of 2-year institutions expect the number of programs to increase compared with 73% of

Responses suggest that an institution's interest in CBE is related to its perceptions about the future of CBE.³⁰ Among institutions adopting CBE or interested in doing so, expectations were relatively similar. Among both institutions with CBE programs or those in the process of adopting CBE, 80% expected CBE to increase and 20% believed the number of programs would be unchanged (see Figure 14). Furthermore, of institutions with CBE programs, 83% reported expecting that CBE programs at their institution would increase in the next 5 years. Of those institutions interested in adopting, 76% expected the number of programs to increase, 23% expected no change, and 1% expected the number of programs to decrease. However, among those institutions that were not interested in adopting CBE, 58% expected CBE to grow in the next 5 years, 38% expected no change, and 4% believed the number of CBE programs will decrease.

Comparison to 2016: Data from 2016 revealed a similar set of attitudes toward the prospects for further CBE growth. Among institutions with existing programs, 33% reported that they expected CBE to continue to play a major role in their institution's strategic plan. Among this same cohort, however, only 16% envisioned CBE becoming part of the higher education "mainstream." Among schools that reported to be in the planning stage, only 5% anticipated mainstream potential for CBE; 32% expected CBE to useful in specialized programs or through the use of specific component parts. Not surprisingly, these 2016 data suggested that institutions with first-hand experience in operating a CBE program were more likely to anticipate further growth. Institutions that had yet to implement a program remained slightly less sure of continued growth.

These data suggest that despite significant and varied barriers to CBE program growth, most institutions remain optimistic about the prospects for further CBE expansion. Although there is evidence that optimism is higher among those with direct experience in developing and managing a CBE program, the sense that CBE will grow going forward outs across key categories of respondents. This positive outlook is consistent with the 2016 findings, and may even be interpreted as an increased sense of optimism.

 $^{^{\}circ\circ}$ These differences are statistically significant.

Figure 13. Expectations About the Future of CBE, by Adoption

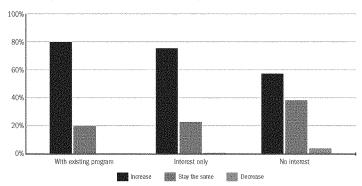
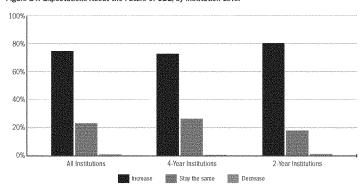


Figure 14. Expectations About the Future of CBE, by Institution Level



CRITICAL QUESTIONS FACING THE FIELD: CBE IN 2018



Findings from the 2018 NSPCBE confirm that the learnercentric logic for CBE remains compelling for many institutions. Indeed, 57% have implemented CBE or are in the process, and 27% are interested—in sum, 84% are either implementing or interested in implementing CBE. A small subset of institutions account for the most program activity.

A critical question is whether CBE can expand in scale and have an impact in traditional institutional contexts and in the current regulatory and policy environment. The findings from this survey suggest that building full CBE programs requires overcoming significant barriers, particularly those outside the purview of any individual academic unit looking to implement CBE, including federal financial aid regulations or institutionwide business processes.

Ultimately, these barriers may explain why many institutions initially use only some CBE elements without adopting a full set or opt for course-level activity rather than full programs. However, CBE's potential to address institutions' learner-centric goals rests in providing its perceived benefits throughout a student's experience—or for a full program rather than in one or two

Despite the current small scale of CBE and barriers to its implementation, the majority of institutions responding to the survey remain optimistic about the growth of CBE. This trend may reflect widespread acknowledgment of the commonly touted, systemic challenges to providing affordable, accessible, and high-quality postsecondary experiences. Or it may signal a deep reservoir of commitment to CBE as the best solution to these problems, perhaps leading more institutions to implement CBE in the years ahead despite the barriers. The NSPCBE will continue to track the level of optimism and implementation in the coming years to better understand that evolution, the decisions that institutions make, and the students

courses-and it is not yet clear whether that logic can help institutions overcome the barriers.

THE ROAD AHEAD



When considering how to support the sustainable and responsible implementation of CBE programs, CBE stakeholders could benefit from assessing several critical challenges:

- Program leaders and department chairs considering CBE should weigh the relative benefits and costs of starting with specific CBE elements versus going "all in" on implementing a full CBE program to understand which components will allow them to best navigate potential barriers. In addition, program leaders with operating programs can consider and evaluate whether their program designs indeed achieve the goals or benefits they intended, including serving nontraditional students and supporting equitable outcomes for all students.
- Institutional leaders should assess whether CBE represents enough of a strategic priority that it is worth marshaling institutionwide resources to remove important barriers identified in this survey, including technology services and platforms, business processes, financial aid, and institutional research.
- Policymakers must figure out how to balance efforts to remove regulatory barriers to innovation—as cited by many in this survey—with maintaining important consumer protections. The survey data do not provide sufficient detail to cite individual regulations nor do they provide evidence of the efficacy needed to help inform a path forward, but those barriers continue to be perceived by both institutions who have navigated the barriers and implemented a program and by those who have not yet started.

Given the prevalence of barriers to CBE implementation, it will be critical that future research continues to seek a better understanding of the experience of CBE implementation and how it is serving students. Future years of the NSPCBE will focus on broadening the field's understanding of where CBE is and is not being successfully implemented, what barriers and accelerators affect implementation, and how faculty and staff roles are structured. The survey also will have a deeper focus on cost to students in CBE programs, a topic that was not well captured by the existing questions. In addition, given early indications that these programs indeed serve sizable populations of older students and students of color, the survey will probe more deeply about how programs are designing approaches with these students in mind, including whether and how program leaders incorporate equity into their design and operations. With an eye toward change over time, the NSPCBE also will track trends in the field and question whether and how changes in the field are related to external factors, such as policy or regulatory changes.

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Eduventures® Research, which is ACT | NRCCUA's research division, provides primary research, analysis, and advisory services to support decision-making throughout the student life cycle. Building on 25 years of success in working with education leaders, Eduventures provides forward-looking and actionable research based on proprietary market data and advisory services that support both strategic and operational decision-making. Our recommendations and personalized support enable clients to understand the top traits of leaders in critical disciplines and evaluate the opportunities presented by new technologies.

Eduventures Research is available in Encoura Data Lab, a data science and analytics technology platform available exclusively to ACT | NRCCUA members.

More information on ACT | NRCCUA, Encoura, and Eduventures can be found at encoura.org

APPENDICES

Appendix A: Survey Descriptive Statistics

The following tables provide details on responses to questions related to program implementation. Please note that these responses are based on respondents who indicated that they had a CBE program, which is a subset of the overall respondents.

Table A-1. How long has your institution offered competency-based courses?

| Less than one year | 6% |
|--------------------|-----|
| 1-2 years | 19% |
| 3-4 years | 26% |
| 5-7 years | 7% |
| More than 7 years | 29% |
| Don't know | 14% |

Table A-2. How long has your institution offered entire programs that are exclusively CBE?

| Less than one year | 13% |
|--------------------------------|------------|
| 1-2 years | 12% |
| 3-4 years | 24% 10% |
| 5-7 years More than 7 years | 10% |
| Don't know | 30% |

Table A-3. Do your CBE programs...

| | Don't Know | No, none do | Yes, some do | Yes. all do |
|--|------------|-------------|--------------|-------------|
| Lead to a certificate, undergraduate, or graduate degree, if completed? | 7% | 10% | 24% | 60% |
| Require mastery learning of ALL competencies in a program? | 11% | 11% | 17% | 61% |
| Primarily require students to demonstrate their competency via authentic assessments? | 10% | 0% | 36% | 54% |
| Use "backward design," where the competencies to be mastered drive students' learning journey? | 26% | 10% | 27% | 37% |

Table A-4. Can students access federal financial aid to pay for your CBE offerings?

| Yes | 55% |
|------------|-----|
| No | 22% |
| Don't know | 24% |

Table A-5. For federal financial aid purposes, our institution...

| Maps competencies to credit hours to award financial aid | 68% |
|--|--------|
| Has been approved for "direct assessment" by the | 17% |
| US Department of Education Other | * C/N; |

Table A-6. At which award levels are your undergraduate CBE programs offered? (Check all that apply.)

| Non-credit | 14% |
|--------------------|-----|
| Certificate | 51% |
| Associate's degree | 38% |
| Bachelor's degree | 53% |

Table A-7. In what disciplines are your undergraduate CBE programs offered? (Check all that apply.)

| Biological and Life Sciences | 7% |
|--|-----|
| Business Administration | 40% |
| Computer and Information Sciences and Support Services | 47% |
| Construction Trades | 13% |
| Education | 17% |
| Liberal Arts and Humanities | 10% |
| Mechanic and Repair Technologies | 12% |
| Nursing and Health Professions | 33% |
| Physical Sciences (e.g., Chemistry, Engineering) | 3% |
| Social Sciences (e.g., Psychology, Sociology, Political Science, Economics) | 8% |
| Other | 19% |

Table A-8. For the most recent academic year for which you have data available, about how many undergraduate students:

| | 0-50 | 51-100 | 101-200 | 201-499 | 500- 1000 | More than 1000 |
|---|------|--------|---------|---------|--------------|-------------------|
| Are enrolled in CBE programs that are entirely competency-based? | 53% | 13% | 9% | 11% | 9% | 6% |
| Are expected to be enrolled in your CBE programs that are entirely competency-based within 5 years? | 13% | 18% | 20% | 21% | 19% | 9% |
| Have graduated from CBE programs that are entirely competency-based? | 62% | 12% | 7% | 11% | 3% | 4% |

Table A-9. For the most recent data you have available, which best describes the composition of undergraduate students enrolled in your certificate and degree programs that are entirely competency based?

| | \$100 PM \$100 P | lergraduate stud programs that ar | | i your certificate etency-based |
|---|--|--------------------------------------|--------|------------------------------------|
| | 0-24% | 25-49% | 50-74% | 75% or more |
| Percent who are white, non-Hispanic | 33% | 21% | 40% | 6% |
| Percent who are at least 25 years old | 17% | 12% | 28% | 44% |
| Percent who had college credit at the time of admission | 41% | 11% | 11% | 37% |
| Percent who are veterans or active duty military | 96% | 4% | 0% | 0% |
| Note. Fewer than 50 institutions reported data for this item. | | | | |

Table A-10. At which award levels are your graduate (post-baccalaureate) CBE programs offered? (Check all that apply.)

| Non-credit | 0% |
|---------------------|-----|
| Certificate | 43% |
| Master's degree | 52% |
| Professional degree | 12% |
| Doctoral degree | 5% |

Table A-11. In what disciplines are your graduate (post-baccalaureate) CBE programs offered? (Check all that apply.)

| Biological and Life Sciences | 0% |
|---|------|
| Business Administration | 23% |
| Computer and Information Sciences and Support Services | 21% |
| Construction Trades | 0% |
| Education | 28% |
| Liberal Arts and Humanities | 2% |
| Mechanic and RepairTechnologies | 0% |
| Nursing and Health Professions | 36% |
| Physical Sciences (e.g., Chemistry, Engineering) | 0% |
| Social Sciences (e.g., Psychology, Sociology, Political | 2% |
| Science, Economics) | 2.70 |
| Other | 5% |

Note, Fewer than 50 institutions reported data for this item.

Table A-12. For the most recent academic year for which you have data available, about how many graduate (post-baccalaureate) students are enrolled in CBE programs that are entirely competency-based?

| 0-50 | 61% |
|----------------|-----|
| 51-100 | 29% |
| 101-200 | 0% |
| 201-499 | 0% |
| 500-1000 | 2% |
| More than 1000 | 8% |

Note. Fewer than 50 institutions reported data for this item,

Table A-13. Five years from now, about how many graduate (post-baccalaureate) students do you expect to be enrolled in your CBE programs that are entirely competency-based in each year?

| 0-50 | 31% |
|----------------|-----|
| 51-100 | 33% |
| 101-200 | 18% |
| 201-499 | 2% |
| 500-1000 | 4% |
| More than 1000 | 11% |

Note. Fewer than 50 institutions reported data for this item.

Table A-14. For the most recent data you have available, about how many graduate (post-baccalaureate) students have ever graduated from CBE programs that are entirely competency-based in total?

| 0-50 | 60% |
|----------------|-----|
| 51-100 | 14% |
| 101-200 | 0% |
| 201-499 | 14% |
| 500-1000 | 7% |
| More than 1000 | 4% |

Note. Fewer than 50 institutions reported data for this item.

Table A-15. For the most recent academic year for which you have data available, which best describes the composition of graduate students enrolled in your certificate and degree programs that are entirely competency based?

| | Percent of graduate students enrolled in your certificate or degree programs that are entirely competency-based | | | | |
|---|--|-------|--------|--------|-------------|
| | Don't Know | 0-24% | 25-49% | 50-74% | 75% or more |
| Percent who are white, non-Hispanic | 26% | 2% | 19% | 47% | 7% |
| Percent who are at least 25 years old | 26% | 0% | 16% | 21% | 37% |
| Percent who had college credit at the time of admission | 12% | 23% | 0% | 16% | 48% |
| Percent who are veterans or active duty military | 52% | 44% | 4% | 0% | 0% |

Note. Fewer than 50 institutions reported data for this item.

Table A-16. To what extent does a senior administrator lead efforts related to competency-based approaches?

| Not at all | 16% |
|-------------------|-----|
| A little | 11% |
| Mostly | 21% |
| To a great extent | 44% |
| Don't know | 8% |

Table A-17. To what extent is CBE incorporated into your institution's strategic plan?

| CBE is not in our current strategic plan and isn't likely to appear in a future one. | 8% |
|---|-----|
| CBE is not in our current strategic plan but is likely to play a minor role in a future one. | 17% |
| CBE is not in our current strategic plan but is likely to play a major role in a future one. | 8% |
| CBE is in our current strategic plan in a minor way. | 40% |
| CBE is in our current strategic plan in a major way. | 16% |
| Don't know | 11% |

Table A-18. To what extent is funding for CBE available for each of the following?

| | No funding | Some funding | Major funding |
|---------------------------------|-------------------|-------------------|-------------------|
| | available for CBE | available for CBE | available for CBE |
| Departments at your institution | 34% | 53% | 14% |
| Your institution | 45% | 41% | 14% |

Table A-19. How do your students access and participate in CBE offerings?

| Our CBE courses are accessed entirely online. | 37% |
|--|------|
| Our CBE courses are accessed in a hybrid or blended modality, combining online | 30% |
| and face-to-face interactions. | 30.0 |
| Our CBE courses are predominately face-to-face, with a few online assignments. | 17% |
| Our CBE courses are entirely face-to-face. | 16% |

Table A-20. For each of the following CBE characteristics, consider the current CBE offerings which you are most familiar. How often, or to what extent, are...

| | Don't know | Never | Occasionally/to some extent | Frequently/to a great extent | Always |
|--|---------------|-------|-----------------------------|------------------------------|--------|
| Curricula clearly organized around measurable competencies. | 0% | 0% | 6% | 35% | 59% |
| Competencies aligned to specific workforce opportunities | 6% | 0% | 15% | 41% | 38% |
| Offerings designed to be completed over variable periods of time. | 7% | 2% | 22% | 17% | 52% |
| Students proceeding through content and assignments at a flexible pace. | 6% | 2% | 22% | 16% | 54% |
| Students receiving real-time, personalized assessments of their learning progress. | 6% | 1% | 11% | 48% | 34% |
| Students' pathways through courses personalized based on assessments of their learning progress. | 12% | 9% | 23% | 23% | 33% |

Table A-21. Generally, how does the level of effort required of faculty and support staff in CBE offerings compare to non-CBE offerings at your institution?

| CBE requires much more work than non-CBE | 22% |
|--|-----|
| CBE requires somewhat more work than non-CBE | 38% |
| Roughly the same level of work than non-CBE | 22% |
| CBE requires somewhat less work than non-CBE | 16% |
| CBE requires much less work than non-CBE | 0% |
| Don't know | 2% |

Table A-22. Generally, how does each of the following differ in your institution's CBE offerings compared to non-CBE offerings?

| | to judge or | worse in CBE | Slightly worse in CBE than non-CBE | Roughly | Slightly better in CBE than non-CBE | better in CBE |
|-------------------------------|-------------|--------------|--|---------|---|---------------|
| Faculty-student communication | 38% | 0% | 2% | 41% | 16% | 2% |
| Learning outcomes | 43% | 0% | 0% | 26% | 20% | 10% |
| Completion rates | 43% | 0% | 6% | 36% | 4% | 10% |

Table A-23. Please identify how your institution supports CBE graduates. My institution...

| Matches graduates with employers based on student performance and mastery of specific competencies. | 8% |
|--|-----|
| Connects graduates to a broader community of CBE alumni. | 10% |
| Identifies areas of greatest workforce needs and opportunities. | 32% |
| Provides ongoing opportunities for graduates to continue augmenting their education through new CBE courses, certificates and degrees. | 12% |
| Other | 8% |
| Has no current CBE graduates. | 44% |
| Don't know | 2% |

Note. Fewer than SO institutions reported data for this item.

Table A-24. Which services do you outsource to an external vendor to support your institution's CBE offerings?

| Learning Management System (LMS) | 66% |
|---|-----|
| Instructional design | 2% |
| Client relationship management (CRM) | 16% |
| Marketing and recruitment | 2% |
| Enrollment management | 2% |
| Development of assessments or competencies | 0% |
| Development of online or blended CBE courseware | 4% |
| Learning portfolio services | 29% |
| Other | 2% |
| Don't know | 16% |

Note. Fewer than 50 institutions reported data for this item.

Table A-25. How is CBE course content created?

| Developed largely from scratch by our faculty. | 90% |
|--|-----|
| Bundled as part of our learning management system (LMS) or similar tool. | 6% |
| Developed by a third-party specialist. | 0% |
| Developed by a combination of faculty and third-party specialists. | 10% |
| Used, adapted, or modified content from outside the university. | 8% |
| Used, adapted, or modified content from within the university. | 18% |
| Developed in conjunction with specific employers or industry associations. | 38% |
| Other | 4% |

Note. Fewer than 50 institutions reported data for this item.

Table A-26. How are CBE competencies created?

| Developed largely from scratch by our faculty. | 92% |
|--|-----|
| Developed by a third-party specialist. | 0% |
| Developed by a combination of faculty and third-party specialists. | 10% |
| Developed in conjunction with specific employers or industry associations. | 31% |
| Other | 2% |

Note. Fewer than 50 institutions reported data for this item.

Table A–27. Have you used the following resources as you developed your program? (For institutions with programs or in the process of adopting)

| Quality Framework published by the Competency-Based Education Network (CBEN) | 28% |
|--|-----|
| The Connecting Credentials Framework/Beta Credentials Framework | 11% |
| LEAP/VALUE rubrics published by AAC&U | 30% |
| Resources provided by the U.S. Department of Labor (O*NET, Building Blocks) | 36% |
| Degree Qualifications Profile | 22% |
| Employer or industry competency models | 60% |

Table A-28. Have you heard of any of the following resources that can be used to support CBE program development? (For institutions with interest, but no program)

| Quality Framework published by the Competency-Based Education Network (CBEN) | 29% |
|--|-----|
| The Connecting Credentials Framework/Beta Credentials Framework | 0% |
| LEAP/VALUE rubrics published by AAC&U | 71% |
| Resources provided by the U.S. Department of Labor (O*NET, Building Blocks) | 0% |
| Degree Qualifications Profile | 43% |
| Employer or industry competency models | 43% |

Note. Fewer than 50 institutions reported data for this item.

Appendix B: Technical Documentation

This appendix outlines the methods of the National Survey of Postsecondary Competency-Based Education (NSPCBE), sponsored by Lumina Foundation and conducted by the American Institutes for Research (AIR). The Web-based survey was administered in the summer of 2018, from June 11 to July 27.

POPULATION AND SAMPLING

The NSPCBE was intended to be administered to administrators at all 4,291 2- and 4-year institutions of higher education in the United States. The list of institutions was drawn from the Integrated Postsecondary Education Data System (IPEDS). Because this is a census, no sampling occurred. Not all institutions were contacted for the survey, though; if the institution could not be successfully "rostered"—meaning that the research team could not obtain contact information for at least one administrator who may be knowledgeable about CBE programs—it was not contacted.

In total, 4,668 provosts, institutional research directors, and other administrators representing 3,043 institutions were sent an invitation to participate on June 12, 2018. Contact information was obtained from several sources, including directory files purchased by the research team and contact information reported in the previous Eduventures survey.

Because this was a census and not a probability sample, no estimates of sampling error will be reported.

RECRUITMENT AND SURVEY FOLLOW-UP

The surveys were administered via the Web with e-mail notifications and reminders. Prior to launch on June 11, AlR and Eduventures notified their partners by direct e-mail and announcements on various electronic mailing lists. During the field period, AlR and Eduventures contacted potential survey respondents through e-mail reminders and direct mail, supplemented by presentations and announcements about the survey through advisory board member outlets.

RESPONSE RATES

The overall response rate for this survey was 16%; 501 of the 3,043 rostered institutions responded. Priority institutions—identified based on their past interest in CBE or the size and makeup of their student population—had a response rate of 23%.

Response rates may be calculated in a variety of different ways. The American Association for Public Opinion Research (AAPOR) has standardized response rate calculations across the survey and polling industry, providing a variety of different options for researchers.²¹ In this study, AAPOR's Response Rate 2 (RR2) was used to calculate response rates:

AAPOR RR2 = (Completes + Partials) /(Completes + Partials + Eligible Nonrespondents)

Partial responses were counted as such if the respondent completed the screener (up to question 5; see Appendix A) but did not complete the rest of the survey. If individuals logged into the survey but did not complete the screener, they were considered nonrespondents. Individuals who completed all relevant survey items were counted as completers.

^{*} https://www.aspoc.org/Standards-Ethics/Standard-Definitions-(1).aspx

Institution-level response rates. The research team targeted multiple individuals at each institution and, at 24 institutions, two individuals responded. Analyses included only a single respondent for each institution, based on a series of rules as follows to identify and keep the most knowledgeable respondent at the institution:

- Completeness of data: the respondent with the most complete data took precedence.
- Scope of knowledge: if both respondents had the same number of questions completed, the respondent who indicated "institutionwide" knowledge of CBE approaches in question 2 of the survey took precedence.
- Role: if the response to question 2 was missing or if both individuals selected that option, question 1 was used to identify the person most likely to be knowledgeable about activity across the institution. Vice provosts took precedence, followed in order by deans, provosts, institutional review directors, department chairs, presidents, and faculty.

In addition to calculating the response rate at the individual level, AIR and Eduventures also calculated the response rate at the institution level, again using AAPOR RR2. In this response rate calculation, the numerator includes institutions with at least one complete or partial response, per the definitions described above. The denominator was the 3,043 institutions for which valid contact information was available.

WEIGHTING

Broadly, the target population for the NSPCBE consists of institutions of higher education in the United States. For weighting purposes, the target population was defined as institutions meeting both of the following criteria:

- The institution is listed in IPEDS²²; and
- The institution was successfully "rostered," meaning that the project team was able to obtain contact information for at least one administrator who may be knowledgeable about CBE programs.

This corresponds to the definition used in the calculation of response rates. Note that this definition implies that institutions that are listed in IPEDS but were not rostered are treated as ineligible for the survey. Thus, weighted estimates will be representative only of rostered institutions; they will not be representative of all institutions in the United States.

To calculate the weights, the universe of institutions was first partitioned into adjustment cells using a classification and regression tree (CART).²³ CART is a machine learning algorithm that automatically identifies predictors that are associated with a dependent variable of interest—in this case, IPEDS variables associated with the likelihood of being a respondent. The algorithm then successively partitions the universe into cells defined by those variables, with the aim of maximizing between-cell variability in the response rate.

For all institutions i assigned to a given cell b, the weight was calculated as:

$$(1) \ \ w_{j} = \frac{U_{L}}{R_{b}}$$

One exception was the College of Traditional Midwifery This institution was not in IPEOS but was included because it is part of the CBEM network and is known to CBE users.
The specific CART implementation was the ipart function in R, available in the spart package. A minimum cell size of 35 and a complexity parameter of 0 were specified.

where U_b is the universe size in cell b and R_b is the number of contacts in cell b. Equation 1 is the equivalent of the inverse of the response rate within cell b.

The following IPEDS variables were selected by the CART analysis to define the nonresponse adjustment cells:

- STRATUM
- C15BASIC (Carnegie classification 2015)
- CCBASIC (Carnegie classification 2005/2010)
- STABBR (state)
- EFTOTLM (number of enrolled men, categorized into deciles)
- EF2MORT (number enrolled with two or more races, categorized into deciles)
- EFYASIAW (number of enrolled Asian women, categorized into deciles)

Across the 501 respondents, the final weights, by construction, sum to the universe size of 3,043 institutions. The final weight is undefined for the remaining 2,541 institutions in the universe that were not respondents.



The 'Moneyball' solution for higher education

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Student Cabria de Chabert says she doesn't mind getting messages from Georgia State's algorithm. \mid Raymond McCrea Jones for Politico

The Agenda FUTURE OF PROSPERITY

The 'Moneyball' solution for higher education

It's a lot easier to start college than to finish. Can 'big data' help? By KIMBERLY HEFLING | 01/16/2019 05:04 AM EST

ATLANTA—On a blistering hot June day, Georgia State University incoming freshman Jaila Heathman found herself feted inside the football stadium by cheerleaders, football coach Shawn Elliott, grilled chicken sandwiches and the booming sound of "Uptown Funk." The academic year wouldn't start for two months, and Heathman wasn't a handpicked athletic recruit or an academic star. In fact, she was someone who Georgia State's computer system decided was just a bit underprepared for college.

Heathman had been invited to the stadium party by an algorithm. For the past seven years, Georgia State has been feeding student data into a "Moneyball"-style predictive analytics system, a custom piece of software designed to figure out who is ready to succeed in college, and how to keep them enrolled. By crunching numbers such as the student's grades in critical classes like 10th-grade English, Georgia State identified Heathman as among the university's weaker incoming freshmen, meaning she's at risk of joining the 31 million Americans who started college and never finished. The stadium event was a highlight of its Summer Success Academy, a pre-college academic prep program that coaches participants selected by the system on skills like managing time, reading textbooks and talking to professors.

"I feel like that shows how much effort they are willing to put into their students," Heathman said. "A lot of schools, and even professors, they'll just let you fail and not even care because you're paying for the class."

Georgia State's leaders turned to predictive analytics to fix a long, perplexing problem in higher education: The 4 out of 10 students who start college and don't finish in at least six years—some never. Education is supposed to be a ladder to prosperity, but in the decades-long push to open college doors wide, an unintended casualty has been the college dropout. The percentage of Americans who started college but didn't earn a four-year degree has doubled since 1960, with an estimated 20 percent of working adults having some college credits, but no degree—a sign of dashed hopes and, often, the crush of student loan debt without the economic boost of a diploma.

In years past, it was just accepted at Georgia State—as it is in much of higher education—that this attrition was inevitable, and a large chunk of students like Heathman would simply fizzle out, to be replaced with a new crop of students. But pressure is growing to change this. The nation's \$1.5 trillion student loan burden weighs heavily on students and schools. The Great Recession reshaped the conversation in higher education to focus more

on workplace skills and value. And better data make it easier to track graduation statistics; several states now have performance-based higher education funding systems—all factors pressing on universities to address the issue.

Georgia State isn't the only university using "big data" to tackle the problem of college completion, but it stands out for two reasons: First, the program has been operating longer than most of the others, and second, because it has improved outcomes with low-income, first-generation and minority students—groups that have the hardest time succeeding in higher education.

For the past seven years, the university has monitored its 52,000 students using 800 different academic risk factors, from how well they're doing in algebra to whether they've started to miss class regularly. It also tracks 14 financial indicators, like unpaid student debt. The goal is to catch students before they reach a crisis point and provide the advising and instructional help to get them through it.

Georgia State's six-year graduation rate in 2018 was 55 percent, up from 48 percent in 2011 before the program rolled out. That might not sound earth-shattering, but when it comes to college completion, every percentage point is hard-won. The fact that its student body is disproportionately disadvantaged economically and socially also makes this progress notable. These days, Georgia State graduates more black students than any other nonprofit educational institution in the United States, according to an analysis by *Diverse Issues in Higher Education*, and minority students make up 71 percent of its student body. Nearly 60 percent of Georgia State's students are eligible for Pell Grants, meaning many come from households making \$40,000 or less.

For all these reasons, Georgia State has become a celebrity of sorts as universities desperately look for the secret sauce to improve college completion rates. Microsoft founder Bill Gates has visited the campus to see the data in action, as have Education Secretary Betsy DeVos and John B. King Jr., the Education secretary before her. College administrators from as far away as South Africa have come to observe first hand.

The question they are all trying to answer is whether Georgia State's model is a one-off, or a recipe that can be duplicated elsewhere. Georgia State's analytics program is hard to separate from the university's broader investment in academic counseling, which has seen the school vastly expand its advising staff over the past seven years, from 13 professionals to more than 70—a big salary commitment for a cash-strapped state university.

Timothy Renick, a Princeton- and Dartmouth-trained religious scholar who is the Georgia State administrator overseeing the effort, says by adding the additional advisers, the university brought the student-to-adviser ratio down to 320 to 1, which is near the recommended standard by the National Association of Academic Advisers. He notes that while many universities have the same proportion of counselors, Georgia State is one of the rare large public universities whose black, Hispanic and Pell-eligible students have graduated at or above the overall rate of the student body the past four years. The university's predictive analytics system has allowed it to move the needle, he says, in ways the others haven't.

Still, even with that improvement, nearly half of Georgia State students still fail to graduate within six years. And skeptics of data-analytics programs have raised worries that their intensive student tracking borders on Big Brother-style surveillance—and on substitute parenting, at a stage in life when students have a right to privacy and should be rising and falling on their own decisions. For his part, Renick sees the ethical equation differently, calling the system a "moral imperative."

"For generations, well-resourced institutions have been very willing to sell the promise of a college degree to low-income families. And these families have often trusted us their sons and daughters, and also their finances, taking out loans and putting great hope in the promises that we offer," Renick said in an interview. "It's about time we begin to deliver on promises that we've made."

WITH THE EDGE of campus just a few blocks from Martin Luther King Jr.'s Ebenezer Baptist Church, Georgia State has helped bring life to a gloomy section of downtown Atlanta as its ambitions grew over the past two decades from a commuter school to an urban residential campus, constructing new student housing and classrooms, taking over and renovating old office towers. The nerve center of the advising system is located on the fourth and fifth floors of a 26-story white stone tower that used to be a bank; Coca-Cola used to store its secret formula in a basement vault.

Eric Cuevas, the director of student success at Georgia State, said many universities put the student advising center in a basement office. "We get priority placement," Cuevas said.

When academic counselor Emily Buis arrives at work each morning, she opens her computer to a "dashboard" and a spreadsheet she uses to track each of the 250-plus students she advises, and every interaction she has with each one. Thanks to the school's prediction system, each student on her screen is identified with a "risk level" of green,

yellow or red. She can also see the data behind why the student is coded this way; a STEM student underperforming in a math class, for example, might need extra attention.

The goal for Buis is to communicate by email, phone or in person at least once with each student assigned to her within the first four to five weeks of the semester. A few months later, Buis individually reviews each student's registration for the next semester to ensure they are in the right classes to keep them on the path to graduation; those who haven't registered get a phone call.

In between, an "early alert" from a professor to Buis with concerns about any aspect of a student's performance will prompt her to reach out to the student. Sudden drops in GPA or low early quiz scores are cause for concern. She also reaches out to students assigned to her through various "campaigns"; one week, for example, she'll check in with all her prejournalism students. Buis said it sounds "cheesy," but "all of my students are on my radar."

The heart of Georgia State's system is its predictive analytics engine, an algorithm built in 2012 with 10 years of data that included 144,000 student records and 2.5 million grades. It's updated nightly, and the data is scoured to look for patterns in student performance.

Georgia State's partner in developing the system was EAB, a Washington-based firm. Renick said the system—groundbreaking when it was developed—was built on ideas from the health care industry, where hospitals would scour large data sets for early signs a patient was at risk.

For all the details collected about each student, the main emphasis of Georgia State's program is ensuring students get a few big things right: that they're in a major well-suited to their talents, taking classes in the correct sequence, and not loading up their schedule with classes they don't need. In 2018 alone, university officials said they did nearly 3,000 "course corrections" to make sure students were enrolled in the right classes for their major. Before the system was rolled out, Renick said the average Georgia State student was taking more than 20 "wasted" credit hours that did not apply to any graduation requirement; now, extraneous courses have been reduced so much that students are graduating on average a semester sooner.

Each adviser has an extra screen on his or her desk that shows students what the system predicts about their chance of success in a major based on the academic records of previous Georgia State students. A student wanting to go to law school who has gotten Cs in political science classes but As in English might be encouraged to switch to an English major but

keep their dream of going to law school. The system signals that those who get a C in math pass chemistry at just a 40 percent rate, so weaker math students are encouraged to get more support before they attempt chemistry.

It might sound impersonal, but counselors have found that the predictive analytics system is sometimes more effective as a tool, since it gives students data to work with, rather than advice from a counselor they may or may not know or trust. "You turn the screen around and they make their own decision," said Elisha Jarrett, associate director of the university advisement center.

For Jarrett, the real benefits of the system have been its ability to flag students who aren't failing but might be quietly struggling, and for whom the right support in time would make a huge difference. "The student that got the B-, the C, or maybe the C-, we were failing those students," Jarrett said. "We didn't have a way to really reach out and capture those students and make sure those students were coming in."

For many Georgia State students, their first encounter with the predictive analytics system is an email from an adviser asking the student to come see them. Casey Prout, a sophomore who wants to be a nurse, got one of those emails her first week of freshman year after a low score on a chemistry quiz. She met with an academic coach who discussed study strategies with her. Ultimately, she said, she got a high 'C' in the class—enough to keep her on track in her major—and was glad she stuck it out. "I was like, oh my gosh, how did they already know I struggled in chemistry?" Prout said. At first, she said, she felt singled out. "But then, once you go in there, they reassure you: 'We caught it early, and we wanted to make sure you keep going from here'."

At first the system felt novel for the students and counselors. But today, the emails and other supports built around the predictive analytics system are so second nature for Georgia State students that some don't even know the program is unusual.

"They don't do that?" said student Cabria de Chabert when told other universities don't send out similar alerts. "There's only so much a person can do coming out of high school without the experience. You're going to need a little push, so I appreciate it."

The data have identified some unexpected patterns that signal trouble; the system also identified "toxic combinations" of classes, and now encourages students not to take these classes in the same semester. The university determined, for example, that students might pass physics and organic chemistry at good rates if taken separately, but struggle if they take them at the same time.

Both the College of Business and the School of Nursing revamped their academic prerequisites after the number crunching. In the business school, students used to need a 2.5 GPA to take upper-level classes—leading about 1,000 students hovering right below that cutoff to take "junk" classes for multiple semesters as they attempted to improve their GPA, said Allison Calhoun-Brown, the associate vice president for student success. Today, the requirement is more focused: business students need a 2.8 GPA in five select classes deemed more critical for them, which addressed the problem, she said. In the nursing program, it was long believed that a two-course sequence in Physiology and Anatomy was the most important predictor of success. But Georgia State's data found a student's grade in his or her first math class was more predictive than either one, so the math score is now used to determine whether a student is admitted into the program, Renick said.

The university is constantly looking for other ways to put the data to work. After it learned that 20 percent of its incoming freshmen were dropping out the summer before they even started, it developed an artificial intelligence "chatbot" to answer common questions about starting college. The bot handled 200,000 queries—and immediately delivered results. About 320 additional students attended that fall compared with the patterns of previous years.

The university also pays close attention to students' finances. Georgia State wants to know if a student has financial holds or an unpaid balance, or has exhausted eligibility for a Pell Grant. Since even small-scale financial stresses cause dropouts, the university pays out about \$2 million annually in microgrants to students identified as needing financial help. A \$300 grant is enough to keep some students in school.

Looking ahead, the university is exploring the possibility of monitoring each student's "electronic footprint" systematically to see if it can be used as an early warning sign that a student is in distress. The hope is that if a student who had been regularly signing onto campus Wi-Fi and electronic course platforms were suddenly to stop, the university would be able to find a way to intervene early.

Students don't always welcome being singled out, such as the incoming freshmen told they need to participate in the Summer Success Academy. But Calhoun-Brown said the school tries to approach students and parents with a truthful, but respectful tone, emphasizing that the program has identified the student as someone who could benefit from extra assistance—similar to what a Division I athlete would receive.

"We are trying to communicate that we believe in the students," Calhoun-Brown said. "We are trying to build our reputation at Georgia State on not who we exclude, but who we

include, and who we succeed with."

Elliott, the football coach, says the university's rising graduation rates have even become a recruiting tool to attract athletes. Elliott said his players are in the advising center almost daily, and the analytics system has become a selling point with prospective players' parents, who want to make sure their children graduate.

"A lot of universities talk about eligibility but \dots when they step foot on campus we're talking about graduation," Elliott said. "That's the ultimate goal."

IN THE YEARS since Georgia State rolled out its system, multiple vendors have begun offering similar services, and the use of predictive analytics as a student success tool has become much more prevalent. Demographic data, grades, test scores and attendance records are all scoured for clues to student success or failure.

As with many appealing technologies, few of those adopters are using the tool to its full potential, says Bridget Burns, an expert on higher-education innovation. Burns, executive director of the University Innovation Alliance, sees Georgia State as an example of one of the few universities truly harvesting the potential of predictive analytics. "There is not a light switch. You do not plug a predictive analytics system into your campus and all of a sudden it's a miracle. It doesn't work like that. It is complicated. It is difficult," Burns said.

Bruce Vandal, a senior vice president at Complete College America, a nonprofit focused on raising college graduation rates, said systems that use data to track and then intervene to help students are the wave of the future, but are only one part of the solution. Getting universities to focus on student support services, including advisers, can be a daunting task. This often isn't where colleges direct their attention, he said. In the race to build flashy student facilities and hire top faculty, "getting institutions to redistribute their resources to these types of activities is a daunting one," Vandal said.

At Georgia State, the technology is a tiny fraction of the university's advising costs. The university spends about \$150,000 annually on the technology, and the additional advisers cost about \$2.5 million. It might seem hard to justify at universities that are increasingly run like businesses. But Renick says the cost-benefit is more than clear: Dropouts mean lost revenue for the school, and the university generates more than \$3 million in tuition and fees for every 1 percentage point increase in students who stay enrolled. He estimates that the university saves millions with the program.

Georgia State's model isn't the only way to use an analytics program. Arizona State University, one of the nation's largest universities, with more than 100,000 traditional and

online students, offers an advanced online adviser system that requires students to take courses early on deemed diagnostic for success in the major they're pursuing. It also aggressively tracks attendance and reaches out to students who miss class. The University of Texas has a comprehensive initiative focused on getting students graduated in four years that uses predictive analytics to rate each student's chance of graduation before they step onto the campus and builds freshman housing groups using the data. Both schools have seen increases in graduation rates.

Some university leaders envision a time when predictive analytics systems in higher education could become even more sophisticated, drawing a portrait of the whole student that incorporates social activities such as Greek life membership, study abroad participation and swipe-card data that track the time students are spending in a campus gym or computer lab—all activities that universities use to help group students or track them in other ways to help them succeed.

Amid the excitement about these types of systems there are also some ethical concerns, including that they are a little too Big Brother. Alan Rubel, director of the Center for Law, Society and Justice at the University of Wisconsin, said it may be true, for example, that a student who is political or religious might be more successful as a student, but that doesn't mean the university should track whether students go to campaign rallies or church services. Ethics concerns have also been raised about building students' health and criminal records into the systems.

"I don't think universities ought to be in the business of collecting that information in the first place, regardless of whether it's relevant to our mission," Rubel said. "There are some things, surely, that universities ought not to be in the business of collecting or corresponding to academic concerns."

Beyond what universities are doing, Rubel said there are too few safeguards restricting what third-party vendors and researchers can do with the data. Georgia State says it follows federal privacy laws and that student data are passcode protected, housed behind firewalls and accessible only to those authorized and trained to use them. Renick emphasized under Georgia State's approach, it's not collecting much information that it didn't before it rolled out the system—the difference is that the insights are shared with students.

Others worry that while the universities' motivation might be good, the systems might be pushing low-income and minority students away from science, engineering or math fields by reinforcing biases and inequities in America's education system.

E. Gordon Gee, a longtime college administrator who is the president of West Virginia University, said he views predictive analytics as an important safety net but worries the systems can't account for serendipity, such as the students he's seen over the years who discover an academic passion and quickly change academically for the better.

"We don't want to become mechanical in how we treat people," Gee said.

Iris Palmer, a senior education policy analyst at the New America think tank who tracks the use of predictive analytics in higher education, said it's a "really hard line" for universities to walk. "On one hand, if you know that a student doesn't have the academic record to be successful in a major like nursing or engineering, don't you have the obligation to tell them that ahead of time before they waste their time and energy? And shouldn't you be able to say, 'Hey, there's this alternative you might want to try to be better suited to your academics'?" Palmer said.

On the other hand, Palmer said, the systems have to be rolled out carefully because "we have historical inequalities and structural and racial issues that can be embedded into their systems if we're not careful in how to build and how we implement the systems."

At Georgia State, Renick said the system doesn't use factors such as race, ethnicity or income when it comes to making predictions. He said the university has 100 percent more students graduating in STEM majors since 2011, in part because the university is able to offer additional supports to help get STEM majors to graduation.

For all its successes, the system isn't perfect. After the end of her first semester at Georgia State, Heathman said she didn't feel the same enthusiasm for the university that she had months earlier. While she enjoyed the stadium celebration and appreciated the support she received, Heathman said it was too "sporadic." She said she failed algebra after getting confused about the start time for her final, so she'll have to retake the class.

But importantly, she's still enrolled in school.

"Basically, I just have to talk to my counselor to figure out what's going on before it ends with me having a super-low GPA," Heathman said.

 ${\it Kimberly Hefling is an education reporter for POLITICO\, Pro.}$

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The Promises and Limits of Online Higher Education

UNDERSTANDING HOW DISTANCE EDUCATION AFFECTS ACCESS, COST, AND QUALITY

Di Xu and Ying Xu

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Executive Summary

In the past two decades, one of the most important innovations in the US higher education system has been the steady increase in distance education through online courses. College administrators have expressed strong support for online education, signaling that the current online expansion will likely continue. Based on a national survey of college administrators, almost half of all postsecondary institutions now include expanding online learning as a crucial component in formal strategic plans. Almost two-thirds of college administrators believe that developing online courses is crucial for the long-term strategy of their institution. Today, more colleges are offering online education courses, and more students are taking them than ever before.

While the supply and demand for online higher education is rapidly expanding, questions remain regarding its potential impact on increasing access, reducing costs, and improving student outcomes. Does online education enhance access to higher

education among students who would not otherwise enroll in college? Can online courses create savings for students by reducing funding constraints on postsecondary institutions? Will technological innovations improve the quality of online education?

This report finds that, to varying degrees, online education can benefit some student populations. However, important caveats and trade-offs remain. Existing experimental and quasi-experimental studies on semester-length college courses typically find negative effects on student course persistence and performance. Research suggests that students in online courses are between 3 percent and 15 percent more likely to withdraw, compared to similar students in face-to-face classes at community colleges. This report examines distance learning's effect on access, cost, and quality and concludes with a discussion about how strategies and policies can improve the effectiveness of online learning in higher education.

1

The Promises and Limits of Online Higher Education

UNDERSTANDING HOW DISTANCE EDUCATION AFFECTS ACCESS, COST, AND QUALITY

Di Xu and Ying Xu

Distance learning generally refers to education that is delivered to students in remote locations. It includes a wide variety of learning environments that are different from the traditional brick-and-mortar classroom setting, such as telecommunication courses (in which instruction is delivered on videotape or through cable distribution to students studying at home), correspondence study (in which the instructor mails or emails lessons to students who work independently), and online courses (in which course content is delivered via the internet, sometimes through modules or websites). However, with advances in technology, online courses have become the primary format of distance education at postsecondary institutions.

The growth of distance education was once intentionally constrained by the "50 percent rule" of the Higher Education Act (HEA) of 1992. This rule denied federal funding for institutions with predominantly or exclusively distance education programs. Specifically, the rule dictated that institutions that offered more than 50 percent of their courses through distance education or enrolled more than half of their students in distance education courses would not be eligible for federal student aid programs such as Pell Grants, subsidized loans, and work-study funding. Since the 50 percent rule applied to institutions instead of programs, an education program could be composed entirely of traditional face-to-face courses and still lose

its eligibility to federal student aid if it was offered at an institution that ran afoul of the 50 percent rule. Similarly, the HEA also denied access to certain types of federal financial aid and loans for students who took more than half their courses through distance courses.²

While all institutions and students were subject to the 50 percent rule when offering and enrolling in distance education, the rule particularly affected nontraditional students who often balance coursework with other job and family commitments. The rule substantially constrained the growth of for-profit institutions, which had pioneered distance learning to allow individuals to pursue further forms of education.³ Since the for-profit sector disproportionately serves adult learners, women, underrepresented racial minority students, and low-income students, educational opportunities for the most disadvantaged populations were substantially compromised due to the 50 percent rule.⁴

To promote new advances in distance education and to address the increasing demand, the HEA was amended in 1998 to create the Distance Education Demonstration Program (DEDP), which granted colleges waivers from the 50 percent rule. The DEDP-granted waivers grew from 15 institutions or university systems in 1999 to 24 in 2003, and the number of off-site students enrolled in distance learning programs more than doubled during the same period.⁵ In 2006, the HEA was amended again to discontinue

the 50 percent rule, thereby spurring the growth of dedicated online institutions.⁶ The share of bachelor's degrees awarded by institutions that offered exclusively online courses grew from 0.5 percent in 2000 to over 6 percent in 2012.⁷

At the state level, funding for online education programs and students enrolled in online classes varies. In 2015, the Education Commission of the States, through its State Financial Aid Redesign Project, analyzed statutes and regulations for the largest 100 state financial aid programs across the country.8 The report indicates that all states, except Pennsylvania, have eliminated the 50 percent rule from state-level policies. Several states have also explicitly promoted the growth of online education in their state budgets. For example, California committed \$100 million in 2018 to create an online community college that will offer certificate and credentialing programs to primarily serve workers in need of new skills. The California state budget further committed another \$20 million to expanding existing online offerings in the current brick-and-mortar campuses.9

Now that higher education institutions are generally unconstrained by state and federal policies from offering online and distance education courses, it is opportune to evaluate the benefits and drawbacks of online courses. How much has the expansion of online learning affected access to college, reduced costs, or improved student outcomes?

Expanding Access: How Many Students Take Online Courses and Why?

The literature on online learning identifies two primary reasons that students take online courses. First, the online delivery format provides greater flexibility and convenience, especially for students who have other work and family commitments. ¹⁰ The California Community College Chancellor's Office (CGCCO) conducted a distance education survey among all students who completed a distance education course in the 2016 fall term. ¹¹ The survey asked distance education students to rank the importance of 16 reasons why they enrolled in a distance course. ¹² Among the

6,625 survey respondents (a 9 percent response rate), the number one reason was convenience with their work schedule. (Seventy-four percent of the respondents rated it as important or very important.)

Second, individual student preferences about the course delivery drive enrollment in online education. Based on interviews with online course takers at two Virginia community colleges, Shanna Smith Jaggars found that students who prefer working independently and at their own pace are more likely to choose online courses. In a similar vein, almost 60 percent of the CCCCO student survey respondents were enrolled in distance courses because they "enjoy learning on a computer." 14

Jaggars also found that students make conscious decisions on a course-by-course basis based on three factors specific to a course: (1) suitability of the subject areas to the online context, (2) difficulty of the course, and (3) importance of the course. In general, the interviewed students seemed to have an implicit understanding that they would not learn the course materials as well when they took a course online rather than face-to-face.15 As a result, students were comfortable taking online courses only when the course was easy (where "easy" was typically used to refer to humanities courses, whereas "difficult" referred to math and science courses), was less important to their academic career (such as courses not in their academic major), and was in a subject area they had less interest in.

A number of students directly pointed out that they would take a course online only when they felt competent to "teach themselves" strictly from a textbook or other readings, with little or no explicit instruction. In contrast, students explicated the need for the immediate question-and-answer context of a face-to-face course in a subject in which they would need stronger instructor guidance. These findings suggest that many online courses implemented at community colleges, at least as currently practiced, may not support student learning as effectively as traditional face-to-face classes and therefore need systematic efforts from both the institution and the course instructors to better facilitate teaching and learning in the online environment.

Due to the flexibility of online learning, online courses may be particularly appealing to students who assume working and family responsibilities and who would otherwise have to take fewer courses or not enroll in college at all. A Government Accountability Office report provided a comprehensive description of current online course takers based on data from the National Postsecondary Student Aid Study, a nationally representative survey covering more than 19 million postsecondary students.¹⁶ The analyses indicate that 1.5 million of 19 million postsecondary students took at least one online course in 1999-2000. These 1.5 million students differ from other postsecondary students in a number of ways. Compared to students who did not take any online courses during their entire program, online course attempters tend to be older and are more likely to be employed full time and attending school part time. They also have higher incomes and are more likely to be married.

These patterns are also echoed in several studies using college administrative data. For example, based on data from California's Community College System, Hans Johnson and Marisol Cuellar Mejia found that students age 25 or older are much more likely than younger students to take online courses. 7 Specifically, 15.4 percent of older students take online courses, compared to 8.5 percent of their traditional college-aged peers (age 18–25).

Additionally, this report reveals a racial and ethnic difference in online enrollment, with Latino students having a substantially lower online enrollment rate than white, African American, or Asian students do. This disparity may partially reflect the broadband internet access divide, as research suggests that Latinos are typically less likely to have internet access at home.18 Given the flexibility of online learning as the most important consideration students cited for enrolling in online courses and the demographic characteristics of the online course takers, it may seem self-evident that online courses provide an avenue to pursue higher education for individuals who otherwise would not enroll. However, there is surprisingly little causal evidence on whether the availability of online learning opportunities indeed increase access

to higher education, especially for disadvantaged or underrepresented student groups.

The only quasi-experimental evidence in this regard came from a recent study that uses data from a new online master's of science in computer science (OMSCS) offered by the Georgia Institute of Technology, in which all courses are delivered exclusively online. ¹⁹ The researchers found a significant difference in the age of students applying for the online program and its in-person equivalent. Specifically, the average in-person applicant is a 24-year-old student recently out of college, whereas the average online applicant is a 34-year-old mid-career worker.

A 2014 survey with OMSCS applicants also revealed that geographic and temporal flexibility is the primary appeal of online education to those whose jobs, families, or residential situations do not allow for enrollment in traditional programs. Eighty percent of those admitted to the online program accept those offers and enroll, suggesting that the online program expanded access to education for mid-career or older populations that would not otherwise enroll. Based on a regression discontinuity approach,20 the researchers find that access to this online option substantially increased overall enrollment by about 20 percentage points and that such effects are fairly consistent across different demographic subgroups, such as by gender, ethnicity, age, and citizenship. Importantly, among applicants who fell right below the cutoff score and were therefore not admitted into the online program, few enrolled in other non-OMSCS programs, supporting the claim that the online option indeed increases access to higher education.

The Supply and Demand of Online Education.

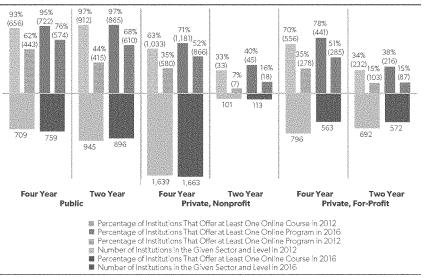
With the added convenience of online classes and their potential ability to expand access to higher education, it should be no surprise that the supply of and demand for online courses has increased throughout the past decade. That is, more colleges are now offering online courses than ever before (more supply), and more students are now enrolling in those courses than ever before (more demand). How large is this increase? The Department of Education's Integrated

Postsecondary Education Data System (IPEDS) provides comprehensive national statistics on postsecondary education, and since 2012, IPEDS has reported data regarding online education offerings and enrollment for degree-seeking students.

IPEDS defines online education as a credit-bearing course or program in which the instructional content is delivered exclusively online ²¹ IPEDS data from 2016–17 are used to show the overall increase in supply of online education courses and the increase in demand for those courses by students. The data represent more than 7,000 postsecondary institutions across the US, among which almost 5,000 are degree-granting institutions.

The Supply Side: Increases in Online Courses and Programs. In 2016-17, approximately 3,500, or 76 percent, of all degree-granting institutions reported offering online courses. This number has increased steadily since 2012, when 70 percent of those institutions reported to offer online courses. Among institutions that offered any online course, almost all offered online courses at the undergraduate level, whereas only half offered online courses at the graduate level. While online courses provide flexibility to students in general, programs offered entirely online allow students to attain a higher education credential remotely and thus could expand access to higher education among individuals who do not live near a physical college campus, such as those serving in the Army. According to IPEDS, more than half

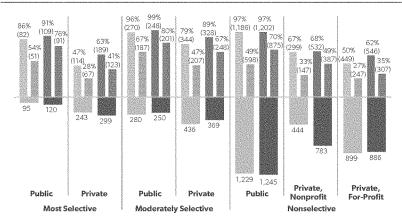
Figure 1. Number of Postsecondary Institutions That Offer Online Courses or Programs by Sector and Level, 2012 and 2016



Note: The numbers reported in the figure are calculated based on data from active degree-granting institutions with valid enrollment data in each year (n = 4,566 in 2016; n = 4,882 in 2012). The numbers in parentheses represent the total number of institutions in a specific category.

Source: National Center for Education Statistics, Integrated Postsecondary Education Data System, 2012 and 2016, https://nces.ed.gov/ipeds/use-the-data.

Figure 2. Number of Postsecondary Institutions That Offer Online Courses or Programs by Selectivity and Sector, 2012 and 2016



- Percentage of Institutions That Offer at Least One Online Course in 2012
- Percentage of Institutions That Offer at Least One Online Program in 2016
- Number of Institutions in the Given Sector and Selectivity Level in 2012
 Percentage of Institutions That Offer at Least One Online Course in 2016
- Percentage of Institutions That Offer at Least One Online Program in 2012
- Number of Institutions in the Given Sector and Selectivity Level in 2016

Note: These numbers were calculated based on active degree-granting institutions with valid enrollment data and valid selectivity scores in a given year. The sample includes 3,952 institutions in 2016 and 3,626 institutions in 2012. Selectivity is derived from the Carnegie Classification of Institutions of Higher Education (variable "C15UGPRF" in the IPEDS 2016 database and variable "CCUGPROF" in the IPEDS 2012 database, respectively). Based on the 15 categories, ²³ we coded all institutions into three selectivity levels: nonselective, moderately selective, and most selective. For the most selective and moderately selective categories, "private" includes both nonprofit and for-profit institutions. However, 99 percent of private for-profit institutions were categories as nonselective, so for-profit and non-profit institutions are grouped to gether in the most selective and moderately selective categories.

Source: National Carter for Education Statistics, Literated Postseconday, Education Data System, 2012 and 2016, https://poss.

Source: National Center for Education Statistics, Integrated Postsecondary Education Data System, 2012 and 2016, https://nces.ed.gov/ipeds/use-the-data.

of degree-granting institutions offered at least one exclusively online program in 2016–17.

Figure 1 shows the percentage of degree-granting postsecondary institutions that offer any online course and at least one exclusively online program, broken out by sector (public, private nonprofit, and private) and level (two year versus four year). Online learning is most prevalent in the public sector, where more than 95 percent of public institutions offered at least one course online in 2016 and more than two-thirds of the institutions offered at least one program that can be pursued exclusively online. Online course and online program offerings are less prevalent

in both the private nonprofit sector and the for-profit sector, especially at two-year institutions.

Comparing data between 2012 and 2016 also reveals noticeable increases in the availability of exclusively online programs at both two-year and four-year institutions in all three sectors. Among two-year public institutions, for example, only 415 (44 percent) institutions offered an exclusive online program in 2012. By 2016, this number increased to 610, or 68 percent, of all degree-granting two-year public institutions. The only exceptions are for-profit two-year institutions, where only 15 percent of these institutions offered exclusively online programs in both 2012 and 2016.

Figure 2 further takes into account an institution's selectivity and displays online course and program offering by sector among institutions with similar levels of selectivity. The selectivity measure is created by IPEDS based on several admission-related factors, such as college admission test scores, the number of applicants, and the number of students admitted.²² In general, more selective institutions have lower acceptance rates and tend to admit students with higher average entrance test scores (such as the SAT or ACT), suggesting that they predominantly admit the most academically qualified students.

While online education offering is most prevalent among public institutions across the board, the gap in online course and program offering is particularly pronounced among the most selective institutions: During 2016–17, 91 percent of more selective public institutions offered at least one online course, compared to 63 percent of more selective private non-profit institutions. Similarly, whereas 76 percent of the more selective public institutions offered exclusively online programs, only 41 percent of the more selective nonprofit private institutions did so.

IPEDS further divides exclusively online programs by Classification of Instructional Programs (CIP) code, thus enabling a more detailed examination of fully online programs by academic subject areas. Figure 3 presents the total number of education programs that can be pursued exclusively online at degree-granting institutions in each field of study. Due to variations in demand and the suitability of the online format in delivering the course content, the supply of fully online programs shows substantial variations across subject areas. Business and marketing top the list, where 7,437 programs can be pursued exclusively online and represent one-quarter of all programs in this area, followed by health (4,783 programs) and education (3,443 programs).

To examine the possibility that the availability of fully online programs in each field may vary by the type of credential, we further break down the distribution of programs for associate and bachelor's degrees (Figure 4), graduate degrees (Figure 5), and certificates (Figure 6). It seems that business, health, and education are among the top three programs for

all three types of credentials, with one exception: Relatively fewer associate and bachelor's degree programs in education can be fully pursued online (569 programs, representing only 6 percent of all associate and bachelor's programs in education).

Finally, Figure 7 shows the distribution of programs by sector and selectivity of institutions for the top five fields with the largest number of exclusively online programs. ²⁴ Two interesting patterns emerge from the findings. First, except for education, fully online programs are overwhelmingly offered by non-selective public and private for-profit institutions. In particular, three-quarters of exclusively online computer science programs were offered by institutions from these two categories. Second, a relatively small percentage of exclusively online programs can be pursued at selective institutions. (Education is a notable exception, in which more than half of the programs are offered at selective institutions.)

The Demand Side: Increases in Online Enrollment. Among all postsecondary degree-granting institutions, 15 percent of all degree-seeking students were exclusively enrolled in online courses during 2016-17, and approximately one-third of degreeseeking students were enrolled in at least one course through online learning (referred to as "any-online student" hereafter). There are substantial variations in student enrollment in online education across sectors: Private for-profit institutions, particularly for-profit four-year institutions, had the highest online enrollment rate, in which 68 percent of students enrolled in this sector during 2016-17 took at least one online class. Among these students, the majority (85 percent) were enrolled online exclusively (referred to as "only-online students" hereafter). Institutions in the public sector and private nonprofit sector had a much lower online enrollment rate, in which 30 percent and 27 percent of students took at least one online class, respectively. Compared with any-online students enrolled in the for-profit sector, any-online students in the public and private nonprofit sectors were more likely to take face-to-face classes simultaneously, in which approximately one-third (35 percent) in the public

DI XU AND YING XU

Figure 3. Availability of Exclusive Online Programs by Academic Subject Areas, 2016

| Business, Management, Marketing, and Related Support | 26% |
|---|----------------|
| Health Professions and Related Programs | 15% 4,783 |
| Education | 15% 3,443 |
| Computer and Information Sciences and Support Services | 22% 2,510 |
| Homeland Security, Law Enforcement, Firefighting, and Related | 27% 1,835 |
| Liberal Arts and Sciences, General Studies, and Humanities | 27% 1,194 |
| Theology and Religious Vocations | 23% 715 |
| Psychology | 13% 620 |
| Public Administration and Social Service Professions | 18% 619 |
| Engineering | 8% 600 |
| Engineering Technologies and Engineering-Related Fields | 6% \$32\$ 539 |
| Social Sciences | 6% 511 |
| Multi- and Interdisciplinary Studies | 11% 483 |
| Legal Professions and Studies | 18% 479 |
| Family and Consumer Sciences and Human Sciences | 13% 396 |
| Visual and Performing Arts | 3% 💹 392 |
| Communication, Journalism, and Related Programs | 8% 361 |
| Parks, Recreation, Leisure, and Fitness Studies | 8% 236 |
| English Language and Literature or Letters | 6% 225 |
| Agriculture, Agriculture Operations, and Related Sciences | 5% 152 |
| Natural Resources and Conservation | 6% (149 |
| Philosophy and Religious Studies | 5% 135 |
| History | 5% 📖 123 |
| Library Science | 45% 119 |
| Foreign Languages, Literatures, and Linguistics | 2% 🕷 104 |
| Personal and Culinary Services | 3% III 101 |
| Mechanic and Repair Technologies or Technicians | 2% 🦉 94 |
| Biological and Biomedical Sciences | 1% (93 |
| Mathematics and Statistics | 3% 💹 91 |
| Area, Ethnic, Cultural, Gender, and Group Studies | 2% 📓 62 |
| Physical Sciences | 1% § 54 |
| Communications Technologies and Technicians and Support | 4% \$\infty 52 |
| Transportation and Materials Moving | 7% 50 |
| Construction Trades | 2% 🐧 40 |
| Military Technologies and Applied Sciences | 50% 34 |
| Architecture and Related Services | 3% 📓 27 |
| Precision Production | 1% I 26 |
| Science Technologies and Technicians | 4% # 18 |

■ Percentage of Programs Offered Online ■ Number of Programs Offered Online

Note: These numbers were calculated based on active degree-granting institutions that reported valid data regarding online education offering in 2016 (n = 4,566). Academic subject areas were retrieved from variable "CIPCODE" in the IPEDS database.

Source: National Center for Education Statistics, Integrated Postsecondary Education Data System, 2016, https://nces.ed.gov/ipeds/use-the-data.

Figure 4. Availability of Exclusive Online Associate or Bachelor's Degree Programs by Academic Subject Areas, 2016

| Business, Management, Marketing, and Related Support Services | 24% 3,735 |
|--|---|
| Health Professions and Related Programs | 14% 2,041 |
| Computer and Information Sciences and Support Services | 21% 1,340 |
| Homeland Security, Law Enforcement, Firefighting, and Related | 29% |
| Liberal Arts and Sciences, General Studies, and Humanities | 28% |
| Education | 6% 569 |
| Social Sciences | 6% 358 |
| Psychology | 15% |
| Theology and Religious Vocations | 21% 298 |
| Multi- and Interdisciplinary Studies | 10% 261 |
| Public Administration and Social Service Professions | 16% 259 |
| Legal Professions and Studies | 21% 257 |
| Engineering Technologies and Engineering-Related Fields | 6% ×××××××××××××××××××××××××××××××××××× |
| Visual and Performing Arts | 2% ≥ 232 |
| Communication, Journalism, and Related Programs | 6% 21 6 |
| Family and Consumer Sciences and Human Sciences | 11% *********************************** |
| English Language and Literature or Letters | 5% 119 |
| Parks, Recreation, Leisure, and Fitness Studies | 4% 91 |
| History | 5% ********* 87 |
| Philosophy and Religious Studies | 4% 81 |
| Engineering | 2% 🕮 73 |
| Natural Resources and Conservation | 4% ***** 68 |
| Foreign Languages, Literatures, and Linguistics | 1% ■ 58 |
| Agriculture, Agriculture Operations, and Related Sciences | 3% 55 |
| Personal and Culinary Services | 5% 52 |
| Mathematics and Statistics | 2% 🞆 40 |
| Mechanic and Repair Technologies and Technicians | 2% ≈ 37 |
| Biological and Biomedical Sciences | 1% ₩ 33 |
| Area, Ethnic, Cultural, Gender, and Group Studies | 2% 💐 30 |
| Transportation and Materials Moving | 8% (80000000) 27 |
| Communications Technologies and Technicians and Support Services | 3% 📾 25 |
| Physical Sciences | 1% # 24 |
| Library Science | 39% 23 |
| Construction Trades | 2% 💓 13 |
| Science Technologies and Technicians | 5% 13 |
| Military Technologies and Applied Sciences | 39% |
| Precision Production | 2% 🛍 11 |
| Architecture and Related Services | 2% 😻 10 |
| | |

Note: These numbers were calculated based on active degree-granting institutions that reported valid data regarding online education offering in 2016 (n = 4,566). Academic subject areas were retrieved from variable "CIPCODE" in the IPEDS database. Source: National Center for Education Statistics, Integrated Postsecondary Education Data System, 2016, https://nces.ed.gov/ipeds/use-the-data.

Figure 5. Availability of Exclusive Online Graduate Degree Programs by Academic Subject Areas, 2016

| | والمراقب المراقب المرا |
|---|--|
| Education | 22% |
| Business, Management, Marketing, and Related Support Services | 36% |
| Health Professions and Related Programs | 20% |
| Engineering | 12% 419 |
| Computer and Information Sciences and Support Services | |
| Theology and Religious Vocations | 22% 284 |
| Homeland Security, Ław Enforcement, Firefighting, and Related Public Administration and Social Service Professions | |
| Psychology | 22% 246 |
| , , , | |
| Multi- and Interdisciplinary Studies | 13% 129 2014-00-00-00-00-00-00-00-00-00-00-00-00-00 |
| Parks, Recreation, Leisure, and Fitness Studies Social Sciences | |
| | |
| Engineering Technologies and Engineering-Related Fields | 31% 95 |
| Legal Professions and Studies | |
| Communication, Journalism, and Related Programs Visual and Performing Arts | 12% 91 3% 79 |
| Family and Consumer Sciences and Human Sciences | 21% 79 |
| | 7% ************************************ |
| English Language and Literature or Letters Natural Resources and Conservation | 9% (5) |
| Natural Resources and Conservation Library Science | 52% |
| Agriculture, Agriculture Operations, and Related Sciences | 32 % *********************************** |
| Agriculture, Agriculture Operations, and Related Sciences Biological and Biomedical Sciences | 0% |
| Liberal Arts and Sciences, General Studies, and Humanities | 14% 36 42 |
| Philosophy and Religious Studies | 6% 888 34 |
| rniosopriyang keligious studies Mathematics and Statistics | 978 |
| Mainemaics and Statistics History | 5% 32 |
| Foreign Languages, Literatures, and Linguistics | 2% # 31 |
| Physical Sciences | 1% 1 22 |
| Transportation and Materials Moving | 64% |
| Architecture and Related Services | 4% * 15 |
| Area, Ethnic, Cultural, Gender, and Group Studies | 3% @ 13 |
| Military Technologies and Applied Sciences | 71% |
| Communications Technologies and Technicians and Support Services | 9% 3 |
| Science Technologies and Technologies and Technologies and Technologies | 25 (|
| Precision Production | 10.9 minutesian () |
| Mechanic and Repair Technologies and Technicians | |
| Construction Trades | |
| Personal and Culinary Services | |
| r elsonarana cumary services | |

■ Percentage of Programs Offered Online ■ Number of Programs Offered Online

Note: These numbers were calculated based on active degree-granting institutions that reported valid data regarding online education offering in 2016 (n = 4,566). Academic subject areas were retrieved from variable "CIPCODE" in the IPEDS database.

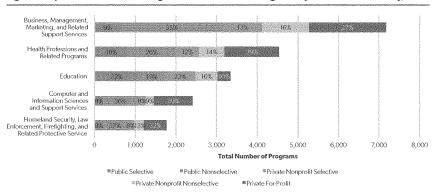
Source: National Center for Education Statistics, Integrated Postsecondary Education Data System, 2016, https://nces.ed.gov/ipeds/use-the-data.

Figure 6. Availability of Exclusive Online Certificate Programs by Academic Subject Areas, 2016

| D | 200 |
|---|--|
| Business, Management, Marketing, and Related Support Services | 25% 2,084 |
| Health Professions and Related Programs | 12% 1,398 |
| Education | 21% 868 |
| Computer and Information Sciences and Support Services | 20% |
| Homeland Security, Law Enforcement, Firefighting, and Related | 20% |
| Engineering Technologies and Engineering-Related Fields | 5% 200 |
| Family and Consumer Sciences and Human Sciences | 13% |
| Theology and Religious Vocations | 29% 133 |
| Legal Professions and Studies | 18% #################################### |
| Public Administration and Social Service Professions | 19% |
| Liberal Arts and Sciences, General Studies, and Humanities | 22% III2 |
| Engineering | 22% 108 |
| Psychology _ | 23% |
| Multi- and Interdisciplinary Studies | 14% 93 |
| Visual and Performing Arts | 4% 888 81 |
| Mechanic and Repair Technologies and Technicians | 2% 🕸 57 |
| Communication, Journalism, and Related Programs | 11% 54 |
| Social Sciences | 9% 52 |
| Agriculture, Agriculture Operations, and Related Sciences | 5% 🐃 52 |
| Personal and Culinary Services | 3% 🕸 49 |
| Library Science | 44% |
| English Language and Literature or Letters | 14% 39 |
| Parks, Recreation, Leisure, and Fitness Studies | 9% 34 |
| Natural Resources and Conservation | 11% 30 |
| Construction Trades | 2% 4 27 |
| Communications Technologies and Technicians and Support | 4% 💌 24 |
| Philosophy and Religious Studies | 17% 20 |
| Area, Ethnic, Cultural, Gender, and Group Studies | 5% 🐃 19 |
| Biological and Biomedical Sciences | 6% 388 18 |
| Mathematics and Statistics | 15% жили 17 |
| Precision Production | 1% 15 |
| Foreign Languages, Literatures, and Linguistics | 3% 🛒 15 |
| Military Technologies and Applied Sciences | 52% |
| Physical Sciences | 9% 8 |
| Transportation and Materials Moving | 2% * 7 |
| History | 6% 🐃 4 |
| Science Technologies and Technicians | 2% 🕸 3 |
| Architecture and Related Services | ant terminalist til til stat om er att manne med skille til stat om er ett skille til |
| Michitectore and related believes | errorman in a state of the contract of the con |
| Percentage of Programs Offered On | line Rumber of Programs Offered Online |

Note: These numbers were calculated based on active degree-granting institutions that reported valid data regarding online education offering in 2016 (n = 4,566). Academic subject areas were retrieved from variable "CIPCODE" in the IPEDS database. Source: National Center for Education Statistics, Integrated Postsecondary Education Data System, 2016, https://nces.ed.gov/ipeds/use-the-data.

Figure 7. Top Five Fields with the Largest Number of Online Programs by Sector and Selectivity, 2016



Note: These numbers were calculated based on active degree-granting institutions with valid enrollment data and with valid selectivity scores (n=3,952). Academic subject areas were retrieved from variable "CIPCODE" in the IPEDS database. Selectivity is derived from the Carnegie Classification of Institutions of Higher Education (variable "CISUGPRF" in the IPEDS 2016 database and variable "CCUGPROF" in the IPEDS 2012 database, respectively). Given that over 99 percent of the institutions in the private for-profit sector were categorized as nonselective institutions, this figure did not break out institutions in this category between selective and nonselective. Source: National Center for Education Statistics, Integrated Postsecondary Education Data System, 2016, https://nces.ed.gov/ipeds/

sector and 65 percent in the private nonprofit sector were enrolled in online courses exclusively.

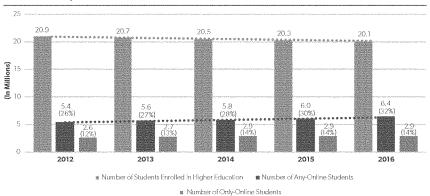
Figure 8 shows the overall changes in student enrollment in online courses between 2012 and 2016 across all degree-granting postsecondary institutions. The number of any-online students increased by one million, representing a 19 percent increase overall. The number of only-online students also increased by 0.3 million during this period, or a 12 percent increase. The nationwide increase in online enrollment displayed in IPEDS is also evident in state and local reporting. At California Community Colleges (the largest community college system in the US) online course enrollment increased by almost 850,000 between 2002 and 2012. Meanwhile, enrollment in face-to-face classes declined by almost 285,000. Consequently, the proportion of online course enrollment surged from 1.4 percent to 10.7 percent over this period.25

Figure 9 further displays the trends of any-online and only-online students by institutional sector.

Overall, the shares of online students (both any-online and only-online students) increased steadily across all three sectors between 2012 and 2016. While the total number of online students slightly increased during the five-year period in both the public and private nonprofit sectors, the number of online students at private for-profit colleges declined, which seems to be primarily driven by the overall shrinkage of total student enrollment in this sector during this period.

To examine possible differences in online enrollment between two-year and four-year colleges, Figure 10 further differentiates between four-year and two-year institutions in each sector and shows the percentage of students enrolled in any online course in 2012 and 2016, respectively. Overall, the percentage of any-online and only-online students increased in both two-year and four-year colleges across all sectors. In the public sector, two-year institutions had slightly higher online enrollment rates than did four-year institutions in both 2012 (27 percent vs. 22 percent for any-online and 10 percent vs.

Figure 8. Number of Students Enrolled in Postsecondary Degree-Granting Institutions and Online Courses, 2012-16



Note: The numbers reported in the figure were calculated based on data from active degree-granting institutions in each year. The numbers in parentheses represent the percentage of any-online or only-online students among those enrolled in higher education

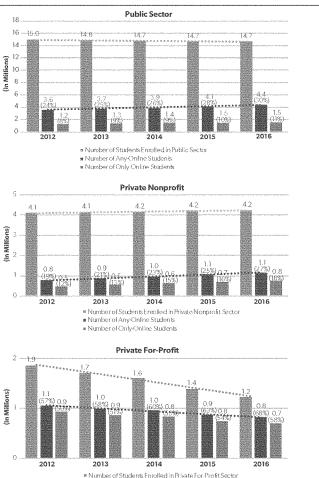
Source: National Center for Education Statistics, Integrated Postsecondary Education Data System, 2012, 2013, 2014, 2015, and 2016, https://nces.ed.gov/ipeds/use-the-data.

7 percent for only-online) and 2016 (31 percent vs. 29 percent for any-online and 12 percent vs. 10 percent for only-online). In the private nonprofit sector, two-year institutions showed a dramatic increase in online enrollment rate between 2012 and 2016 (from 7 percent to 40 percent for any-online and from 2 percent to 34 percent for only-online), although these two-year institutions only accounted for less than 1 percent of the total postsecondary enrollment. In the private for-profit sector, four-year institutions had an extremely high online enrollment rate (80 percent for any-online and 69 percent for only-online in 2016), while the rate was fairly low at two-year, private for-profit institutions (13 percent for any-online and 4 percent for only-online in 2016).

Figure 11 displays the percentage of any-online and only-online students by institutional selectivity. The patterns across institutions are strikingly consistent: the more selective an institution, the less likely the students would attempt any online course. For example, only 16 percent of the students enrolled in most-selective institutions attempted any online course during 2016-17, which is half the rate compared to students enrolled at nonselective institutions (39 percent).

The higher rate of online enrollment among nonselective institutions shown in Figure 11 might be primarily driven by a large share of students enrolled at private for-profit institutions. To address this possibility, Figure 12 shows the percentage of students enrolled in online courses broken out by sector in each category of selectivity. After disaggregating the data by both sector and selectivity level, the pattern of higher online enrollment rate in nonselective institutions holds in the public sector and the private nonprofit sector. For example, in the private nonprofit sector, only 10 percent of the students at more selective institutions took any online course in 2016-17. The percentage of any-online students almost tripled at moderately selective nonprofit institutions and increased by about half at nonselective nonprofit institutions.

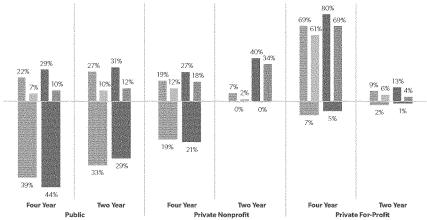
Figure 9. Number of Students Enrolled in Postsecondary Institutions and Online Courses by Sector, 2012–16



Note: The numbers reported in the figure were calculated based on data from active degree-granting institutions in each year. The numbers in parentheses represent the percentage of any-online or only-online students among all enrollees in higher education in a given year. Source: National Center for Education Statistics, Integrated Postsecondary Education Data System, 2012, 2013, 2014, 2015, and 2016, https://nces.ed.gov/ipeds/use-the-data.

Number of Any-Online Students
 Number of Only-Online Students

Figure 10. Higher Education and Online Enrollment by Sector and Level, 2012 and 2016



- ** Percentage of Students Who Took at Least One Online Course in 2012
- Percentage of Students Who Took at Least One Online Course in 2016
- Percentage of Students Enrolled in the Given Type of Institutions in 2012.
- $^{\approx}$ Percentage of Students Enrolled Exclusively in Online Courses in 2012 Percentage of Students Enrolled Exclusively in Online Courses in 2016
- * Percentage of Students Enrolled in the Given Type of Institutions in 2016

Note: These numbers were calculated based on active degree-granting institutions with valid enrollment data in the current year (n = 4,566 in 2016; n = 4,822 in 2012). Institutional sector was retrieved from variable "CONTROL," and institutional level was retrieved from variable "ICLEVEL" in the IPEDS database. Total enrollment rate in private, nonprofit two-year institutions in 2012 is 0.18 percent. The total enrollment rate in two-year, private nonprofit institutions in 2016 was 0.26 percent.

Source: National Center for Education Statistics, Integrated Postsecondary Education Data System, 2012 and 2016, https://nces. ed.gov/ipeds/use-the-data.

Finally, considering that state-level policies may shape online learning in unique ways, Figure 13 shows online enrollment by state in the 2016-17 school year. Unsurprisingly, the most populated states, such as California, Florida, and Texas, also had the largest number of online course takers. Once accounting for between-state differences in overall higher education enrollment, four states have the largest share of students who enrolled in at least one online course in 2016: Arizona (61 percent), Idaho (52 percent), New Hampshire (58 percent), and West Virginia (57 percent). At the other end of the spectrum, three states-Connecticut, New York, and Rhode Islandhad less than 20 percent of students enrolled in at least one online course.

The Cost of Online Education: Can Distance Learning "Bend the Cost Curve"?

One reason for the support behind online education and distance learning is that it can help address funding insufficiencies in higher education

56%

Nonselective

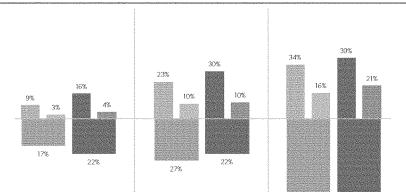


Figure 11. Higher Education and Online Enrollment by Selectivity, 2012 and 2016

- Moderately Selective

 © Percentage of Students Who Took at Least One Online Course in 2012
- # Percentage of Students Who Took at Least One Online Course in 2016
- ™ Percentage of Students Enrolled in Institutions by Selectivity in 2012
- $^{\mbox{\tiny{$18$}}}$ Percentage of Students Enrolled Exclusively in Online Courses in 2012
- Percentage of Students Enrolled Exclusively in Online Courses in 2016
- # Percentage of Students Enrolled in Institutions by Selectivity in 2016

Note: These numbers were calculated based on active degree-granting institutions with valid enrollment data and with valid selectivity scores in a given year. The sample includes 3,955 institutions in 2016 and 3,626 institutions in 2012. Selectivity was retrieved from the Carnegie Classification of Institutions of Higher Education (variable "C15UGPRF" and variable "CCUGPROF" in the IPEDS 2016 and IPEDS 2012 database, respectively).

Source: National Center for Education Statistics, Integrated Postsecondary Education Data System, 2012 and 2016, https://nces.ed.gov/ipeds/use-the-data.

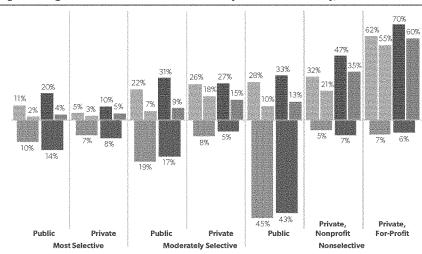
by reconfiguring the use of highly paid faculty and reducing the demand for brick-and-mortar construction and maintenance. Since online courses do not have physical space limitations on enrollment, colleges can increase class sizes in online courses as a response to changes in demand relatively easily compared to brick-and-mortar classrooms. Moreover, the consequence associated with increased class size on student learning may also differ substantially by course delivery format: While larger class sizes can negatively influence student-learning

Most Selective

outcomes through increased classroom disruptions in the traditional face-to-face setting, these mechanisms would be largely muted if an online course has limited synchronous student-instructor interactions and peer interactions.²⁷

Eric Bettinger and his coauthors directly assess the effects of increasing class size on studentlearning outcomes in online courses at a large for-profit university.²⁸ The authors exploit a field experiment in which more than 4,000 course sections of 111 courses were randomly assigned to either

Figure 12. Higher Education and Online Enrollment by Sector and Selectivity, 2012 and 2016

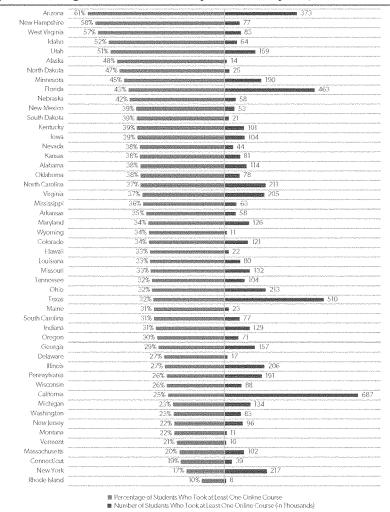


- Percentage of Students Who Took at Least One Online Course in 2012
- Percentage of Students Who Took at Least One Online Course in 2016
 Percentage of Students Enrolled in the Given Type of Institutions in 2012
 Percentage of Students Enrolled Exclusively in Online Courses in 2012
- Percentage of Students Enrolled Exclusively in Online Courses in 2016 $\ensuremath{\text{m}}$ Percentage of Students Enrolled in the Given Type of Institutions in 2016

Note: These numbers were calculated based on active degree-granting institutions with valid enrollment data and with valid selectivity scores in a given year. The sample includes 3,955 institutions in 2016 and 3,626 institutions in 2012. Selectivity was retrieved from the Carnegie Classification of Institutions of Higher Education (variable "C15UGPRF" and variable "CCUGPROF" in the IPEDS 2016 and IPEDS 2012 database, respectively). For the most selective and moderately selective categories, "private" includes both nonprofit and for-profit institutions. However, 99 percent of private for-profit institutions were categorized as nonselective, so for-profit and nonprofit institutions are grouped together in the most selective and moderately selective categories.

Source: National Center for Education Statistics, Integrated Postsecondary Education Data System, 2012 and 2016, https://nces. ed.gov/ipeds/use-the-data.

Figure 13. Percentage of Students Enrolled in Any Online Course by State, 2016



Note: These numbers were calculated based on active degree-granting institutions that reported valid data regarding online education offering (n = 4,566).

Source: National Center for Education Statistics, Integrated Postsecondary Education Data System, 2016, https://nces.ed.gov/ipeds/use-the-data.

regular-sized classes of 31 students or slightly larger classes with an average 10 percent increase in class size. They estimate the effect of online class size on a variety of student outcomes. The authors find, after addressing potentially endogenous student sorting into different classes, that increasing the online class size by 10 percent has no statistically significant effect on either current course grade or subsequent course enrollment. The null results suggest that online courses have the potential to reduce the cost of providing education by increasing online class size without affecting student outcomes.

If online course offerings can indeed serve as cost-saving innovations for institutions, colleges may also charge lower tuition for their online programs and courses, therefore lowering the costs for students to pursue postsecondary education. Indeed, using IPEDS, David Deming and his coauthors found that institutions with higher shares of students enrolled online charge lower prices, providing some suggestive evidence that online education might be able to "bend the cost curve" in traditional higher education.²⁹

Caveats Against Online Courses as a Cost-Saving Strategy. At first, these results seem to provide evidence that online courses present a promising opportunity to reduce higher education costs for both institutions and students. A caveat against this promise, however, is the extent to which online courses and programs compromise the quality of education received compared with traditional face-to-face instruction. If the primary reason why online class size can be increased without degrading learning outcomes is that interpersonal interactions are muted enough in online classrooms, it is reasonable to question whether the reduced interpersonal interactions and social presence may compromise the quality of education received by students. In fact, in a separate paper that uses the same data set from a large for-profit university, Bettinger and his coauthors find that online courses do significantly less to promote student academic success than similar in-person courses do.30 The negative association between online learning and student-learning outcomes, which is discussed in detail below, indicates that college online courses do not currently support student learning equally as well as face-to-face classes. Thus, perhaps a more compelling question is whether online technology has the potential to deliver *similar* quality of education in a less expensive way relative to brick-and-mortar instruction.

Another important caveat to the promise of online education is the large upfront cost of developing high-quality online courses. The complexities involved in making generalizations about costs across different types of courses and institutions make it extremely difficult, if not entirely impossible, to provide a clear-cut answer as to whether online courses are indeed cheaper in terms of both upfront costs in course development and recurring costs in course delivery.31 For example, Russell Poulin and Terri Taylor Straut noted substantial variations in how an online course is designed and implemented, ranging from a set of slides with little student-instructor interaction to a highly interactive course with well-designed videos of lectures.32 As a result, development costs for online courses can vary widely across institutions from \$10,000 to \$60,000 per course, depending on a variety of factors such as specific online course design features, student services, and faculty compensation,33

Based on expenditure data from the University of North Carolina (UNC) system, a recent report provides suggestive evidence that well-designed online courses with technologically enabled interaction between students and instructors are more expensive than traditional on-campus courses in terms of both startup expenditures in course development and recurring expenditures in delivering the course.34 More specifically, based on the cost information on a sample of 92 courses (46 on-campus and 46 distance courses) from 15 UNC campuses,35 the report indicates that the average cost for developing a distance course (\$5,387) is 6 percent higher than the average cost for developing an on-campus course (\$5,103).36 The higher costs associated with developing online courses are primarily driven by higher expenses for staff or consultants that assist faculty in course development. In terms of course delivery, the cost for delivering an online course (\$17,564) is also higher than the average cost for delivering an on-campus course (\$16,433), which is due to distance education courses often having other costs associated with delivery that on-campus courses do not incur, such as special software or hardware needed for content delivery or technologically enabled interaction between students and instructors.³⁷

Most interestingly, the average class size for distance education courses was significantly smaller than the average size for on-campus courses (18 vs. 23), and faculty in follow-up campus interviews emphasized the need to maintain smaller class sizes for online courses specifically because "teaching online courses is more time consuming for faculty" and "due to the amount of work necessary to engage students in the online environment." That faculty might need to spend more time to ensure the quality of instruction and interaction in an online course than in face-to-face classes raises questions on the potential of online courses to serve as a cost-saving strategy through larger class size.

If cost saving is not the primary reason for institutions to offer online courses, then why do postsecondary institutions generally agree on the importance of expanding online learning? Interviews conducted by Lawrence Bacow and his coauthors identified two major reasons for providing online learning opportunities. First, many institutions view online education as an important new revenue source, as it may generate new revenue streams by reaching students who would not otherwise enroll in traditional degree programs. 39 Second, most institutions intend to use online learning as a way to improve students' learning experience.

Specifically, several administrators noted online learning as an effective way to address space constraints, particularly in low-division, high-demand introductory courses—an issue many institutions are facing due to the increasing demand for higher education. Freedom from the constraint of physical classroom space allows administrators to create as many course sections as they can find qualified instructors for, which could address the availability barrier. In

addition, online learning may also expand access to better educational resources: While small colleges do not always have the resources to offer a wide range of courses to their students, shared online courses allow these campuses to offer students a wider variety of courses. Finally, college administrators are also optimistic about online courses potentially reforming the traditional learning process through technology, such as enabling a greater level of learning flexibility, achieving strong computer-mediated student-to-student interaction and collaboration, and providing immediate personalized feedback on student learning.

Online Education and Student Outcomes

With the rapid growth of online education and its potential benefits to address the needs of diverse student populations, questions remain regarding its effectiveness.40 Do online courses effectively prepare students with the knowledge and skills needed to succeed in college and later in their careers? Earlier observational studies attempted to compare student-learning outcomes between online and face-to-face formats, and the findings are mixed.41 Such discrepancies in research findings might be partially explained by the issue of "self-selection": Most of these observational studies simply made comparisons between students who opted to take the course online and those who self-selected into the traditional face-to-face format and, therefore, did not control for the possibility that a common set of personal characteristics and school circumstances may jointly influence decisions on online course enrollment and course outcomes. As a result, the extent to which these statistical findings are attributable to cause-effect relationships remains uncertain.

To provide an overview of the causal link between course delivery format and student-learning outcomes, we reviewed the literature that uses experimental or quasi-experimental research design to control for student sorting by course delivery format. Appendix A summarizes the key information of each study discussed below.

Online Delivery Format Improves Learning Outcomes. The strongest support for the optimism around online learning comes from a meta-analysis by the US Department of Education.⁴² Based on only randomized experiments or quasi-experiments, the meta-analysis suggests that, on average, students in online learning conditions performed better than did those receiving face-to-face instruction.⁴³ However, a thorough review by Jaggars and Thomas Bailey of the 45 experimental studies included in the meta-analysis raises concerns regarding whether the findings from the Department of Education report could be generalizable to typical college courses.⁴⁴

First, the majority of the studies included in this meta-analysis focused on only one specific topic, in which the duration of the intervention could be as short as only 15 minutes. Results from these short interventions may not speak to the challenging issues inherent in maintaining student attention and motivation over a course of several months. Among all the 45 studies included, only seven were relevant to typical online semester-length college courses.45 Overall, these seven studies showed no strong advantage or disadvantage in terms of learning outcomes among students who stayed in the course throughout the entire semester.46 However, all seven studies were conducted at midsize or large universities, with five rated as "selective" or "highly selective" by US News and World Report, and all seemed to involve relatively well-prepared students.

These results may not speak to academically underprepared students who may struggle more in online learning environments due to poor time-management and independent-learning skills, which are thought to be crucial to success in online education, or due to technical difficulties, such as slowness of typing, problems navigating the course management system, and difficulty following material on the screen. These are all problems that may be more common among students with weak educational backgrounds. 47 Only one of the studies examined the impacts of the course delivery format on lower-performing students. Cynthia Peterson and Nathan Bond performed a descriptive analysis suggesting that the lowest third of academically prepared students performed

substantially better in the face-to-face setting than in the online setting 48

In addition, the studies included in the metaanalysis almost exclusively focus on course grade and do not study attrition as an outcome. While course attrition rates might be low and ignorable in a selective institution with an academically well-prepared student population, a large proportion of students enrolled in open-access public institutions, especially at two-year community colleges, are academically underprepared. These underprepared students withdraw from courses and drop out of college at a higher rate.49 Indeed, studies consistently identify higher course attrition rates in online courses compared to similar face-to-face courses at two-year colleges.50 If less academically prepared students are more likely to withdraw due to the online nature of the delivery format, it may not be surprising, then, that students who stayed in the online course were more likely to earn a good grade than were students who took face-to-face

Finally, several studies in the meta-analysis were conducted by professors who taught the course in subjects likely to be especially well-suited to online learning, such as computer programming. These professors were either online course advocators or potentially highly motivated professors teaching unusually high-quality online classes. The classes often involved synchronous sessions, timely instructor feedback, effective technical support, a clear grading rubric, and a well-organized course structure with intuitive navigation. Yet, the quality of the courses designed and offered by these online advocates may not represent typical online courses offered at colleges. Indeed, studies that examine the design features of online courses currently offered at postsecondary institutions, especially open-access public colleges, noted that many instructors simply transfer their in-person pedagogy to the online format and include a minimal level of synchronous interpersonal interaction opportunities.51

Online Delivery Format Hinders Learning Outcomes. Aside from the meta-analysis, all other experimental and quasi-experimental studies on semester-length college courses find negative effects on student course performance, course persistence, and other downstream learning outcomes such as course repetition and subject persistence. The effect of taking online courses on these outcome metrics is explored in detail below.

Course Performance. Nearly all causal studies find negative effects of online course taking on student course performance or, at best, null results.⁵² The outcome measures include course grades, course completion with a passing grade, and standardized posttest scores.⁵³

Four experimental studies are conducted in relatively selective four-year institutions and randomly assign students into different delivery formats in a single course in economics or statistics with a total enrollment ranging between 312 and 725 students.54 David Figlio, Mark Rush, and Lu Yin compare between a purely online and face-to-face classroom setting in teaching microeconomics principles, in which students assigned to the online format watch videos of the lectures online.55 Ted Joyce and his coauthors also conducted the study in principles of microeconomics, but the online instruction in their study instead takes the form of blended learning that included an online component and reduced the weekly face-to-face meeting time by half.56

William Bowen and his coauthors compare an online delivery format with one hour per week of instructor contact time to a purely face-to-face delivery format with three hours per week of contact time in a statistics course by randomly assigning students on six public university campuses.57 The online instruction in their study is the most sophisticated among the four studies, which includes an interactive learning system that provides students with customized machine-guided instruction and timely information about student performance to course instructors for more targeted and effective guidance from the instructor. Additionally, the blended group is also accompanied by one hour of face-to-face instruction each week. William Alpert and his coauthors compared student-learning outcomes in a microeconomic principle course delivered through three formats—face-to-face, blended, and fully online—at a public university.⁵⁸ Both the blended and the online formats provide students with online lectures; additionally, students in the blended format attend a weekly in-person discussion session, whereas students in the fully online format attend a weekly online synchronous discussion session.

Except for Bowen and his coauthors who identify no significant difference in learning outcomes between the blended and face-to-face instruction, the other three all find negative effects of online instruction on course grades. 59 Bowen and his coauthors point out that one potential explanation for the null effects in their study versus more negative impacts in other studies may be due to the form of online instruction: The online course examined in their study uses an advanced, less commonly used interactive learning system with machine-guided protocols, whereas the online instruction in the rest of the studies is mainly through videotaped lectures that do not enable student-faculty interactions. 60

While well identified, all the experimental studies focus on a small number of students in a specific course and therefore shed limited insights on the impacts of online learning in the broad set of college courses. A handful of studies address this issue by using college administrative data that include a large swath of online and face-to-face courses at one college or multiple colleges in an entire state.61 The majority of these quasi-experimental studies examine online learning at two-year community colleges, which is a population of particular interest for policy on online learning.62 Four state community college systems have been examined thus far (California, North Carolina, Virginia, and Washington), and all states demonstrate rapid growth of enrollment in fully online courses during the past decade.63

Using different quasi-experimental methods to address student sorting into online courses and drawing on data from different states and settings, the results from the quasi-experimental studies find patterns that are strikingly similar: Students in fully online delivery formats had learning outcomes that were substantially worse than those in the face-to-face section of the same course.⁶⁴ The current

evidence on the negative effects of online delivery format are primarily based on data from a large swath of courses at nonselective institutions, such as for-profit four-year colleges or two-year community colleges, 65 In contrast, all the studies conducted at selective four-year institutions involve only a few hundred students enrolled in one specific course. As a result, it is uncertain whether the consistent and substantial performance decrement observed at the nonselective institutions also speaks to online courses at four-year colleges. We do know, however, compared to the robust and sizable negative impacts of online learning identified across all studies conducted at nonselective institutions, the studies conducted at relatively selective four-year institutions yield mixed findings; even among studies that identified a negative association between online delivery and student-learning outcomes, the magnitude of the negative effects also tend to be smaller compared with those based on student course performance at two-year or for-profit colleges.

One concern that is often raised about comparisons between the online and face-to-face sections of a course without randomized controlled trials is that there might be systematic differences between instructors teaching the online and face-to-face sections. For example, if more experienced and high-quality instructors avoid teaching courses online, the negative effects identified by these quasi-experimental studies might be partly attributable to teacher productivity. Cassandra Hart and her coauthors directly assessed the extent of this problem by including a rich set of instructor characteristics into the fixed effects model.66 Their analyses indicate that including observable instructor characteristics does little to alter the negative relationship between online course taking and student performance.67

Course Persistence. While course persistence—measured as making it through the entire semester of a class—is generally high at four-year colleges, course attrition is a serious issue at open-access institutions, particularly at two-year community colleges, where a large proportion of students withdraw before the end of a course at a high rate.⁵⁸ This particular retention

problem in community colleges is even worse with online courses. Indeed, most community colleges acknowledge that online course dropout rates are higher, although it is not clear whether these dropout rates are due to the online course format or the characteristics of students who choose that course format based on simple raw comparisons.

Four quasi-experimental studies explicitly examine the causal impacts of online delivery format on course persistence at the four state community college systems mentioned above, and all identified sizable negative impacts of online course taking on course persistence. The research finds that students in online courses are between 3 percentage points and 15 percentage points more likely to withdraw from the course, compared to similar students taking face-to-face classes, depending on the state examined and the statistical method used.69 Students who withdraw during the add and drop period were not included in the analysis. As a result, midsemester course withdrawal penalizes students not only academically-students do not obtain any credit from the course and a grade of "W" also appears on their permanent record-but also economically, since students who withdraw after the add and drop period pay full tuition for the course and do not receive any refund for the course.

Downstream Outcomes. A handful of studies examined whether online delivery format influences students' downstream outcomes, including course repetition, defined as whether a student retakes the same course; subject persistence, defined as future enrollment in other classes in the same subject area; follow-up course grades; and college persistence—as opposed to dropping out of college after that term.70

Using a multi-way fixed effects model, Hart and her coauthors find that online course taking is positively associated with course repetition and negatively associated with subject persistence at the California Community Colleges. Based on transcript records from nearly 40,000 students at a large comprehensive university over a 10-year period, John Krieg and Steven Henson match each course with all subsequent courses for which it is a prerequisite and used an instrumental variable approach to control for

student sorting by course delivery format. 72 They find that students taking online prerequisite courses earn lower grades compared to students who took the prerequisite face-to-face.

The sizable negative impacts of online learning on subject persistence into the next course may be driven by two distinct sources: An uninspiring experience in a course may reduce the student's probability of either taking another course in a particular field or dropping out from college completely. While both are undesirable, the latter is particularly worrisome, since completing college—not just enrolling in it—is imperative with economic opportunity, especially among disadvantaged populations.

Regression analyses also find that taking online courses has a negative effect on college persistence. After controlling for multiple observable covariates, numerous studies find that students who take online courses are less likely to persist in college and attain a degree.73 For example, based on data from Washington community colleges, Nick Huntington-Klein and his coauthors find a negative effect of 2 percentage points of taking an online course on the probability of earning a degree. Based on data from Virginia Community College System, Jaggars and Xu also find that students who took at least one online course in their first semester at college were 5 percentage points less likely to return for the subsequent semester and students who took a higher proportion of credits online were significantly less likely to attain any credential or transfer to a four-year college.74

Given the robust negative impacts of online learning on concurrent and subsequent course performance, the question then is whether the expansion of online learning may negatively influence a student's eventual labor market performance, such as average employment rate and income level. Unfortunately, experimental or quasi-experimental studies that can estimate the causal impact of exposure to online learning and labor market outcomes are still missing from the literature.

Heterogeneous Impact by Student and Course Characteristics. A handful of experimental and quasi-experimental studies compared the size of the online performance decrement by a number of student characteristics and found strikingly consistent patterns.75 Specifically, the performance gaps between online and face-to-face learning seem to be particularly strong among underrepresented racial minority students, younger students, students with lower levels of academic preparation, students with part-time enrollment, and students who do not intend to transfer to a four-year institution. Since most of these subgroups already tend to have poorer academic outcomes overall, the achievement gaps that existed among these subgroups in face-to-face courses became even more pronounced in online courses. For example, in California Community Colleges, among online course takers, the average gap between white and African American students in course completion with a passing grade increased by 5 percentage points, from 13 percentage points to 18 percentage points, representing an almost 40 percent increase.76

In addition to online performance gaps by student subpopulations, a number of studies also found that the online performance gap varied across academic subject areas.77 For example, based on data from the Washington community college system, Xu and Jaggars found that some of the variability in the online performance gap across academic subject areas seemed due to peer effects: Regardless of their own characteristics, students experienced stronger online performance decrement when they took courses in subject areas in which a larger proportion of peers are at risk for performing poorly online.78 Perhaps in online courses with a high proportion of students who are struggling in the online environment, interpersonal interactions and group projects are more challenging than they would be with the same group of students in the face-to-face setting. Or perhaps instructors need to respond to highly demanding students, thereby decreasing the support to other students enrolled in the class.

After removing the effects of measurable individual and peer characteristics, the authors further identified two subject areas that demonstrated significant online performance gaps: the social sciences (e.g., anthropology, philosophy, and psychology) and the applied professions (business, law, and nursing). These subject areas may require a high degree of hands-on demonstration and practice or require intensive interactions between faculty and students, which studies have suggested are more difficult to effectively implement in the online context.79

The results regarding the relative impact of online learning across subject areas are less consistent across studies, partly due to the different ways that researchers categorize courses. For example, using data from California Community Colleges, Hart and her coauthors divide all courses into five broad disciplines (social sciences, business and management, humanities, information technology, and math) and find that the online performance decrement is particularly pronounced in math and humanities classes.80 Also using data from California Community Colleges, Johnson and Mejia provide a much more detailed subject categorization that includes 17 subject areas in total.81 They find that students enrolled in public and protective services, engineering, and media and communications suffer from the largest online performance penalty. Despite the variations in effect sizes, the online performance gaps are observed consistently across student subgroups and by different subject areas.

What Explains Online Performance Decrement?

Why do students struggle more in fully online courses? Practitioners and scholars increasingly acknowledge two crucial challenges to successful learning in an online environment: requirement of higher-level self-directed learning skills and greater difficulties in enabling effective human interactions. On top of these challenges, individual differences in technology literacy and unequal access to computers and internet may also hinder some students' online learning effectiveness. For example, in 2010, only 55 percent of African Americans and 57 percent of Hispanics had high-speed internet access at home, compared to 72 percent of Caucasian and 81 percent of Asians. 82

Unlike face-to-face courses in which students attend course lectures at a fixed time, students working in a fully virtual environment are required to plan out when they will watch the course lectures and work on corresponding assignments. Even in

high-quality online courses, students must learn course materials independently, manage time wisely, keep track of progress on course assignments, overcome technical difficulties and the feeling of isolation, and take the initiative to communicate with instructors and peers for questions and group assignments.⁸³ As such, online learning has been recognized as a highly "learner-autonomous" process that requires high levels of self-motivation, self-direction, and self-discipline to succeed.⁸⁴

Granted, these skills are important to success in any learning environment, but they are more crucial to effective online education. A recent national report on online learning finds that more than two-thirds of academic leaders believe that "students need more discipline to succeed in an online course than in a face-to-face course." ⁸⁵ Thus, while we would expect students with lower self-directed learning skills to fare more poorly in any course compared to their more-prepared peers, students with insufficient time management and self-directed learning skills may struggle particularly in an online learning environment.

Similarly, the lack of interpersonal connections in online courses imposes at least two additional challenges on students. First, due to the absence of physically present peers and their behaviors, social comparisons are limited. Extensive research from psychology indicates that making comparisons to peers is one of the fundamental ways through which students adjust and regulate their behaviors during the learning process. 86 In traditional classrooms, peer comparisons happen naturally with the physical presence and visibility of classmates. However, such affordance of social comparison is missing in most online courses. With sparse social and normative signals, online learners need to regulate their learning process independently, which can affect learning outcomes.

Second, computer-mediated communications are often criticized as inherently impersonal since non-verbal and relational cues—common in face-to-face communication—are generally missing. Despite the high potential of leveraging advanced technology to facilitate peer-peer and student-instructor interactions, most of the online courses, particularly those

offered at public open-access institutions, involve limited peer interactions and student-faculty interactions. ⁸⁷ Low levels of social presence may lead to increased feelings of loneliness and isolation, which has negative effects on course persistence and learning performance. ⁸⁸

The evidence reviewed above indicates that most students tend to perform worse in online settings compared to face-to-face classes, but the performance decrement is particularly strong among certain subpopulations. Literature suggests that female students, white students, older students, and individuals with high prior educational attainment on average have a higher level of self-directed readiness than do male students, black students, and individuals with lower educational attainment. So As Michael Zastrocky, research director for academic strategies for the Gartner Group, stated, "There are some students who really do not do well outside a traditional classroom. There are some who do very well."

Strategies to Improve Online Education

Based on the growing knowledge regarding the specific challenges of online learning and possible course design features that could better support students, several potential strategies have emerged to promote student learning in semester-long online courses. The teaching and learning literature has a much longer list of recommended instructional practices. However, research on improving online learning focuses on practices that are particularly relevant in virtual learning environments. These include strategic course offering, student counseling, interpersonal interaction, warning and monitoring, and the professional development of faculty.

Strategic Online Course Offering. Above all, given students' differential ability to successfully learn in an online environment, colleges may need to be more strategic in online course offerings. Considering that the convenience of online learning is most valuable to adults with multiple responsibilities and that older students typically have a higher level of self-directed

learning skills, colleges may be able to expand online learning more drastically in courses or programs enrolling a large proportion of adult learners. In contrast, in lower-division courses in which the majority of students are fresh high school graduates, colleges may need to provide more face-to-face interaction opportunities and support to the students. To combine the benefits from both delivery formats, one popular approach many colleges have adopted is replacing part of the traditional face-to-face time with online learning or a hybrid course. This strategy could partly address issues of resource constraints but will also largely overcome the challenges associated with learning in a fully virtual environment.

Student Counseling. When students struggle academically, they may benefit from institutional resources and supports, such as counseling and tutoring services. ⁹² However, since online students often choose the format to accommodate work and family responsibilities, they may face challenges accessing these supports if they are delivered exclusively on campus. ⁹³ To better address the need of the growing online student population, especially those who enroll exclusively online, many colleges have started to provide comprehensive counseling and tutoring through the online format.

For example, the California Community College System established the Online Education Initiative (OEI) in 2014 to coordinate efforts in online education across campuses and has developed a series of services to support online learning.94 These services include 24/7 online tutoring in high-volume subjects, an online counseling platform that connects students to counselors from their own campus, and a set of online readiness tutorials. These help students evaluate their readiness for online learning and provide students with information that may help them identify barriers to success in online learning and make plans to address those barriers. A recent report on the pilot testing of OEI supports suggests that students in OEI pilot courses outperformed their peers in non-pilot courses.95 Although the evaluation was purely descriptive, it provides suggestive evidence that online learners may benefit from institutional resources and services tailored for online learning specifically. Of course, providing additional resources alone will do little to improve online course performance if students do not use them. For resources to be most effective, colleges should ensure that services are clear, easy to use, and accessible to all students.

Promoting Interpersonal Interactions. Interpersonal interactions are key to successful learning in any environment. Researchers have proposed a number of ways to strengthen interpersonal communication in fully online courses, including assigning students to peer groups and incorporating small-group problem-solving activities to facilitate student-to-student interactions and providing synchronous online discussion sessions to improve instructor-student interaction by mimicking traditional classroom interactions.96 Researchers also agree that creating opportunities for students to meet face-to-face with their instructors could substantially improve student-instructor relationships and student motivation, although this can be challenging for some students since they may have enrolled in online courses due to work schedules, family commitments, and other obligations.97

In current online courses, the most common form of face-to-face meetings takes place through office hours. However, studies suggest that many students are uncomfortable seeking assistance from instructors through individual meetings and that office hour visits are often brief and underused.98 Based on these observations, some researchers suggest providing structured group face-to-face meeting sessions as a substitute for office hours for answering student questions.99

Warning and Monitoring. One great advantage of the virtual learning environment is its potential to identify at-risk students in a timely way, based on individual online learning behaviors that might otherwise go unnoticed in face-to-face lectures with large class sizes. ¹⁰⁰ Based on student click stream and learning analytics data, online platforms can closely record when and how students access online materials and complete assignments. Colleges could incorporate early warning systems into online courses to identify

and intervene in helping struggling students before they withdraw from the course. For example, Kimberly Arnold and Matthew Pistilli used local course data to build predictive models that correlate disparate types of measures (such as online learning patterns, student surveys, and online learning diagnostics) with student course performance to identify students who are at risk of negative academic outcomes.101 Early identification of at-risk learning behaviors can enable course instructors or counselors to take more proactive steps to determine whether a student is experiencing problems and to discuss potential supports or solutions. Yet, the extent to which this strategy helps students succeed in online learning environments largely depends on the quality of follow-up supports that instructors and advisers provide.

Faculty Professional Development. Online courses require students to assume greater responsibility for their learning; thus, a successful online student may need high levels of self-regulation and self-discipline. Of Given the crucial importance of self-directed learning skills and time management in online success, researchers argue that students, especially those from disadvantaged backgrounds, may need additional support or scaffolding to build those skills. To For example, some researchers argue that it would be beneficial to provide online learners with the opportunity to pre-commit to studying course materials at a specific day and time, which in turn may provide students with a self-control mechanism to avoid procrastination. To A.

It is not clear whether most online courses incorporate such skill development or scaffolds when they are offered. However, a recent qualitative study at two community colleges found that many faculty expected their online students to begin courses already equipped with self-directed learning skills and did not believe that faculty should be responsible for helping students develop those skills. Los Colleges therefore may consider offering faculty professional development opportunities that inform online instructors of the challenges faced by students in online courses and ways to scaffold self-directed learning skills effectively.

Conclusion

Online education is a growing industry, and students are choosing online learning in ever-greater numbers. But is online education simply a substitute for in-person education, or can it instead expand access to students who would not otherwise have enrolled in an educational program? A review of the existing research on this topic provides suggestive evidence that online education can indeed expand access to college. The convenience of online learning is particularly valuable to adults with multiple responsibilities and highly scheduled lives; thus, online learning can be a boon to workforce development, helping adults return to school and complete additional education that could otherwise not fit into their daily routines. From an institutional perspective, online courses allow colleges to offer additional classes or programs, increasing student access to required courses. Given the value of these benefits, online courses are likely to become an increasingly important feature of postsecondary education.

Yet, the reasons students give for selecting online versus face-to-face delivery format seem to suggest that students suspected compromised learning experiences in a fully online course. If students indeed learn less well on average in online courses than in face-to-face courses, the current online expansion at higher education institutions may be at the cost of worse academic outcomes. A comprehensive review of the research literature reveals that, on average, students learn less well in online courses compared to similar students in face-to-face classes—particularly at two-year and nonselective institutions. Research finds that online learning can even exacerbate education inequality among different demographic groups, since online courses are substantially more prevalent at nonselective institutions that disproportionately enroll students from underrepresented groups and lower socioeconomic backgrounds.

While some students may benefit substantially from a well-organized online course with high levels

of peer interactions and student-faculty interactions, maintaining these high-level interactions requires instructors to devote a substantial amount of time throughout the course. Students in high-interaction online courses report that instructors posted announcements on a regular basis to remind students about requirements and deadlines, responded to questions in a timely manner (typically, within 24 hours), provided multiple ways for students to communicate with the instructor, offered personal feedback on students' assignments, responded to individual student postings on the discussion forum, and were also more likely to ask for student feedback and were responsive to that input. All these activities require strong time commitments from the instructor. As a result, colleges that contemplate benchmarking online course quality will need to take into account the workload on instructors in delivering a high-touch online class and the cost of supporting instructors in using sophisticated technology infrastructure and instructional platforms.

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Appendix A

Table A1. Experimental and Quasi-Experimental Evidence on the Impact of Online Learning on Student Outcomes

| Study | Setting | Sample | Experi- ment Con- ditions | Description of Online Format | Method- ology | Outcome Measures | Key Findings | | | |
|---|---------------------------------|--------------------|--|--|----------------------|--|---|--|--|--|
| | | Experiment Studies | | | | | | | | |
| US Department of Education (2009) | K-12 and Higher Education | 45 Studies | Face-to-Face; Bended; Fully Online | Unspecified | Meta- Analysis | Unspecified | Positive Effects of Fully Online and Blended Format on Learning Outcomes | | | |
| Figlio, Rush, and Yin (2013) | Research Universities | N = 312 | Face-to-Face; Fully Online | Online Lecture with Access to Face-to-Face Meeting with Instructor and Graduate Student Teaching Assis- tants | Random Assignment | 1. Course Grade | Negative Effects of Fully Online Format on Course Grade | | | |
| Bowen et al. (2014) | Public Universities | N = 605 | Face-to-Face; Blended | Interactive Online Learning System with Some Face-to-Face Instruction | Random Assignment | 1. Course Grade 2. Comprehensive Assessment of Outcomes in Statistics (CAOS) 3. Course Completion with a Passing Grade | No Format Effects on Course Grade No Format Effects on CAOS Posttest Scores No Format Effects on CAOS Posttest Scores No Format Effects on Course Completion | | | |
| Joyce et al. (2015) | Public Universities | N = 725 | Face-to-Face; Blended | Online Learning System with One 75-Minute Face- to-Face Lecture Each Week | Random Assignment | 1. Course Grade 2. Course Persistence 3. Class Attendance 4. Study Time | Negative Effects on Blended Format on Course Grade No Format Effects on Course Persistence No Format Effects on Class Attendance No Format Effects on Study Time | | | |

(continued on the next page)

| Study | Setting | Sample | Experi- ment Con- ditions | Description of Online Format | Method- ology | Outcome Measures | Key Findings |
|--|--------------------------|----------------|---|--|---|---|--|
| Alpert, Couch, and Harmon (2016) | Public Universities | N = 323 | Face-to-Face; Blended; Fully Online | Blended Format: Online Lectures with a Weekly Face-to-Face Dis- cussion Session Fully Online: On- line Lectures with Online Synchro- nous Discussion | Random Assignment | 1. Course Grade | Negative Effects of Fully Online Format on Course Grade Compared to Face-to-Face Format; No Difference Between Blended vs. Face-to-Face Format |
| | | - | | Quasi-Experim | ental Studie | :s | |
| Coate et al. (2004) | Public Uni- versities | N = 126 | Face-to-Face with Online Assignments; Fully Online | Online Lecture with Online Synchronous or Asynchronous Discussion | Two-Stage Least Squares Correction | 1. Course Grade | Negative Effects of Fully Online Format on Course Grade |
| Xu and Jag- gars (2011) | Community Colleges | N = 22,279 | Face-to-Face; Fully Online | Unspecified | Propensity Score Matching | 1. Course Grade 2. Course Persistence | Negative Effects of Fully Online Format on Course Grade Negative Effects of Fully Online Format on Course Persistence |
| Xu and Jag- gars (2013) | Community Colleges | N = 22,624 | Face-to-Face (Less Than 50 Percent Online); Online (over 51 Percent Online) | Unspecified | instrumental Variable | 1. Course Grade 2. Course Persistence | Negative Effects of Online Format on Course Grade Negative Effects of Online Format on Course Persistence |
| Johnson and Mejia (2014) | Community Colleges | N = 126,509 | Face-to-Face; Online (over 80 Percent Online) | Online Lecture with Either Asynchronous or Synchronous Interaction | instrumental Variable | 1, Course Completion with Passing Grade | Negative Effects of Fully Online Format on Course Completion |
| Streich (2014) | Community Colleges | N = 112,566 | Face-to-Face; Blended; Fully Online | Unspecified | Instrumental Variable | 1. Course Grade 2. Course Persistence | Negative Effects of Fully Online and Blended Format on Course Grade Negative Effects of Fully Online and Blended Format on Course Persistence |

(continued on the next page)

| Study | Setting | Sample | Experi- ment Con- ditions | Description of Online Format | Method- ology | Outcome Measures | Key Findings |
|--|--|----------------|--|--|---|---|---|
| Xu and Jag- gars (2014) | Community Colleges | N = 498,613 | Face-to-Face; Fully Online | Unspecified | Individual Fixed Effects | 1. Course Grade 2. Course Persistence | Negative Effects of Fully Online Format on Course Grade Negative Effects on Fully Online Format on Course Persistence |
| Krieg and Hen- son (2016) | Regional Compre- hensive Universities | N = 38,652 | Face-to-Face; Online (over 75 Percent Online) | Unspecified | Fixed Effects with Instrumental Variable | Subsequent Course Grade | Negative Effects of On- line Format on Subsequent Course Grade |
| Bettinger et al. (2017) | Private For-Profit Universities | N = 230,484 | Face-to-Face; Fully Online | Online Lecture with Online Discussion and Group Projects | instrumental Variable | Course Grade Subsequent Course Grade Subsequent Subsequent Enrollment | Negative Effects of Fully Online Format on Course Grade Negative Effects of Fully Online Format on Subsequent Course Grade Negative Effects of Fully Online Format on Subsequent Enrollment |
| Hart, Fried- mann, and Hill (2018) | Community Colleges | N = 440,405 | Face-to-Face; Fully Online | Online Lecture with Either Asynchronous or Synchronous Interaction | Student and Course Fixed Effects | Course Grade Course Persistence A. Course Completion with a Passing Grade 4. Course Repetition Subsequent Course Enroilment | Negative Effects of Fully Online Format on Course Grade Negative Effects of Fully Online Format on Course Persistence Negative Effects of Fully Online Format on Course Completion Fully Online Format on Course Completion Fully Online Format or Course Repetition Fully Online Format Decreases Likelihood of Same-Course Repetition Subsequence Course Enrollment in the Same Subject |

Source: Authors.

Notes

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- 12. Since the survey did not ask students the motivation for choosing a particular delivery format, some of the top-rated reasons are general motivation for course enrollment. More specifically, the top seven reasons students took a distance education course were (1) the course was convenient with their work schedule, (2) the course met requirements for the associate degree, (3) the course met requirements for transfer to a four-year college or university, (4) the course would improve their job skill, (5) they had a personal interest in the subject, (6) they had success with a previous distance education course, and (7) they enjoy learning on a computer.
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- $20. \ \, Specifically, the \ researchers \ exploited \ an \ arbitrary \ undergraduate \ GPA \ cutoff \ of \ 3.26 \ for \ admission into the \ online \ program \ that$

is unknown to applicants and employed a regression discontinuity design to examine the extent to which the quasi-random variation in admission among applicants just above and below that threshold lead to differential higher education enrollment outcomes based on the National Student Clearinghouse data.

- 21. Hybrid courses that include traditional face-to-face time do not count as online course per IPEDS's definition. Therefore, IPEDS uses a relatively more strict definition of online course compared with other national surveys. For example, Babson Survey Research Group and the Instructional Technology Council define online courses as those in which at least 80 percent of instruction is delivered online. Abby Miller, Amela M. Topper, and Samantha Richardson, "Suggestions for Improving IPEDS Distance Education Data Collection," National Postsecondary Education Cooperative, 2017, https://nccs.ed.gov/ipeds/pdf/NPEC/data/NPEC_Paper_IPEDS_Distance_Education_2017,pdf. Despite the disparity in definition, however, the trends and descriptive statistics regarding the growth of online courses are fairly consistent across these reports. This is probably due to fully online courses dominating online education at the higher education sector and a relatively small proportion of courses being provided through a hybrid format. See Francie E. Streich, "Online Education in Community Colleges: Access, School Success, and Labor-Market Outcomes" (doctoral dissertation, University of Michgan, Ann Arbor, MI, 2014); and Di Xu and Shana Smith Jaggars, "The Effectiveness of Distance Education Across Virginia's Community Colleges: Evidence from Introductory College-Level Math and English Courses," Educational Evaluation and Policy Analysis 33, no. 3 (2011): 360-77.
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- 24. The five largest programs are (i) business, management, marketing, and related support services; (2) health professions and related programs; (3) education; (4) computer and information sciences and support services; and (5) homeland security, law enforcement, firefighting, and related protective service. We combined "most selective" with "moderately selective" into one category (as opposed to "nonselective") in Figure 4.
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- 34. The differences in costs to deliver a distance course and an on-campus course does not reach statistical significance though. For more information, see North Carolina General Assembly, *University Distance Courses Cost More to Develop Overall but the Same to Deliver as On-Campus Courses*, April 28, 2010, https://ncleg.net/PED/Reports/documents/DE/DE_Report.pdf.
- 35. A total of 1,979 new courses were developed since 2004 at the University of North Carolina. The evaluation team further limited the sample to 801 courses developed between 2008–09 and 2009–10 to determine the most recent costs for course development. Finally, the evaluation team stratified the sample by funding category and type (distance vs. on campus) and randomly selected courses for each category and type. The report includes a more detailed explanation of the sampling methodology in Appendix A. See North Carolina General Assembly, University Distance Courses Cost More to Develop Overall but the Same to Deliver as On-Campus Courses.
- 36. The University of North Carolina (UNC) defines "distance education" as "a coherent course of study in which the student is at a distance from the campus and the instructor may or may not be in the same place as the student." Therefore, UNC definition of distance education includes a broader range of courses than the typical definition of online course in which course content is delivered fully online. See North Carolina General Assembly, University Distance Courses Cost More to Develop Overall but the Same to Deliver as On-Campus Courses.
- 37. The report indicates that UNG faculty use a variety of technology platforms, in which the instruction may be delivered either synchronously (such as through two-way video conferencing or internet chat) or asynchronously (such as providing course materials via video). Faculty-in-focus group interviews generally agreed that instructors can "get to know their distance students better than their on-campus students because mandatory posting requirements for online courses increase student-instructor interaction." See North Carolina General Assembly, University Distance Courses Cost More to Develop Overall but the Same to Deliver as On-Campus Courses, 6.
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[Additional submission by Dr. Schrier follows:]



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DOUG BURGUM GOVERNOR OF NORTH DAKOTA VICE CHAIR JAMES D. OGSBURY EXECUTIVE DIRECTOR

June 18, 2019

The Honorable Bobby Scott Chairman Committee on Education and Labor U.S. House of Representatives 2176 Rayburn House Office Building Washington, D.C. 20515 The Honorable Virginia Foxx Ranking Member Committee on Education and Labor U.S. House of Representatives 2101 Rayburn House Office Building Washington, D.C. 20515

Dear Chairman Scott and Ranking Member Foxx:

In advance of the Committee's June 19, 2019 hearing on Innovation to Improve Equity: Exploring High-Quality Pathways to a College Degree, attached please find two Western Governors' items related to postsecondary pathways:

- Western Governors' Association Policy Resolution 2018-13, Workforce Development in the Western United States; and
- the Western Governors' Workforce Development Initiative Special Report.

 $I\ request\ that\ you\ include\ these\ documents\ in\ the\ permanent\ record\ of\ the\ hearing,\ as\ they\ articulate\ Western\ Governors'\ policy\ positions\ and\ recommendations\ on\ this\ important\ issue.$

Please contact me if you have any questions or require further information. In the meantime, with warm regards and best wishes, I am

Respectfully,

Attachments

James D. Ogsbury Executive Director

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Policy Resolution 2018-13

Workforce Development in the Western United States

A. BACKGROUND

- Workforce development efforts contribute to the economic well-being of western states by enabling people to find fulfilling, well-paying jobs, fostering economic mobility, and ensuring that businesses have access to the skilled employees they need to thrive.
- Western states had an average unemployment rate of just under 4.0 percent in March 2018.¹ Many businesses report that they cannot find qualified candidates for open positions. At the same time, many jobseekers are unable to find good jobs for which they are qualified.
- 3. Workforce development challenges are particularly acute in rural communities, which are commonly characterized by higher rates of unemployment, a lack of economic diversity, geographic isolation, and limited infrastructure, including access to broadband.
- 4. Economic equity continues to be a problem across states, with people of color and people with disabilities, regardless of career preparation and credential levels, seeing poorer rates of employment and earnings than majority populations.
- 5. There are 6.6 million unfilled jobs in the United States due in part to a shortage of workers with the skills and qualifications to fill those positions. ² The largest gap is in middle skills jobs, which require more than a high school diploma but less than a four-year degree.
- 6. Postsecondary education and training is critical in today's economy. Almost 80 percent of jobs in the United States require a postsecondary credential, including certificates, associate degrees, four-year degrees, and licenses.³
- 7. On average, those holding a bachelor's degree earn more than those who have not attained that degree, but those who do not reach that level of education can still find good employment. There are 30 million jobs that don't require a four-year degree and pay at least \$35,000 per year with a median salary of \$55,000.4
- 8. Education systems have not kept pace with economic realities. Student success is traditionally perceived, and measured, as moving directly from high school to a four-year degree program. Today, only 20 percent of students successfully complete that traditional

¹ Bureau of Labor Statistics, Local Area Unemployment Statistics, May 18, 2018.

² Bureau of Labor Statistics, Job Openings and Labor Turnover Summary, May 8, 2018.

³ National Skills Coalition, <u>United States Middle-Skill Fact Sheet</u>, February 2017.

⁴ Carnevale, A.P., Strohl, J., and Ridley, N., <u>Good Jobs that Pay Without a BA: A State-by-State Analysis</u>. Georgetown University Center of Education and the Workforce, 2017.

pathway to their career.⁵ The rest are finding their own pathways to success, which may include entering the world of work or pursuing other types of credentials. Many, however, encounter obstacles.

- 9. On average, only about one-third of high schoolers are engaged in school, meaning that twothirds are not actively involved in or enthusiastic about school.⁶ Three million young adults ages 16-24 are not participating in either work or education.⁷
- 10. Additionally, many Americans start a college degree but do not complete it, leaving them with the burdensome costs of higher education but no wage benefit 35 million people over 25 have some college credits but no degree.8
- 11. As students increasingly pursue indirect routes to higher education, over 70 percent of students enrolled in postsecondary education are now "nontraditional students" who may be older, working full or part time, or caring for children.
- 12. Technology will continue to be a disruptive force in the labor market, driving potentially drastic changes in the labor demands of certain industries. It is expected that many jobs that will be in demand in 2030 do not yet exist. Workers will need to be able to acquire new skills over their careers to adapt to change. Up to one-third of U.S. workers in 2030 may need to learn new skills or move into a new occupation due to the impacts of automation.9
- 13. To address these issues, Western Governors have prioritized a variety of workforce development efforts, from better aligning education with labor market demands to expanding workforce services and training opportunities for the unemployed and underemployed to attracting more skilled workers.
- 14. Western states are also leading the way on expanding work-based learning opportunities for both students and adults. Work-based learning programs, including registered apprenticeships, allow people to acquire in-demand skills while earning a salary.
- 15. Employer leadership is critical to ensure that workforce development efforts are satisfying the needs of an ever-changing economy. Businesses in the West have taken an active role in working with educational institutions and workforce agencies but increasing industry participation will remain critical.

B. GOVERNORS' POLICY STATEMENT

 Western Governors recognize that there are many pathways students can take to a successful career, including short-term education and skills training or work-based learning

⁵ U.S. Department of Education, National Center for Education Statistics, <u>The Condition of Education 2017</u>, May 2018.

⁶ 2016 Gallup Student Poll Snapshot Report

⁷ Brookings, <u>Employment and disconnection among teens and young adults: The role of place, race, and education</u>, May 2016.

 $^{^8}$ U.S. Census Bureau, Educational Attainment in the United States: 2017, December 14, 2017.

⁹ McKinsey Global Institute, <u>Jobs Lost, Jobs Gained: Workforce Transitions in a Time of Automation</u>, December 2017.

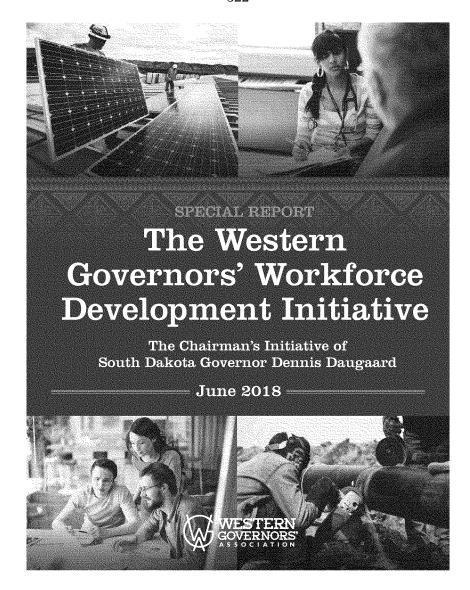
- programs such as registered apprenticeships. Students and jobseekers should have access to understand their options and the potential outcomes of these programs.
- 2. Facilitating lifelong learning is essential to prepare for the impacts of technology on the labor market. Western Governors encourage Congress to increase student access to short-term education and skills training programs in reauthorization of the Higher Education Act, including through expanding the Pell Grant program to include high-quality short-term training programs leading to industry-recognized credentials. These flexible work-force oriented funds should be coupled with plans to adopt and report outcomes metrics tied to employment and earnings to maximize the success of this policy in equipping workers for high-opportunity jobs and careers.
- 3. Western Governors also support the expansion of work-based learning programs, including registered apprenticeships. Western Governors encourage Congress and federal agencies to support and incentivize state-, local-, and industry-led partnerships to create and scale work-based learning and apprenticeship programs. New federal investments in apprenticeships should align with existing efforts to foster a coherent system with minimal duplication at the federal, state, and local level.
- 4. Career and technical education (CTE) helps expose students to their career options and develop skills they will need in the workforce. Western Governors call on Congress to reauthorize and fully fund the Carl D. Perkins Career and Technical Education Act. Reauthorization of the act should take into consideration the following principles:
 - Governors and states are in the best position to determine how to use federal CTE funding to meet the unique needs of their economies.
 - High-quality CTE programs should lead to in-demand, high wage careers; include
 career and academic advising; include pathways to four-year degrees, for example
 through articulation agreements or stackable credentials; and develop
 employability skills through integrated education and training, work-based learning
 or leadership opportunities.
- Western Governors note that federal funding for workforce development through the Workforce Innovation and Opportunity Act supports economic growth and job creation in the states. Western Governors request that the 15 percent reserve for statewide activities be maintained. This funding allows Governors to be flexible in addressing state needs and supports innovation.
- 6. Western Governors encourage the federal agencies, including the U.S. Department of Labor and U.S. Department of Education, to coordinate their efforts to better align federal workforce development, career and technical education, and higher education programs.
- 7. Western Governors recognize the benefits of measuring and reporting outcomes by institution and program. Reporting completion rates, employment and earnings will provide useful information for students and their families and help promote the success of these programs to prepare students for in-demand jobs and careers in their regions. Western Governors encourage Congress to include the College Transparency Act in reauthorization of the Higher Education Act, to adopt and report on earnings, employment,

- and credential attainment metrics by education provider and individual program in a manner that protects student privacy and ensures data security.
- 8. Employers play an important role in state workforce development efforts. Western Governors support efforts to incentivize employers to play a more active role in talent development, through partnership with state workforce development agencies and educational institutions or investments in the skills and training of their employees.
- Rural communities are at risk of falling further behind in skills necessary for the economy of the future due to a lack of broadband access. Western Governors encourage federal agencies and Congress to continue to deploy resources to solve this urgent need.
- Professional licensing requirements vary by state and can create a barrier to mobility for professionals in western states. Where possible, Western Governors should work together to minimize this barrier.

C. GOVERNORS' MANAGEMENT DIRECTIVE

- 1. The Governors direct WGA staff to work with Congressional committees of jurisdiction, the Executive Branch, and other entities, where appropriate, to achieve the objectives of this resolution.
- Furthermore, the Governors direct WGA staff to consult with the Staff Advisory Council
 regarding its efforts to realize the objectives of this resolution and to keep the Governors
 apprised of its progress in this regard.

Western Governors enact new policy resolutions and amend existing resolutions on a bi-annual basis. Please consult www.westgov.org/resolutions for the most current copy of a resolution and a list of all current WGA policy resolutions.



Dear Friends and Colleagues:

The job market has changed dramatically.

In 1973 more than 70% of the job force had no more than a high school degree or less, but by 2016 that number had fallen to just 39%. The evolution is further highlighted by the fact that since the recession, nearly all 11.6 million jobs created nationally have been filled by workers with a college degree, or at least some post-secondary education. In all, just 80,000 of those jobs went to someone with a high school degree or less.

Young people aren't the only ones being left behind. Many adults in the workforce are underemployed and lack the skills or credentials that would allow them to secure a higher-skill, higher-paying job.

The challenge extends to employers. Even though the low unemployment rates we have been experiencing across the West are good news, it means a smaller pool of eligible workers from which businesses may search for the talent they need.

Those job candidates often don't have the skills employers need, creating a "skills gap" that has led to worker shortages for industries such as manufacturing, cybersecurity and healthcare. CEOs surveyed in 2017 verified that these talent gaps were causing problems for business and industry.

As Chair of the Western Governors' Association (WGA), I launched the Western Governors' Workforce Development Initiative to bridge the skills gap between workers and employers in the West. The work accomplished during the past year by Western Governors has focused on how to create enhanced career opportunities for students, graduates and displaced workers to help build a more vibrant regional economy.

The work of the Initiative started with four regional workshops hosted by Western Governors. I kicked off the series in Sioux Falls, S.D., with a series of incisive roundtable discussions by experts and a keynote by Secretary of Labor Alexander Acosta. The two-day event concluded with a visit to Lake Area Technical institute, the 2017 winner of the prestigious Aspen Prize for Community College Excellence.

Subsequent workshops were hosted by Colorado Governor John Hickenlooper, Oklahoma Governor Mary Fallin and Washington Governor Jay Instee. Those events attracted the top minds in workforce development – such as Suzan and Eric Levine, Chauncy Lennon and Josh Davies – to talk about apprenticeships, public-private partnerships, and how to anticipate changes in the workplace.

The workshops were followed by a series of webinars that delved deeper into issues of special interest that arose during those regional events. The topics included youth apprenticeships, prioritizing college and career readiness, rural workforce challenges, and how to encourage lifelong learning.

To ensure that as many people as possible would benefit from this collected wisdom, the Western Governors' Association livestreamed each workshop and then made them available on their website (www.westgov.org) alongside the webinars and other workforce development

Which brings us to this report. In addition to detailing the many issues that have resulted in the skills gap, the report of the Western Governors' Workforce Development Initiative presents a series of findings that offer suggested actions for Governors to take and examples of how various western states are already exercising leadership in addressing these challenges.

It's an insightful collection of ideas that can help shrink the skills gap, but it will require action for them to have meaningful impact, Given the work of the Western Governors so far on this Initiative, and the impressive collaboration I've witnessed during my involvement with WGA, I'm confident that significant progress will be made.



Sincerety,

Dennis Daugaard



Dear Friend of the West,

In launching the Western Governors' Workforce Development Initiative – the Chair's Initiative of South Dakota Governor Dennis Daugaard – W6A has taken on an issue that is sprawling, multi-faceted and critical to the continued growth and prosperity of the Western United States. Igniting a dynamic conversation about the future of work, education and the technology economy, W6A conducted workshops hosted by Governors throughout the West: Governor Daugaard in Sioux Falls; Oklahoma Governor Mary Fallin in Oklahoma City, Colorado Governor John Hickenlooper in Denver; and Washington Governor Jay Inslee in Seattle. W6A is indebted to these leaders for their participation and important contributions to the workforce conversation.

WGA also hosted a webinar series, conducted surveys and deployed other tools to collect and synthesize the region's best thinking about the development of robust workforce ecosystems.

The measure and quality of information that has been generated and exchanged through these mechanisms have been remarkable. We have drilled deeply into any number of discrete workforce development issues, focusing on the skills gap in the West; career pathways; and future workforce scenarios for which we need to prepare now.

To be sure, there would be considerable value in these efforts if all WGA accomplished were information exchange, identification of best practices, and an elevated awareness of the challenges associated with western workforce development. But Western Governors seek to leverage all this work to a much higher purpose. The initiative will uttimately be a

success only to the extent it prepares and empowers Governors to make positive contributions to workforce development in the West. Given the Governors' recent track record – as well as their collective commitment to education and healthy economies – the prospects for a successful outcome could not be brighter.

This effort would not be possible without the intellectual and financial contributions of the many initiative sponsors identified in this report. WGA thanks these supporters and books forward to our continued partnership in effecting meaningful and positive change in workforce development and training systems.

Possibly the most extraordinary aspect of the Initiative to date has been Chairman Daugaard's personal investment in the project. Traveling across the country to participate in Initiative workshops and related events, he has exercised outstanding leadership and maintained laser-like focus. A dedicated student of education and workforce issues, he is committed to better alignment of educational models with industrial opportunity. For years to come, in continuing the work he has Initiated, WGA hopes to further cement Chairman Daugaard's legacy as a preeminent state leader in workforce development issues.

Respectfully,

Jim Ogsbury WGA Executive Director



EXECUTIVE SUMMARY

Changes in states' economies and labor markets and the transformative impacts of technology have combined to make workforce development a top priority for Western Governors. While low unemployment rates across the West represent a positive economic development, a smaller pool of available workers results in the inability of businesses to find enough qualified workers. CEOs are raising the alarm that "talent gaps" are causing issues in their business or industry. The largest gap is in "middle skills" jobs – those that require more than a high school diploma but less than a four-year degree.

South Dakota Governor Dennis Daugaard, as Chairman of the Western Governor's Association, launched the Western Governor's Workforce Development Initiative in July of 2017 in response to these growing challenges. The work of the Chairman's Initiative has leveraged the region's best thinking to help bridge the gap between prospective workers and employers in the West and create enhanced career opportunities for students, graduates and displaced workers.

The Workforce Development Initiative examined these issues in several ways, starting with a state of workshops hosted by Western Governors Dennis Daugaard in South Dakota, John Hickenlooper in Colorado, Mary Fallin in Oklahoma and Jay Inslee in Washington. The workshops gathered policymakers, educators, business leaders, and community organizations to discuss the challenges they face, promising solutions, and how Governors across the West are improving education and workforce development.

WGA conducted a series of webinars designed to delve deeper into issues that arose during the workshops. Webinar topics included: expansion of youth apprenticeship programs; state prioritization of college and career readiness; rural workforce development; and means for strengthening lifetiong learning. The webinars and the livestreams of each workshop are available on the WGA website as a resource.

This report presents the findings of the



Governor Dennis Daugaard kicked off the Workforce Development Initiative workshops in Sioux Falls, S.D.

Initiative and recommends suggested steps that Governors might take towards the following goals:

Integrate State Efforts: Governors are uniquely situated to leverage their influence and visibility to highlight workforce development challenges and develop statewide strategies to address those challenges. Governors can exercise powerful leadership in coordinating the work of state agencies involved in education, training, labor and workforce services, as well as among external partners, including educational institutions, businesses and community organizations.

Value All Pathways: Better communication about the value of postsecondary credentials other than four-year degrees, and ensuring that state policy maximizes these educational opportunities, will help Governors erase stigmas associated with career and technical education and boost the numbers of students and adult workers who benefit from these career pathways.

Connect Education to Careers: Students need better information, guidance and opportunities for career exploration to make informed decisions about their postsecondary education and



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Colorado Governor John Hickenlooper, left, discussed the challenge of developing a strong workforce at a time of low unemployment. Washington Governor Jay Inslee highlighted the nobility of all work and the critical importance of innovation, while Oklahoma Governor Mary Fallin addressed the challenge of closing the gap between the skills prospective employees now have and the skills employers will need.

career plans. Governors can ensure that educators, students and parents can find the information they need about jobs available in their state, including the average earnings and what education or credential is required. They can also implement policies to increase the career readiness of high school graduates.

Create Pathways to In-Demand Careers: Governors can provide leadership in the development of career pathway programs, especially by helping to leverage the insights of industry leaders and key employers to design coursework and curricula more aligned to workforce opportunity. They can promote work-based learning such as apprenticeships which often lead to an industryrecognized credential and employment.

Upgrade Skills: Many adults in the workforce are underemployed or stuck in low-skill, low-wage jobs. Governors can take steps to make training and education more accessible to working adults to empower their transition to higher skilled, better paying jobs.

Address Rural Challenges: The skills gap is particularly acute in the rural West where major economic shifts and automation have displaced workers in traditional sectors such as agriculture



Workforce Development Initiative workshops, like this one in Oklahoma City, gathered experts from multiple sectors to discuss challenges and solutions.

and manufacturing. There also is a severe shortage of skilled workers in fields such as healthcare, information technology and education. Workforce development efforts are needed to help rural westerners adapt to changing labor market demands. Expanding broadband access in rural communities is a critical foundational step to help align the skills of the

available workforce to the needs of rural communities.

The first year of the Western Governors' Workforce Development Initiative has provided considerable insight into the challenges facing the region as well as possible solutions. This year-one report describes that work in greater detail and will help guide ongoing WGA efforts.

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BACKGROUND

With low unemployment across the West, it has become difficult for businesses to find all the talent they need to thrive. The huge wave of Baby Boomer retirements exacerbates this problem because there are not enough young workers to replace them. A mismatch between worker skills and employer needs is causing serious labor shortages across the region.

There are especially severe shortages of skilled workers in industries such as construction, manufacturing, cybersecurity and healthcare. In a 2017 survey, over half of responding CEOs report that talent gaps are causing issues in their business or industry! The largest gap is in "middle skills" jobs, which require more than a high school diploma but less than a four-year degree."

The Western Governors' Workforce
Development Initiative has highlighted
how Governors are addressing this issue
to strengthen their economies and
expand opportunities for westerners.
Governors are improving their talent
pipelines to better prepare students for
the workforce and expanding access to
education and training to help working
adults and displaced workers secure
better employment.

States are aligning education to workforce opportunity to help students successfully transition from high school to further education, job training or work. While possession of a high school diploma was once enough to qualify one for a good job, 8 out of 10 jobs today require a postsecondary credential, such as a certificate, professional license or college degree.² At the same time, students are struggling to succeed in high school and beyond. Only one-third of American high schoolers are actively engaged in, and enthusiastic about, school.³ Another three million young adults, 16-24 years of age, are neither working nor attending school.³

Most students who do graduate from high school proceed directly to a fouryear degree — almost 70% of 2016 high



school graduates.⁶ Of those, however, a staggering 40% will not graduate.² Worse still, only 36% of college graduates say their education prepares them for a job* and over half of recent graduates are unemployed or underemployed. Clearly, more options are needed for postsecondary education that can better prepare graduates for good jobs.

Moreover, many adults in the workforce are underemployed. They may lack the skills or credentials that would enable them to move into higher skill, higher wage jobs. The middle skills gap cannot be filled with young people alone, especially in the many western states with aging populations. Unemployed and underemployed adults need to be able to quickly gain skills for in-demand jobs.

Unemployment remains a challenge in rural areas where the economy has net rebounded from the 2008 recession.* Historically, the primary employers in rural areas have been manufacturing, farming and mining. Technological change has resulted in a shift in labor market demands. Rural manufacturing has declined while technological improvements in mining and farming have depressed their contribution to rural employment. Increasingly, jobs in rural communities are in fields such as

healthcare and education and there are not enough people with the skills to fill them.

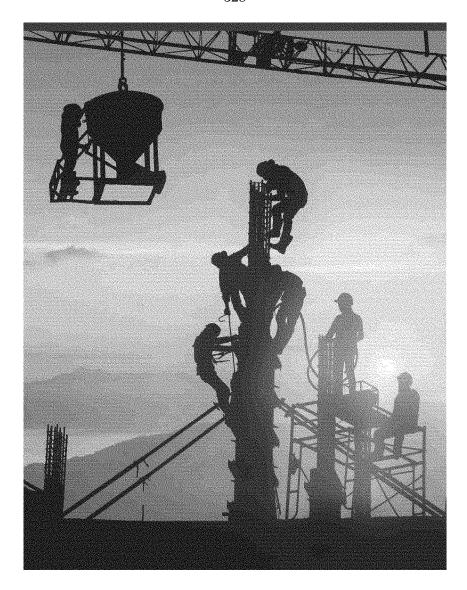
Automation and artificial intelligence (AI) promise to affect massive shifts in the kinds of employment that will be in demand in the future. Many jobs requiring repetitive tasks will disappear while new occupations will develop, it is expected that a third of U.S. workers will need to learn new skills or move into a new occupation by 2030 due to the impact of automation and AI.⁷⁹

increasingly, employers identify skills such as critical thinking, creativity and interpersonal communication as keys to success in the 21st century workforce. Most of all, workers will need to be adaptable and keep their skills and training up to date to keep pace with technology.

Western Governors are focused on implementing tasting changes in education and workforce systems to create opportunities for westerners and support growing economies. As each state implements innovative solutions to solve its unique challenges, there is immense opportunity for Western Governors to learn from one another.



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FINDINGS

The Western Governors' Workforce Development Initiative brought together stakeholders from across the region to share their experiences and ideas about the most pressing issues facing the West, with a focus on how Governors can best leverage their leadership to remove impediments to workforce development in their states.

Sectors represented in workshops and webinars included: education (from K-12 to technical college to higher education); federal, state and local government; state labor, education and economic development agencies; and a variety of employers and industry groups. The findings of the Initiative are organized into priority areas of potential state activity and influence. Each priority area includes suggested actions that Governors might take, and examples of how various western states are already exercising leadership in addressing these challenges.

I. Integrate State Efforts

The most immediate role for Governors may be to coordinate existing workforce development efforts and systems within their states. Workforce development activities fall within the purview of several state agencies and offices including education, training, workforce development, and economic development. If these agencies are not collaborating, they may be duplicating efforts or perpetuating ineffective programs. There are also a variety of external partners — including educational institutions, businesses, and community organizations — that may be working to solve workforce development challenges in disparate ways.

Coordination across public and private sectors benefits all stakeholders in workforce development by creating efficiencies and encouraging collaboration. Governors have the authority and convening power to bring these stakeholders together and integrate disparate efforts into a comprehensive state workforce development system.

Establish Goals

Governors can establish a clear vision to connect talent development to their state's workforce needs and set goals for stakeholder collaboration. Each western state has different challenges and opportunities, so state-specific visions are essential to the development of appropriate priorities.

Anecdotal evidence often drives conversations about the skills gap so establishing a data-driven baseline of labor supply and demand in the state is an important step in creating an integrated workforce development system. Stakeholders need a shared understanding of the issues in order to work collaboratively on solutions. Additionally, public support for workforce development policies and programs is contingent on successful communication of where skills gaps are occurring and their impact on economic growth.

Various state agencies collect relevant data at the state and local levels, including through departments of education and labor, and offices of economic development. Governors are positioned to drive the coordination of those agencies and ensure that data is accessible to stakeholders in a user-friendly format.

Colorado publishes an annual Talent Pipeline Report, prepared by the Colorado Workforce Development Council (CWDC) in partnership with the state's Departments of Higher Education, Education and Labor, as well as the Department of Labor and Employment, Office of Economic Development and International

Trade. The report explores the likes of the evolving labor market and postsecondary education outcomes and identifies "Top Jobs" in high-demand, high-arowth occupations.

The **Governor's Office of Warkforce Innovation for a New Nevada** partnered with the Governor's Office

of Economic Development and the Nevada Department of Employment, Training and Rehabilitation to issue the 2017 In-Demand Occupations and Insights Report. The report is a resource to educators, nonprofits, government entities and workforce boards to inform decisions and drive olignment of education and training programs for the state's labor needs. It also helps students and adults make decisions about education and trainina.

South Dakota publishes a Hot Careers page on the state's website. Careers, and job openings in those careers, are eligible for being listed on the page if they meet criteria based on high-wage, high-demand jobs in South Dakota.

Align State Resources

To develop a statewide vision and implement an integrated workforce development system, it is incumbent upon states to inventory existing programs and resources and consider whether they can be deployed more



WEBINAR: Strategies to Expand Youth Apprenticeship

The Swiss model of apprenticeship and examples of successful work-based learning programs for youth in the U.S. were the focus of this discussion

Moderator: Brent Parton, Deputy Director, Center on Education and Skills at New America. Panelists included: Diane Jones, Senior Policy Advisor to the Secretary, U.S. Department of Labor; Christopher Nesmith, Career and Technical Education Director, West Valley School District – Yakima, Washington; Mark Tapy, Apprenticeship Program Manager, Pinnacol Assurance.

Comments included:

"Most of our apprenticeship programs remain to this day concentrated within a limited range of occupations



and industry sectors. Against that backdrop, we con't meaningfully expand apprenticeship in the United States without trying to connect and integrate it into our formal education systems, and importantly, expand it into new industry sectors." Brent Parton

"We must address the issue of

stiomatization. If we can't do better at helping people understand the power of apprenticeships and the great jobs available for someone coming through an apprenticeship pathway, almost nothing that business or government can do will deliver the success we want." Diane Jones

"If we are going to grow apprenticeship models within the United States, we have to set them up in a way that it opens doors and it doesn't close doo Christopher Nesmith

"We want to maintain institutional knowledge and have our young students learn from our leaders who may not be here down the road. We felt like youth apprenticeship was the right approach for our business." Mark Tapy

effectively. State agencies can work to align data systems to allow sharing of information seamlessly between agencies and to increase transparency and effectiveness of programs. Programs should be measured by real outcomes for completing participants. Governors can evaluate and realign levels of state funding and staffing across agencies and influence federal funding streams to support the most effective programs and eliminate those not achieving the desired outcomes.

Governors can also refine organizational structures to elevate workforce development priorities or encourage coordination across agencies.

Montana created a position, jointly funded by the Department of Labor and Industry and the Montana University System, to focus specifically on bridging industry and higher education.

Industry Engagement

Industry leadership is critical to the alignment of talent development systems with workforce needs. Employers must help define the needs in their industry and identify

the competencies and skills the talent

Partnerships may already exist between employers and educational institutions, or between industry groups and workforce development organizations. The challenge is to increase the scale and impact of such partnerships. This challenge can be met by making business participation efficient, cost-effective and rewarding. Governors can take a leadership role by creating a state-level entity through which businesses can interact with the relevant state actors in the workforce development system. This entity can also serve to foster partnerships, integrate them into the system, and scale those that already exist to a statewide level.

The Colorado Workforce Develop Council currently supports 22 sector northerships across the state's 14 regions. The partnerships gather business leaders from the same industry and in a shared labor market region. They work with education, workforce development, economic development and community organizations on workforce and other competitiveness needs in their

Oklahoma established Kev Economic Networks (KENs) to coordinate workforce development efforts by region. Each of the state's seven KENs are led by a business leader. The network connects companies from high-demand industries with education, workforce development and community organizations to build partnerships and align education with regional workforce needs.

South Dakota established the SD Wins Program, Launched by the Governor it features six regional summits that include leaders from businesses, education, state and local government

II. Value All Pathways

A key cause of the middle skills gap is the stigma around, or lack of information about, pathways that alter from immediate enrollment in four-year college following high school. These pathways include technical degrees and certificates, associate degrees, registered apprenticeships, and industry-recognized certifications. For many years, the emphasis in education has been on fouryear college to the detriment of these

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Students, parents, teachers and guidance counselors may be unfamiliar with or have biases against careers in the skilled trades, considering them a step below careers that may be achieved with a college degree. As a result, career and technical education (CTE), which traditionally focuses on middle skills careers, has become viewed as a dead-end path, despite the ongoing and projected growth of job openings in these sectors.

Communicate to the Public

Governors have the prominence and stature to help shift public perception about what it takes to succeed in the economy. Through policy initiatives and the full array of communications tools at their disposal, Governors can raise the public profile of CTE and highlight middle skills jobs in their states. Changing the messaging around success will help change the mindset of students and parents.

The Build Dakoto Scholarship Fund is encouraging students to pursue good technical careers in South Dakota. The full scholarship is for students who enroll in a technical institute program determined to be a high-need workforce area in South Dakota and agree to work in the state in that field for at least three years after graduation. South Dakota uses funding provided in the program to market the scholarship to students and families. South Dakota's four technical colleges have seen an increase in applications for the programs highlighted by the scholarship sa result.

Ensure State Policies Value All Pathways

Many states have policies that encourage the public education system to focus on producing college graduates. This has the effect of pulling resources away from other types of pathways. A key leadership role for Governors is identifying systemic barriers to valuing all pathways and, if necessary, realigning state policies, resources and incentives to create a new paradigm for student and school success.

Under the Every Student Succeeds Act



Governor Daugaard took advantage of his time at the workshops to share ideas with attendees.

and state policies, states determine the metrics used to measure school performance and accountability systems and these metrics guide how teachers and school administrators prioritize their time and resources. States have historically used metrics such as test scores and graduation rates, which are indicators of college readiness. Many states are now adding school performance measures that reflect students' successful transition to more types of postsecondary education and training. Accounting for all pathways helps school districts and teachers to encourage students to more purposefully pursue all types of in-demand nostsecondary credentials. States can also include jobs outcomes as key metrics for postsecondary education and training programs and provide the public with information on jobs and earnings outcomes by program and institution.

Arizona includes college and career readiness in its school accountability plan and ensures that schools can receive credit for both readiness indicators. Schools are awarded points based on the students that complete a work-based learning experience (i.e. an intenship), earn an industry-recognized credential, or score well on ACT Workleys assessments.

South Dakota amended its constitution to remove technical colleges from the control of the Board of Regents and created a co-equal board for them. In addition, 12 school districts were awarded a combined \$8.5 million to assist in developing and strengthening career and technical education programs. These funds helped middle schools and high schools partner with other school districts, postsecondary institutions, and industry to create more career pathways.

Help Industry Improve Messaging

A recurring theme of the Initiative is that perceptions of work in the skilled trades have become outdated. Jobs once characterized by repetitive tasks and physically demanding conditions, frequently referred to as "dirty, dark and dangerous," have been transformed by technology. For example, manufacturing jobs now often require the management of automated machines, which requires troubleshooting skills and technical knowledge. Workplaces have evolved as well, offering perks and benefits to attract a younger workforce. The skilled trades also offer good wages and opportunities for growth.

Industry participants recognized that they have not done a good job marketing themselves to young people



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WORKSHOP:

Sioux Falls, South Dakota (Aug. 8-4, 2017)

South Dakota Governor Dennis Daugaard launched the first workshop of the Western Governors' Workforce Development Initiative by illuminating the changing job market and encouraging skills training.

Gov. Daugaard highlighted change in the jobs market by noting that in 1973, 72% of the work force had a high school degree or less. By 2016, however, just 39% of the work force had a high school degree or less. And since the recession, nearly all 11.6 million jobs created nationally were filled by workers with a college degree. In all, just 80,000 of those jobs went to someone with a high school degree or less.

"That illustrates why skills training is essential if you are one of those workers without a degree and you want to be of value to an employer," said Gov. Daugaard.

Labor Secretary Alexander Acosta Landr Secretary atexander actors highlighted positive news about the western economy — the regional average unemployment rate is below 4% — but added there are nearly 6 million



job vacancies nationally (1.25 million in the West) and many of those employers can't find qualified applicants. Secretary Acosta also noted the Administration's respect for Governors as the leaders of their states and recognition that "each state is different, and that what works for a large East Coast state may not work

The Sloux Falls workshop also included roundtable discussions by experts on topics such as how to align state resources to identify and meet training

Michael Cartney, President of Lake Area Technical Institute, took part in a roundtable at the South Dakota workshop and then led attendees on a tour at the award-winning institute the next day.

needs, industry leadership in career training, and how to attract and retain talent. The meeting concluded with a field trip to Watertown, S.D., and the Lake Area Technical institute, which earned the 2017 Aspen Prize for Community College Excellence

or the parents, classroom educators and school counselors who influence their career path. Governors can encourage employers in their states to invest time and resources in attracting students and jobseekers. States can provide a framework and resources for industry members to come together to develop communications and outreach plans through regional or statewide industry partnerships. States can also provide a platform to connect secondary and postsecondary educators and counselors to business and industry leaders to enhance their understanding of the current labor market and how technology has transformed both the skills in demand and workplaces themselves

The NoCo Manufacturing Partnership in **Colorado** connects students to tours of manufacturers and provides presentations internships and scholarship opportunities.

Lake Area Technical Institute in South Dakota publishes Playbooks for communities and industry on steps to help develop a pipeline for critical needs workforce.

III. Connect Education to Careers

Preparing students to succeed after high school is a key challenge for western states. Many students struggle to transition from education to the workforce. Initiative participants attribute this largely to the current disconnect between secondary education and careers that makes it difficult for students to choose and plan the pathway that is right for them. Students need to understand their options and have meaningful experiences to help them discern which jobs they can excel at and experience satisfaction

Participants recognized that career awareness, exploration and guidance all need to be enhanced to help students succeed after high school.

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WEBINAR: Moving Toward Career Readiness Goals

States must prioritize college and safetireadiness. Webinar panelists highlighted how this dual approach better serves students and employers with examples that included an employer utilizing the ACT WorkKeys National Career Readiness Certificate and industry-recognized credentials in the hiring process.

Moderator Jennifer Zinth, Director of High School and STEM, Education Commission of the States, Panelists included: Dawn Burns, Chief Strategy Officer - Caree Readiness, New Skills for Youth, Nevada Department of Education, Sarah Heath, State CTE Director, Colorado Career and Fechnical Education, Nathan Kubicek, Talent Development Piersch, Crossland

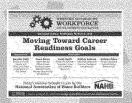
Construction, Kathryn Zekus, Senior Associate, Federal Policy, Advance CTE

Comments included:

"The key was to get in the schools and help raise the bar on the curriculum and credentialing that our industry finds valuable." Nathan Kubicek

In Colorado, we manage and support career and technical education for middle, high school, and post-secondary. We try to connect all three levels and develop programs of study as a continuum.⁹ Sarah Heath

"We like to think about states having a larger career readiness vision and using federal policy as a tool in their toolbox



to advance that vision." Kathryn Zekus

"We're trying to shift the mindset. In the past, the message hids got was just get through high school and that's enough. We're trying to change that" Dawn Burns

Provide Accurate, User-Friendly Data

As states work to coordinate education and workforce data, it is important to ensure that this information is accessible in a meaningful way to various audiences. Educators, students and parents need information about which jobs are available in their local community or state, average earnings, projected growth rates, and the required level of education or type of credential. Additionally, they need clear information on which educational and training programs are most effectively preparing people for specific jobs and careers as indicated by outcomes for program graduates.

Governors can assist in solving this problem by ensuring that all state-gathered information is available in one location. Many states have developed tools to help students explore and compare their options.

Oklahoma's Top 100 Critical Occupation List emphasizes the state's "desire to meet labor demands so that businesses and entrepreneurs can grow and prosper." South Dakota's "My Life" portal allows students and parents to access tools for planning education and career plans. It also helps develop a personal learning plan and obtain dual credit, as well as details on scholarship opportunities.

Launch My Career is a web tool for students to learn which jobs in their state are in demand and identify majors, degrees or certificate programs that can prepare them for those jobs. The U.S. Chamber of Commerce tool is available in a few states nationwide, including Colorado.

Provide Guidance and Encourage Career Planning

With the wide variety of career and education/training options available, career advising is essential to guide students through their decision-making process. States often do not have the resources to provide dedicated career advisors in all high schools, and high school guidance counselors are often overwhelmed by large school populations and the wide variety of social and academic issues impacting students.

States and school districts are starting to adopt innovative strategies to combat this resource constraint. They also are equipping teachers with the skills and knowledge to provide meaningful career advice to students they already see daily. This is driving a shift toward more systemic, school-wide career development throughout a student's education.

South Dakota recently launched a pilot program to pool resources in four school districts to provide more career counseling. Using state and federal funding, 11 career counselors were hired for the four districts, with one person serving as the program coordinates.

States can also implement policies that engage students, parents and teachers more fully in career planning. This engagement focuses students on how to use what they are learning in the real world, making education more meaningful. Many states require students to complete some form of career plan before graduating from high school. These requirements can drive meaningful conversations about a students future.

Oklahoma developed the Individual Career and Academic



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Plan (ICAP) to drive a strategic shift in how schools think about and incorporate career development activities throughout K-12 education to help students and their families become more informed consumers of education and training. The ICAP is designed to be an ongoing, student-driven process that helps students create a vision of their future and prepare a personal plan for achieving their goals through high school and beyond. Oklahoma is working to help school districts implement the ICAP and move toward a systematic, school-wide approach to career development.

Support Career and Technical Education (CTE)

initiative participants highlighted the value of CTE for increasing career readiness among high school students. CTE provides students opportunities to explore careers and participate in programs of study designed around specific professions.

Governors can work to ensure that CTE programs are supported and aligned to state workforce needs. CTE should be part of the statewide vision for workforce development with resources focused on good jobs, as defined by the state. States receive federal funding under the Carl D. Perkins Career and Technical Education Act to support CTE programs and distribute funds to school districts, community or technical colleges, and other local recipients. Governors can use their leverage over this funding to ensure that CTE programs support the statewide vision. Governors may also reserve up to 10 percent of this funding to support areas of significant need or to catalyze innovative programs.

Nebraska developed reVISION to align career education programs with workforce needs and economic development priorities, strengthen career readiness, and fortify career guidance initiatives for all high school students, among other goals. Through a year-long process, school districts or regions comprised of multiple districts review and analyze



Governors Daugaard and Hickenlooper showcased WGA's signature bipartisanship when they both addressed the Denver workshop.

their CTE offerings to identify gaps and areas for improvement and then develop an action plan. The state's Department of Education guides the process and ensures collaboration with postsecondary education and regional workfor or economic development leaders.

Governors should also ensure that CTE programs provide high-quality career exploration opportunities and prepare students for postsecondary success. States possess a variety of policy levers to drive this goal, such as statewide requirements for high school graduation, school performance measures, and incentive structures for schools and students.

Nevada created a College and Career Ready (CCR) Diploma to incentivize high school students to earn a college-ready or career ready endorsement on their diploma. The state's Department of Education worked with school districts, industry and other partners to develop the CCR Diploma framework, which allows CTE or work-based learning courses to fulfill a diploma requirement.

Colorado's Career Success Pilot Program provides financial incentives for school districts and charter schools that encourage high school students to complete industry credential programs, internships, residencies, construction pre-apprenticeship and apprenticeship programs, even Advanced Placement courses. Districts and charter schools are eligible to receive up to \$1,000 for each student completing a qualified program.

South Dakota established the Workforce Education Fund, up to \$1.5 million of which is designated to provide grants for career and technical education programs in secondary schools. The grants enable school districts to make transformative change in career and technical education programs.

IV. Create Pathways to **In-Demand Careers**

To close the skills gap, states are working with employers to build career pathways that lead high school students directly to in-demand jobs benefitting both students and local businesses. Because developing new career pathways programs requires coordination between the public education system and major employers, Governors are well positioned to drive expansion of such programs.

Although career pathway programs in

WORKSHOP:

Denver, Colorado (Sept. 18-19, 2017)

Keynotes: John Hickenlooper, Governor of Colorado; Dennis Dausaard, Governor of South Dakota; Josh Davies, The Center for Work Ethic Development CEO; and Suzan LeVine, former U.S. Ambassador to Switzerland and Liechtenstein, and Eric LeVine, CEO of CellarTracker

The second workshop of the Chairman's Initiative, hosted by Colorado Governor John Hickenlooper, focused on innovation and effective partnerships with industry, Gov. Hickenlooper's opening remarks highlighted the state's low unemployment rate of 2.3% but added the flip side to that success is a "labor pool so tight, businesses are finding it hard to find the talent that they need."

WGA Chair and South Dakota Gov. Dennis Daugaard also addressed the workshop and noted that employers in his state face a similar challenge finding qualified candidates and need to start thinking differently about preparing people to join the workforce.

"In South Dakota we are working to redefine how to achieve career success. You don't necessarily need to go to four-year college. That's a good path, but other paths can lead to careers with great success. With so many options out there, we need to make sure students understand them all."

Making the business case for youth apprenticeships in the U.S., Suzi and Eric LeVine shared their findings from



European models, saying "a Swiss apprenticeship doesn't define you for life, but it is designed to prepare you for

Josh Davies delivered dynamic remarks on how employment has dramatically changed through history, highlighted the impact of automation and the rising role of competency-based education and training, and the importance of partnering with industry.

The lively dual presentation by Suzi and Eric LeVine during the Denver workshop highlighted their findings about European apprenticeship models.

The Denver workshop also included roundtable discussions by experts on topics such as aligning education and training with industry defined competencies, and industry-led workforce development initiatives.

western states vary, they generally require participating students to complete: coursework and curricula that are developed with insights from industry partners, a work experience such as a summer internship; and an evaluation resulting in an industry-recognized credential. These programs include a commitment from employer partners to hire from the pool of students meeting the established criteria.

Facilitate Industry-Education Collaboration

Support from the state is critical to help expand and scale employer-driven

career pathway programs. Governors can assemble employers within an industry, identify their common needs and provide resources to develop career pathways that prepare students to meet those needs. States can also facilitate statewide coordination between schools and industry.

Talent Ready Utah provides resources and coordination for businesses to engage with education. The program worked with industry partners to establish coreer pathways in aerospace, diesel tech, medical innovations

and information technology. Students complete related coursework at both their high school and a technical college and complete a summer internship to earn a certificate as well as a guaranteed interview with an employer partner.

Create or Support Intermediaries to Scale Work-Based Learning

Work-based learning is a crucial component of successful career pathway programs because it provides students with meaningful career exploration



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WEBINAR: Rural Workforce Development Challenges

Expanding meaningful training and education opportunities for high-wage, in-demand careers is a challenge for rural communities. This webinar highlighted the efforts of states and employers to provide high quality career and secunical education (CTE) and workforce services for rural job-seekers to access in-demand careers and strengthen the local talent pipeline

Moderator: Lauren DeNinno, Policy Advisor, Western Governors' Association Panelists included: Kristi Boswell, Senior Advisor, U.S. Department of Agriculture. Austin Estes, Senior Policy Associate. Advance CTE, Richard Kalt, State Director, Nebraska Career Education Randy Noel, Chairman of the Board, National Association of Home Builders, Geniphyr Ponce-Pore, Director, CSU Regional Hub Network.

Comments included:

"We want to work with our state and we want to work with our state and local partners to identify gaps. We want to help facilitate those partnerships and understand where there are missing links, so we can maximize and leverage the resources we have at the federal level," Kristi Boswell

"Four out of five You-education" counties are rural, and these counties are much more likely to experience high rates of poverty. Technology allows students to engage with workplace experts in every industry, no matter their zip code." Austin Estes

"Our objective is to say, 'vour zip code" should not determine the quality or diversity opportunities that you have in education.' We're really doing it through



distance learning networks where schools share instruction between each other." Richard Katt

"We've heard from industry that people need the obility to learn for a lifetime, not just a four-year period. They need to learn over a lifetime and do it in a compressed way that works for people with busy lives." Geniphyr Ponce-Pore

opportunities while helping them develop the skills they need to succeed in any workplace. Initiative participants stressed that these opportunities are essential to prepare students for the workforce and help them determine their career interests.

Some western states have invested in youth apprenticeships, which is one type of work-based learning. Youth apprenticeships can be federally registered apprenticeships, in which case they must adhere to federal requirements. Some states have developed their own models for youth apprenticeship along with state guidelines and frameworks to ensure program quality and safety. In either case, youth apprenticeships differ from internships, part-time jobs, or other work experiences by offering students a multiyear commitment, wages, mentorship, and rigorous related instruction.

Youth apprenticeships typically begin in junior or senior year of high school when participating students begin splitting time between classes and work and continue past high school graduation. Classes can include college courses. At the end of the apprenticeship, apprentices have a nationally recognized industry credential,

work experience and college credits, giving them the option to continue working or pursue postsecondary education. Apprenticeships have historically been common in the skilled trades, but other sectors such as insurance and financial services are now developing youth apprenticeships to ensure their access to talent.

Youth apprenticeships can be intimidating for employers to establish. Employers may be wary of hiring high school students and unsure of applicable federal and state requirements and regulations. Smaller employers, who can often benefit the most, may lack the resources to develop a youth apprenticeship program, States can make this process easier for businesses by supporting intermediaries that work with industry partners to determine industrywide needs, design the instructional elements of apprenticeship, and coordinate with school administrators States can create or support industry-specific organizations dedicated to creating and supporting apprenticeships.

Washington is expanding youth apprenticeships through the Aerospace Joint Apprenticeship Committee (AJAC). The state funded the creation of AJAC in 2008 to help the industry prepare for impending retirements and increasing production demand. AJAC has developed registered apprenticeships for high school students to help capture the knowledge of senior workers and create avenues for young people to join the industry.

For youth apprenticeship programs to become more commonplace in the West, states need to take the lead in establishing models or systems that include quality controls and standards at the statewide scale. This will make it easier for more schools, businesses, and students to participate.

CareerWise Colorado was created as a nonprofit intermediary to bring youth apprenticeship to Colorado at scale. The public-private partnership seeks to create over 20,000 apprenticeships in high-demand, high-pay occupations across multiple business sectors

WEBINAR: Innovative Policy for Lifelong Learning

Short-term education and training programs for working adults provide skills and credentials that fead to careers in high-paying fields such as advanced manufacturing and health care. This weblinar discussed best practices in post-secondary education and highlighted how adult education programs could be strengthened and expanded through pending federal policies and legislation including reauthorization of the higher Education Research

Moderator: Steve Yoy'tek, Federal Government Relations Manager, ACI, Panelists included: David Baime, Senior Vice President, Government Relations and Policy Analysis, American Association of Community Colleges, Katle Brown, Senior Federal Policy Analyst, National Skills Coalition; Lindel Fields, Superintendent & CEO, Tri County Tech.

Comments included:

"The issue of short-term workforce development is probably the most important item for community colleges in the reauthorization of the Higher Education Act." Dayld Balme

"We tried the old way of having programs five days a week in the evenings, and that just isn't realistic for busy adults. Flex programs open up a whole new world." Indel Fields

The largest investment in America's workforce today remains the Higher Education Act: legislation that dwarfs all



other federal investments in this area. As we look towards modernizing this legislation and others, it is important that future policy recognize that there are multiple pathways, including a four-year degree, to success in today's labor market." Steve Voytek

by 2027. CareerWise works with school districts and businesses to create career competencies and ensures that apprentice work and school schedules are optimized. It also recruits students and acts as an intermediary between the education system and industry to align goals and ensure a streamlined experience. Additionally, CoreerWise works with the hiring businesses to train supervisors and apprentice-coaches, and with apprentices to prepare them for a professional work environment.

V. Upgrade Skills

Governors and initiative participants noted that helping underemployed workers in low-skill, low-wage jobs to upgrade their skills is essential to fill the middle skills gap and increase economic stability. Working adults face several barriers to pursuing training or education, including access and affordability.

Encourage a Skills-Based Labor Market

In job postings, businesses often list requirements, such as a bachetor's degree, that are not actually needed to do the job but serve as a rough proxy for other attributes. This practice can

have the unintended consequence of restricting the poot of qualified candidates. Skills-based hiring, which focuses on the exact competencies a job candidate needs, makes it easier for jobseekers to apply their current skills in new careers or identify which skills they need to acquire. It also helps businesses better target qualified candidates for job openings in a tight labor market.

States can facilitate a skill-based labor market by helping both businesses and jobseekers focus on competencies. States can work with employers and industry groups to identify essential competencies in their fields and provide tools or training to individual employers to write skills-based job postings.

In 2016, Colorado became the first state to partner with Skilful to drive a shift toward training, educating and hiring based on skills. The online network of tools and on-the-ground resources connects job seekers to fast growing, high-poying jobs. It also can direct them jobs. It disc and direct them training for new skills that advance their careers. Skilful also helps employers create skills-based job descriptions and hire workers bosed

on those core skills. The Skillful State Playbook details how state leaders can create a skills-based labor market. Other states in the network include Montana, North Dakota, Oklahoma, South Dakota, Utah, and Washington.

The **South Dakota** Department of Labor and Regulation revamped its SDWORKS database of jobs to enable decisions to be made with real-time, skill-based supply and demand information.

Through its Governor's Office of Economic Development, South Dokota provides direct workforce development training grants that lets businesses undertake training programs that olign workers' skills with the skills and competencies required for the position. Each year, approximately 450 workers receive training through this program.

Expand Registered Apprenticeships

Working adults may not have the time and money necessary to upgrade their skills in pursuit of a better career.

Registered apprenticeships mitigate

W

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WORKSHOP:

Oklahoma City, Oklahoma (Oct. 16-17, 2017)

Keynotes: Mary Fallin, Governor of Oklahoma; Dennis Daugaard, Governor of South Dakota; Chauncy Lennon, Managing Director and Head of Workforce Initiatives, Global Philanthropy at JPMorgan Chase

The Chairman's Initiative workshop hosted by Governor Mary Fallin examined how states can better utilize data to identify critical skills gaps and align resources to provide jobseekers with increased career awareness.

"We think it's important to start talking to our high school students at a younger age about some of the career opportunities that are available to them, Governor Fallin said in opening remarks.

WGA Chair and South Dakota Governor WGA Chair and South Dakota Governor Dennis Daugaard also spoke on the theme, saying "Every governor is aware of and struggles with the workforce gap, where the skills of those who are searching for work don't align with the skills employers need to fill their

efforts that she has launched as governor, including "Oklahoma Works." That initiative connects businesses, state agencies and educators to discuss what skills employers need and how educational leaders can better align degree programs to better achieve that employee pipeline.



"Every governor is aware of and struggles with the workforce gap," said Governor Daugaard during a press conference with Governor Fallin.

"Many of the workforce programs we have in place today were designed decades ago for an economy that tooked very different," said Chauncy Lennon very offerent, said Chauncy Lennon of JP Morgan Chase. "To build new career pathways, we need to work with employers and educators to identify targeted skills and opportunities for

students to learn to work by being in the

The Oklahoma City workshop also included roundtables on topics such as creating opportunities for students to learn at work, and how states and employers address the skills and credential gaps.

this problem by paying apprentices for the work they do while they are in training. While traditionally utilized in the trades, new programs are giving people the opportunity to start new careers in healthcare, IT and insurance as well. Apprenticeships also help jobseekers enter a new field without prior work experience, thus removing a common stumbling block. For businesses, apprenticeships offer a quicker solution to labor shortages than waiting for education to produce talent.

Many states provide assistance to businesses seeking to establish a registered apprenticeship. Many states also support intermediaries to serve entire industry sectors, reducing transaction costs for participating employers.

With funding from Washington state, the Washington Technology Industry Association set about creating an apprenticeship program to solve the region's shortage of tech workers. Apprenti helps people - especially women. veterans and minorities — get started in a tech industry career. Apprenti recruits and intensively trains candidates who are then placed in tech company apprenticeships. Apprenti is now expanding its model nationwide.

Credentials for Adults

For working adults who need a postsecondary credential, a certificate

program often makes more sense than a degree program. Postsecondary certificates, most of which take a year or less to complete, are typically offered through community or technical colleges and, depending on the program, can increase wages as much as an associate's or bachelor's degree. Although certificate programs can be efficient tools to help adult workers upgrade their skills, they must be paid for out of pocket. Federal financial aid can only be applied to programs that meet federal credit-hour requirements.

As demand for various postsecondary credentials grows, federal financial aid requirements should be modernized

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WORKSHOP:

Seattle, Washington (Nov. 1-2, 2017)

Revinites: Invitistee Governor of Washington: Rvan Harkins, Director of State Affairs and Public Policy, Microsof

Governor Jay inside hosted the initiative workshop, which highlighted apprenticeships and opportunities in the healthcare, advanced manufacturing and IT sectors.

Washington, an initiative aimed at helping more students pursue good-paying jobs after high school through career-ready education such as apprenticeships and technical training, during his opening remarks. To this day, I believe that all work is noble work and we need to welcome people from all paths of the workforce," he said.

One highlight of the workshop was hearing from Trevor Mackey, a high school student and apprentice with Cub Crafters, who spoke about his experience. The people who work at the company have been there for 10 to 15 years or more, so they're really knowledgeable. A lot of what I've learned has been through side conversations with those people."

Ryan Harkins of Microsoft delivered a keynote about reducing the rural broadband gap through the use of TV



High school student Trevor Mackey illuminated and entertained attendees at the Seattle workshop by relating his apprentice experience.

White Space technology, which provides cost-effective internet access in rural communities

"Today, 34 million Americans don't have access to broadband. Perhaps 10 years ago not being able to access the internet at home would have been an inconvenience. But today, it has created a real opportunity gap because much of the world is racing ahead with the opportunities that technology provides," said Harkins.

The Seattle workshop also included roundtables on topics such as careerconnected learning and public-private partnerships for job training.

to help underemployed adults pursue nondegree credentials. Congress should expand the Pell Grant Program to include high-quality, short-term training programs that lead to industry-recognized credentials.

States can also help working adults make this crucial investment. As part of the state's vision for workforce development, Governors can help determine which nondegree credentials have the best return on investment and are priorities for employers in their states.

Increase Educational Attainment

While all types of postsecondary credentials are in demand, bachelor's

uegrees tenant me goat to many working adults. While Western Governors are focused on increasing the level of educational attainment in their states there are 35 million American adults with some college credits but no degree. Individuals who do not complete college are twice as likely to become unemptoyed as individuals with a bachelor's degree. Median earnings also increase with higher levels of educational attainment.

As a result, many states are encouraging adults to complete their degrees to fill the skills gap and create a more resilient workforce. States can provide support to adults that are interested in returning to college.

The Complete Washington Initiative seeks to reengage in higher education the 300,000 adults in Washington with some college experience but no degree with the goal of improving economic mobility and workforce readiness for this population. The initiative addresses barriers to college reentry (including cost, geographic limitations, and family or coreer obligations) by expanding resources available to re-entering students. Complete Washington is partnering with Western Governors University, which offers technology-enabled, competency-based education that is designed for adult learners.



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VI. Rural Challenges

Rural regions of the West have slower rates of economic growth and higher rates of unemployment than metropolitan areas. Fewer rural adults hold associate degrees or higher than their urban counterparts, and that gap in college completion rates continues to grow Western states are facing severe shortages of workers in rural areas in sectors such as healthcare and education.

Rural communities face a variety of obstacles that make it difficult for states to provide them with adequate education and workforce services. For example, there are fewer employers with whom schools can partner to provide career exploration or work-based learning opportunities. The nearest postsecondary institution may be too far for working adults to pursue postsecondary credentials.

Western states are implementing innovative solutions to these problems For example, students in **South Dakota**'s rural schools can take dual-credit classes online. Nebraska developed virtual career tours that highlight the state's key industries. Many states are deploying technology and online tools to connect rural areas to resources in urban areas.

Expand Rural Broadband Access

One of the biggest obstacles to rural workforce development is the lack of broadband access. More than 20 percent of schools in rural areas lack high-



Naria Santa Lucia, the Executive Director of Washington State Opportunity Scholarship, moderated the Seattle roundtable, "A Model for Public-Private Partnership."

speed internet, resulting in lost online learning opportunities and inadequate development of the digital skills needed in today's workforce.

Expansion of broadband access is critical to providing rural western communities with the training and education opportunities required to develop a robust workforce. The disparity between rural and urban broadband access is mainly due to the high cost of building

infrastructure and laying miles of fiber optic cable to rural communities. New TV White Space technology, which uses spectrum in the television band to provide wireless internet access, could potentially serve some rural western communities for a much lower cost. Pilot projects of the technology are underway in several western states and Western Governors support the use of innovative technologies that have the potential to connect rural communities at affordable costs.

Explore New Models for Rural Employment

Connecting more rural communities to high-speed internet presents new opportunities, because technology enables more jobs to be performed remotely wherever talent is available. Some companies are locating these jobs outside of cities to take advantage of the lower cost of living. While participants in the Initiative noted this shift and cited examples in the tech industry, more concrete information is needed to understand the type and quantity of jobs that are moving to rural areas.

Governors, through their offices of economic development, can explore the viability of attracting jobs with flexible location requirements to rural communities. Governors can also engage with employers to understand what skills and competencies lend themselves to remote work and build these into the state vision for rural workforce development

ENDNOTES

- A database of accountability measures by state is available from Achieve, Inc. at https://states.achieve.org/essa-tracker
- National Skills Coalition, Putting Pell Grants to Work for Working Students, March 2018. https://census.gov/data/tables/2017/demo/education-attainment/cps-detailed-tables.html
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- 7U.S. Department of Agriculture, Interagency Task Force on Rural Economic Prosperity Report, January 2018.
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ON THE WEB

Find the Initiative online resources and join the conversation at westgov.org

The central objective of the Western Governors' Wortforce Development Initiative is to leverage the region's best thinking to bridge the gap between prospective workers and employers in the West and create enhanced career opportunities for students, graduates and displaced workers to help build a more vibrant regional economy. To ensure the conversation reaches the widest possible audience, WGA launched an online resource that includes videos of all Workshops, our Webinar series and a variety of other resources. We've also created the Initiative Appendix, a document that delivers expanded detail on the conversations at each workshop and webinar.





WORKSHOPS

More than 300 attendees took part in the four regional Initiative workshops. The workshops were livestreamed on the web via Google and Facebook, and subsequently posted to YouTube. Workshops were hosted by Gov. Dennis Daugaard in South Dakota, Gov. John Hickenlooper in Colorado, Gov. Mary Fallin in Oklahoma and Gov. Jay Inslee in Washington.

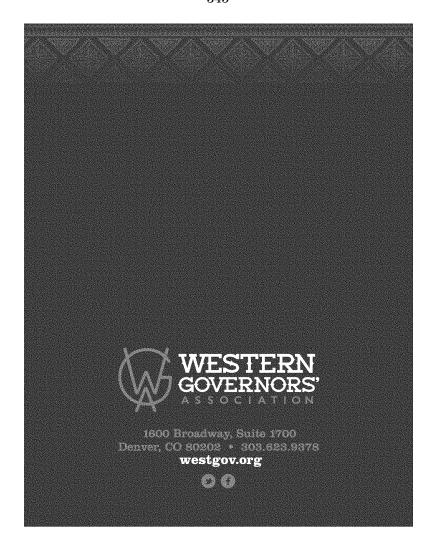


WEBINARS

The Initiative webinar series featured leading thinkers on topics such as "Strategies to Expand You Apprenticeship," "Moving Towards Career Readiness Goals," "Rural Workforce Development Challenges," and "Innovative Policy for Lifelong Learning."



PAGE 22 • 2018 WORKFORCE DEVELOPMENT INITIATIVE



[Additional submission by Ms. Stevens follows:] A Path From Access to Success: https://www.govinfo.gov/content/pkg/CPRT-116HPRT40650/pdf/CPRT-116HPRT40650.pdf

[Questions submitted for the record and their responses follow:]



COMMITTEE ON EDUCATION

AND LABOR

U.S. HOUSE OF REPRESENTATIVES
2176 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515-6100

July 10, 2019

Mr. Sameer Gadkaree Senior Program Officer Joyce Foundation 321 N. Clark Street, Suite 1500 Chicago, IL 60654

Dear Mr. Gadkaree:

I would like to thank you for testifying at the June 19, 2019, Committee on Education and Labor hearing entitled "Innovation to Improve Equity: Exploring High-Quality Pathways to a College

Please find enclosed additional questions submitted by Committee members following the hearing. Please provide a written response no later than Thursday July 18, 2019, for inclusion in the official hearing record. Your responses should be sent to Claire Viall of the Committee staff. She can be contacted at 202-225-3725 should you have any questions.

I appreciate your time and continued contribution to the work of the Committee.

Sincerely,

ROBERT C. "BOBBY" SCOTT

Enclosure

Committee on Education and Labor Hearing
"Innovation to Improve Equity: Exploring High-Quality Pathways to a College Degree."
Wednesday, June 19, 2019
10:15 a.m.

Representative Ilhan Omar (D-MN)

- Over the last few decades, college enrollment rates have climbed across all racial and
 economic groups. Although we should celebrate gains in college access, we should also
 stop to ask the important question of "access to what?" For example, low-income
 students and students of color are overrepresented at community colleges and in the forprofit sector, and these enrollment patterns contribute to nationwide gaps in bachelor's
 degree attainment.
 - What can you tell us about the extent of this enrollment stratification and how it mirrors what we see at the K-12 level?
 - What are the consequences of the overrepresentation of low-income students and students of color at underfunded institutions and at institutions in the for-profit sector?
 - O What can the federal government do to address these issues?
- I was distressed to learn that, after six years in college, four in ten students still haven't
 earned a degree and that, as a nation, we've barely made any progress in increasing
 college graduation rates over the past two decades. For students of color, I know their
 reality is even more dire: white students graduate at more than one-and-a-half times the
 rate of Black students and are 10 percentage points more likely to graduate than Latinx
 students.
 - Can you outline what you think may be contributing to our low national graduation rates and why it's worse for students of color?
 - O How can we address these factors through federal policy?

Representative Lucy McBath (D-GA)

I want to highlight the impressive work of Georgia State University, which has been
named the #2 most innovative university in the nation. Today, Georgia State graduates
African-American, Hispanic, first-generation, and Pell Grant eligible students at a rate
that is at or above that of the overall student body. This makes Georgia State the only
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One of the ways Georgia State was able to reach these successes was by improving their advising programs. They now use predictive analytics to monitor students' progress and alert academic advisors when it is time to respond with proactive advice tailored for each student. And in 2003, the University implemented the Panther Retention Grants. These are micro-grants totaling as little as \$300 to help cover minor financial shortcomings that

would impact a student's ability to pay tuition and fees and enroll in classes. Over 85 percent of the Panther Retention Grant recipients have now gone on to graduate. Studies done by the research organization MDRC have found that comprehensive support programs with intensive advising, lead to more students graduating. And this has been seen in cases such as Georgia State. It seems that the programs with the best results have small student caseloads per advisor, and advisors interact with students frequently, helping them to address both academic and personal challenges. At past hearings, we've heard about how a case management approach, where each student has one advisor who can help them navigate college, can have particularly positive results.

• What are the barriers to providing intensive advising to students at scale? How can those barriers be addressed?

Representative Russ Fulcher (R-ID)

- I would like to understand how to make Pell Grants more widely applicable for programs
 that don't follow a traditional college course calendar. Schools like the College of
 Western Idaho, Treasure Valley Community College, Boise State University, and the
 University of Idaho are all implementing versions of professional certification programs.
 - Can you offer any suggested guidelines or parameters when it comes to considering how far and in what direction to apply Pell Grants?
 - What would be your markers besides traditional student outcomes like retention rates, graduation rates, and student loan default rates to ensure the quality of education is improved?
- When it comes to helping ensure students succeed, Lewis Clark State College (in Lewiston, Idaho) provides students with a unique advising model. In the first year, the students are assigned an academic advisory, a faculty mentor, and a peer mentor to provide guidance and advising. The school said this has helped on their retention efforts. There is also a "student behavior referral system" where faculty / staff can refer students to provide for enhanced communication across departments.
 - o What improvements can you add to help ensure struggling students succeed?

Representative Brett Guthrie (R-KY)

- Mr. Gadkree, in your testimony, you mention learning models such as apprenticeships
 programs, are a great option to fill the current skills gap. This is why last Congress, I
 introduced a bipartisan bill, which would help expand apprenticeships.
 - Could you further share how state and local communities can increase apprenticeship programs?
 - Follow up: What are the benefits apprenticeships can have for students?

MAJORITY MEMBERS:

ROBERT C. 'BOBBY' SCOTT, VIRGINIA,

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Ms. Tomikia P. LeGrande Ed.D. Vice Provost for Strategic Enrollment Management Virginia Commonwealth University Ginter House, Room 305; 901 W. Franklin Street, Box 842527 Richmond, VA 23284

Dear Dr. LeGrande:

I would like to thank you for testifying at the June 19, 2019, Committee on Education and Labor hearing entitled "Innovation to Improve Equity: Exploring High-Quality Pathways to a College Degree."

Please find enclosed additional questions submitted by Committee members following the hearing. Please provide a written response no later than Thursday July 18, 2019, for inclusion in the official hearing record. Your responses should be sent to Claire Viall of the Committee staff. She can be contacted at 202-225-3725 should you have any questions.

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Studies done by the research organization MDRC have found that comprehensive support programs with intensive advising, lead to more students graduating. And this has been seen in cases such as Georgia State. It seems that the programs with the best results have small student caseloads per advisor, and advisors interact with students frequently, helping them to address both academic and personal challenges. At past hearings, we've heard about how a case management approach, where each student has one advisor who can help them navigate college, can have particularly positive results.

- Dr. LeGrande, can you tell us about the kind of advising that's available to your students and the student-to-advisor ratios on your campuses?
- Have you adopted any changes to improve advising and what results have you've seen from those changes?
- What are the barriers to providing intensive advising to students at scale? How can those barriers be addressed?

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 - What improvements can you add to help ensure struggling students succeed?

Representative Brett Guthrie (R-KY)

Dr. LeGrande, many first-year students tend to borrow money and upon completion of
their postsecondary education thought they had no debt at all. This information is very
concerning to me, which is why I have introduced a bipartisan counseling bill to enhance
financial aid awareness and understanding. The Empowering Students Through Financial
Counseling Act, H R. 2129 would require more detailed and annual counseling for
federal aid recipients throughout their education.

- Can you explain what Virginia Commonwealth University is doing to increase effectiveness of financial aid counseling and to ensure exit counseling is beneficial to students?
- Dr. LeGrande, as we look to address the skills gap, I believe Congress needs to provide
 all students the opportunity to pursue the postsecondary education programming that fits
 their unique talents and desires. I am constantly hearing from employers in my district
 about the lack of skilled workers.
 - In your written testimony, you discuss the work of career service-offices at
 postsecondary institutions. What do you believe colleges should do to improve
 employment outcomes for their students?

MAJORITY MEMBERS:

ROBERT C. "BOBBY" SCOTT, VIRGINIA

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Ms. Charla Long, J.D. Executive Director Competency-Based Education Network 1417 Hanson Drive Franklin, TN 37067

Dear Ms. Long:

I would like to thank you for testifying at the June 19, 2019, Committee on Education and Labor hearing entitled "Innovation to Improve Equity: Exploring High-Quality Pathways to a College Degree."

Please find enclosed additional questions submitted by Committee members following the hearing. Please provide a written response no later than Thursday July 18, 2019, for inclusion in the official hearing record. Your responses should be sent to Claire Viall of the Committee staff. She can be contacted at 202-225-3725 should you have any questions.

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 - o What can the federal government do to address these issues?
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 - Can you outline what you think may be contributing to our low national graduation rates and why it's worse for students of color?
 - o How can we address these factors through federal policy?

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I want to highlight the impressive work of Georgia State University, which has been
named the #2 most innovative university in the nation. Today, Georgia State graduates
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small student caseloads per advisor, and advisors interact with students frequently, helping them to address both academic and personal challenges. At past hearings, we've heard about how a case management approach, where each student has one advisor who can help them navigate college, can have particularly positive results.

o What are the barriers to providing intensive advising to students at scale? How can those barriers be addressed?

Representative Russ Fulcher (R-ID)

- Idaho is a rural state. We know that students in rural school districts have less access to
 AP courses than their urban and suburban counterparts. While the percentage of rural
 school children taking AP courses jumped from 56% to 74% between 2001 and 2015, it
 remains far below the 90% access rate of students in urban and suburban school districts.
 - o What suggestions can you offer to help improve access for rural students?
 - o Do you see online or other resources playing a part?

MAJORITY MEMBERS:

ROBERT C, 'BOBBY' SCOTT, VIRGINIA

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COMMITTEE ON EDUCATION AND LABOR

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DAVID P. ROLE TENNESSEE

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TON TON WINGER, TENAS

DANEL, MERUSER, PENNSYLVANIA

DANEL REUSER, PENNSYLVANIA

Ms. Judith Marwick, Ed.D. Provost William Rainey Harper College 1200 W. Alongquin Road Palatine, IL 60067

Dear Dr. Marwick:

I would like to thank you for testifying at the June 19, 2019, Committee on Education and Labor hearing entitled "Innovation to Improve Equity: Exploring High-Quality Pathways to a College Degree."

Please find enclosed additional questions submitted by Committee members following the hearing. Please provide a written response no later than Thursday July 18, 2019, for inclusion in the official hearing record. Your responses should be sent to Claire Viall of the Committee staff. She can be contacted at 202-225-3725 should you have any questions.

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 - Can each of you outline what you think may be contributing to our low national graduation rates and why it's worse for students of color?
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- Dr. Marwick, can you tell us about the kind of advising that's available to your students and the student-to-advisor ratios on your campuses?
- Have you adopted any changes to improve advising and what results have you've seen from those changes?
- What are the barriers to providing intensive advising to students at scale? How can those barriers be addressed?

Representative Russ Fulcher (R-ID)

- Dual Credit in Idaho continues to be a major part of our education focus. Nearly one-third of the College of Western Idaho's students are taking courses through Dual Credit.
 While a small number of students take Dual Credit to get an Associate's degree, many are using Dual Credit to take 3-4 courses that will help them both save money and graduate with their Associate's degree in a more timely fashion.
 - o What are some of the best practices you've found with the college mentor working with the high school instructor to ensure the student remains fully prepared when they get to college, i.e., not needing to spend as much time in remedial courses or tutoring? Is it regular interaction over the curriculum? Is it having the college mentor requiring the student take the same assessment as the college students taking the course? Other suggestions?

Committee on Education and Labor Hearing

"Innovation to Improve Equity: Exploring High-Quality Pathways to a College Degree."

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Sameer Gadkaree

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Answer: Students of color and low-income students are over-represented in community colleges and for-profit colleges while they are under-represented in selective public colleges. Unfortunately, some data suggest that this problem may be getting worse: an Institute for Higher Education Policy report found that the racial disparity between high school graduates and student bodies in flagships in the upper Midwest has widened considerably in the last 15 years. In a similar vein, but looking nationally, a Demos study suggested that flagship colleges have not made progress in increasing black student representation over the past twenty years. Instead, students of color and lower-income students are more likely to attend less well-funded community colleges. A Century Foundation report found that public research universities spend 60% more per student than community colleges. More research is needed to understand the full extent of this issue. I haven't seen any analysis of whether this is better or worse than these issues in K-12

 What are the consequences of the overrepresentation of low-income students and students of color at underfunded institutions and at institutions in the for-profit sector?

Answer: A <u>Center for American Progress study</u> found that we spend \$5 billion less educating students of color than their white peers. Resources matter in community college settings. Four different research studies have shown that an investment of approximately \$1500-\$2500 per student per year in community college settings can yield double the graduation rates. Those resources help to provide far more intensive advising supports and financial supports. With only four in ten community college students ultimately getting a credential or degree, a failure to invest those resources means more students who attend college but do not complete.

On the other side of the coin, a comprehensive study on for-profit colleges found that they did not produce any statistically significant increase in earnings versus high school

graduates. That's troubling because students who attend those colleges often have significant debt that will be difficult for them to pay off.

· What can the federal government do to address these issues?

Answer: The federal government can provide college-level incentives to enroll more low-income students and students of color and offer capacity building to under-resourced colleges with many of those students. The ASPIRE Act addresses both of these points by assessing a small financial penalty on well-resourced colleges with very few low-income students and using those funds to build capacity at low graduation rate colleges. For the latter, the bill requires the college to commit to increase its success rates. In addition to the ASPIRE Act, the federal government should continue supporting the capacity of minority-serving institutions and HBCUs.

• I was distressed to learn that, after six years in college, four in ten students still haven't earned a degree and that, as a nation, we've barely made any progress in increasing college graduation rates over the past two decades. For students of color, I know their reality is even more dire: white students graduate at more than one-and-a-half times the rate of Black students and are 10 percentage points more likely to graduate than Latinx students. Can you outline what you think may be contributing to our low national graduation rates and why it's worse for students of color?

Answer: In part, it is a question of resources. As I mentioned in a past answer, we spend \$5 billion less educating students of color than their white peers. There are structural reforms that colleges are undertaking to help more students navigate the higher education system. For example, building on many years of research by the Community College Research Center at Columbia University, community colleges across the nation have implemented "guided pathways" approaches. Those approaches make it easier for students to see the path to completion and what courses they need to take. They emphasize the "end goal" of a job or transfer. But those changes are often part of an overall re-design of institutional practices, one that also requires far more intensive college advising.

• How can we address these factors through federal policy?

Answer: One possible response is to invest in evidence-based programs and in community colleges directly. A bipartisan group, including two former chairs of the Council of Economic Advisors, proposed a \$22 billion investment in community colleges. They estimate this would produce 3.6 million more young graduates in 2030 and 28 million older graduates. Those new graduates would include a disproportionate number of students of color and lower-income students.

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Answer: The big barrier is cost. These programs, including CUNY ASAP, the Arkansas Career Pathways Initiative, Stay the Course by Catholic Charities, and One Million Degrees, cost an incremental \$1500-2500 per student per year. That investment pays off, sometimes even reducing the total cost per graduate. The federal government could invest in evidence-based programs to scale them up.

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I would like to understand how to make Pell Grants more widely applicable for programs
that don't follow a traditional college course calendar. Schools like the College of
Western Idaho, Treasure Valley Community College, Boise State University, and the
University of Idaho are all implementing versions of professional certification programs.
Can you offer any suggested guidelines or parameters when it comes to considering how
far and in what direction to apply Pell Grants?

Answer: The overall growth in labor market demand seems to be weighted towards degrees more than certificates, especially bachelor's degrees. Therefore, programs of short duration, as little as 8 weeks, are unlikely to markedly alter the overall economic competitiveness of our nation.

Additionally, I would offer two caveats for this Committee as it considers expansion of Pell grants to cover short-term certificates. First, it would be important to restrict any expansion to only the certificates that pay off. Currently, we have limited data on how many short-term certificates pay off, and existing federal and state data systems will not be adequate to ensure that funding goes only to programs that lead to jobs and wage

growth. Unfortunately, the data that does exist suggests many certificates lead to jobs that are essential but have high turnover and low pay. For example, nurse aides who work in nursing homes.

Second, a Columbia University study has found that fewer than 5% of students who start in a certificate program are using those college credits to get a degree. That means that, unfortunately, most programs may not be a stepping stone to the next rung in the career ladder. It may be best to limit any federal funds to programs that do, indeed, offer career progression and to ensure that students enrolled in programs that prove not to be stepping stones are not prevented from further education.

Finally, it is worth noting that there was an experimental sites initiative by the Department of Education on short-term certificates; it may be prudent to ask the Department of Education to release results to inform future policy.

 What would be your markers besides traditional student outcomes like retention rates, graduation rates, and student loan default rates to ensure the quality of education is improved?

Answer: It makes sense to look at workforce outcomes, including employment and post-graduate wages, as well. The College Transparency Act would help us get closer to this goal, as did the gainful employment regulations.

Beyond that, there are not good measures of student learning, especially of so-called "21st century skills" or "personal success skills" like critical thinking, written communication, or oral communication. In the long run, it will be important to understand what students are learning in addition to whether they are getting out of college and getting a job soon afterwards. That is especially important because we typically think of college as changing a students' career trajectory in addition to helping them get a first job. Michael Dannenberg of Education Reform Now has suggested that we need an analogue to the NAEP test for higher education.

• When it comes to helping ensure students succeed, Lewis Clark State College (in Lewiston, Idaho) provides students with a unique advising model. In the first year, the students are assigned an academic advisory, a faculty mentor, and a peer mentor to provide guidance and advising. The school said this has helped on their retention efforts. There is also a "student behavior referral system" where faculty / staff can refer students to provide for enhanced communication across departments. What improvements can you add to help ensure struggling students succeed?

Answer: Early alert systems like the one you describe are a good way to identify struggling students before they drop out. A federal investment in evidence-based programs would enhance that effort: once faculty have helped identify struggling students, having enough advisors can help ensure they have the support they need to graduate.

Representative Brett Guthrie (R-KY)

Mr. Gadkaree, in your testimony, you mention learning models such as apprenticeships
programs, are a great option to fill the current skills gap. This is why last Congress, I
introduced a bipartisan bill, which would help expand apprenticeships. Could you further
share how state and local communities can increase apprenticeship programs?

Answer: The big thing that we are finding is that public colleges need resources to meet the needs of employers. Specifically, resources to recruit and support students, and to work with the employers to ensure that programs are teaching students the skills that will make them successful. For that reason, it may make sense to build public sector capacity along the lines of the Trade Adjustment Assistance Community College and Career Training program.

o Follow up: What are the benefits apprenticeships can have for students?

Answer: There are two things that make apprenticeships compelling for students. First, they know they have a job if they complete college, which helps with persistence. Second, these programs often help defray tuition costs. On both counts, they are an advantage for students versus the traditional college model.

[Ms. LaGrande responses to questions submitted for the record follow:]

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Committee on Education and Labor Hearing
"Innovation to Improve Equity: Exploring High-Quality Pathways to a College Degree."

Wednesday, June 19, 2019

10:15 a.m.

Responses to Additional Questions from Members of the Committee

Representative Ilhan Omar (D-MN)

Over the last few decades, college enrollment rates have climbed across all racial and economic groups. Although we should celebrate gains in college access, we should also stop to ask the important question of "access to what?" For example, low-income students and students of color are overrepresented at community colleges and in the for- profit sector, and these enrollment patterns contribute to nationwide gaps in bachelor's degree attainment.

 How can individual institutions ensure they are equipped to meet the needs of lowincome students and students of color?

Response: Recognizing that all students do not all start from the same place with respect to access to power and information on how to succeed in college means institutions must develop holistic approaches that address (1) guidance and support, (2) college affordability and financial literacy, and (3) student-faculty engagement to meet the needs of low-income and students of color and to improve degree attainment rates.

Institutions should consider guidance and support models that include:

- Case management advising and career coaching that proactively guide students through a
 reflection of experiences, identifying purpose, and goal setting as they focus on their
 educational outcomes. This case management approach ensures relationship building, goal
 setting, milestone check-ins, and connections to support resources when needed.
- Data analysis and predictive analytics that inform the design of support structures and use
 of technology to best guide and support low-income and student of colors.
- Cultural competence as it allows educators to be more effective in working with students
 from cultures other than their own by having an awareness of one's own cultural identity
 and views about difference, and the ability to learn and build on the varying cultural and
 community norms of students and their families. Cultural competence is a key factor in
 informing and expanding how institutions approach student success strategies for lowincome students and students of color.

Institutions should make college affordability and financial literacy a priority. Some institutions will be able to find cost saving measures (efficiencies) to identify resources to increase financial aid while others may have significant challenges with fundraising. However, the large majority of institutions serving significant numbers of low-income and students of color will need support from federal and state sources to provide additional resources to help close the financial gaps that exist

for these populations. Institutions will never be able to provide financial aid to cover the full cost of attendance for most students; thus, providing proactive financial counseling and advice to low income students and students of color is paramount. Helping students develop good borrowing habits, make informed choices, and maximize financial aid by making timely progress to degree should be an integral component of an institution's approach to financial literacy.

Lastly, students will spend the much of their time on a college campus in the classroom. So student-faculty engagement is essential. Institutions can work to redesign courses and teaching approaches to ensure that they are relevant for conveying knowledge, preparing college graduates in the 21st century, and focusing on student success. An example is VCU's approach to teaching first-year courses. In VCU Focused Inquiry courses, faculty pique their students' curiosities about the world through interdisciplinary, inquiry-based, community-engaged, and experiential learning—all while developing writing and critical thinking skills. This cohort-style learning model offers small class sizes with consistency in the students and the faculty member during the entire first year, fostering connectedness, creativity and engagement. Similarly, through high impact experiences, such as undergraduate research and service learning, institutions are able to engage students in meaningful hands-on work that applies knowledge from the classroom into action and service that is relevant to their personal interests and future goals. An example of this approach is VCU REAL—REAL is an acronym that means "relevant, experiential, and applied learning." VCU data suggests that students who participate in these types of high-impact learning courses are more likely to persist and graduate on time than their peers who do not.

• What can the federal government do to address these issues?

Response: Expand existing federal policy to strengthen support and available funding for need-based grant programs for students.

I was distressed to learn that, after six years in college, four in ten students still haven't earned a degree and that, as a nation, we've barely made any progress in increasing college graduation rates over the past two decades. For students of color, I know their reality is even more dire: white students graduate at more than one-and-a-half times the rate of Black students and are 10 percentage points more likely to graduate than Latinx students.

 Can you outline what you think may be contributing to our low national graduation rates and why it's worse for students of color?

Response: It is challenging to change a system that was not originally designed for students of color. In addition, institutions that support significant numbers of students of color are often scarcely resourced. Because of the aforementioned challenges, institutions often pilot

student success approaches and find useful mechanisms that improve the persistence and graduation of students of color but later identify challenges with scaling these supports in the existing structure due to expenses associated. Institutions that are making strides in eliminating equity gaps, like VCU, find that support mechanisms that positively impact graduation rates for students of color are also beneficial to all students. In lieu of supporting longstanding special pilot programs, VCU has exerted great effort to redesign the system by implementing supports that will address the needs of student populations for which equity gaps exist, thus benefiting all students.

· How can we address these factors through federal policy?

Response: Federal policy is needed to strengthen support for research grant programs to study innovation in student success with an equity focus. These grants serve as the catalyst for institutions to incubate innovation, measure success, develop a plan for institutionalization and scalability, and provide models to other institutions of best practices and approaches in educational equity.

Representative Lucy McBath (D-GA)

I want to highlight the impressive work of Georgia State University, which has been named the #2 most innovative university in the nation. Today, Georgia State graduates African-American, Hispanic, first-generation, and Pell Grant eligible students at a rate that is at or above that of the overall student body. This makes Georgia State the only national public university to attain these graduation rates.

One of the ways Georgia State was able to reach these successes was by improving their advising programs. They now use predictive analytics to monitor students' progress and alert academic advisors when it is time to respond with proactive advice tailored for each student. And in 2003, the University implemented the Panther Retention Grants. These are micro-grants totaling as little as \$300 to help cover minor financial shortcomings that would impact a student's ability to pay tuition and fees and enroll in classes. Over 85 percent of the Panther Retention Grant recipients have now gone on to graduate.

Studies done by the research organization MDRC have found that comprehensive support programs with intensive advising, lead to more students graduating. And this has been seen in cases such as Georgia State. It seems that the programs with the best results have small student caseloads per advisor, and advisors interact with students frequently, helping them to address both academic and personal challenges. At past hearings, we've heard about how a case management approach, where each student has one advisor who can help them navigate college, can have particularly positive results.

 Dr. LeGrande, can you tell us about the kind of advising that's available to your students and the student-to-advisor ratios on your campuses? Response: VCU utilizes an intrusive advising model that proactively guides students through a reflection of experiences, identifying purpose and goal setting as they focus on their educational outcomes. We invested significant resources to provide a consistent student-advisor experience—no matter a student's classification or major—and to lower the student-to-advisor ratio. The student-to-advisor ratio was as high as 1700 to 1 in some departments and has now been lowered to 350 to 1 across the institution. These lower student-to-advisor ratios have allowed for early intervention when students are struggling academically. We have also developed technology that allows for well-timed advice and guidance to promote satisfactory and timely progress to degree completion.

 Have you adopted any changes to improve advising and what results have you've seen from those changes?

Response: VCU has developed a comprehensive approach to student success that places academic advising, student support services, and career services all within one unit for better coordination of related student success work. The impact of this unit can be seen in a number of university-wide initiatives, including:

- An early alert system, with advisors partnering with faculty to follow up when students fail to
 attend class, begin having academic difficulties, demonstrate behaviors that may signal them
 being "at risk" for failure, and/or simply need more support;
- Major Maps, a planning tool that helps students, advisors, faculty, and family members
 strategically map out a student's college experience by program of study. These maps provide
 recommended academic planning, career planning and suggestions for how to gain real-life
 experience and skills so students can maximize their time at VCU and get the most out of their
 major;
- Expanded career advising and career counseling workshops and courses have been incorporated into student success efforts – made more effective and efficient given that Career Services reports through the VCU Student Success unit;
- The Navigate system, a phone app that provides students with an "advisor in their pocket," links faculty, advisors, and students in a connected and coordinated network of student support.
- What are the barriers to providing intensive advising to students at scale? How can those barriers be addressed?

Response: The greatest barriers to providing intensive advising to students at scale are: (1) institutional culture, (2) use of data and predictive analytics, and (3) available resources. A shift to an intensive advising model will require the adoption of an institutional culture that is grounded in data-driven and student-centered decision making. Strong and supportive leadership coupled with increased faculty/staff engagement can create an environment that is properly disposed to providing intensive advising at scale. Moving to a data-driven and student-centered institutional

culture will compel the use of data and predictive analytics to segment and prioritize student populations, connect students to specific support interventions or resources, and track the results. Lastly, increased fiscal and human resources will be needed to hire additional advisors to create manageable caseloads and purchase technology to create an intensive advising structure. Leadership support will ensure the institution prioritizes student success and invests resources where needed. Availability of resources may be especially challenging for institutions that find themselves with tight budgets. This may be an area where federal support can help support students across all institutions.

Representative Russ Fulcher (R-ID)

I would like to understand how to make Pell Grants more widely applicable for programs that don't follow a traditional college course calendar. Schools like the College of Western Idaho, Treasure Valley Community College, Boise State University, and the University of Idaho are all implementing versions of professional certification programs.

 Can you offer any suggested guidelines or parameters when it comes to considering how far and in what direction to apply Pell Grants?

Response: No comment as this is not my expertise.

 What would be your markers besides traditional student outcomes like retention rates, graduation rates, and student loan default rates to ensure the quality of education is improved?

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Response: No comment as this is not my expertise.

When it comes to helping ensure students succeed, Lewis Clark State College (in Lewiston, Idaho) provides students with a unique advising model. In the first year, the students are assigned an academic advisory, a faculty mentor, and a peer mentor to provide guidance and advising. The school said this has helped on their retention efforts. There is also a "student behavior referral system" where faculty / staff can refer students to provide for enhanced communication across departments.

What improvements can you add to help ensure struggling students succeed?

Response: At VCU we also use early alert systems and academic support among a variety of interventions to help students succeed. Interestingly, we find that students continue to report that one of the major reasons they attend college is to get a better job. However, many students are not able to articulate what that "better job" is. Students often are not able to describe their skills, interests, values, and passions, as they do not have a personal reference point from which to evaluate potential academic and career options. These students are often struggling with a "sense of purpose" in college. In essence

these students struggle with being successful in college because they are constantly evaluating, "what am I doing here?"

A key strategy in helping struggling students find their purpose and success is the interconnection of academic and career advising. The interconnection provides an interactive process that helps students understand how to form their academic and career goals around their personal interests, abilities, and values that might predict success in the academic and career fields they are considering. In addition to integrating and expanding academic advising and career counseling, VCU has implemented Major Maps, a uniquely designed planning tool that combines academic planning with strategic career planning. Working with their university guides—such as academic advisors, career advisors, faculty, and mentors—students create a plan that is individualized to them and that focuses on their end goal. They work backward to determine which experiences, connections, and skills will best position them to succeed as working professionals after they graduate.

Representative Brett Guthrie (R-KY)

Dr. LeGrande, many first-year students tend to borrow money and upon completion of their postsecondary education thought they had no debt at all. This information is very concerning to me, which is why I have introduced a bipartisan counseling bill to enhance financial aid awareness and understanding. The Empowering Students Through Financial Counseling Act, H.R. 2129 would require more detailed and annual counseling for federal aid recipients throughout their education.

 Can you explain what Virginia Commonwealth University is doing to increase effectiveness of financial aid counseling and to ensure exit counseling is beneficial to students?

Response: VCU has a multi-prong approach to increasing the effectiveness of financial aid counseling which includes providing financial outreach and counseling during new student orientation, first year experience courses, and throughout a student's journey. In addition to interactive web-based videos, VCU Financial Aid, in collaboration with the Student Success Unit, offers a one credit hour "How Can I Pay For College?" course for first-semester freshman who elect to enroll. The course examines ways to budget money, investigate private and public resources to finance their education, and research resources in local communities to potentially secure additional dollars to make sure they can continue to afford their education.

Additionally, VCU is implementing a new Student Financial Management Center (SFMC), that will focus on providing outreach, literacy, financial case management, and counseling to students, parents, families, and others to proactively and successfully address the financial needs of a diverse student body. The staffing model is a blend of permanent staff, graduate students, and undergraduate peer counselors. In addition to serving as the single point of contact to resolve questions about all financial regulations or transactions (student financial aid and student accounting), the SFMC, in concert with Academic Advising, will focus on helping students develop

good borrowing habits, making informed choices, and maximizing financial aid by making timely progress to degree. We anticipate that this approach will positively impact retention and graduation of low-income students and the average student debt for VCU graduates.

Dr. LeGrande, as we look to address the skills gap, I believe Congress needs to provide all students the opportunity to pursue the postsecondary education programming that fits their unique talents and desires. I am constantly hearing from employers in my district about the lack of skilled workers.

 In your written testimony, you discuss the work of career service offices at postsecondary institutions. What do you believe colleges should do to improve employment outcomes for their students?

Response: To improve employment outcomes for their students, institutions should engage employers in conversation about the skills and experiences that graduates need and identify ways to provide these experiences to students. At VCU we know first-hand that those who employ our students value their critical reasoning abilities applied outside of a classroom or laboratory setting, which the VCU REAL (relevant, experiential, and applied learning) initiative affords. Through REAL, students engage in meaningful hands-on work that allows the application of knowledge from the classroom into action and service. These hands-on experiences could include internships, undergraduate research, service learning courses, and much more. These experiences are both directly relevant to students' personal interests and address social, scientific, and economic challenges that our society faces.

Lastly, institutions should ensure that their definition of student success extends beyond graduation. At VCU we are committed to preparing our students for the world of work and post-graduation outcomes. That is why our Major Maps include a developmental scheme for assisting students to work through major choice and change, career choice, and university preparation beyond the classroom. Major Maps help students prepare for their careers, which is why we have moved our Career Services Office under the auspices of the Student Success Office. It is also why we have connected the Major Maps to student experiences and skill development such as undergraduate research, service learning, practica, internships, and networking.

Committee on Education and Labor Hearing
United States House of Representatives

"Innovation to Improve Equity: Exploring High-Quality Pathways to a College Degree"

Wednesday, June 19, 2019

10:15 a.m.

Questions for the Record Provided by Charla Long, J.D., Executive Director Competency-Based Education Network, Franklin, Tennessee Submitted on July 18, 2019

Representative Ilhan Omar (D-MN)

Over the last few decades, college enrollment rates have climbed across all racial and economic groups. Although we should celebrate gains in college access, we should also stop to ask the important question of "access to what?" For example, low-income students and students of color are overrepresented at community colleges and in the for-profit sector, and these enrollment patterns contribute to nationwide gaps in bachelor's degree attainment.

Question 1: What can the federal government do to address these issues?

Answer: As Congress seeks to reauthorize the Higher Education Act, Congress should encourage institutions to create pathways, based on competencies, that allow a learner to more readily transition from one degree or credential to another. Congress should seek opportunities to support the national All Learning Counts movement, championed by Lumina Foundation, which encourages institutions to recognize learning regardless of whether this learning occurred in a traditional classroom environment or not. By recognizing competencies developed in military-, work-, or community-based settings, learners can demonstrate required knowledge, skills and abilities, and intellectual behaviors at the required levels and earn college credit toward recognized high-quality credentials. This is part of the requested demonstration project, which I described in my written and oral testimony to the Committee. As part of this demonstration project, the federal government could require the reporting of retention, progression and graduation rates by race and gender (as well as socioeconomic status, but this is harder to attain). It should be noted that community colleges are playing an instrumental role in preparing people with the competencies needed to be qualified for many meaningful and well-paying jobs that fuel the U.S. economy. These programs are often underfunded and underappreciated.

I was distressed to learn that, after six years in college, four in ten students still haven't earned a degree and that, as a nation, we've barely made any progress in increasing college graduation rates over the past two decades. For students of color, I know their reality is even more dire: white students graduate at more than one-and-a-half times the rate of Black students and are 10 percentage points more likely to graduate than Latinx students.

Question 2: Can you outline what you think may be contributing to our low national graduation rates and why it's worse for students of color?

Answer 2: Since I was asked to testify on behalf of the Competency-Based Education Network (C-BEN) about the role competency-based education is playing in higher education innovation today, this question is outside the scope of my expertise as the Executive Director of C-BEN. However, as a higher education professional with 20+ years in the field, both as a tenured faculty member and a dean overseeing professional and adult studies programs, I offer the following suggestions based on my own professional experience and not as a held belief by C-BEN.

Often, the low national graduation rate is a manifestation of issues that began earlier in the student lifecycle. Performance gaps in primary and secondary schools are exacerbated at the post-secondary level. For first generation students from all races, learners struggle because of lack of mentorship. Completing today's FAFSA application is an almost insurmountable barrier for many learners and their families. The lack of adequately trained career and college counselors in all high schools adds barriers for learners. The higher education system is complex and complicated, hindering navigation through the system by novices. Innovative higher education institutions are helping learners overcome these barriers. Other witnesses at the hearing spoke to specific innovations at their institutions, including intrusive advising and dual-credit offerings.

Question 3: How can we address these factors through federal policy?

Answer 3: Again, this is outside my area of expertise, but I offer the following professional insights. Simplifying regulations and processes, such as FAFSA, would be helpful to all learners. Federal policy should support programs in primary and secondary schools to keep students of color in school, performing on track with white counterparts, and graduating on time.

Congress should support demonstration projects or experiments, such as the one I proposed in my written and oral testimony, to develop new models of education, including CBE, that speak more to diverse populations rather than traditional models, which don't seem to be effective. When race and economic status intersect, there are additional challenges. It would be highly beneficial for the federal government to provide some sort of emergency support to assist students in need, with food insecurity, homelessness or transportation issues. This could drastically improve retention and completion by students who are currently leaving because "life" interfered with their academic supports.

Representative Lucy McBath (D-GA)

I want to highlight the impressive work of Georgia State University, which has been named the #2 most innovative university in the nation. Today, Georgia State graduates African-American, Hispanic, first-generation, and Pell Grant eligible students at a rate that is at or above that of the overall student body. This makes Georgia State the only national public university to attain these graduation rates.

One of the ways Georgia State was able to reach these successes was by improving their advising programs. They now use predictive analytics to monitor students' progress and alert academic advisors when it is time to respond with proactive advice tailored for each student. And in 2003, the University implemented the Panther Retention Grants. These are micro-grants totaling as little as \$300 to help cover minor financial shortcomings that would impact a student's ability to pay tuition and fees and enroll in classes. Over 85 percent of the Panther Retention Grant recipients have now gone on to graduate. Studies done by the research organization MDRC have found that comprehensive support programs with intensive advising, lead to more students graduating. And this has been seen in cases such as Georgia State. It seems that the programs with the best results have small student caseloads per advisor, and advisors interact with students frequently, helping them to address both academic and personal challenges. At past hearings, we've heard about how a case management approach, where each student has one advisor who can help them navigate college, can have particularly positive results.

Question 1: What are the barriers to providing intensive advising to students at scale? How can those barriers be addressed?

Answer 1: Since I was asked to testify on behalf of the Competency-Based Education Network (C-BEN) about the role competency-based education is playing in higher education innovation today, this question is outside the scope of my expertise as the Executive Director of C-BEN. However, as a higher education professional with 20+ years in the field, both as a tenured faculty member and a dean overseeing professional and adult studies programs, I offer the following suggestions based on my own professional experience and not as a held belief by

I commend Georgia State University for achieving its impressive outcomes and hope other institutions can learn from their success. As institutions struggle under current funding models and formulas, leaders often cite cost as the most significant barrier to providing intensive advising. These institutions are unable to realize how an investment in intensive advising, instead of another area that also needs funding, could yield greater financial returns and student outcomes for the institution. It is imperative for Georgia State and other institutions who have successfully employed intensive advising to transparently publish their return on investment data for said programs. Then, this information could be leveraged by other institutional leaders to make the financial case for this type of investment on their own campuses.

Representative Russ Fulcher (R-ID)

Idaho is a rural state. We know that students in rural school districts have less access to AP courses than their urban and suburban counterparts. While the percentage of rural school children taking AP courses jumped from 56% to 74% between 2001 and 2015, it remains far below the 90% access rate of students in urban and suburban school districts.

Question 1: What suggestions can you offer to help improve access for rural students?

Answer 1: Since I was asked to testify on behalf of the Competency-Based Education Network (C-BEN) about the role competency-based education is playing in higher education innovation today, this question is outside the scope of my expertise as the Executive Director of C-BEN.

However, as a higher education professional with 20+ years in the field, both as a tenured faculty member and a dean overseeing professional and adult studies programs, I offer the following suggestions based on my own professional experience and not as a held belief by C-BEN.

Urban and suburban school districts should be encouraged, and perhaps financially incentivized, to partner with rural school districts. Live streaming could be used to engage rural students synchronously with an urban or suburban in-person, teacher-facilitated course. Learners could participate in team projects, where rural students would be paired with urban/suburban counterparts which would be mutually beneficial for these learners.

Question 2: Do you see online or other resources playing a part?

Answer 2: Provided the rural areas have access to reliable internet, high-quality online learning programs could serve as a gateway to greater opportunities. As described above, there are other ways technology could be leveraged besides online course instruction. It may be helpful to engage community colleges and/or four-year institutions nearest to the rural community. Through strategic partnerships, these higher education institutions could offer rural high school learners dual-credit opportunities. Such a partnership could be viewed as a useful recruiting tool while establishing a pathway for students from high school to college.

[Ms. Marwick reponses to questions submitted for the record follow:]

Representative Ilhan Omar (D-MN)

- Over the last few decades, college enrollment rates have climbed across all racial and economic groups. Although we should celebrate gains in college access, we should also stop to ask the important question of "access to what?" For example, low-income students and students of color are overrepresented at community colleges and in the for- profit sector, and these enrollment patterns contribute to nationwide gaps in bachelor's degree attainment.
- o How can individual institutions ensure they are equipped to meet the needs of low-income students and students of color?
- o What can the federal government do to address these issues?

I was distressed to learn that, after six years in college, four in ten students still haven't earned a degree and that, as a nation, we've barely made any progress in increasing college graduation rates over the past two decades. For students of color, I know their reality is even more dire: white students graduate at more than one-and-a-half times the rate of Black students and are 10 percentage points more likely to graduate than Latinx students.

- Can each of you outline what you think may be contributing to our low national graduation rates and why it's worse for students of color?
- o How can we address these factors through federal policy?

This question presents one of higher education's most difficult challenges. As such, there is no easy answer. At Harper we changed the focus ten years ago from one of enrollment to graduation. In response to President Obama's graduation challenge, we calculated that our proportion of the needed increase in graduates by 2020 was 10,604 more graduates than the typical number who would graduate each year. This 10-year goal was achieved in just 7 years by refocusing our attention on student success and graduation.

I agree that too many students are attending for-profit institutions when public institutions offer the same degrees for significantly less money and generally have higher graduation rates. One policy implication is to require institutions to be accredited by one of the regional accreditation agencies such as the Higher Learning Commission to receive federal Title IV funds. This would assure a uniform quality across institutions while still preserving student choice.

While Baccalaureate degrees represent a significant achievement, it is important not to discount the value of Associate in Applied Science degrees that are offered by community colleges. These degrees prepare students for a specific job in the workplace often with salaries that can support a middle-class lifestyle. This is the right choice for many students.

Students who begin at a community college often transfer without an Associate's degree and then fail to complete a Baccalaureate degree. These students are left with only a high school diploma. Policy could be developed to allow universities to automatically transfer credits back to the

community college so that an Associate's degree could be awarded after a student has transferred providing these students with at least one college credential.

College policies to improve student completion include better advising, the establishment of easy to understand academic pathways to degree completion linked to specific career opportunities, a reduction in the need for developmental courses, as well as multiple measures of placement. While these policies help all students, gaps still exist in completion rates for low-income and minority students. Many of these students may be first in their family to attend college. Thus, additional supports may be needed to encourage completion for these students. Projects such as ASAP in New York, One Million Degrees (OMD) in Chicago, and the Detroit Promise have shown excellent results for persistence and completion for low income and minority students. Harper has participated with OMD for the last five years. We currently have approximately 160 low-income, first-generation students supported by this program. The majority of these students identify with one or minority groups. These students are highly motivated to complete an academic degree and OMD provides all of the requirements and supports to help them achieve their goals. Harper OMD students graduate at a rate of almost 90%.

While each of the support programs mentioned above provides different support services, a common element is a stipend in the form of a metro card or cash several times a year for those students who meet with advisors, have good attendance and meet other program requirements. Federal policy might expand and replicate these programs by providing stipends under specific circumstances for these Pell-eligible students.

Representative Lucy McBath (D-GA)

• I want to highlight the impressive work of Georgia State University, which has been named the #2 most innovative university in the nation. Today, Georgia State graduates African-American, Hispanic, first-generation, and Pell Grant eligible students at a rate that is at or above that of the overall student body. This makes Georgia State the only national public university to attain these graduation rates.

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Studies done by the research organization MDRC have found that comprehensive support programs with intensive advising, lead to more students graduating. And this has been

seen in cases such as Georgia State. It seems that the programs with the best results have small student caseloads per advisor, and advisors interact with students frequently, helping them to address both academic and personal challenges. At past hearings, we've heard about how a case management approach, where each student has one advisor who can help them navigate college, can have particularly positive results.

- o Dr. Marwick, can you tell us about the kind of advising that's available to your students and the student-to-advisor ratios on your campuses?
- o Have you adopted any changes to improve advising and what results have you've seen from those changes?
- o What are the barriers to providing intensive advising to students at scale? How can those barriers be addressed?

In 2017, in an effort to increase student persistence and completion rates, Harper College instituted a new academic advising system. The new system provides an assigned advisor to each credential-seeking student from student orientation and throughout their college experience. The new advising structure requires each advisor to carry a case load of approximately 250 enrolled students and to proactively support their students throughout their time at Harper.

To support the new advising structure, Harper used funding from a Title III grant to purchase and implement software to develop a new student portal, implement an early alert student monitoring system, and use data analytics to alert both students and advisors if the student is getting off track from their academic plan. Further, we developed guided pathways as an organizing structure to communicate more clearly the academic choices and pathways to completion for students.

Prior to implementation of the new structure, Harper employed 17 faculty counselors who provided student orientation and academic advising services as well as performing many other responsibilities. Students were required to meet with a counselor during orientation and they could make an appointment with counselors any other time while pursuing their education. However, a large number of students wanted an appointment with a counselor just as registration opened each semester and all the time slots were quickly filled leaving students to stand in line for hours during the two weeks before the semester began or leaving them to register on their own without personal advice. Data showed that many students were earning significantly more credits than were required for their credential indicating possible course enrollment mistakes.

Over a period of time, we reduced the number of faculty counselors to 7, repurposed 19 student development positions and hired 14 new positions to provide a total of 33 full-time academic advisors. Advisors complete a generalized training program and are asked to become specialists in two of the ten broad academic areas of interest. They are asked to monitor and support their students through an analysis of a variety of reports providing student data. They proactively reach out to all students several times a semester and more often if a student appears to be at

risk. The advisors are asked to balance a consistent approach with the individual needs of each student.

We began the new advising structure by assigning first-time, credential seeking students to an advisor in the fall of 2017. As more students have matriculated a larger percentage of Harper students have been assigned an advisor. In the fall of 2018 71% of credential seeking students had an assigned advisor. We believe that this figure will increase to scale in the fall of 2019.

Our data shows a positive student impact. Fall to spring persistence rates for students with an assigned advisor are 14 percentage points higher than for students without an assigned advisor (77% vs 63%). The fall to fall student persistence rates for students with an assigned advisor is 10% higher than the overall college persistence rate (58.3% vs 48%). Further the College graduation rate has doubled in the last four years from approximately 17% to almost 34%.

Significant hallmarks of the new Harper College advising system include mandatory orientation, a first semester schedule that includes any needed math and English courses as well as a First Year Seminar course during which students are asked to work with their advisor to complete an academic plan to credential completion. We believe that a student case load of 250 provides the advisor time to personally work with each student. In addition, each advisor continues to reach out to students who are not enrolled for three semesters if they have not completed a credential. We believe that a successful advising program must be well structured, with consistent training and a plan for ongoing advisor turnover.

The most significant barrier to providing intensive advising to students at scale is the cost of employing enough advisors for a manageable case load. Harper managed this without an institutional cost increase by repurposing current student development employees, faculty retirements in departments where there was decline in student enrollment, and a reorganization of the administrative structure. A second barrier is the purchase and implementation of an integrated software system to provide data analytics to both students and advisors. Barriers might be addressed through grant funding to purchase and integrate software and incentives to replicate existing successful models.

Representative Russ Fulcher (R-ID)

- Dual Credit in Idaho continues to be a major part of our education focus. Nearly one-third of the College of Western Idaho's students are taking courses through Dual Credit. While a small number of students take Dual Credit to get an Associate's degree, many are using Dual Credit to take 3-4 courses that will help them both save money and graduate with their Associate's degree in a more timely fashion.
- o What are some of the best practices you've found with the college mentor working with the high school instructor to ensure the student remains fully prepared when they get to college, i.e., not needing to spend as much time in remedial courses or tutoring? Is it regular interaction over

the curriculum? Is it having the college mentor requiring the student take the same assessment as the college students taking the course? Other suggestions?

In order for dual credit opportunities to have a significant impact on college cost and completion, we must ensure that dual credit provides an opportunity for qualified high school students to take college classes. We must be sure that dual credit is not college credit for high school courses. If we do not ensure that dual credit courses meet college academic standards, then we have not prepared students for success in future college work.

High school teachers must meet college credential statements if they are to teach dual credit courses. The syllabi, course materials, assessments and grading criteria used in the dual credit course must be similar as those used at the college. Collaboration between high school dual credit teachers and college faculty is essential to maintain academic standards and consistency across all dual credit classes.

At Harper, we ask high school teachers who have been approved to teach dual credit courses to meet with college faculty teaching the same course. They discuss content and assessments and often analyze the results from common assessments students take in the same course at both the high school and the college. We offer the same professional development opportunities and have the same requirements for grade submissions for all faculty teaching the same course regardless of the location. Harper requires that students enrolled in a dual credit course meet the same prerequisites as students taking the course at the college. In the case of a math or English course, this could mean taking a college entrance exam or having a qualifying score on the SAT or ACT tests.

Dual credit opportunities in high school give students an early start in college classes while they still have the support of high schools. In addition to reducing the cost and time to completion for a college degree, successful completion of a college credit course while in high school may provide students with the confidence and skills to attend college. Policy allowing Pell funding for qualified students enrolled in dual credit courses and grants to high schools to support teachers meeting with college faculty could expand dual credit opportunities.

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