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INNOVATIONS IN EXPANDING REGISTERED APPRENTICESHIP PROGRAMS

HEARING

BEFORE THE

SUBCOMMITTEE ON HIGHER EDUCATION AND WORKFORCE INVESTMENT

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

ONE HUNDRED SIXTEENTH CONGRESS

FIRST SESSION

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INNOVATIONS IN EXPANDING REGISTERED APPRENTICESHIP PROGRAMS

Wednesday, March 27, 2019
House of Representatives
Committee on Education and Labor,
Subcommittee on Higher Education and Workforce Investment
Washington, DC.

The subcommittee met, pursuant to notice, at 10:15 a.m., in room 2175, Rayburn House Office Building. Hon. Susan A. Davis [chairwoman of the subcommittee] presiding.

Present: Representatives Davis, Courtney, Takano, Jayapal, Harder, Levin, Trone, Lee, Trahan, Castro, Sablan, Bonamici, Adams, Norcross, Smucker, Guthrie, Grothman, Stefanik, Banks, Walker, Cline, Watkins, Meuser, and Timmons.

Also present: Representatives Scott, and Foxx.

Staff present: Staff Present: Tylease Alli, Chief Clerk; Nekea Brown, Deputy Clerk; Mishawn Freeman, Staff Assistant; Christian Haines, General Counsel Education; Stephanie Lalle, Deputy Communications Director; Bertram Lee, Policy Counsel; Andre Lindsay, Staff Assistant; Jaria Martin, Staff Assistant; Katherine McClelland, Professional Staff; Kevin McDermott, Senior Labor Policy Advisor; Richard Miller, Director of Labor Policy; Max Moore, Office Aide; Merrick Nelson, Digital Manager; Veronique Pluviose, Staff Director; Banyon Vassar, Deputy Director of Information Technology; Claire Viall, Professional Staff; Joshua Weisz, Communications Director; Cyrus Artz, Minority Parliamentarian; Courtney Butcher, Minority Coalitions and Members Services Coordinator; Bridget Handy, Minority Legislative Assistant; Blake Johnson, Minority Staff Assistant; Amy Raaf Jones, Minority Director of Education and Human Resources Policy; Hannah Matesic, Minority Director of Operations; Kelley McNabb, Minority Communications Director; Jake Middlebrooks, Minority Professional Staff Member; Brandon Renz, Minority Staff Director; Mandy Schaumburg, Minority Chief Counsel and Deputy Director of Education Policy; Meredith Schellin, Minority Deputy Press Secretary and Digital Advisor; Brad Thomas, Minority Senior Education Policy Advisor; and Lauren Williams, Minority Professional Staff.

Chairwoman DAVIS. Good morning. The Committee on Education & Labor will come to order. We certainly want to welcome everybody here today. I note that a quorum is present and the com-

mittee is receiving testimony today on innovations in expanding Registered Apprenticeship programs.

The Subcommittee on Higher Education & Workforce Investment is holding what is actually our first real official hearing this term, to examine opportunities to expand access to high quality Registered Apprenticeship programs.

Registered Apprenticeships are a valuable tool in our effort to help more Americans get the skills they need to compete in the modern economy. And for apprentices, these programs provide access to good paying jobs and benefits that provide employees increased wages as they build their skills, a valuable credential that can help secure future employment and of course advance along a rewarding career path.

Over 90 percent of apprentices are employed after completing their apprenticeships—that is quite a number actually—and earn an average starting wage above $60,000 annually. Over the course of a career, individuals with apprenticeship credentials can earn around $300,000 more than non-apprentices.

Registered Apprenticeship programs are similarly beneficial for employers. They can build a pipeline of more productive and talented workers who are more likely to remain at their jobs for an extended period of time. It builds loyalty, and we have heard that repeatedly. Studies have shown that for every dollar that employers invest in apprenticeships they receive $1.47 in improved productivity, reduced waste, and greater innovation.

But not all training programs are shown to be this beneficial. The key ingredient that has made the Registered Apprenticeship so successful is the consistent quality found across all apprenticeship programs. Quality standards in Registered Apprenticeship programs not only ensure that apprentices build valuable skills while earning a salary and benefits, but they also ensure apprentices receive a credential that is valued in the labor market and recognized by employers across the country.

These programs require employers to develop a plan combining classroom and on the job training, and this includes a schedule for when and how the program will help workers increase wages as they build skills and competencies.

In June of 2017 the White House issued an Executive Order creating the President's Taskforce on Apprenticeship Expansion. The Taskforce recommended a second track for apprenticeships, called industry recognized apprenticeship programs, or what we call IRAPs.

IRAPs would allow private entities to both create and set their own standards for apprenticeship programs without the quality assurance and approval of the Department of Labor. In other words, IRAPs would not be required to maintain the same quality standards as Registered Apprenticeships but would still have access to the same taxpayer dollars dedicated for high-quality Registered Apprenticeships. And the rationale behind this proposed change is that the current apprenticeship system is too burdensome and inflexible.

And today we have witnesses who run the Registered Apprenticeship programs in sectors including information technology, insurance, and construction, and I hope that we will be able to talk, you

know, about the differences to a certain degree and how we can certainly see clear so that it is a process that people can understand easily and that it is not a cumbersome one.

The committee welcomes their perspectives on whether the Registered Apprenticeship model meets the needs of their industries and ways to improve the system while maintaining quality and how to support expansion of high-quality programs.

To ensure that the proposed IRAP program does not waste taxpayer dollars we need to examine then if it will provide employers with a consistent level of quality standards that they already expect from Registered Apprenticeship programs and if it is necessary to divert resources to maintain two apprenticeship programs as opposed to improving and modernizing one national apprenticeship system.

According to a study done by the Harvard Business Review, there are currently 47 occupations—26 of which commonly require a 4-year degree—that would benefit from creating new apprenticeships—but have required skills that can be obtained without one. And this includes professions such as computer support specialist.

And just as we must expand apprenticeships into new sectors, we must expand into nontraditional demographics. Women, for example, make up nearly half the U.S. work force yet account for less than 10 percent of apprentices.

I know through my conversations that there is strong bipartisan support for apprenticeships. Last Congress I joined with Mr. Guthrie in introducing the Apprentice Act, which would have expanded apprenticeship programs and awareness as well as creating a better alignment between the Departments of Education and Labor. There are a number of other good proposals that we will consider, such as expanding pre-apprenticeships and growing the number of intermediaries who can assist small and medium sized businesses.

I want to thank our witnesses for traveling long distances to be with us here today, and we certainly look forward to all of your testimony.

I now yield to the ranking member, Mr. Smucker, for the purpose of an opening statement.

[The statement of Chairwoman Davis follows:]

Prepared Statement of Hon. Susan A. Davis, Chairwoman, Subcommittee on Higher Education and Workforce Investment

This morning, the Subcommittee on Higher Education and Workforce Investment is holding its first hearing to examine opportunities to expand access to high-quality Registered Apprenticeship programs.

Registered Apprenticeships are a valuable tool in our effort to help more Americans get the skills they need to compete in the modern economy. For apprentices, these programs provide access to:

* Good paying jobs and benefits that provide employees increased wages as they build their skills,
* A valuable credential that can help secure future employment, and
* Advancement along a rewarding career path.

Over 90 percent of apprentices are employed after completing their apprenticeships and earn an average starting wage above $60,000 annually. And, over the course of a career, individuals with apprenticeship credentials can earn around $300,000 more than non-apprentices.

Registered apprenticeship programs are similarly beneficial for employers that can build a pipeline of more productive and talented workers who are more likely to remain at their jobs for an extended period of time.

Studies have shown that for every dollar that employers invest in apprenticeships, they receive $1.47 in increased productivity, reduced waste, and greater innovation.

But not all job training programs are shown to be this beneficial. The key ingredient that has made registered apprenticeships so successful is the consistent quality found across all apprenticeship programs.

Quality standards in registered apprenticeship programs not only ensure that apprentices build valuable skills while earning a salary and benefits, they also ensure apprentices receive a credential that is valued in the labor market and recognized by employers across the country.

Registered apprenticeship programs require employers to develop a plan combining classroom and on-the-job training. This includes a schedule for when and how the program will help workers increase wages as they build skills and competencies.

In June 2017, the White House issued an executive order creating the President's Taskforce on Apprenticeship Expansion. The taskforce recommended a second track for apprenticeships—called Industry Recognized Apprenticeship Programs, or IRAPs.

IRAPs would allow private entities to both create and set their own standards for "apprenticeship" programs without the quality assurance and approval of the Department of Labor. In other words, IRAPs would not be required to maintain the same quality standards as registered apprenticeships but would still have access to the same taxpayer dollars dedicated for high-quality Registered Apprenticeships.

The rationale behind this proposed change is that the current apprenticeship system is too burdensome and inflexible.

Today, we have witnesses who run Registered Apprenticeship programs in sectors including information technology, insurance, and construction.

The Committee welcomes their perspectives on:

* Whether the Registered Apprenticeship model meets the needs of their industries,
* Ways to improve the system while maintaining quality, and
* How to support expansion of high-quality programs.

To ensure that the proposed IRAPs program does not waste taxpayer dollars, we need to examine:

* If it will provide employers with the consistent level of quality standards, they already expect from Registered Apprenticeship programs, and
* If it is necessary to divert resources to maintain two apprenticeship programs as opposed to improving and modernizing one National Apprenticeship System

According to the Harvard Business Review, there are currently 47 occupations—26 of which commonly require a 4-year degree—that would benefit from creating new apprenticeships but have required skills that can be attained without one. This includes professions such as computer support specialists.

And just as we must expand apprenticeships into new sectors, we must expand into non-traditional demographics. Women make up nearly half the U.S. work force, yet account for less than 10 percent of apprentices.

I know through my conversations that there is strong bipartisan support for apprenticeships. Last Congress, I joined with Mr. Guthrie in introducing the Apprentice Act, which would have expanded apprenticeship programs and awareness as well as created better alignment between the Departments of Education and Labor.

There are a number of other good proposals we will consider, such as expanding pre-apprenticeships and growing the number of intermediaries who can assist small and medium sized businesses.

I want to thank the witnesses for traveling long distances to be with us here today. I look forward to their testimony. I now yield to the Ranking Member, Mr. Smucker, for the purpose of an opening statement.

Mr. SMUCKER. Thank you, Madam Chair. Look forward to working with you on this subcommittee, and thank you for yielding.

All over the country we are beginning to see the perception around skills-based education evolve. For far too long there has been a stigma surrounding skills-based education. There was a misconception that a baccalaureate degree was the only viable path to a good job and a successful life. But as the national skills gap of more than 7 million unfilled jobs has widened, people have begun to wake up to the power of skills-based education, like on

the job learning, earn while you learn programs, and apprenticeships. These programs are real ways to give Americans the skills needed not only to build successful careers, but also to empower them to improve their own lives.

We have seen a surge of interest in apprenticeships in recent years, but this work force development tool has really been around for centuries. Apprenticeship programs give countless Americans the knowledge and skills they need to excel in the millions of good paying, in demand jobs that are available nationwide right now.

Nothing can prepare a student quite like on the job experiences. Apprenticeships are a tried and true method of setting students up for success. We know they work. We also know that we are behind other countries regarding how broadly apprenticeship programs can be applied. Take Switzerland, for example. They have robust apprenticeship programs in over 230 industries.

This committee should evaluate, learn best practices, and think about how we can expand our current apprenticeship offerings. And when appropriate, we need to make sure that government doesn't stand in the way of progress.

Last Congress this committee made historic progress strengthening the work force development efforts. In July we sent the Strengthening Career and Technical Education for the 21st Century Act to the President's desk and he signed it into law. This was the first legislation in more than a decade to modernize our Nation's CTU program. It promotes strong engagement with employers, it connects students with on the job learning opportunities like apprenticeships, which we know are invaluable tools for success in the workplace and beyond.

The committee also passed the Prosper Act, the first ever postsecondary reform legislation to make apprenticeships and industry led earn while you learn programs a central component of higher education learning. Committee members also oversaw the implement of the Workforce Innovation and Opportunity Act, or WIOA as we call it, which gives employers a seat at the table and encourages collaboration between local leaders to create on the job learning opportunities.

The Department of Labor's Registered Apprenticeship program served half a million active apprenticeships last year. In order for a business to participate in the Registered program they must describe what activities apprentices will complete, how much time will be spent on each activity, how the apprentice will be supervised, set a schedule for wage increases and affirmative action plan, among other conditions.

I have been a strong supporter of the administration's actions to expand apprenticeship programs for all workers and have been closely following the development of the IRAP system. However, I am concerned that not all industries will be eligible to participate under the administration's proposal. We must not lose sight of the goal to reach all workers.

Private industry-led apprenticeship and learn and earn programs account for more than 80 percent of all apprenticeship programs around the country. Employers know what skills their employees need to succeed in the workplace and we have seen real innovation and results from highly customizable programs for apprentices. We

need to encourage business and community leaders to continue to buildup their work force and help their employees succeed.

This committee must continue working to make skills-based education a valuable path for all Americans. This is a real way that we can make an impact, have an impact on our work force, our economy, and on the country.

I am really looking forward to hearing from today's witnesses. Thank you for being here. Looking forward to hear about all the ways that we can connect effective education with jobs that are available today and promote apprenticeships to build our work force and better our country.

Thank you, Madam Chair.

[The statement of Mr. Smucker follows:]

Prepared Statement of Hon. Lloyd Smucker, Ranking Member, Subcommittee on Higher Education and Workforce Investment

Thank you for yielding.

All over the country, we're beginning to see the perception around skills-based education evolve. For far too long, there was a stigma surrounding skills-based education. There was a misconception that a baccalaureate degree was the only viable pathway to a good job and a successful life. But as the national skills gap of more than seven million unfilled jobs has widened, people have begun to wake up to the power of skills-based education like on-the-job learning, earn-while you-learn programs and apprenticeships. These programs are real ways to give Americans the skills needed not only to build successful careers but also to empower them to improve their own lives.

We've seen a surge of interest in apprenticeships in recent years but this work force development tool has been around for centuries. Apprenticeship programs give countless Americans the knowledge and skills they need to excel in the millions of good-paying, in-demand jobs available nationwide. Nothing can prepare a student quite like on-the-job experience.

Apprenticeships are a tried-and-true method of setting students up for success.

Last Congress, this committee made historic progress strengthening our work force development efforts. In July, we sent the Strengthening Career and Technical Education for the 21st Century Act to the President's desk and he signed it into law. This was the first legislation in more than a decade to modernize our Nation's CTE program. It promotes strong engagement with employers and connects students with on-the-job learning opportunities like apprenticeships, which we know are invaluable tools for success in the workplace and beyond.

This committee also passed the PROSPER Act, the first-ever postsecondary reform legislation to make apprenticeships and industry-led earn-while-you-learn programs a central component of higher education learning.

Committee members also oversaw the implementation of the Workforce Innovation and Opportunity Act (WIOA), which gives employers a seat at the table and encourages collaboration between local leaders to create on-the-job learning opportunities.

Private industry-led apprenticeship and earn-and-learn programs account for more than 80 percent of all apprenticeship programs around our country.

Employers know what skills their employees need to succeed in the workplace and we've seen real innovation and results from highly customizable programs for apprentices. We need to encourage business and community leaders to continue to buildup their work force and help their employees succeed.

The Department of Labor's Registered Apprenticeship program served half a million active apprenticeships last year. In order for a business to participate in the registered program, they must describe what activities apprentices will complete, how much time will be spent on each activity, how the apprentice will be supervised, set a schedule for wage increases and an affirmative action plan, among other conditions.

Registered apprenticeships and employer-led apprenticeships give opportunities for workers to receive the training they need to get a job and keep a job.

This committee must continue working to make skills-based education a valuable path for all Americans this is a real way we can make an impact on our work force, our economy and our country. I'm really looking forward to hearing from today's witnesses and learning more all the ways that we can connect effective education

with in-demand jobs and promote apprenticeships to build our work force and better our country.

Chairwoman DAVIS. Thank you. Thank you, Mr. Smucker. I appreciate your statement.

And without objections, all members who wish to insert written statement into the record may do so by submitting them to the committee clerk electronically in Microsoft Word format by 5 p.m. on April 10.

I am now pleased to recognize my colleague, Representative Jayapal, to briefly introduce her constituent who is appearing before us as a witness today.

Ms. JAYAPAL. Thank you so much, Madam Chair, and welcome to all of you.

It is my great honor and privilege to introduce a constituent of mine who is here. Jennifer Carlson serves as the Executive Director of the Washington Technology Industry Association Apprenti Program, the work force development arm of the Association. Apprenti is focused on addressing the tech industry's work force and diversity needs through a registered technology apprenticeship program. It is the nationally Registered U.S. DOL IT sector lead focused on filling the tech industry's work force and diversity needs through Registered Apprenticeships.

And I can't tell you how pleased I am that we get to lift up the incredibly innovative work that you are doing right out of Seattle that can serve as a model across the country.

Thank you, Madam Chair.

Chairwoman DAVIS. Thank you. I will now introduce the remaining witnesses.

Mr. James Pavesic. Mr. Pavesic is the director of education and training for the United Association of Pipe Trades. He also serves as the chairman of the International Training Fund, the president and chairman of the International Pipe Trades Joint Training Committee and the co-chair of the UA Labor Management Cooperation Fund.

Thank you for joining us.

Mr. Mark Hays is the vice chancellor of work force and economic development for the Dallas County Community College District. He leads the District's efforts in the development and growth of apprenticeships in a variety of industry sectors in the North Texas area.

Thank you for being with us.

And Bridget Grainer of Aon is the vice president of global public affairs for Aon, which is using their Registered Apprenticeship model to create a new talent pipeline for building the company's work force. Ms. Grainer also played an instrumental role in the creation of the Chicago Apprenticeship Network.

Thank you so much as well for being here.

We appreciate all the witnesses and look forward to your testimony.

I wanted to just remind you all that we have read your 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 presentation to a 5 minute summary of your written statement.

And I wanted to remind you as well that pursuant to Title 18 in the U.S. Code, Section 1001, it is illegal to knowingly and willfully falsify any statement, representation, writing document, or material fact presented to Congress or otherwise conceal or cover up material fact.

Before you begin your testimony please remember to press the button on the microphone in front of you so it will turn on and the members can hear you. Very important to our communication. As you begin to speak the light in front of you will turn green and, after 4 minutes the light will turn yellow to signal that you have 1 remaining minute. When the light turns red your 5 minutes have expired and we hope that you will wrap up as quickly as possible.

We will let the entire panel make their presentations before we move to member questions. And when answering a question, please remember to again turn your microphone on.

I think that covers everything.

So I first wanted to recognize Ms. Carlson. Please begin and then we will go down the line.

Thank you.

STATEMENT OF JENNIFER CARLSON, EXECUTIVE DIRECTOR, APPRENTI

Ms. CARLSON. Thank you, Chairman Davis and Ranking Member Smucker and thank you Representative Jayapal for the introduction.

Just to give some context to the challenges in the IT sector, there is a shortage of trained talent for technology roles, both within the tech sector and other sectors that rely heavily on technology to remain cutting edge. At the close of 2018 there were roughly 2.97 million tech job postings in the U.S., however the country produces only 65,000 4-year computer science degrees and 250,000 total related engineering degrees annually. New graduates cannot fill these positions. And coupled with an aging work force and forecasted tech growth, this gap suggests a meaningful disconnect between supply and demand.

As technologies evolve and automate, the skill level needed to meet our requirements increases. Hiring middle skills tech talent has become the greatest pain point for companies of all sectors. More and more are recognizing that college degrees may not be the best or only path to these middle skills jobs.

Apprenticeship represents a time-tested approach for supplying companies with the talent they need and workers with fulfilling careers and family sustaining wage.

Three years ago the WTIA conducted a study on diversity in talent gaps in Washington State's tech sector. Based on the outcomes of that study the WTIA decided to focus its efforts on the Registered Apprenticeship pathway that could address today's hiring needs in real time. A consortium of companies with hiring needs across the country, including Microsoft, Amazon, F5 Networks, Premera Blue Cross, Russell Investments, and Accenture, evaluated several program design options and determined that Registered Apprenticeship is the best secondary talent development

track to invest in. This is due to the success of this model for the tech sector in other countries, the rigor and consistency of the Registered model in the United States, the certified completion of apprenticeship credential provided by the U.S. DOL via established criteria by the industry, and portability of the classroom training related to tech certifications. The industry's strategy being that Registered Apprenticeship creates the ability to accept applicants with either a college degree or completion of Registered Apprenticeship. Finally, per DOL regulations, the requirement that apprenticeship is a job. This critical requirement means that investment is made only in those with a guaranteed employer sponsor willing to train that person for a minimum 1-year term and employers are thus training to retain this new talent into planned headcount.

These companies identified the most critical middle-skills jobs, defined as jobs with potential for upward mobility and traditionally would have required a college degree as the highest impact area for apprenticeship. Since then Apprenti has outlined and filed 13 middle-skills tech roles that it can fill with diverse populations based on competency over pedigree.

After receiving the American Apprenticeship Initiative grant from the U.S. DOL, Apprenti launched its first cohort of apprentices in November 2016. It has since pushed to market over 40 additional cohorts for over 400 apprentices across 11 States with 30 employers. And in 2019 we will see an additional 20 employers and 3 new States, totaling roughly 1,000 apprentices.

Apprenti's role as the sector's intermediary has grown to meet industry's needs through screening and delivery of diverse talent, identification of technical training resources on behalf of employers, program compliance, apprentice registration, and as the standards holder. This hybrid time and competency-based Registered model straddles the high tech, financial services, healthcare, and retail sectors for tech jobs and is successfully delivering diversity with women and minorities comprising 66 percent of our placements, and veterans 64 percent of our placements.

We are seeing incredible outcomes. The program is delivering value for apprentices and ROI for State and Federal Governments. To date, apprentices have moved from a median annual pre-program earnings of $29,000 with 22 percent unemployed on entry to the program, to a median apprenticeship earnings of $51,000 plus benefits and median retained earnings on completion and final placement with the company of $75,000. This reflects a 155 percent jump in earnings from pre to post-apprenticeship in roughly 18 months. This improved lifetime earnings also delivers more than $1 million per apprentice in improved earnings. Early retention figures have been strong with 84 percent completing apprenticeship being retained.

Our apprentices come from every walk of life, teachers, Uber drivers, warehouse workers, pharmacy technicians and return to work moms. Our youngest placed is 18, our eldest placed is 63, and the median age is 32.

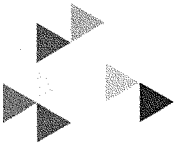
There are a number of things the Federal Government can do to further stimulate adoption in conclusion. Companies invest an average of $80,000 per apprentice in salary, benefits, and partial tuition subsidy for these unproven candidates. The technical training

cost per apprentice is roughly $15,000 per person. Congress can create Federal match funds that State employers can tap into to augment the classroom training expense.

Focusing additional Federal investment in scaling successful programs like Apprenti can move tech from thousands to tens of thousands of apprentices via appropriation of $1 million per market, and there is significant brand confusion around the sector about the definition of what an apprenticeship is. Codifying into law the current regulation defining a Registered Apprenticeship would reduce brand confusion, create clear guidelines around its use, and establish accountability for using it in training subsidies.

Thank you and I will do my best to address any questions you have.

[The statement of Ms. Carlson follows:]



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The path, the plan, your career in tech.

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206.707.0194

Testimony before Subcommittee on Higher Edication and Workforce Development
March 27, 2019

Written Testimony before the U.S. House of Representatives,

Committee on Education and Labor, Subcommittee on Higher Education and Workforce Investment

Hearing Entitled "Innovations in Expanding Registered Apprenticeships"

Susan Davis. Chairman

March 27, 2018

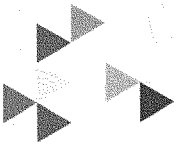
Chairman Davis, Ranking Member Smucker and distinguished members of the committee, it is an honor to appear before you today at this important hearing on registered apprenticeship. By way of background, my name is Jennifer Carlson, I am the Executive Director and Co-Founder of Apprenti, a nationally recognized 501(c)3 non-profit and wholly owned subsidiary of the Washington Technology Industry Association (WTIA)– the trade association representing the needs of 1100 tech sector companies in the state of Washington. Apprenti is the U.S. Department of Labor Information Technology Sector Lead focused on development, implementation and expansion of registered technology apprenticeships in the United States.

CONTEXT

Our country is in the midst of a tech talent crisis. There is a shortage of trained talent for technology roles both within the tech sector and in other sectors that rely heavily on technology to remain cutting edge. While a four-year college degree is often thought of as a requirement for securing many of these roles, colleges and universities are not keeping up with the new talent demand from industry. At the close of 2018, there were roughly 2.97 million tech job postings in the U.S., while the country confers only 65,000 four-year computer science degrees and 250,000 total engineering degrees annually.[1,2] Of course, new graduates will not fill all open positions, but coupled with an aging workforce and forecasted tech growth, this gap suggests a meaningful disconnect between supply and demand.

As technologies evolve and automate, the skill level needed to meet our requirements increases. Entry level jobs like Quality Assurance, or testers, and Help Desk that were once good entry points to building a tech career are shrinking making the new entry point a middle skill level like Software Developer, Application Developer or Systems Administrator, which require significantly higher training. As hiring

[1] *Cyberstates.org*, CompTIA, 2018. "Tech occupations" are technical in nature and include roles outside of the tech sector (e.g., in healthcare, financial services, etc.).
[2] *Digest of Education Statistics*, National Center for Education Statistics, 2016. Total degree count includes Associate's, Bachelor's, Master's, and Doctor's degrees across STEM fields. Number is much lower for technology-specific degrees.



"middle skills" tech talent has become the greatest pain point for companies of all sectors, more are recognizing that a college degree may not be the best or only path to these jobs.

Apprenticeship – workforce training that combines technical instruction with paid "on-the-job" training at a company – represents a time-tested approach for supplying companies with the talent they need and workers with fulfilling careers that carry family-sustaining wages.

APPRENTI

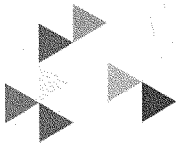
Three years ago, the WTIA conducted a study which shed light on the pernicious diversity and talent gaps in Washington state tech sector. Based on the outcomes of that study, the WTIA decided to focus its efforts on a new training pathway that could address today's hiring needs in real time and launched Apprenti as a nationally Registered Apprenticeship (RA) program. A consortium of companies with hiring needs across the country including Microsoft, Amazon, F5 Networks, Premera Blue Cross, Russell Investments, and Accenture, evaluated several program design options and determined that Registered Apprenticeship is the best secondary talent development track to invest in due to:

- The success of this model for tech in other countries;
- The rigor and consistency of the registered model in the United States across other sectors;
- The certified completion of apprenticeship credential provided by the U.S. Department of Labor via industry established criteria
- The portability of both the classroom training and related tech certifications coupled with a completion of registered apprenticeship credential; and
    - Long-term industry strategy being that RA creates the ability for employers to accept qualified applicants with either a college degree, or completion of Registered Apprenticeship.
- Finally, per DOL regulations, the requirement that apprenticeship is a job. This lone requirement means that investment is made only in those with a guaranteed employer sponsor willing to train a person for the minimum one-year term. Employers are thus training to retain this new talent into planned headcount.

These companies identified the most critical "middle skill" jobs, – defined as jobs with potential for upward mobility that traditionally would have required a college degree – as the highest impact area for apprenticeship. Since then, Apprenti has outlined 13 "middle skill" tech roles it can fill with diverse populations based on *competency over pedigree*.

After receiving the American Apprenticeship Initiative Grant from DOL, Apprenti launched its first cohort of apprentices in November, 2016, and has since pushed to market over 40 additional cohorts for over 400 apprentices across 11 states with 30 employers. 2019 will see an additional 20 employers, and 3 new states, totaling roughly 1,000 apprentices.[3]

Apprenti's role as the sector's intermediary has grown to meet industry's needs: screening and delivery of diverse talent, identification of technical training resources on behalf of employers, program compliance, apprentice registration and standards holder, joint apprentice management and sourcing of public/private resources. As a hybrid time and competency-based Registered Apprenticeship model straddling the High



Tech, Financial Services, Healthcare and Retail sectors and have been successful in achieving diversity with women and minorities comprising 66% of placements and veterans 64%.

Outcomes are critical: Income data suggest the program is delivering value for apprentices and return on investment for states and the federal government. The apprentices served to date have moved from median annual pre-program earnings of $29,000 with 22% unemployed on entry, to median apprenticeship earnings of $51,000 plus benefits, and median retained earnings on completion and final placement of $75,000. Not only does this reflect a 155% jump in earnings from pre to post-apprenticeship in roughly eighteen months, but also improved lifetime earnings greater than $1,000,000 per apprentice.[4] Early retention figures have also been strong with 84% of those completing apprenticeships being retained.[5]

Our apprentices come from every walk of life, teachers, Uber drivers, warehouse workers, pharmacy technicians and return to work moms. Our youngest placed is 18 and eldest is 63. One of our earliest apprentices was working as a furniture truck delivery driver, with an Associate's degree in computer science. After applying for hundreds of jobs in tech, he had no interviews because he had no experience. After graduating from his apprenticeship as a web developer, he is now one of many in our program making a six-figure income and is the leader of his development team.

CONCLUSION

Companies invest an average of $80,000 per apprentice in salary, benefits and tuition subsidy for technical training. We appreciate the investment made to date by the U.S. Department of Labor in our expansion and supporting the sector's talent development needs. Focusing additional federal investment in scaling successful programs like ours can move tech from thousands to tens of thousands of apprentices.

Tying that support to conforming standards of apprenticeship, and focusing on outcome metrics like improved earnings, retention, and diversity ratios, combined with policy support, would build sector confidence and sustained adoption of apprenticeship as a secondary talent development system. Policies could include:

- Codifying into law the current regulations defining a "Registered Apprenticeship" would reduce brand confusion, create clear guidelines around its use and meaning, and establish accountability for use in training subsidies.
- Create a sustainable, annual, >$250M Federal fund that states can match to support the classroom (RSI) training costs of developing apprentices in non-traditional sectors.

Thank you and I will do my best to address any questions that you have.

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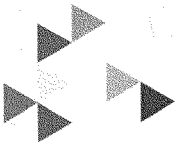
[3] Current states operating in: Washington, Oregon, Louisiana, Michigan, Massachusetts, Tennessee, Ohio, Texas, Virginia, Georgia, Illinois. Expanding to California, Utah & Arizona with others in development. Hawaii is a veteran training only location.

4 Median age of 32 in program, forecasting 20-year tech career, at known $50k per year of improved income is $1.0MM excluding salary increases, promotions.

5 84% retention represents Apprenti's first five cohorts. Apprenti's long-term, steady state expectation is 80% retention within sector.



Appendix: Apprenti Overview
March 27, 2019

"We need to prepare our young people for the workforce of tomorrow, investing in areas such as STEM education and in creating apprenticeships as paths to career readiness. And these apprenticeships can be accredited and validated as true educational vehicles... Companies are great universities for educating the workforce of the future..."

- Marc Benioff, Chairman and CEO, Salesforce.com[3]

CONTEXT

Our country is in the midst of a tech talent crisis. There is a shortage of trained talent for technology roles both within the tech sector and in other sectors that rely heavily on technology to remain cutting edge (e.g., healthcare, financial services). While a four-year college degree is often thought of as "table stakes" for securing many of these roles, colleges and universities are not keeping up with the new talent demand from industry. In 2017, there were roughly 2.8 million job postings for tech occupation jobs in the U.S. standing vacant at the close of the year, while the country confers only 65,000 four-year computer science degrees and 250,000 total engineering degrees the prior year.[4,5] New graduates will not fill all open positions, and coupled with an aging workforce and forecasted tech growth, this gap suggests a meaningful disconnect between supply and demand.

This crisis should be no surprise given the pitfalls of American higher education. Only 46% of recent high school graduates enroll in four-year institutions, with an additional 24% enrolling at two-year institutions.[6] For those who enroll in college, degree completion rates are low; only about 60% of students at four-year institutions and 30% of students at two-year institutions complete their degrees in 150% of the planned duration or less.[7] Even those who earn degrees are often under-prepared for the world of work; only half of managers say that recent college graduates are adequately prepared for their jobs.[8] On top of low enrollment, completion risk, and questionable preparation, the high (and rising) cost of post-secondary education leaves many students struggling with debt for years and can be a disincentive from pursuing a college degree.

To make matters worse, higher education outcomes vary dramatically by race, exacerbating inequities in economic outcomes. Black and Hispanic students are much less likely to graduate on-time than white students.[9] Historically, disparities in post-secondary outcomes have directly translated into disparities in workforce opportunities, including limited access to tech careers. While studies show minorities account for 15% of the high-tech workforce, compared to 28% of the workforce across all private industries, tech

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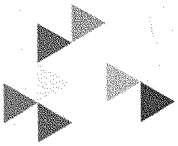
[3] Benioff, Marc, *"We must ensure the Fourth Industrial Revolution is a force for good"*, World Economic Forum, 2017.
[4] *Cyberstates.org*, CompTIA, 2018. "Tech occupations" are technical in nature and include roles outside of the tech sector (e.g., in healthcare, financial services, etc.).
[5] *Digest of Education Statistics*, National Center for Education Statistics, 2016. Total degree count includes Associate's, Bachelor's, Master's, and Doctor's degrees across STEM fields. Number is much lower for technology-specific degrees.
[6] Ibid.
[7] Ibid.
[8] *"Workforce-Skills Preparedness Report"*, PayScale, 2016.
[9] *Digest of Education Statistics*, National Center for Education Statistics, 2016.



sector executives state blacks, Hispanics and those of mixed race represent less than 5% of the high-tech workforce.[10] Conventional pathways into high-paying, high-growth tech roles have not served a diverse population well.

The experience of other countries suggests there is a better way. Apprenticeship – workforce training that combines technical instruction with paid "on-the-job" training at a company – represents a time-tested approach for supplying companies with the talent they need and workers with fulfilling careers that carry family-sustaining wages. European countries such as Austria, Germany and Finland have long incorporated apprenticeship into their education systems at scale (50% to 70% of high school students enter into apprenticeships) with impressive results, including in so-called "white-collar" industries.[11] Across industries, apprenticeship in these countries provides access to robust, long-term career ladders; as a notable example, the new CEO of Deutsche Bank launched his career with an apprenticeship, in lieu of pursuing a college degree, at the same company.

There is also evidence from the U.S. that apprenticeship can provide a viable pipeline for skilled talent and an alternative to conventional post-secondary degrees. U.S. studies show that workers experience large, statistically significant wage gains from participating in apprenticeship that exceed those of community college graduates over the long-term.[12,13] Apprenticeship is also a good investment for employers; a U.S.

What is Registered Apprenticeship?
For an apprenticeship program to be officially recognized by the U.S. government, it must be registered with either the U.S. Department of Labor's Office of Apprenticeship or a State Apprenticeship Agency and meet several requirements:

- **Business Involvement:** Employers must define the program policies they will use to sponsor full-time apprentices
- **Structured On-The-Job Training:** Apprentices must receive structured "on-the-job" training (at least 2,000 hours) and 1:1 mentorship from a designated company employee
- **Related Instruction:** Apprentices must receive related technical instruction (at least 150 hours per year)
- **Base Wage and Rewards for Skills Gain:** Apprentice wages must start at no less than 50% of the journeyperson rate and include benefits; wages must increase as competency grows
- **Nationally-Recognized Credential:** Apprentices must receive a portable, nationally-recognized credential of proficiency upon completion

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[10] *"Diversity in High Tech"*, U.S. Equal Employment Opportunity Commission (EEOC), 2016. EEOC defines industries, according to NAICS classifications, as "high-tech" if at least 25% of occupations within the industry are technology-oriented. Other estimates for black and Hispanic share of the tech workforce are as low as 5% combined.
[11] Hoffman, Nancy, *"Schooling in the Workplace: How Six of the World's Best Vocational Education Systems Prepare Young People for Jobs and Life"*, Harvard Education Press, 2011.
[12] Reed et al., *"An Effectiveness Assessment and Cost-Benefit Analysis of Registered Apprenticeship in 10 States"*, Mathematica Policy Research, 2012.
[13] Hollenbeck, Kevin, *"State Use of Workforce System Net Impact Estimates and Rates of Return"*, W.E. Upjohn Institute for Employment Research, 2008.

Department of Commerce study of 13 employers with apprenticeship programs yielded unanimous agreement that the benefits of apprenticeship programs outweigh costs.[14] (Though tech apprenticeship ROI is still in development) Overall, 97% of U.S. employers with apprenticeship programs would recommend apprenticeship to other companies.[15]

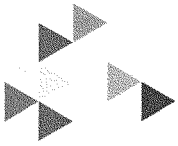
Despite compelling examples, however, apprenticeship is substantially less common in the U.S. than in many European countries and has traditionally been associated with so-called "blue-collar" occupations. Apprentices make up only 0.2% of the U.S. labor force compared to 2-4% in Germany, the U.K., and Canada.[16] The most recent federal data from 2017 show that U.S. apprentices were concentrated in a few industries: construction (68%), public administration (9%), manufacturing (7%), transportation (6%), and utilities (4%).[17] The story in Washington is the same; through December 2018, there were about 19,220 registered apprenticeships in the state, of which only 1,958 (10%) were women, and 14,174 (74%) were in the building trades. Tech or IT roles represented .06%, all from Apprenti.[18]

But the winds are shifting. Registered apprenticeship is increasingly garnering interest from a range of employers as well as federal and state policymakers due to its exceptionally tight alignment to workforce needs, its favorable economics, and its ability to supply diverse talent. Apprenticeship has won bipartisan federal support, and there is political and legislative momentum behind apprenticeship expansion at both the federal and state levels, especially for tech roles where talent and diversity challenges are particularly acute as is the disconnect with industry's rapidly evolving needs.

***Internships are** generally limited to college enrolled students, paid in the tech sector due to intellectual property rights and are not preparing the intern to be "work ready". Essentially a short-term **try before you buy** with limited value to employers as each employer defines its internship process differently.*

***Apprenticeships are Train to Retain**, companies place the apprentice in a headcount it intends to fill, then spend one year mentoring the person into the staff member they need. The classroom training, often resulting in an industry recognized credential, coupled with the apprenticeship completion credential, makes them industry viable and a known quantity, thus portable.*

[14] *"The Benefits and Costs of Apprenticeship: A Business Perspective"*, U.S. Department of Commerce and Case Western Reserve University, 2016. Only two of the 13 firms (Dartmouth-Hitchcock, Siemens USA) evaluated return on investment quantitatively, with both finding that benefits exceeded costs during the apprentice's first year of full-time employment post-program. The Dartmouth-Hitchcock and Siemens USA programs are one year and four years, respectively.
[15] Lerman et al., *"The Benefits and Challenges of Registered Apprenticeship: The Sponsors' Perspective"*, Urban Institute Center on Labor, Human Services, and Population, 2009.
[16] Lerman, Robert, *"Expanding Apprenticeship Opportunities in the United States"*, Brookings Institution, 2014.
[17] One8 calculations based on data from: *Registered Apprenticeship National Results, FY 2017*, U.S. Department of Labor, Employment and Training Administration. Calculations exclude U.S. Military Apprenticeship Program.
[18] Washington State Apprenticeship & Training Council, Fourth Quarter 2018 Report, January 17, 2019 *www.Lni.wa.gov/TradesLicensing/Apprenticeship/files/quarterly/January2019.pdf*



	Registered Apprenticeship	Community or Technical College	College or University	Accelerated Certification Programs and Code Camps
Time to Complete	14 to 17 Months	2 Years	4 Years	8 to 24 Weeks
Tuition/Training Cost*	Varies by State	$7,000 (Average In-district)	$40,000 (Average In-state)	Free to $26,000
Work Experience/ Paid or Unpaid	1 Year of On-the-job training Paid including benefits	Internship or None Paid or Unpaid	Internship or None Paid or Unpaid	Internship, sometimes incorrectly referred to as apprenticeship Paid or Unpaid

At the federal level, movement began in 2016 when the Obama Administration awarded American Apprenticeship Grants to public-private partnerships across the country. In 2017, President Trump signed an Executive Order aimed at expanding the number of apprenticeships and increasing funding for apprenticeship programs. Most recently, the U.S. Labor Secretary announced additional grant funding to support sector-based approaches to expanding apprenticeship, with a focus on sectors that have not traditionally relied on apprenticeships.[19]

Many state policies have followed suit, with input from Apprenti, in providing public subsidies to support private hiring needs. Governor Inslee, Washington, provided a $4.0M grant to subsidize up to 50% of training costs for tech apprentices in the state through Apprenti. Former Governor Kashich, Ohio, provided a start-up grant exclusively for training subsidies to Apprenti spanning the next two years. Go Virginia is subsidizing training dollars directly through the Norther Virginia Community College (NOVA) to reduce related technical training costs. Governor Baker, Massachusetts, has expressed his commitment to apprenticeship and there have been several legislative wins, including a line item appropriation for training in the most recent state budget and a new state tax credit for employers sponsoring apprentices in non-traditional sectors.

It is within the context of a strong evidence base and a favorable policy environment that Apprenti has emerged with a scalable model that is showing strong early signs of success.

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[19] *"U.S. Departments of Labor Announces Funding For Apprenticeship Expansion in Key Industry Sectors"*, U.S. Department of Labor, 2018.

APPRENTI

Three years ago, the Washington Technology Industry Association (WTIA) conducted a study which shed light on the pernicious diversity and talent gaps in the Washington state tech sector. WTIA recognized good work was already underway in the area of K-12 education reform to strengthen student interest and achievement. Similarly, there was ample work being done on immigration reform to expand the pool of traditionally qualified candidates. WTIA decided to focus its efforts on a new training pathway and launched Apprenti as a Registered Apprenticeship program designed by a group of tech companies, including Microsoft, specifically for tech roles. The WTIA set up the WTIA Workforce Institute, a 501(c)(3) organization, to house this new area of programmatic activity.

A working group of WTIA member companies and Apprenti leadership started by identifying the most critical hiring need, "middle skill" jobs, and a set of middle skill job types in the tech arena – defined as jobs with potential for upward mobility that traditionally would have required a college degree – as the highest impact area for apprenticeship. Since then, Apprenti has outlined 13 "middle skill" tech occupations it can fill with apprentices; for each of these occupations, Apprenti has worked with an employer committee to complete a full documentation of the competencies for the role and registered the occupation with the relevant federal and state regulatory agencies. (See Appendix A for full list of registered roles.) Apprenti launched its first cohort of apprentices in November, 2016 with pilot partners including Microsoft and Amazon and has since won a U.S. Department of Labor contract to expand the program nationally. Today, Apprenti is operating in eleven markets across the country.

PROGRAM

There are five main pieces to Apprenti's program model.

1. Apprenti works with companies to secure headcount for apprentices – apprenticeship is a job – so employer hiring commitment is a requirement for initiation.
2. Apprenti recruits and evaluates diverse candidates for the program.
3. Apprenti coordinates training for candidates tailored to specific "middle skill" job roles but common across employers with employer input.
4. Apprenti does light-touch case management work and intervenes as needed while the apprentice is completing the technical instruction and on-the-job training.
5. Apprenti liaises with state and federal agencies to formally register its tech occupations, continually update occupational skills to keep up with the dynamic needs of industry, and secure public funding where possible.

The outcome is that apprentices graduate with industry recognized related certifications/training, a DOL credential for completing apprenticeship per industry standards– essentially proving competent to be a "journey worker" in the role– with a full year of experience leading to this level of competency.

In the area of candidate recruitment and evaluation, Apprenti has designed its process around the fundamental belief that job-seekers should be evaluated on the basis of ***competency not pedigree***. Employers informed the process of defining "competency" as a mix of mathematical ability (at an algebraic and geometry level), skill in critical thinking/problem solving, and emotional intelligence. Apprenti evaluates competency in all three areas using a custom-built, online aptitude test and a set of interviews with the Apprenti team. The most promising candidates are then presented to prospective employers for in-person interviews and final decisions based on a soft skills interview. Notably, employers do not have access to candidates' work histories or education levels at the time of the in-person interview. In fact, Apprenti does not even collect this information from candidates unless an employer decides to extend an offer of employment and the candidate accepts.

Training only begins when a candidate accepts an employer's offer. This sequence differentiates Apprenti from other tech training programs; no candidate can begin training unless there is a guaranteed, employer paid apprenticeship on the other end; contingent on satisfactory completion of classroom training. The first phase of training is classroom-based, employer-influenced, role-specific instruction, which lasts three to five months depending on the role. Technical training is provided by third-parties, which Apprenti vets and selects by market. When technical instruction is complete, apprentices begin 12 months of "on-the-job" training. During on-the-job training, apprentices are placed on teams at their companies, assigned official mentors to oversee their on-job learning and development, paid at least 60% of the full-time entry-level salary, and provided benefits. At the end of the apprenticeship period, employers have the opportunity to retain apprentices as traditional employees, though apprentices are not required to stay.

Apprenti has two goals against which it measures success in closing talent and diversity gaps:

- Talent Gap: Apprenti aims to have at least 80% of apprentices retained full-time within the sector (ideally at their host employers) at the end of the official apprenticeship period.
- Diversity Gap: Apprenti targets populations that are underrepresented in the tech sector, specifically women, people of color, and veterans. Apprenti strives for at least 70% of its apprentices to fall into at least one of these three demographic categories.

Companies working with Apprenti agree with two fundamental principles:

- First, that there is a vast untapped resource of people domestically, capable of doing these jobs, that would benefit from a combination of technical training/retraining combined with mentored hands-on experience. The minimum term of 1-year of hands on experience required in registered apprenticeship is a strong entry point for getting a person qualified for these roles.
- Second, that there are few differences in tech roles across sectors and geographies. Thus, we need to build one cohesive system/set of standards that companies can easily operationalize across all U.S. states; not one per company, nor one per state. This universal approach allows for consistency in program fidelity, standards, quality and provides clear portability.

EARLY SUCCESS

As of March 22, 2019, Apprenti has placed 429 apprentices with 30 tech companies over 28 months. (Forecasting to exceed 1,000 apprentices in 2019) Apprenti is serving large tech companies like Microsoft and Amazon, as well as small and mid-sized tech companies like Silicon Mechanics and Avvo.com. An additional 20 companies have signed Letters of Intent/MOU's to bring on apprentices in 2019, including employers from non-tech industries such as healthcare (Partners Healthcare, BlueCrossBlueShield), financial services (JPMorgan Chase, Huntington Bank), who are all competing for tech talent.

Companies believe in the registered apprenticeship model due to its rigor, consistency and ability to scale, serving an entire industry sector. Early results are promising. Placement data shows 84% are retained within the sector, creating a new ecosystem of talent, plus diversity with a high share of women (25%), people of color (41%), and veterans (59%).[20] In total, 81% of apprentices fall into one of these target demographics. Apprentices come from a variety of educational backgrounds; 48% have at least a four-year college degree, 44% do not have any post-secondary degree and another 8% have a two-year degree. Competency is proving more important than degrees or degree types as retention is the same for both college and non-college degreed apprentices.

> *"Before participating in the Apprenti program, I was working odd jobs and scraping by. The program has been life-changing for me financially."*
>
> *- Yana Radenska*

[20] Amazon, Apprenti's largest hiring partner, has an initiative to hire veterans, thereby skewing overall apprentice demographics toward veterans and men. Excluding Amazon, women improve to 34% of placements.

Income data suggest the program is delivering value for apprentices. The apprentices served to date have moved from median annual pre-apprenticeship earnings of $29,000 to median apprenticeship earnings of $51,000 to median post-apprenticeship earnings of $75,000. In total, this has reflected a 155% jump in median earnings from the pre-apprentice level to the post-apprenticeship role less than eighteen months later. Early retention figures have also been strong; to date, 84% of those completing apprenticeships have been retained.[21]

Employers also appear to be satisfied with the program. In its second year, Apprenti saw strong hiring partner retention and growing commitments from Microsoft and Amazon with significant growth in new adopters. Specifically, Amazon doubled its 2018 hiring commitment and ended its in-house apprenticeship program in favor of Apprenti. Microsoft is evaluating the scale of adoption it's able to support with Apprenti. (See Appendix E for demographic information on Microsoft cohorts to date.)

"At [our company], our apprentices come into the same roles as many recent college grads. They don't always have the same educational pedigree, but they hustle and they bring a lot of non-technical skills that are valuable. Plus, a lot of our apprentices are just trying hard to get their foot in the door somewhere, so when we take a chance on them, we think that's compelling for long-term retention."

- Kevin Goldsmith, CIO, Avvo.com

MODEL

Apprenti began to help companies build apprenticeship systems in-house. Over time, Apprenti evolved to become the industry intermediary, to address a number of business needs, from assessing and screening prospective talent to managing the filing, registration and compliance of apprenticeship. This led to Apprenti winning the U.S. Department of Labor contract as the IT Sector Lead. Companies operating across multiple markets desired a standardized national system; they agreed on the roles that were most apprenticeable, and that those roles ostensibly function the same across companies and sectors.

In each market, a three-person team has responsibility for a range of functions including, but not limited to: business development to recruit new employer partners, updating occupational roles and registering them with the state, attracting and screening local apprentice candidates, selecting training providers, and providing light case management to individuals in the program. Local market partnerships are developed with organizations serving employers such as technology councils and chambers of commerce. For talent development, outreach targets community colleges, community orgs serving diverse populations, military bases and workforce boards.

In each market, a local, non-governing Apprenti Executive Committee – consisting of stakeholders from both industry and government agencies – provide oversight as well as strategic and operational guidance to the local team.

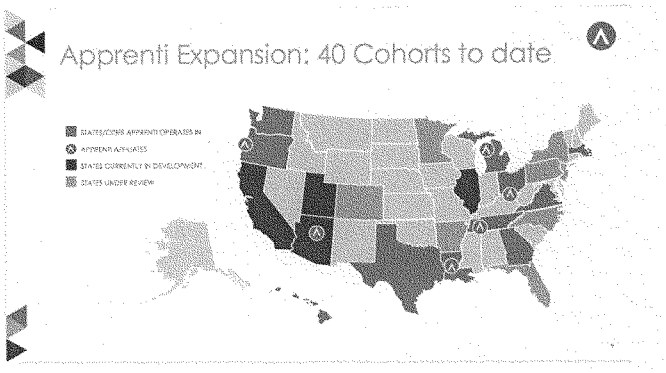
[21] 84% retention represents Apprenti's first five cohorts. Apprenti's long-term, steady state expectation is 80% retention within sector.

Apprenti's operating plan builds sustainable operating scale within its first three years of operation to the point where the overhead is covered by nominal employer fees and is industry directed in that we go where companies state they have hiring needs. In current markets; sourcing grants to fund the initial development term is time consuming, but has proven the model in four of eleven markets; however, investing federal grants in successful models like Apprenti can scale new markets for the IT sector more quickly. The average market needs $1.0MM over three years to scale a financially sustainable business.

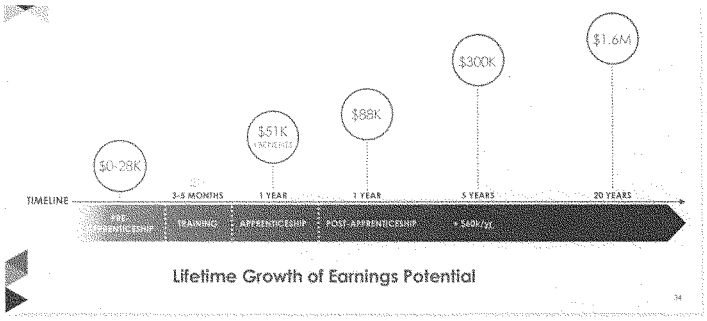
Additionally, as each new market opens, new hiring companies look for public/private partnerships to fund the preparatory classroom training to get apprentices technically competent before beginning their year of OJT. The average cost of this immersive, 40-hour per week, 3-5 months of technical training costs an average of $15,000 per person. Hiring companies are willing to subsidize up to half of this cost, in addition to apprentice salary and benefits during OJT. Training must be nimble, accelerated to meet industry timetables and able to shift quickly as technical platforms and software language change (typically changing or modifying every 24 months). Training providers include private code academies, certified corporate trainers and select community colleges via continuing education departments.

Three recommendations:

- Building a sustainable funding source for training dollars that states and companies can access would significantly accelerate adoption. (E.g. 1/3 Federal, 1/3 State matched, 1/3 Employer)
- Creating million-dollar micro-grants, over three-year terms, directed at chambers and trade associations with deep company relationships to expand this registered apprenticeship model
- Shift implementation focus away from "filing of standards" to outcomes: Numbers placed, retained, income improvement, diversity ratios and adherence to regulations around registered apprenticeship



FINANCIALS/ROI

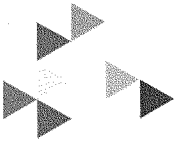


The above chart illustrates the lifetime forecast of apprentices in software development based on current data. With a median age in apprenticeship of 32, the forecast looks out 20 years with a known retention income after graduation from apprenticeship of $88,000. For an apprentice, this equates to:

- Lifetime improved earnings exceed $1.6M per person
- Using Apprenti's current 133 Software Developer Apprentices x $1.6M improved earnings = **$212,800,000** in overall improved lifetime earnings from program

If funding were offered to support scaling to 20 additional cities, generating new 5,000 apprentice software developers:

- 5,000 Apprentices x $1.6M improved earnings = $8,000,000,000 in total improved lifetime earnings
  - Start-up costs of $20,000,000 for three-year operating grants in new 20 markets
  - $75,000,000 in accelerated classroom training expense
    - Recommend braided funding: $25M from Federal Government, $25M matched by State, $25M from Employers
  - Tax revenue to U.S. Government: >$1B
  - Cost to deliver Registered Apprenticeship: 1.25% of gross earnings or ~$95M



RECOMMENDED POLICY CONSIDERATIONS TO SUPPORT EXPANSION OF REGISTERED APPRENTICESHIP:

As Apprenti has engaged with over 500 companies ranging in size from 50 employees to over 100,000, and 25 states seeking to understand tech as an apprenticeable model, it has learned a great deal about obstacles and policies needed to stimulate increased adoption:

- Apprenticeship is a new concept for tech companies in the United States. They are changing culture to become training-centric, absorbing the employment cost of hiring and training apprentices on-the-job, but want the public sector to share in that risk. Subsidizing training costs (RSI) more substantially and sustainably, reduces risk around the non-conformity to corporate hiring processes and encourage participation.
    - Create a sustainable, annual, >$250M Federal fund that states can match to support the classroom training costs of developing apprentices in non-traditional sectors.

- Recognizing that new sectors will take time to build, invest in expansion for programs that have track records and momentum.
    - Currently, DOL is focused on tracking numbers of new program/occupations filed, a metric that does not create sustainable adoption. If the sector is asking for a unified solution that establishes standardized job frameworks that are portable, the focus should be on measurable outcomes, i.e., improved earnings, retention, diversity ratios, etc.

- The Trades have enjoyed the benefits of the Fitzgerald Act for over 80 years, and the term "Apprenticeship" has had a clearly defined, indisputable meaning. However, as new sectors engage and attempt to understand the rules of engagement with registered apprenticeship, the greatest challenge has been the misuse and marketing of the word "apprenticeship". The lack of continuity around its use and inconsistency in applying it at the regulatory level has created significant brand confusion in the market.
    - Codifying into law the current regulations defining a "Registered Apprenticeship" would reduce brand confusion, create clear guidelines around its use and meaning, and establish accountability for its use in the case of aforementioned training subsides.

Appendix A: Apprenti Roles Filed w/ Sample Certifications and Locations

Cloud Operations Specialist 1 and 2
CompTIA Network+, Linux+, Python/SQL (and cloud service certification for level 2)

Network Security Administrator
Cisco CCNA Security

Web Developer
HTML/CSS, SQL, JavaScript, web app frameworks

Software Developer 1 and 2
HTML, JS, primary language stack (e.g., C#, Java, Python), computer science basics

Systems Administrator
Linux LPIC 1/2 or Microsoft Windows Server MCSA

Technical Sales Specialist
Content depends on employer need

Data Center Technician
CompTIA A+, Network+, Linux+

IT Support Professional
A+, Net+ or Cisco CCENT, LPIC1 or Microsoft Windows MTA

IT Business Analyst
ITIL Foundations, SQL, Linux+, Tableau

Note: Additional occupations being filed include Data Analyst, Security/Cyber Analyst, QA and UI/UX. Apprenti can also file new occupations and build specialized programs. Project Management is filed and approved, though no demand.

Number of Apprentices by State/City:

Washington – 171	(Most mature market 28 months of operation, began with 6 apprentices in first cohort, grew to 40 second year and will place over 200 this year. Forecast continues to show double that in 2020.)
Oregon – 41	(Second most mature, smaller markets and companies)
Virginia – 138	(Large companies, third market of operation)
Tennessee – 12	(Affiliate began in Q4 of 2018)
Dallas, TX – 28	(One employer, one-year-old market)
Columbus, OH – 13	(Began Q1 of 2019)
Baton Rouge, LA – 9	(Began Q4 of 2018)
Massachusetts – 15	(Began Q1 of 2019)
Michigan – 2	(Began Q3 of 2018)

Appendix B: WTIA Workforce Institute Board Members

Greg Beams – Partner, Ernst & Young (retired), Board Chair

Bradd Busick – Chief Information Officer, MacDonald-Miller

Cefe Quesada – Managing Director, Global Technology Services, State Street

Jennifer Carlson – Co-Founder & Executive Director, WTIA Workforce Institute

Portia Wu – Director, Workforce Policy, Microsoft

Michael Schutzler – Chief Executive Officer, WTIA

Kraig Baker – Partner, Davis Wright Tremaine, 2019, Secretary

Apprenti Apprenticeship Committee

Employer Representatives:

Jason Johnson (Chair) – Director of HR, Microsoft

Robin Baker – Lead Military Recruiter, Amazon

Kelly Harkins – Sr. Program Manager, Accenture

Birgit Zeidler – Senior HR Professional, F5 Networks

Nick Curry – Alternate, Amazon

Employee Representatives:

Lief Zimmerman (Secretary) – Software Developer, Comtech Communications

Amy Morgans – Project Manager, Synapse

Adam Anderson – Systems Administrator, Silicon Mechanics

Hunter Davis – Lead Software Developer, Avvo.com

Appendix C: Program Performance & Demographic Data (through 3.15.19)

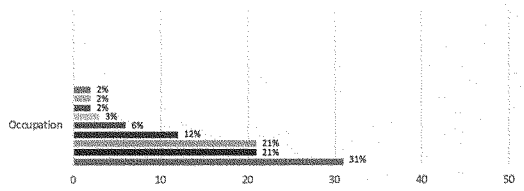
Current Apprentice Data

Median Salary of All Prior to Apprenti:	$29,000
Unemployed Prior to Apprenti:	22%
Median Salary of Previously Employed:	$30,275
Median Salary in Apprenticeship:	$51,000
Median Retained Salary All Positions:	$75,000
Retention	84%
Median Apprentice Age:	32
Youngest Placed:	18
Eldest Placed:	63
Diversity Placements	81%
Persons with Disability (Self Identified)	12%

Occupational Breakout:

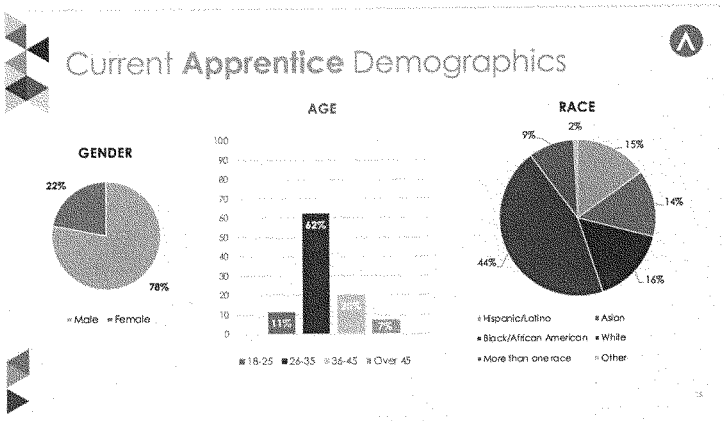
Current Apprentice Demographics

Occupational Role Placements%



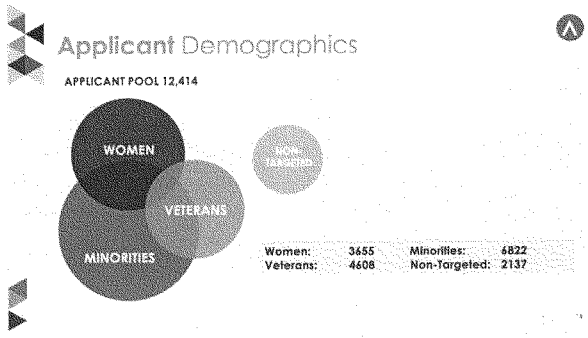
Network Security Administrator · Other · Web Developer
Technical Sales Specialist · Network Operations Developer · IT Support Professional
Data Center Technician · Cloud Operations Specialist · Software Developer

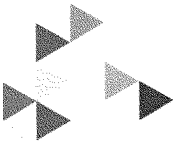
Gender, Veteran Status & Ethnicity



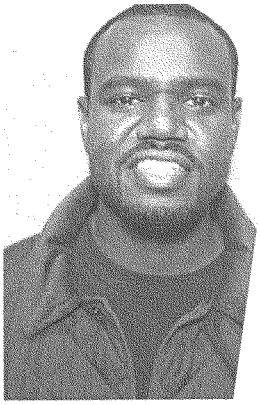
Gender is skewed by one employer focused on Veteran hiring. If we exclude one employer, the number of women improves to 29%. While 44% of placements are Caucasian, nearly half are Veterans and women.

Total Applicant Pool





A few Registered Tech Apprentices



ALEM

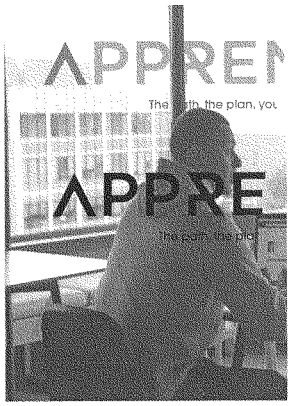
- **PRIOR EDUCATION:** B.A. International Security & Conflict Resolution
- **PRIOR JOB:** Uber driver
- **TRAINING DELIVERED:** 5 months Python, HTML, and C#
- **APPRENTICESHIP:** Microsoft Software Developer

APPRENTI

MAKI

- **PRIOR EDUCATION:** Some college
- **PRIOR JOB:** Crowdsourcing specialist
- **TRAINING DELIVERED:** 5 months Python, HTML, and C#
- **APPRENTICESHIP:** Microsoft Software Developer

APPRENTI



SHAWN

PRIOR EDUCATION: B.A. in Business & Art; Associates in Computer Science

- **PRIOR JOB:** Lead at moving company
- **TRAINING DELIVERED:** 5 months HTML, CSS, JavaScript, Node/Angular.js
- **APPRENTICESHIP:** Avvo Web Developer
- **CONVERTED:** to staff after 8 months

VIVIAN

- **PRIOR EDUCATION:** Some college
- **PRIOR JOB:** Network Admin, veteran
- **TRAINING DELIVERED:** 4 months of Network+, Linux+, Python, and Juniper
- **APPRENTICESHIP:** Amazon Network Development Engineer

Living the tech dream, thanks to a novel apprenticeship program

Beth Pinsker

5 MIN READ

NEW YORK (Reuters) - While growing up in Seattle, Enrique Rico's mom cleaned the posh homes of Microsoft employees. When Rico tagged along on sick days from school, he dreamed of having the life of a technology worker.

Enrique Rico, 26, a developer at Avvo, an online marketplace for legal services, is seen in Seattle, Washington, March 2018. Courtesy Enrique Rico/via REUTERS

Now, at 26, with no college degree or background in STEM, Rico is working a developer at Avvo, an online marketplace for legal services.

He is a graduate of a program called Apprenti that provides education and on-the-job training for tech jobs to non-traditional recruits.

"I never really thought I could do it. But once I dug deep, I gave it my all," said Rico.

The Apprenti program is run by the Washington Technology Industry Association in partnership with the U.S. Department of Labor. It operates at around 50 companies nationwide with major employers including Microsoft (MSFT.O), Amazon.com (AMZN.O) and JPMorgan Chase (JPM.N).
During the first year of the program in 2017, 76 candidates went through the training, which includes about 400 to 780 classroom hours on the front end, compressed into 12 weeks.

After a year of on-the-job training, the program will finish 2018 with 330 graduates placed into full-time jobs. The class of 2019 is on track to produce more than 700 graduates.

Amazon expects its apprenticeship cohort to grow from 150 to 1,000 workers in the next few years, said Tammy Thieman, a senior program manager at the ecommerce giant.

The tech industry had 2.8 million openings last year, with 50 percent of them middle-level jobs that do not necessarily require a college degree, according to Jennifer Carlson, executive director of Apprenti.

The pace of hiring is lagging, however, because companies cannot find properly trained workers, she said.

"This industry needed technical competency at the start - that's a paradigm shift from traditional apprenticeships," Carlson added.

Apprenti focuses on veterans, women and under-represented minorities, screening about 2,000 candidates to find 700 candidates for 2019.

Amazon teamed up with Apprenti after its CEO Jeff Bezos made a commitment in 2016 to hire 25,000 veterans and military spouses by 2021. But the apprenticeship program quickly broadened to find qualified workers for a vast swath of open jobs that required specific credentials.

"It is not at all unrealistic that freshman going to college today come out already behind," said Amazon's Thieman. "An apprenticeship offers a model to do the learning in a compressed way and then learn the skills on the job.

While veterans often have valuable skills, they usually do not have a conventional resume or workplace experience. That is why the biggest challenge currently for veterans is being underemployed when they leave the armed forces, said Chris Newsome, vice president of candidate aggregation at Recruit Military.

"A lot of these men and women are able to find jobs, but not necessarily careers," Newsome said.

New college graduates often will need to complete a program like Apprenti to be job-ready because programming languages and platforms change so quickly.

Training at universities or even specialty classes at community colleges also do not quite stack up when it comes to hiring for a role such as cloud administrators which require specific certificates, Apprenti's Carlson said.

Even boot camps for coding do not necessarily do the trick. Rico tried that route first, quitting his $16.50-an-hour job as a salesperson at an Apple Store to go into a coding program.

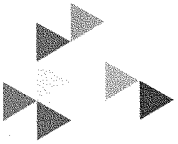
But without a college degree, he did not stand much of a chance against the automated interfaces most big tech companies use to sort through applicants when hiring.

DIVERSITY BOOST

For smaller companies like Avvo, Apprenti is more of a mission.

"The executives saw the value of a program that gets you talented engineers and does a social good," said Hunter Davis, director of engineering at Avvo.

The company has about 25-30 developers currently on staff, with about 15 percent of them coming through Apprenti.



"They are awesome and full of grit and willing to learn," Davis said.

The leg up for Apprenti grads starts right away. Like Rico, many were previously working minimum wage jobs, with a median income of $28,000 and most without benefits. The starting salary in the Apprenti program is $45,000 during training.

At six months when candidates begin their on-the-job training, the salary rises $51,000. If they get hired full-time - and almost all of them do - Apprenti grads make at least $75,000.

That is a life-changing salary for most of the participants.

"I have an apartment and a dog and a cat," said Rico, who is still dreaming. "I'd love to get married and have kids and buy a house. I want to be my own boss. I would love to start my own company."

Editing by Lauren Young and G Crosse
Our Standards:The Thomson Reuters Trust Principles.

https://www.reuters.com/article/us-world-work-apprenti/living-the-tech-dream-thanks-to-a-novel-apprenticeship-program-idUSKCN1P91CY

Chairwoman DAVIS. Thank you very much. Please continue, Mr. Pavesic.

STATEMENT OF JAMES G. PAVESIC, DIRECTOR OF EDUCATION AND TRAINING, UNITED ASSOCIATION OF JOURNEYMEN AND APPRENTICES OF THE PLUMBING, PIPEFITTING AND SPRINKLER FITTING INDUSTRY OF THE UNITED STATES AND CANADA

Mr. PAVESIC. Good morning, Chairwoman Davis, Ranking Member Smucker, and the members of the subcommittee. My name is James Pavesic.

In addition to being a proud product of an apprenticeship program, I am the director of education and training for the United Association of Union Plumbers and Pipefitters, or UA for short.

On behalf of the more than 350,000 members of the UA, I want to thank you for the opportunity to testify today.

There are currently over 45,000 apprentices participating in Registered Apprenticeship programs supported by the UA and our International Training Fund. These programs provide training covering the full range of UA crafts, including HVAC technicians, plumbers, pipefitters, welders, and sprinkler fitters.

In my view there are at least five attributes to a successful apprenticeship program.

First, there needs to be successful partnerships. A successful apprenticeship program is built on a partnership between organized labor, signatory employers, government, and more recently accrediting agencies, such as the Council on Occupational Education, or COE. The UA and its signatory employers are able to invest over $200 million each year on apprenticeship and journeyperson training. Bear in mind that these are all private sector dollars, so these investments come at no cost to taxpayers.

All totaled, training programs sponsored by the UA and our sister building trades unions provide the lion's share of the training for the U.S. construction industry. UA apprenticeship programs have always been a part of the Registered Apprenticeship system and we believe very strongly in it.

UA programs also benefit from the accreditation process conducted by the COE. The COE has accredited an increasing number of UA programs which allows us to provide instructions for which apprentices receive college credits.

The second attribute of a successful program is effective recruitment. UA programs are committed to offering the benefit of apprenticeship to all qualified applicants, including people of color and women. The UA has also worked with the U.S. military to train and place veterans in our programs through our award-winning Veterans in Piping, or VIP program.

Under the VIP program the UA offers transitioning service men and women the opportunity to participate in an intensive 18-week program on base where they receive cutting edge training in one of our crafts at zero cost to the government, the military, or the student. VIP graduates are then placed in a local apprenticeship program with advanced credit and guaranteed a job.

The VIP program currently operates on seven different military installations and has provided apprenticeship opportunities to nearly 2,000 military veterans to date.

One of our many appeals of the UA apprenticeship is the opportunity for apprentices to earn a strong wage and benefit package while they learn. To give you an example, pipefitter apprentices in my home local, Local 597 in Chicago, currently receive an average of $32.79 per hour, along with a high quality health coverage, contributions to a 401(k), and other benefits. Apprentices who complete the program today will earn an hourly wage of $48.50 and begin receiving contributions to a defined benefit pension plan on top of their 401(k). In addition to receiving on the job instruction, apprentices attend classes at one of the hundreds of state-of-the-art local UA training schools across the country and have the chance to earn college credits in the process.

Upon graduation they enter a growing industry with a lifetime of skills and are in high demand and, unlike the average college student, they come out of our program debt free because the education they received comes at virtually no cost to them.

Innovation is a third attribute of successful apprenticeship program. UA apprenticeships partner with subject matter experts, industry suppliers, and manufacturers to design and implement training programs that are on the cutting edge of new technologies.

A fourth attribute of a successful program is a team of dedicated and talented instructors, which our organization is fortunate to have in abundance.

Fifth, and finally, no apprenticeship program is successful without a commitment to excellence. Everyone involved in the program must be invested in the work of setting high standards for the apprentice and then helping that apprentice achieve them.

Anyone could call something an apprenticeship, but as I hope I have been able to convey, building a successful program requires a great deal more than that. In the UA's view, the best way for Congress to make life changing apprenticeship opportunities available to Americans is to support the programs and invest the time and resources and commit the high standards necessary to produce those apprenticeship opportunities.

I invite every member of this committee to see what this looks like by visiting one of our training centers. It would be our privilege to have you.

Thank you again for this opportunity.

[The statement of Mr. Pavesic follows:]

Testimony Submitted to the

U.S. House of Representatives
Committee on Education and Labor
Subcommittee on Higher Education and Workforce Investment

Hearing on Innovations in Expanding Registered Apprenticeship Programs

James Pavesic
Director of Education and Training

United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry of the United States and Canada, AFL-CIO

Thank you, Chairwoman Davis, Ranking Member Smucker, and members of the Subcommittee, for the opportunity to provide this testimony. My name is James Pavesic. I completed my pipefitting apprenticeship in Chicago in 1983 and worked 26 years in the field as a journeyman pipefitter. In addition, with the support of my union and without stepping away from my job as pipefitter, I was able to earn my Associate's and Bachelor's degrees. I am now the Director of Education and Training for the United Association of Union Plumbers and Pipefitters of the United States and Canada ("UA"). On behalf of the more than 350,000 members of the UA, I want to thank the Committee for giving me the opportunity to speak to you about what I believe are the keys to a successful apprenticeship program that has been in operation for decades and has stood the test of time. There are currently over 45,000 apprentices participating in registered apprenticeship programs supported by the United Association and our International Training Fund. These programs provide training covering the full range of crafts that make up the UA, including HVAC technicians, plumbers, pipefitters, welders and sprinkler fitters.

A. Partnership

A successful apprenticeship program is built on a partnership between organized labor, signatory employers, government and in the past few years accrediting agencies, such as the Council on Occupational Education ("COE"). Through collectively bargained contributions to joint trust funds, the UA and its signatory employers are able to invest over 200 million private, non-taxpayer dollars each year in apprenticeship and journeymen training.[1] This investment is

[1] This includes expenditures made by the UA's International Training Fund as well as those made by the hundreds of Local UA Training Programs throughout the United States, all of which are funded entirely with non-taxpayer dollars.

made because apprenticeship is the lifeblood of our industry and high quality training is what sets a UA craft person apart from others in the plumbing and pipefitting industry.

The importance of the investments that the UA and other building trades unions make in construction industry apprenticeships cannot be overstated. The construction industry nationwide is facing increasing skill shortages due to retirements of baby boomers, shifting demographics, and other factors. It is no secret to anyone who has studied the U.S. construction industry that apprenticeship and other training programs sponsored by the UA and our sister building trades unions provide the lion's share of the training for the industry as a whole.[2] We understand that the ability of the United States to build projects safely and to the high-quality standards Americans deserve and expect very much depends on the ability of the UA and other building trades unions to recruit, train and deploy the next generation of skilled craftsmen and women. We take that responsibility seriously and work hard every single day to meet it.

Subject matter experts are also essential partners in a successful apprenticeship program. The UA meets this need not only by securing top-flight instructors, but also by working with the International Joint Pipe Trades Committee, Inc., a non-profit corporation, to obtain high-quality and up-to-date training books and manuals from technical authors and publishing companies which reflect the latest changes in technology. In addition, through our WebBooks program, all apprentices have the ability to access their entire "book bag" on their laptop, iPad, personal phone or other device.

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[2] See, e.g., Allison L. Huang, Robert E. Chapman, and David T. Butry, *Metrics and Tools for Measuring Construction Productivity: Technical and Empirical Considerations*, U.S. Department of Commerce, National Institute of Standards and Technology, Office of Applied Economics, September 2009, p. 23, ("Typically, training programs are funded by both owners and contractors through union and collective bargaining agreements. While open shop training programs exist, they tend to be rare.")

UA apprenticeship programs have always been part of the registered apprenticeship system and we believe very strongly in it. UA apprenticeship programs also benefit from participation in the accreditation process conducted by the COE. Starting at the International level down to Local UA programs, the COE has reviewed and accredited UA apprenticeship programs who have chosen to go through its multi-step certification process. During the process every aspect of the program of education offered by the apprenticeship program is reviewed. By completing the process and obtaining accreditation, our programs are able to provide instruction for which participants receive college credit.

B. Recruitment

UA apprenticeship programs are committed to offering the benefits of apprenticeship to all qualified applicants, including those from traditionally under represented populations such as people of color and women. Representatives of UA apprenticeship programs regularly attend local, regional and national job fairs and other meetings and conventions where potentially interested and qualified applicants can be found. In addition, the UA has created different videos that are designed for guidance counselors, parents and high school students that explain the benefits of a UA apprenticeship program as one of many high-quality postsecondary options. Moreover, representatives of UA apprenticeship programs receive training on best practices for expanding the reach of their recruitment efforts.[3]

The UA has also led the way in working with the United States Military to train and place veterans into our apprenticeship programs through our award winning Veterans in Piping

[3] Local UA apprenticeship programs will regularly advertise and provide notice to community outreach programs when applications for entry into the apprenticeship program will be available and otherwise comply with the United States Department of Labor's Regulations on Equal Employment Opportunity in Apprenticeship.

Program ("VIP"). Under the program, the UA offers transitioning service men and women from all branches of the military the opportunity to participate in an intensive eighteen week program on base, where they receive cutting-edge training in one of the crafts that make up the plumbing and pipefitting industry. This training is paid out of jointly-sponsored trust funds of the UA and our signatory employers and comes at zero cost to the government, the military or the student. Upon successful completion, graduates are placed in a UA Local apprenticeship program, given advanced credit toward the completion of their apprenticeship program, and guaranteed a job. This program currently operates on seven different military installations and since its inception has provided apprenticeship opportunities to 1,969 military veterans.[4]

It is important to bear in mind that recruitment is only as good as the program that is offered and UA apprenticeships provide the opportunity for apprentices to earn while they learn. Apprentices are paid an increasing scale of wages and also receive health care coverage and become participants in retirement plans. For example, pipefitter apprentices in my home Local Union, Local 597 of Chicago, currently receive, on average, a wage of $32.79 per hour, along with high-quality health coverage, contributions to a 401(k) and other benefits. Apprentices who complete the program today will earn an hourly journeyperson wage of $48.50 and begin receiving contributions to a Defined Benefit Pension Plan, on top of their 401(k). Family-supporting wages and benefits of this kind are not limited to Chicago. A great many UA journeypersons throughout the United States earn well over six figures per year in wages, along with similar benefits.

[4] The UA efforts at helping veterans does not end with the VIP program. UA apprenticeship programs offer direct entry to veterans who have received any related training while serving our country.

In addition to receiving on the job instruction, apprentices attend classes at one of the hundreds of state-of-the-art local UA training schools across the country. Completion of the five year apprenticeship program leads to journeyperson status and the opportunity to continue to work in an ever growing industry with lifetime skills that are in high demand. Also, participants in UA apprenticeship programs incur little or no cost for their education and come out of the apprenticeship program debt free.[5] They are also eligible to earn—again, at no cost to them—up to 45 college credits toward the receipt of an Associate's Degree.

C. Innovation

Industries change and a successful apprenticeship program must change with them, from the content of the curriculum to the manner in which material is presented. UA apprenticeships partner with industry suppliers and manufacturers to design and implement training programs that are on the cutting edge of new technologies. Recognizing that today's student grew up in a digital world, the UA has become a leader in the use of virtual reality training aids, online resource libraries for both students and instructors, as well as the creation of apps that assist in learning and on the job. The UA is also working on a new apprenticeship program that will concentrate on training participants in high demand skills such as Computer Aided Design (CAD) and Building Information Modeling (BIM).

D. Dedication

No apprenticeship program can be successful without a cohort of trained and dedicated instructors who are willing and eager to share their skills and knowledge with those entering the

[5] According to the United States Department of Education the average debt per college student is $33,310.00 spread out over 42.9 million students. U.S. Dep't of Educ., Federal Student Loan Portfolio (2018), https://studentaid.ed.gov/sa/about/data-center/student/portfolio.

industry. UA Local apprenticeship programs employ thousands of such individuals who every year have the opportunity to attend a week long seminar in Ann Arbor, Michigan where they are taught not only the latest technologies from industry leading experts, but also how to teach adult learners and use technology in their classes.

E. Excellence

The purpose of any apprenticeship program is to produce a qualified journey person, which includes not only the mastering of certain skill sets and the attainment of advanced knowledge of a craft, but also an understanding that what you do impacts the lives of countless numbers of Americans. To achieve this, all involved in the program—the classroom instructors, those on the job who share their knowledge and experience, the employer and, of course, the apprentice—must be dedicated to achieving and maintaining a standard of excellence.

Let me close by encouraging the members of this Committee to be mindful of the fact that anyone can call something an "apprenticeship program." As I hope I have been able to convey, it takes a great deal more to actually build and maintain a successful one. A successful apprenticeship program should not be a for profit enterprise where students are asked to pay "tuition" or veterans are required to use their GI benefits, nor should it be simply an opportunity for employers to obtain workers who receive lower wages in exchange for the illusion of training and future job opportunities. In the UA's view, the best way for the government to make life-changing apprenticeship opportunities available to Americans is to support the programs that invest the time and resources—and commit to the high standards—necessary to produce those opportunities. In addition, because smaller, less-established programs fail at a far greater rate than larger programs, the government should increase its regulatory focus on those programs.

The U.S. Congress can also support high-caliber registered apprenticeship programs in our industry by ensuring that the contractors which participate in such programs and use registered apprentices on jobs are credited for those investments in the federal procurement process. This could be done, for example, by adopting legislation to require contractors that bid on federal construction projects to participate in registered apprenticeship programs and use a certain number of registered apprentices on the project. Such requirements could take the form of a pre-qualification requirement for contractors, or be included in the contractor responsibility evaluation that is conducted under federal procurement laws. Taking these kinds of steps would not only promote the expansion of registered apprenticeship opportunities, but also help to address the increasing skill shortages facing our industry, thereby ensuring that the United States has the skilled workforce necessary to build safe and high-quality projects in the future.

I would like to invite each and every member of this Committee to see what a successful apprenticeship program looks like by visiting one of our training centers. It would be our privilege to have you.

At the UA, we and our partners understand that apprenticeship is the lifeblood of the industry, and as evidenced by our decades of success and the hundreds of millions of non-taxpayer dollars that are invested each year in UA-supported training, we take pride in our programs and strive every day to meet or exceed a standard for excellence.

Thank you again for this opportunity.

Chairwoman DAVIS. Thank you. Mr. Hays.

STATEMENT OF MARK HAYS, VICE CHANCELLOR OF WORKFORCE AND ECONOMIC DEVELOPMENT, DALLAS COUNTY COMMUNITY COLLEGE DISTRICT

Mr. HAYS. Madam Chair, Ranking Member, and members of the subcommittee, my name is Mark Hays and I serve as the vice chancellor for Workforce and Economic Development for the Dallas County Community College District in Dallas, Texas. DCCCD consists of seven independently accredited colleges with credit and non-credit enrollment exceeding 100,000 students. It is the largest community college district in the State of Texas and one of the largest in the Nation.

It is indeed an honor to be before you today to discuss how DCCCD is engaging employers, students, community-based organizations, and others to expand apprenticeships in North Texas.

In my role as vice chancellor of Workforce and Economic Development, I oversee a dedicated team of professionals who work to expand apprenticeships in a variety of industry sectors. We have made a commitment to our board of trustees for DCCCD to be engaged with 50,000 apprentices by 2030. To date, we are involved in 25 apprenticeship programs touching more than 1,600 apprentices. Nearly 50 more companies have expressed interest in both Registered and industry-recognized programs and our team is working with these companies to get apprenticeships off the ground and getting more North Texans into middle class jobs. These apprenticeships encompass construction, manufacturing, information technology, health care, logistics, and aerospace.

We work with both private employers and organized labor to create middle class jobs that provide a good living for workers and a stable work force for businesses in North Texas. DCCCD's involvement in these apprenticeship programs varies. The District may simply be a pass-through entity for funds for some apprenticeship programs, but is also more involved as an intermediary, assisting employers with the establishment of new apprenticeships and working with State and Federal officials in assuring compliance with the law.

Our team works closely with employers, the U.S. Department of Labor's Office of Apprenticeship, and the Texas Workforce Commission to provide meaningful, competency-based apprenticeships that are important in meeting work force demands in the Dallas area.

A significant milestone occurred this past summer when DCCCD, in partnership with RMS Aerospace, the Office of Apprenticeship in Dallas, and the Texas Workforce Commission worked together to create the Nation's first Registered Apprenticeship in unmanned aerial systems. The first cohort is underway and educating future UAS pilots for cutting-edge jobs with a variety of North Texas employers. Apprentices will receive three FAA licenses and one FCC certification when they complete the program.

I often get the question, why is a community college district so involved with apprenticeships. Well, my answer is our job is to help workers earn more and companies to become more profitable. Dallas is experiencing a conundrum. While there are thousands of middle-class jobs going unfilled, the poverty rate is the third high-

est in the Nation. Most of these jobs require an associate degree or less, yet people who need these jobs are not getting connected to them. Our DCCCD Chancellor, Dr. Joe May, speaks about the higher education network, where it is not about a single higher education institution, but about creating a better, more efficient system where communities and individuals thrive.

Many of the apprentices we work with are not enrolled in our colleges as students. This effort is not about enrolling more students in our colleges. We hope that at some point they do enroll, but that is not the primary motivation here. We want members of our community to obtain the skills necessary to support their families and we want companies to have a stable work force. If those apprenticeships involve college credit, great. If not, well then that is okay too. The key is obtaining the necessary skills to provide a good living and creating a dynamic, skilled work force that helps our communities grow and thrive.

The vast majority of apprenticeships DCCCD is involved with are registered. We do have a small number that are industry recognized apprenticeship programs and we fully anticipate those types of apprenticeships expanding significantly once the Department of Labor issues clear guidance on IRAPs.

DCCCD's goal is to meet employer needs, whether that be a Registered Apprenticeship or an IRAP. Some employers are hesitant to begin the process of a Registered Apprenticeship because they feel it is not flexible enough to meet their needs. They want a program that allows an apprentice to be trained in multiple skill areas. At DCCCD we are all about meeting the employer needs and look forward to dramatically expanding IRAP programs in the future. Our team is prepared to work with both Registered and IRAP apprenticeships, working with employers, and Federal and State officials to make it happen.

In closing, I would like to emphasize how critical the role of the community college system is in moving apprenticeships to the next level. While Registered Apprenticeships have been around for decades, it is only recently that the community college has begun to play a significant role. Community colleges must continue to add and expand apprenticeships so individuals and communities can thrive. We cannot allow ourselves to be boxed in by excluding any type of program that allows individuals to obtain the necessary skills to succeed and businesses to grow.

Thank you for this opportunity today. I sincerely appreciate your attention and your dedication to this effort.

[The statement of Mr. Hays follows:]

Testimony of Mark Hays
House Subcommittee on Higher Education and Workforce Investment
March 27, 2019

Madame Chair, Ranking Member, and members of the subcommittee:

My name is Mark Hays and I serve as the Vice Chancellor for Workforce and Economic Development for the Dallas County Community College District in Dallas, Texas. DCCCD consists of seven independently accredited colleges with credit and non-credit enrollment exceeding 100,000 students. It is the largest community college district in the State of Texas and one of the largest in the nation. It is indeed an honor to be before you today to discuss how DCCCD is engaging employers, students, community-based organizations, and others to expand apprenticeships in North Texas.

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involved as an intermediary -- assisting employers with the establishment of new apprenticeships and working with state and federal officials in assuring compliance with the law. Our team works closely with employers, the US Department of Labor's Office of Apprenticeship, and the Texas Workforce Commission to provide meaningful, competency-based apprenticeships that are important in meeting workforce demands in the Dallas area.

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I often get the question, "Why is a community college district so involved with apprenticeships?" My answer is our job is to help workers earn more and companies to become more profitable. Dallas is experiencing a conundrum. While there are thousands of middle class jobs going unfilled, the poverty rate is the third highest in the nation. Most of these jobs require an associate's degree or less, yet people who need those jobs are not getting connected to them. DCCCD Chancellor, Dr. Joe May, speaks about the "higher education network", whereby it's not about a single higher education institution, but about creating a better, more efficient system where communities and individuals thrive. Many of the apprentices we work with are not enrolled in our colleges as students. This effort is not about enrolling more students in our colleges. We hope that at some point they do enroll, but that's not the primary motivation here. We want members of our community to obtain the skills necessary to support

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Thank you for this opportunity today. I sincerely appreciate your attention and your dedication to this effort.

Chairwoman DAVIS. Thank you very much. Ms. Gainer.

STATEMENT OF BRIDGET GAINER, VICE PRESIDENT OF GLOBAL PUBLIC AFFAIRS, AON

Ms. GAINER. Thank you very much. So good morning, Chairwomen Davis, Foxx, and all the members of the committee. Thank you for this opportunity to testify today about Aon's Apprenticeship program and where it can take us in the future.

I am Bridget Gainer, vice president of Global Public Affairs for Aon based in Chicago. Aon is the leading global professional services firm providing a broad range of risk, retirement and health solutions.

Now is an important time in work force policy and we are encouraged that policymakers, academics, and employers are recognizing the expanded role that apprenticeship can play in continuing to develop the 21st century work force.

Every year, Aon surveys employers around the country about the risks that they face in running their business. At the top of the list, along with trade, cyber threats, and others is work force and the ability to find the right talent to grow your business.

The U.S. economy has been changing for a generation, with the services sector and technology—industries where skills evolve rapidly and there are few structured training programs—taking up a larger and larger part of both GDP and employment. But our work force policy has failed to keep pace. Universities, employers, and individuals are often sitting in silos without an effective mechanism to scale successes across the country. These mechanisms do exist however. Apprenticeships have long been successful in the skilled trades and give a road map to effective recruitment, training and employment.

At Aon we have the benefit of a generation's worth of proof that this return on investment works. Apprenticeships across the economy, trades, services, retail, hospitality, are common in Europe, especially in the UK. There is a long tradition of students leaving high school and joining the insurance industry, especially in London.

In London, as in Chicago, the motivation was to address a specific constraint in the work force and, in this case, it was retention and engagement, especially in entry level positions. As we all know, the assumption that you will begin and end your career at the same company is long gone. But the turnover rates among certain entry level positions was of such a pace and percentage that it called out for a solution. And we found it within the ranks of our own employees. When we looked at the roles that had higher attrition in the UK, we found that those employees who had entered as an apprentices were much more likely to stay at Aon longer and had higher engagement scores, which is essentially a measurement of how you feel connected to and happy with your job and your employer.

Engagement scores have a direct correlation to productivity, as evidenced by a recent Gallup Poll. Over the last 5 years, Gallup interviewed 2 million workers at 300,000 organizations and found that engagement was directly correlated to productivity and profit.

So we know from the track record in the UK that apprenticeships have both higher retention and engagement.

So from my office window at Aon in Chicago I can look down Lake Street and see Harold Washington College, one of Chicago's city colleges. And I am pleased that Mr. Hays mentioned the role of city colleges because I think it is incredibly important. Until 2 years ago Aon had never hired anyone from city colleges. All our hires only came post 4 years of college. But it was a missed opportunity for us. We were ignoring an entire talent pipeline that was staring us in the face, but we had no real way to bring them into the company.

So we brought together employers, worked on a curriculum, created mentorship programs, but realized we could do so much more, which became the base for the Aon apprenticeship program.

So I want to be really clear about this next point, our apprenticeship program is not a social program. It must work for the business. So we set out to build a business case to replace some of our entry level positions with apprentices. The first step was to determine which ones really required 4 years of college, or where had we just gotten in the habit of hiring from 4 years of college.

We looked closely at those jobs and found that many of them had really high turnover, which is expensive and disruptive. Because the role didn't require the degree, the new hire was not staying in a job that didn't really demand it. But our H.R. system required it because that is the way we always had done it.

Over the last 3 years at Aon, we have hired 75 apprentices in a 2-year program in IT, H.R. and our core insurance business. They work 4 days a week at Aon, go to class at Harold Washington, which is a city college in Chicago, on Fridays. They are paid as full-time employees and receive the same health and retirement as I do, as well as fully paid tuition. Of the three classes of apprentices we have hired, 75 percent of them are African-American or Latino, most are Chicago Public School graduates, and all of them were working multiple jobs to finance their life and school before coming to Aon.

Further our apprentice program is Registered in partnership with the Department of Labor which signifies that our program meets the standards and quality requirements for such programs.

Because of these efforts, these young people have a path to a career not just a job. But that was just the beginning, because I mentioned, the idea is good, but the scale is essential.

We created the Chicago Apprentice Network to give employers an opportunity to come together, learn about the program, and eventually join. In our first year, 2017, us and Zurich had 50 apprentices. In 2018 there were 8 employers with 130 apprentices. And this year we have 23 employers with 425 apprentices across the city of Chicago, the goal being 1,000 by the end of 2020.

This is a tremendous opportunity for our City, but this is where we need your attention and leadership. In order to build this new tranche of our work force we need to have a structured program that has national standards. Registration is a big part of that because our investment is high quality and we want it returned to us.

To that end I would like to commend Congressman Lipinski, Congressmen Rodney Davis, and Raja Krishnamoorthi, who just introduced the Leap Act to further support apprenticeships.

I also have comments on city colleges, which were said by Mr. Hays, but they are incredibly important to the ongoing work of the apprentice programs.

Thank you for having me.

[The statement of Ms. Gainer follows:]

Oral Testimony on behalf of Aon

By Bridget Gainer Vice President of Global Public Affairs Aon

March 27, 2019

Good Morning. Thank you all for this opportunity to testify today on Aon's Apprenticeship program and where it will take us in the future. I am Bridget Gainer, Vice President of Global Public Affairs at Aon. Aon is the leading global professional services firm providing a broad range of risk, retirement and health solutions.

Now is an important time in workforce policy and we are encouraged that policy makers, academics, and employers are recognizing the expanded role apprenticeship can play in continuing to develop the 21st century workforce.

Every year, Aon surveys employers about the risks they face in running their business. At the top of the list along with trade, regulation and cyber threats is workforce and the ability to find the right talent to run - and grow - their business. The US economy has been changing for a generation, with the services sector and technology – industries where skills evolve rapidly and there are few structured training programs- taking up a larger and larger part of both GDP and employment. But our workforce policy has failed to keep pace and now neither serves most workers or a growing sector of employers. Universities, employers and individuals are sitting in silos without an effective mechanism to communicate, share best practices and scale successes across the country.

These mechanisms do exist however, apprenticeships have long been successful in the skilled trades, industrial and manufacturing sector and give a road map to effective recruitment, training and employment. Apprenticeship can also address the challenges of the rising cost of college and creates a pipeline of talent that is ready, willing and able to meet the changing employment needs of the country's fastest growing industries. But for this model to be successful, a national set of standards that insures quality and creates scale is required. We are investing in an apprentice program and it will benefit our local workforce, however, the true return on investment come when we scale – when an Aon apprentice in Chicago trained an HR analyst can fill a similar position at Accenture in Columbus. Or when a member of the Chicago Apprentice Network is looking for employees it knows that an IT apprentice graduate will meet their needs.

This conversation happening not just in Chicago but in cities across the country.

At Aon we have the benefit of a generation of proof of this return on investment. Apprenticeships across the economy – trades, services, retail, hospitality – are common in Europe and the UK. There is a long tradition of students leaving high school and joining the insurance industry, especially in London. Similar to the workforce conversation we are having in the US today, about a decade ago, the UK government increased their focus on the opportunities of expanded apprenticeship. Aon took the lead in that effort and over the past

years we have tripled the number of apprentices in the insurance industry and more importantly, have added many new apprentice roles – actuarial, consulting, investing, broking – these are all positions in our industry that can be filled by apprentices – and are doing so with great success.

In London as in Chicago the motivation was to address a constraint in the workforce – in this case, retention and engagement, especially of entry level positions. As we all know, the assumption that you will begin and end your career at the same company is long gone, but the turnover rates among entry level positions was of a pace and percentage that it called out for a specific solution. And we found it within the ranks of our own employees. When we looked at the roles that had higher attrition in the UK, we found that those employees that had entered as an apprentice were much more likely to stay at Aon longer and had higher engagement scores – essentially a measurement of how much you feel connected to and happy with your job and your employer.

Engagement scores have a direct correlation to productivity, as evidenced in the recent Gallup Poll. Over the last 5 years, Gallup interviewed over 2 million workers at 300,000 organizations and found that engagement was directly correlated to productivity and profit. The top 10% of firms as ranked by highly engaged employees had average profit gains of over 26% while firms with the least engaged employees had profit declines of 14% (WSJ, Sam Walker, March 23, 2019).

Challenges such as high turnover, lack of scalable training models for services, the high cost of are creating a drag on the pipeline for talent that all companies need to continue to grow. No region of the U.S. has escaped this problem and no one has found the ultimate answer. We believe that the solution can start locally, drawing on the strengths of city or regional economy but in order to truly scale we need a national strategy.

I am from Chicago - born, raised, and raising my own children there, and if you asked me my main workforce goal it would be the same as most parents - that my children all get good jobs in our hometown and build their lives there.

But our city – like many of yours – faces serious challenges. Many of our young people are confronting two significant hurdles: the mismatch between their desire and their ability to work, and the way we hire in many of the fastest growing parts of our economy.

The solution requires innovation to create a new path to real employment opportunities. It takes time and creativity and collaboration. But it also takes the active participation of not just employers, but of the whole system.

AON

From our windows at Aon, I can look down Lake Street and see Harold Washington College, one of Chicago's City Colleges.

Until a two years ago, Aon had never hired anyone from City Colleges, and that seemed like a missed opportunity. A missed opportunity for *us*. We were ignoring an entire talent pipeline that was literally staring us in the face. So, we brought together a group of employers from the insurance and financial service sectors and created a curriculum that was open to all students. We built internships and had colleagues from Aon mentor the students.

But we realized that we could do more.

You can have all the programs in place to assist, but if you really want to make a difference, address the lack of diversity, access or opportunity – adopt our new mantra –just hire someone!

I want to be very clear about this next point, our apprenticeship program is not a charity program, it must work for the business. So, we set out to build a business case to replace some of our entry level positions with apprentices. The first step was to determine which one really required a four-year degree or where have we gotten in the habit on hiring from four years of college.

Then we took a closely look at those jobs and found that many of them had high turnover which is expensive and disruptive. Because the role didn't require the degree the new hire was not staying in a job that didn't really demand it. But our HR system required it because that's the way we always had done it.

The key to the success to our program was the buy in from the entry position manager. In their judgement the investment in training with increase retentions was clearly superior to a quick hire and greater turnover. Our partnership with Harold Washington College combined with our on the job training serves their business needs and Aon desire to take advantage of community resources. We mitigated the risk in hiring college graduates, while addressing our needs and Chicago's opportunity.

Over the last three years we have hired 75 apprentices in a two-year program in IT, HR and our core insurance business. They work four days a week at Aon and go to class at Harold Washington on Fridays. They are paid as full-time employees and receive health and retirement as well fully paid tuition. Of the three classes of apprentices that we have hires, 75% are African-American or Latino, most are Chicago Public School graduates and all of them were working multiple jobs to finance their life and their school before coming to Aon. Further our

apprentice program is registered in partnership with the Department of Labor which signifies our program meets the standards and quality requirements for such programs.

Because of these efforts, these young people have a path to a career not just a job. But that was just the beginning, because as I mentioned, the idea is good, but the scale is essential.

To that end, we created an employer lead initiative know as the Chicago Apprentice Network, bringing other large employers together with the goal of creating an entry point for employers to explore apprenticeship, learn best practices and create an ecosystem of job training and workforce development. These employers Accenture, Zurich, Walgreens, JP Morgan Chase, McDonalds and others have come together to build a strong foundation in Chicago and a roadmap for other cities.

In our first year – 2017 – there were 2 employers and 50 apprentices, in 2018, 8 employers and 130 apprentices, this year we have 23 employers and over 425 apprentices with the goal of 1000 apprentices by the end of 2020.

Beyond the numbers, another important goal is to create an environment where the students that attend our nation's community colleges feel there is an opportunity for success in a corporate environment. It is our desire to expand this opportunity to other cities across the country.

This is where we need your attention and leadership. In order to build this new traunch of our nations' workforce and keep pace with change in our economy we need strong national standards for apprenticeships that will allow us to scale across the country. We have found these standards in the registration process and encourage both employers to adopt registration and the Department of Labor to continue the collaborative partnership that has made that process successful.

Second, we would strongly encourage continued investment in the workforce development mission of the nations' community colleges. This system is everywhere and is the answer to the rising cost of traditional four year colleges. If a student does not have personal resources for college or does not want to take on debt, community colleges are often the only option. This option needs to be a viable entrée into all parts of the economy. As negotiations begin ion the reauthorization of the Higher Education bill, a strong investment in community colleges and HBCU's that encourages employer partnerships and apprenticeships would go a long way to building a more accessible workforce training system.

AON

I want to thank the committee for your interest and for affording me the opportunity to speak to you today about Aon's initiative in this vital area. We are proud of this program and look forward to growing these programs in a variety of disciplines across the United States.

Chairwoman DAVIS. Thank you very much. Thank you to all of you. Your testimony was very helpful.

We are going to move into our question session now under the 5 minute rule. Everyone can ask a question and we will kind of keep an eye on the clock for them as well. We will be alternating between the parties.

I now recognize myself for 5 minutes.

And my question to you really goes along with the testimony of all of you. I mean we acknowledge that apprenticeships have seemed to pique the interest of employers, of policymakers, educators, new apprentices, and more. For the United States we are certainly at a 20 year high for the average number of people taking part in apprenticeships. And Congress has continuously increased our appropriations for Registered Apprenticeship programs with dedicated funding starting in 2016.

Ms. Carlson, according to your testimony, of course Apprenti was created just 3 years ago.

Ms. CARLSON. Yes.

Chairwoman DAVIS. And has a great record in that 3 years. And Ms. Gainer as well, really you—first apprentices started in 2017. So it is happening at a time that we actually have low unemployment and, you know, people might ask, so what is going on now. Why now? Why is there interest and appetite across the country to create and invest in and expand these apprenticeship programs?

You have clearly outlined a lot of that in your statements. I wanted you to just offer, if you could, what you think of the reasons that you have heard, and even borrowing from one another, what stands out the most, why now?

And we are going to move on and then talk about the role of the Department of Labor as well.

Ms. Carlson, if you would like to start.

Ms. CARLSON. Certainly. I think if you are looking from the tech sector, it is a combination of factors. There is this significant talent gap that we outlined already, but you are also dealing with a highly underemployed population in the folks that we are looking at. If you look at the median income coming in at $28,000. It turns out in a very blind way—we don't ask for educational attainment coming into our program—but we only know that based on apprentices that 52 percent of them have a college degree. And if the median age is 32, that means they came out at the bottom of the economy, and based on that income have been largely in service level and entry level positions and incapable of moving up.

So this creates an alternative pathway for them to get reeducated into a much higher living wage and serve the tech sector as well without having to go back to college and start over.

Chairwoman DAVIS. Great. Mr. Pavesic.

Mr. PAVESIC. Well, I don't believe that the interest in apprenticeships really correlate with unemployment, because apprenticeship is not about filling jobs today or tomorrow, but it is really about getting a career and having that career and having those lifetime skills and being a productive member of society and being able to raise a family and send your children to college.

These are highly skilled jobs. It is a viable chance for them to, you know, let us say even avoid college debt. You know, let us face

it, college debt is a huge problem in this country. And for an individual to be able to attend an apprenticeship at little to no cost to them and come out with a job that pays just as well as a college education, is a wonderful thing.

The other part of it too is that as some of these apprenticeships show, they can earn college degrees. It is a different path to a college degree post-secondary education.

Chairwoman DAVIS. Thank you. Go ahead and, just quickly as you can. I know it is hard. What else would you like to emphasize?

Mr. HAYS. Yes, Madam Chair. I think it comes down a lot to the labor economics. Employers are looking for employees. They are not only looking for them, but how do they retain these employees. And, you know, we all know that there are more job openings than there are workers to fill them now, so in some sense it is a desperation among some employers to try to find workers to fill those needs.

So I have always said, if you keep doing the same thing you have always done, you are going to keep getting what you have always got. So employers are starting to look at apprenticeships in a whole new light now as a way to fill labor force needs.

Chairwoman DAVIS. Thank you, Ms. Gainer.

Ms. GAINER. Yes, just quickly. Look, the pendulum has shifted. A generation ago a lot of people didn't go to college and they had perfectly good career jobs. It swung way over to college and I think what we are seeing now is the weaknesses in that system. So you have high cost of college, you have this high turnover rate. You know, candidly, millennials need a lot more engagement to stay happy at work. And this was an issue. So I think engagement, retention, and the pressures of high cost of college.

Chairwoman DAVIS. Great. Thank you so much. I wanted to ask you all about what role you think that the Department of Labor should be playing in relation to apprenticeship programs.

Maybe just from you Ms. Gainer, sort of high, medium, low? What do you think?

Ms. GAINER. Yes. I think that they—look, as an employer perspective, the role of the Federal Government is to set standards. We do not take one dollar of Federal money, nor have we ever sought, and neither do any of the employers that are in our network.

Having said that, it is not a—I don't want to be in the position of creating a set of standards for other people to follow, but I do want to know that if we have invested 2 years in training someone to be an IT analyst that they should be able to go to another company and be an IT analyst, just like you can be a plumber or you can be something else. It should be portable in the marketplace because to invest in the work force is ultimately better for the entire country.

That is not the job of the employers to set national standards, however they need to be high quality and set across the country.

Chairwoman DAVIS. Thank you, thank you. And perhaps someone else will pick up and will get into this role as well.

I want to now recognize the ranking member, but instead we have the ranking chairwoman of the Education & Workforce Committee, and so I am delighted to turn to Ms. Foxx.

Mrs. FOXX. Thank you very much, Madam Chairman. And I want to thank our witnesses for being here.

The Chairwoman has had a great interest in this for a long, long time, as have I. And I am very glad that we are having this hearing today.

Mr. Hays, I am encouraged to hear you say preparing the individuals for the work force should not be about one type of education, degree, or institution. I have tried to champion the idea that all education is career education.

Can you tell me more about how that type of flexibility benefits your community and the people that come through your programs?

Mr. HAYS. Absolutely. Congresswoman, it is a matter of—we don't want to put people in a box. We know that people learn different ways, people pick up skills different ways. We want that flexibility to be there so that these individuals can obtain the skills they need in order to provide for themselves and their families.

And so if that is Registered Apprenticeships, great, if it is IRAPs, great, if it is a traditional college degree, outstanding. We want to be able to have that flexibility in our community to give people the choices that they can make to better support themselves and their families.

Mrs. FOXX. Great. Thank you.

Mr. Hays, every day I hear from employers they need skilled workers. We have talked about that; most of you have. Registered Apprenticeship programs are a great way for workers to earn while they learn a skilled trade. However, many employers, as you have all—I think most of you have said that the process can seem overly burdensome to employers and may ultimately not give the company the flexibility it needs.

What are some of the concerns you have heard from employers when it comes to Registered Apprenticeship programs?

Mr. HAYS. I think there are two main concerns from our employer community. One is the length of time it takes to get a Registered Apprenticeship program off the ground. And the second one, to some extent there is a lack of flexibility of trying to learn multiple skills. Sometimes they feel like they are put in a box on the skills that they have to—for the apprentices to learn. They would like to have more flexibility to expand the skills of that apprentice.

Mrs. FOXX. You mentioned in your comments something that you don't usually hear from somebody associated with a community college, and that is whether the students receive college credit or not is not the big issue that you all are concerned with. And I applaud you for saying that.

But how many of your programs, if any, have college credit built into them and do you expect that to be more of a focus in the future? Because I assume you are funded on FTE by the state and that you would be funded under continuing education differently than you are for curriculum.

Mr. HAYS. Yes. So there are a couple of programs where the apprentices get college credit. What we look at as a community college system is how can we be more innovative in this area. It could be a situation of prior learning credit, where an apprentice gets through a program and then we come back on the back end and say that we can award the apprentice college credit for this instead

of, you know, working through the state system to try to get new programs established. That can take anywhere from a year and a half to 2 years. Employers don't want to wait that long, apprentices don't want to wait that long. How can we as a community college system possibly come back on the back end and award that credit once the apprentice is well established or through with the program.

Mrs. FOXX. Well, that is a very innovative way to think about it because obviously the college has that opportunity to do it, particularly if you are the ones who are designing the programs, then you know what is in those programs and they could be very similar to what you have in curriculum. Is that correct?

Mr. HAYS. Yes, ma'am. Very much so. And a lot of this too, we listen to the employers, you know, what is it you need, what kind of skills do you need these apprentices to have. And making sure that rigor is sustained and that as a community college system, how can we help grease the skids, move this process along. And then if the apprentice or the employer chooses later on for that apprentice to have college credit, then how can we make that as painless as possible and get it done quickly.

Mrs. FOXX. And one more question, you don't have to answer it all now, we can get it from you later, but are you keeping records on the number of students who might continue at Dallas Community College or other Texas colleges to earn degrees? Because one of our big concerns these days is completion of programs. And so I hope you are keeping some records on this so you will know how many go on.

Mr. HAYS. Yes, ma'am. Yes, correct.

Mrs. FOXX. Thank you. Thank you, Madam Chair.

Chairwoman DAVIS. Thank you very much. Ms. Jayapal.

Ms. JAYAPAL. Thank you, Madam Chair, and thank you again for your very interesting testimony.

This is a topic of great interest to me. When I was in the state Senate we worked with labor unions, community colleges, and nonprofit organizations to put together a very successful pre-apprenticeship program with millions of dollars. It was a bipartisan program that I led and we had incredible retention and graduation rates in just 2 years. Iron workers actually did a fantastic job of really reaching out to formerly incarcerated and minorities.

So I appreciate very much the work that you have done.

Ms. Carlson, your testimony described stark gender disparities in Registered Apprenticeships in Washington State. Through December 2018 there were about 19,220 Registered Apprenticeships in the state, of which only 10 percent were women and about 7 percent of apprentices were women at the Federal level.

How does this contribute to broader gender wage gaps in the industry?

Ms. CARLSON. Well, I think that hiring and cost disparity and how we compensate people in the tech sector is well documented unfortunately. The significant advantage on the Registered Apprenticeship side is that doesn't exist. What we establish as a wage per occupation with each company, and it is company driven at that level, is what all apprentices in that role get paid. And so there is no wage disparity walking in the door.

And we have established a system for communicating with the companies also on retention where we identified a couple of companies, one in particular, that retained their male apprentices at a slightly higher wage, not at the significant gap we have seen historically, than the female. And we brought that to their attention and they leveled that.

Ms. JAYAPAL. Thank you. And today we will pass the Paycheck Fairness Bill on the House floor under Democratic control.

So you also mentioned that Apprenti aims for 70 percent of its participants to be women, people of color, and/or veterans. I am interested in how you target these groups in particular. I would add rural communities to this as well, because I think there is a particular challenge with getting jobs into rural communities.

And if any of the others of you would like to respond briefly to that as well I would be interested.

You want to start, Ms. Carlson?

Ms. CARLSON. Certainly. So far our success in attracting diversity has been strong. We have 84 percent of our applicants in women underrepresented minorities and veterans. And the way we have defined that very specifically are African American, Hispanic, mixed race, Native American, Pacific Islander, basically to the exclusion at an EEO level of Asian and Indian because that isn't underrepresented in the tech sector specifically.

The composition, 64 percent underrepresented women, 66 percent veteran. Composite is 84 percent. So we are well above the 70 percent that we intended to place and continue to manage to that level.

Ms. JAYAPAL. And if anyone else wants to add to this, I am interested in what strategies you used to do that. What makes you effective at getting that kind of diversity?

Ms. CARLSON. I think it was about the outreach and how we structured the program from the get-go. It was about how we targeted organizations that work with those underrepresented groups from working on base for recruitment to community college system to NPOs, nonprofit organizations, serving those groups.

Ms. JAYAPAL. Anyone else want to add to that? Ms. Gainer?

Ms. GAINER. I think it is intentional recruitment and I think it is also creating a support system.

So we partnered with an organization called One Million Degrees that meets with the students when they go to school on Fridays. They meet with a manager of the—One Million Degrees meets with the manager, they meet with the students. I mean, look, we always tell these guys, your boss is not your mom. You have to kind of figure out a way to navigate your workplace. So realizing that this is someone's first entry into work and supporting them has been helpful.

Ms. JAYAPAL. That is really what we found too. Those nonprofit organizations can do that particularly well, so those partnerships are important.

Finally, I am deeply concerned about the Trump Administration's effort to replace Registered Apprenticeship programs with so called industry-recognized apprenticeship programs which do lack government oversight and protections for potential conflicts of interest and the welfare of apprentices.

Mr. Hays mentioned that in his experience employers are hesitant to begin the process of a Registered Apprenticeship because they feel it is not flexible enough to meet their needs and they want a program that allows an apprentice to be trained in multiple skill areas.

And I am just curious, Ms. Carlson, has that been your experience at Apprenti, and what would you say in response to that?

Ms. CARLSON. It has not been our experience thus far. And we are working now in 11 states and the consensus of the companies we worth with has been that they want a single standardized system, an ecosystem if you will, of Registered Apprenticeship to define the roles, because the roles are not dissimilar from one sector to the next with regard to technology, and that portability of the skill set is what it is most important or paramount to our ability to scale this operation, and that will actually provide the outcomes the companies are looking for to fill the skill gap.

Secondarily, they have had extraordinary flexibility in creating the tech talent, the training, the classroom portion of training, to meet that employer's specific needs. And we actually work with the Dallas Community College system to deliver that on behalf of AWS, Amazon Web Services, and have scaled it exactly to their needs, very differently than we scale Microsoft's training needs, but to the same platform of skill sets required.

Ms. JAYAPAL. Thank you so much.

Chairwoman DAVIS. Thank you.

Ms. JAYAPAL. And, Madam Chair, if I might ask for unanimous consent to introduce into the record a progress report for the Preapprenticeship Support Services program that I mentioned at the Washington State Department of Transportation.

Chairwoman DAVIS. Thank you. So ordered.

Ms. JAYAPAL. Thank you.

Chairwoman DAVIS. Mr. Watkins.

Mr. WATKINS. Thank you, Madam Chair, and thank you Ranking Member Foxx.

Mr. Hays, this question will be for you. A majority of my constituents are enjoying record low unemployment. The Bureau of Labor Statistics says that in February the unemployment rate in Kansas, it is the lowest it has been in 10 years. It is 3.4 percent. We believe that this is in part because of common sense pro-growth policies like low taxes and low regulation.

With such a demand for skilled labor, it seems like we should be focusing more on all types of apprenticeship and work force development programs, not just the Department of Labor Registered programs.

What are your comments on that and what kind of work force development policies do you think we should consider here in Congress?

Mr. HAYS. Well, as I have mentioned, Congressman, I think it is important that we have a variety of programs from the standpoint of the community college district that we can work with employers on.

If those are Registered Apprenticeships, that is great, if they are IRAPs, outstanding for us as well. If it is credit programs, certifi-

cate programs, we are there to move agilely to meet employer needs. We want to be able to help those employers.

In Dallas about 60 percent of our funding as a community college district comes from ad valorum taxes and 60 percent of those taxes are paid by businesses. We are in the business of helping our businesses to succeed. And when we help our businesses succeed that means they will hire students or they will hire apprentices and make those programs work.

As far as policies go, the thing that we ask for is basically we want to maintain rigor in all of our programs, whether it be apprenticeship programs, academic programs, whatever the case may be. We feel that employers are giving us great feedback, and they say why would we want to train people for jobs that we have in our business and those people not be trained to the utmost of the skills that they can get.

So we hear both sides of this and we work the Registered programs, the IRAP programs. We also work the traditional college programs as well to meet employer needs.

Mr. WATKINS. Thank you, Mr. Hays.

Madam chair, I yield my time.

Chairwoman DAVIS. Thank you, Mr. Watkins.

Mr. HARDER.

Mr. HARDER. Thank you so much for being here. This is such an important issue and I am really excited to have the chance to have this conversation.

Ms. Carlson, in your testimony you state that our Nation is facing a tech talent crisis. And you said in 2018 there was about close to 3 million tech jobs left unfilled in the U.S. did I get that right?

Ms. CARLSON. Correct.

Mr. HARDER. A lot of those jobs are in San Francisco and Silicon Valley, only 90 miles away from my district, and a lot of folks in my community commute 3–4 hours both ways, round trip every single day to have that. And we have a lot of talent, we just need to make sure that we are creating a better pipeline and a better educational system in some of those jobs.

Given this enormous demand, enormous demand of some of these opportunities, do you know the percentage of combined 4-year computer science and engineering degrees that we are graduating every year?

Ms. CARLSON. I do, 65,000 computer science degrees and 250,000 related STEM engineering degrees to computer science.

Mr. HARDER. Got it. So let us take the big number there, 250,000—

Ms. CARLSON. Right.

Mr. HARDER [continuing]. compared to 3 million job openings.

Ms. CARLSON. Right.

Mr. HARDER. So I think we can all agree that we are not going to solve the tech talent crisis just by graduating more people from a 4 year degree.

Ms. CARLSON. And there is no capacity.

Mr. HARDER. Exactly. And I think that is especially resonant in a community like mine, where 84 percent of my residents don't have a 4-year college degree. And I think if we tell people that the only route to the middle class, the only route to solve some of these

jobs that our employers need to fill is through a 4-year college degree, we are really doing a deep disservice to a lot of folks.

So that is the demand side, but let us talk about the supply side. So on the supply side, the Federal Government today spends about a billion dollars, $1.2 billion on vocational programs. Do you know the ratio of how much we spend for vocational programs versus higher education?

Ms. CARLSON. I do not.

Mr. HARDER. So we did the math, we tried to add it all up. There are a lot of different programs there. But what I think is I think we spend about $80 billion on the Federal level for higher education, PELL grants, subsidized levels, all the rest, and that we still have a crisis on how we actually can make college more affordable, so we probably need to be doing a better job there. But even at our current level, we say that this is an important priority and we are spending 80 times more on higher education than we are on vocational training. We need to do a much better job of increasing funding for both higher education and for our apprenticeship programs.

What do you think we can be doing? Like if we actually did a real good job of emphasizing the funding around a vocational training program and made it commensurate to the amount of talking and lip service that we give it, what could we be doing better to make sure we are connecting that gap?

Ms. CARLSON. Well, I think there are two things, at least with regard to our sector when I speak of tech. One is we don't have the rich 80-year history yet that our brothers in the trades have. And we don't have the same level of company engagement with regards to paying for the classroom portion of training for unproven quantities at this point. We have a lot of appetite and interest and swirl in the corporate side to understand what this could mean in creating new talent.

We have worked very closely with the state of California, amongst others, to create public-private partnerships to underwrite some of that training cost. But creating a sustained national funding mechanism that companies can tap into while we grow into this idea of taking people from nontraditional sectors, would be significant.

And just to run a couple of quick numbers, if we put $100 million into a national training fund on a match basis for companies or states to tap into, that would fund on a partial basis, 50 percent. Roughly 13,000 apprentices with that $50,000 earnings delta in the tech sector, going from $29,000 to $79,000 in earnings from pre-apprenticeship to post-apprenticeship. That would net $650 million in improved income just in the first year, or $13 billion lifetime. That would be a meaningful ROI on that $100 million a year investment that the government could make.

Mr. HARDER. Yes, yes. I really see there as being two challenges here. One is this huge imbalance between supply and demand that we have talked about and the lack of real Federal focus to solve this problem.

But the second is what you highlighted, which is the fact that we now have our entire apprenticeship program in America governed by an Act that Congress passed in 1937. And I don't think

there were a lot of tech jobs that were really in 1937. Maybe some weird stuff.

So that is what we need to be doing and I am really excited to have the opportunity to talk about this. And we will look forward to working with you and hopefully getting some stuff across the finish line.

I yield back by time.

Chairwoman DAVIS. Thank you very much.

Mr. WALKER. Thank you, madam Chair. I would have to take just a moment to applaud the Simmons family, machine specialists back in my district there who have really created the best apprentice program that I have seen and would at some point maybe like to enter some of their work into the record.

Mr. Hays, when it comes to the Federal Government being involved in some of these apprenticeships, how do you feel like—if you were grading this, giving the Federal Government a grade trying to partner with a small business, where are we right now? Can you speak to that?

Mr. HAYS. Well, I can speak to the experience we have had with the Office of Apprenticeship in Dallas, in the DUO regional office there. They have been fantastic to work with. They are understaffed, they have great knowledge of apprenticeship programs, we consider them a critical partner, along with employers and organized labor in all of our apprenticeship programs.

Grading the system as a whole, it is tough to say because it can vary in different parts of the country.

Mr. WALKER. Okay. Let me move forward. You have given me a good synopsis there.

Can you describe this typical student that participates in one of your apprenticeship programs? Can you build me a little profile here?

Mr. HAYS. Yes, again it is hard to build a profile, but most of the apprentices basically are in their early 20's, but however in our unmanned aerial system programs we have individuals anywhere from early 20's—one individual that is in his early 60's that is in that program. So we see that this is a—we are kind of plowing new ground in North Texas in this area. So it is something we are going to see I think a lot more interest in.

Mr. WALKER. And would you say the impact of these apprenticeship programs—how would you describe that? I don't want to lead you too far, but give me just a quick word on that.

Mr. HAYS. Well, I think the impact right now is growing and as we said, we want 50,000 apprentices by 2030 in Dallas and we think that will be a substantial economic impact and that will continue to grow every year.

Mr. WALKER. I appreciate that. What would say some of the concerns of the small businesses are regarding compliance with the requirements of these Registered Apprenticeships?

Mr. HAYS. I think there is some trepidation in the fact that they just don't know. There has to be some education involved there, not only from us but from the Department of Labor. Other businesses who are participating in apprenticeship programs now are great resources. Businesses talking to businesses helps a lot and helps alleviate a lot of those fears.

Mr. WALKER. Sure. I think you mentioned about small businesses in your testimony seeking additional flexibility. Can you expand for just a second on that lack of flexibility?

Mr. HAYS. It is a common perception among the businesses that if I train an individual in a Registered program with one set of skills then I am locked into that one set of skills. A lot of that is education on our part, how we can help individuals look at apprenticeship programs that are best for them. They want employees that have a multiple tool box full of skills that they can use. And some look at the Registered programs and say that works, others look at the IRAPs and say that is what we would like to have.

Mr. WALKER. How would IRAP or other industry-based programs address that issue?

Mr. HAYS. I think the perception is it gives the employers more flexibility to help individuals with multiple skill sets, gives them the freedom that they can do some things, that maybe they couldn't do under Registered programs. And so they look at those with a very keen eye because they think those programs could work for them.

Mr. WALKER. I was meeting recently with an organization called Pike Energy and meeting with the CEO and I was impressed to talk about what they are trying to do, and that within 5 years pretty much anybody can be trained and be making 6 figures a year.

The problem is, with Pike Energy and dozens and dozens, if not 100 companies I have talked to in North Carolina, they can't seem to find someone to be able to even start these programs. So maybe this a question to you, and anybody else who wants to weigh in my final minute here, at what age range—and maybe if you have any experience—at what age range should we be identifying some of these skill sets as far as trying to match them up to some of the industry that we see out there?

Mr. HAYS. Well personally, I think pre-apprenticeship programs are great in this area because it gets students exposed at an early age to those areas. And I think that the earlier the better. Letting people know about occupations, pre-apprenticeship programs are great, whether it be at the high school level and getting people prepared for a full-blown apprenticeship program, whether it be Registered or an IRAP program.

Mr. WALKER. I would like to followup some more, but I have got about 17 seconds left, so with that I will yield back, Madam Chair.

Chairwoman DAVIS. Thank you.

Mr. LEVIN.

Mr. LEVIN. Thank you, Madam Chairwoman. Thank you so much for convening this hearing. This is a very important topic. I am a huge champion of apprenticeships.

And I want to just pick up where the gentleman just left off with pre-apprenticeship programs. When I was running the work force system in Michigan we worked with the Registered Apprenticeship programs, such as Mr. Pavesic represents here, and created pre-apprenticeship programs from high school on—you know, college, dislocated workers, whoever, could enter them. And we got people ready to meet the rigorous standards of the Registered Apprentice-

ship programs. Road construction apprenticeship readiness was the first one we did. And we had paid programs where people got training, got tools, and a lot of them were people from disadvantaged communities. You know, it is something that is very good.

You know, I think that Registered Apprenticeships can and should expand into new industries, occupations, and populations as one of many solutions to address the need for more high-quality pathways to the middle class and beyond.

Registered Apprenticeships have consistently proven to be worthwhile investments, with 91 percent of apprentices employed after completing their apprenticeships, earning an average starting wage above $60,000 annually.

I am troubled by the Trump Administration's efforts to expand unregistered apprenticeship programs which are not accountable for meeting quality standards or ensuring the success of apprentices. I strongly support innovation and expansion of our Registered Apprenticeships into new occupations, but I will not compromise on the quality and accountability of these programs.

I extend my hand to Republican colleagues who want to work with us on expanding high-quality Registered Apprenticeships that would benefit both employers and employees.

Ms. Gainer, I have concerns with the confusion that having two apprenticeships systems under the same name with very different levels of quality and accountability will add for employers and prospective participants. Do you share those concerns?

Ms. GAINER. You know, I think the key thing is employers really want to focus on running their business and they want to hire people and they want them to be trained and they want a credential like a 4-year degree to mean something. So if you went to a college in North Carolina, it is the same as if you went to a college in Indiana, and you can do that. I think one set of standards means that we are much more likely to make the improvements in the work force policy that we are talking about.

What is going to happen is no one is going to lead a protest to your door to tell you it doesn't work. They are just not going to do it because it is too complicated. And no one wants to spend a bunch of time navigating whether or not this thing makes any sense. We already know that the registration process creates a system in which someone is trained to a do a job and they can do the job. I doubt anyone is—large employers are going to spend a lot of time trying to learn a whole new system. You just may get people not participating.

Mr. LEVIN. So you want certainty and clarity about the standards essentially from the employer—

Ms. GAINER. Yes. We are making a substantial investment and we would like it to mean something.

Mr. LEVIN. Absolutely. And I appreciate your earlier comments about portability being so important for you. And it is really a contribution the employers make. They build their own work team and they build it across their whole industry.

Mr. Pavesic, you know, people talk about this program as being restricted to union workplaces. Some say Registered Apprenticeships are only for traditional trades and that unions receive pref-

erential treatment from the U.S. Department of Labor for their programs.

From your experience, do these claims seem to be accurate?

Mr. PAVESIC. Well, you know, I heard it said, and Ranking Member Smucker mentioned the amount of apprenticeships in Europe and how far ahead Europe is the United States. And I would say that, you know, a Registered Apprenticeship—and we have talked here today about Registered Apprenticeships and the amount of effort that goes into a Registered Apprenticeship, the thing is, if something is easy, is it really worthwhile? You know, we shouldn't water down apprenticeships just so that we can increase the numbers of apprentices in this country. Registered Apprenticeships have stood the test of time. The building trades are definitely, you know, a source of that to be able to see that, but I just don't see where if we water down apprenticeships and create those numbers—and, you know, we talk about filling jobs, we want to make sure that individuals are trained so that when unemployment goes up that they have the skills to be able to find a job and not just be able to have that one job and then when that job is gone then they no longer have the skills to find another.

Mr. LEVIN. Thank you. Madam Chairwoman, as my time expires, I wanted to tell you I was at the Bricklayers Local 2 training center in my district in Warren, Michigan late last week and they have 30 and 40 people coming into wave after wave of apprenticeship training programs, a rainbow of people, all ages, from all races and nationalities. And they can't train enough people. It is a fantastic job, you know, starting $60,000 and above. So this is a really important area for our workers.

Chairwoman DAVIS. Thank you.

Mr. LEVIN. And I really appreciate your interest in it.

Chairwoman DAVIS. Thank you.

I am going to turn to Mr. Meuser.

Mr. MEUSER. Thank you, Madam Chair. Thank you very much to all of you for being here with us today. This is a very important discussion, one of which is quite topical in my district, in Pennsylvania, and I am sure most districts throughout the country. I appreciate your expertise.

And I have spent much time visiting career and technical schools throughout my district, including career and tech centers in Lebanon County, Carbon County, and Schuylkill County. Just yesterday I met with directors from Berks Career and Technology Center, sharing ideas on how we can improve this climate of skill and career development for people of all ages.

We also have in my district some high schools, including Central Columbia High School, that has an outstanding career development program.

So it is quite topical to have this sort of initiative for the work forces that are available. And so as we fulfill the many jobs that are also available and going unfilled.

So, Mr. Hays, I know you understand the importance of making sure we are educating students a way that the lines—with the unique needs of employers in our communities. So I ask you, as you are doing an excellent job with your community college, creating

opportunities for industries within your area, can you talk about how other school districts can replicate some of your best practices?

Mr. HAYS. Well, I think that a lot of it was we just decided to jump in and learn. And mistakes were made along the way, and we will make more mistakes I am sure. But as we gather this expertise it is all about listening and listening to the workers, listening to the employers—that is key—and what are their needs.

So, you know, our—basically what we do is we serve as an intermediary in a lot of ways. If an employer says I need people trained in these skills or I need people trained in those skills, then we try to solve the problem. How do we help the employer meet those skill shortages, how do we connect Dallas County residents with those opportunities, how do we get into the high schools to let students know that those opportunities are available? You know, we have a lot of our students—our average age in our college is about 26. A lot of those are individuals they may have a child or two. And when you're going with the traditional higher ed speak and saying well in 2 years you could be doing this or 4 years you could be doing this and said no, what can I do in 2 weeks or 2 months, I have got kids to feed, how can I move ahead. So a lot of times apprenticeships are a great avenue for them if they don't have the time, the luxury of time to spread out a 2-or 4-year program for a college degree. Get into apprenticeships, start making some money right now. And then if they want to look at college hours down the road, great, we will help them with that too.

Mr. MEUSER. Okay. Are you finding employers difficult to gain to be part of this and for them to embrace that this is a great way of fulfilling their job?

Mr. HAYS. It is a lot easier than it used to be. And as I mentioned earlier, I think a lot of that is due just to the fact of labor force shortages. The workers just aren't there that they need. So they are looking at new ways, innovative ways that they can come in and try to attract workers and retain those workers.

And so it is the conversations that we are having where employers are much more open to hearing about apprenticeships and other innovative methods to put people to work to meet their labor force needs.

Mr. MEUSER. Okay. But do you find that a challenge, training young people, or anyone, for a new career, developing new skills is certainly one part of it, the fulfillment, but making sure that those who have the demand are aware of what endeavors that you are and what you are offering? Is that more of a challenge than the—

Mr. HAYS. It is a challenge simply because of the scale of Dallas and the Dallas-Fort Worth area of how large it is. We try to reach out to as many employers as we can, but we are still hitting just a drop in the bucket with the number of employers that we do have.

But we want to get that word out as quickly as we can to as many employers as we can to let them know that there are options available to them.

Mr. MEUSER. Thank you. Madam Chair, I yield. Thank you.

Chairwoman DAVIS. Thank you.

Ms. TRAHAN.

Ms. TRAHAN. Thank you, Madam Chair. I want to thank you for holding this important hearing and for the witnesses for taking the time to join with us this morning.

In Massachusetts our Republican Governor has launched a new initiative to expand Registered Apprenticeships. And much of what we have heard today I am proud to report we are already doing in the Bay State.

The Governor's apprenticeship expansion plan was launched last summer to fill pipelines of mature industries, but also to grow into new economic sectors as well. And in just over a year we have added over 100 new apprentices in manufacturing, we have new programs in healthcare, and our first apprenticeship program for software developers will be launching in April.

Ms. Carlson, thank you for testifying today. You have had a great success. Apprenti is clearly filling an important role in meeting the demands of today's tech job market. And three words from your testimony jumped out at me, competency over pedigree. I agree with you, we need to embrace more pathways for our young people to get a good job at a good wage, particularly as college prices continue to rise. However, in a tightening job market a bachelor's degree or higher seems to be a prerequisite, even if the job doesn't necessarily require it.

Dr. Noemi Custodia-Lora, who is an assistant dean at Northern Essex Community College, and our president there, Dr. Lane Glenn, recently wrote a paper titled "Revaluing the Associate's Degree to Remedy the Skills Gap". The upshot was although many employers can require a bachelor's degree or higher for a particular middle skills job, it doesn't mean that they should or need to do so. The associate degree can be sufficient.

Your testimony was in a similar vein, but for Registered Apprenticeships. I have no quarrel at all with those who value a bachelor's degree. I was the first in my family to graduate and it was life changing for me.

This committee recently reported that a bachelor's degree holder will earn 167 percent more than what a high school graduate would earn, but a bachelor's degree isn't always the best option and we need to, as you say, value competency over pedigree.

What has been the reception from Washington's Technology Industry Associations' membership or other companies as Apprenti has expanded into I think more than 11 states now, when you have argued for apprenticeships filling roles that had been traditionally reserved for those with a bachelor's degree?

Ms. CARLSON. Well, I think the pain point for employers is finally at a fever pitch. You know, there are a combination of factors. The mantra has become poaching in order to get the talent that they need, which is driving company P&Ls up significantly on their tech talent. And so this is an opportunity for them to sort of change their direction and be willing to become training entities, to develop the talent that they need, and create the long-term sustainable platform for training talent that the country needs on a portable basis.

The companies that are working with us have gone very publicly on record as needing to work on more of a culture change in the tech sector around training. And so the first 40–50 companies that

are at the table, very large and very small companies both, are working on that front to do exactly that.

Ms. TRAHAN. Do you have lessons for us, certainly making the case for Registered Apprenticeships to employers, but as you so eloquently said, culture change. How do we accelerate that culture change?

Ms. CARLSON. Well, again, I think it is about the pain point. Companies have recognized it and they understand it. They are looking for the right solution. And I think that my colleague here at the other end of the table very eloquently put it herself that this is about investing in a system that we expect to be sustainable and portable and that we wouldn't do this at a company level if we didn't see that support from the government level to create such a program.

Now, it is a birds of a feather flock together mentality. So, you know, each company is looking to see who else has gone before them and how successful that has been. And we are finally getting to a point of momentum where we are able to show that it is working across sectors, across states, and that the skill sets are stable and that the talent, even though unproven, is able to migrate into the job and be retained.

So it is really in—we are in that 5–10 year longitudinal study window that companies need to see to feel positive about it.

Ms. TRAHAN. You bet. And I am going to try to squeeze this last question into my 20 seconds.

But often what we hear from employers is that with no formal bachelor's degree, soft skills are lost, that are so important. You know, those management skills, financial literacy skills.

Have you confronted that? In 5 seconds do you have any recommendations for how to fill that gap?

Ms. CARLSON. I don't have a recommendation. I can tell you that it is a core requirement of the companies coming in though.

Ms. TRAHAN. Okay, great. Thank you.

Chairwoman DAVIS. Thank you.

Mr. GUTHRIE.

Mr. GUTHRIE. Thank you, Madam Chair, for holding this meeting. Thank you for all the witnesses for being here. I tell people back home quite often that a lot of the stuff that happens here happens in working together in bipartisanship. That is not what gets on television all the time. And the Chair and I have worked hard on the Apprentice Act, and just put forth the Partners Act.

And everybody here—because everybody here and sitting at home, they were having employers that want to expand, want to grow, want to move forward, and they can't find qualified employees to apply or to be there. And if employees show up with the right skills, they are going to make their lives better.

So knowing makes their businesses better, makes our citizen better. And so that is why there is so much focus on this. And what a great panel.

I worked in a manufacturing facility and we didn't have enough tool and die makers, industrial maintenance people, and tried to find them, tried to find them, until we found the very best people were the ones working in our plant at other places. They knew what the die was, they knew what the—they knew how to run it,

but they didn't know how to set it, they didn't know how to make it, they didn't know how to repair it. But they showed up for work every day and they were working hard. And they weren't underemployed according to their skill level, but they were certainly underemployed to their aptitude level and what they could be and what they could do.

And there was a particular person, who is like mid 30's and had 2 children, one almost a teenager. And I remember at a quality lab her doing an angle on a thing and I said, wow, you just did trig, and she had dropped out high school. And she said, I don't know trig, I never took trig. I said well, you don't know that, but you do know it. And it was funny to see her kind of spark and go on back to school.

But I guess through that, 4 years is a lifetime to her. If you are 33 years old, you have got almost a teenager, just to say I can't go in the fall and just in the spring and take the summers off. I have got to get through this. And so that is what—who we—I want to focus on and try to reach out to. I think a lot about her and people in her situation and how we move forward.

But there are a lot of jobs that require skills, and with those skills come good wages. But some will take 4 years, like truck driving. I know in our area you can start over—almost $50,000 starting for truck driving. There are welders paying $18 for people just to show up and learn how—$18 an hour just to learn how to weld if they are willing to learn how to weld.

And what seems to be happening—of course, our big supply of these skills were people that came to work unskilled and we trained them, because they were smart and they just didn't know it, or nobody told them that, or something happened to them in their education level. But now you struggle just to get the—if you have some unskilled—so in a factor you have got unskilled jobs or low skilled jobs and you have got high skilled, and trying to transfer them up. Now, just getting people—if you go to employers now, they say, if I could find somebody breathing and pass the drug test, they would move forward, I can move forward.

And so I guess what I am getting at—and I know that, Mr. Hays, you have an ambitious program with your apprenticeships. And when you go to factories and when you go to even work force training—we did a lot of work bipartisan on WIOA. The biggest concern when you go to employers, even people who train work force training, is we don't have people showing up for the training, we are not getting people into the training. And wages are—I mean it is almost $50,000 to start truck driving. I think Walmart said they might pay $90,000 for truck driving because they can't move their stuff.

So but it just doesn't seem the market is working. That wages are going up in skills. I am not—don't necessarily talk about unskilled or low skilled, and business—and there are seven main open jobs, but people aren't showing up for the training. I know people are, but the mass of people that can fill these jobs.

And, Mr. Hays, do you have any insight on that? And I know you want to reach I think 50,000 people, and how are you going to measure that and how are you moving forward with that?

Mr. HAYS. And I will give you a good example, Congressman. In Dallas right now there are probably 45–50,000 jobs open today that pay $24 an hour or more and require an associate degree or less. And yet, as I said, we have the third highest poverty rate in the Nation. They are not buying what we are selling.

Mr. GUTHRIE. That is my point. You are right onto my point. So what is your—

Mr. HAYS. So how do we bring that home. And I think a lot of it we are doing—and our chancellor very visionary with his early college high school programs. We have 55 high schools in Dallas County right now that will next fall be participating where students are getting an associate degree and their high school diploma at the same time. And we have partnered like with the University of North Texas Dallas so those students can move into bachelor degree programs, for example, at no cost to that student.

We have the Dallas County Promise. Students who are graduating seniors from Dallas County high schools coming in and not having to pay anything to go to college.

Mr. GUTHRIE. You think you are—are you capturing—I am running out of time—are you capturing students that would have probably gone on anyway, they just got it done before they got out of high school, or are you actually bringing in people that you think would have been lost to the system?

Mr. HAYS. Yes, we—the data shows that we are increasing significantly the number of students who are going to college.

Mr. GUTHRIE. That is good.

Mr. HAYS. And my thing is that college is an option for them, but apprenticeships are too. And so how do we create programs in the high school levels to start bringing those students into apprenticeships.

Mr. GUTHRIE. I might have said college, I meant skills.

Mr. HAYS. Yes, skill programs as well. And I think the pre-apprenticeship programs that we discussed are great avenues for that. And it is something—we have to up our game in to try to bring in more pre-apprenticeship programs to the high schools to match what we are doing bringing students into college programs.

Mr. GUTHRIE. Okay. Thank you. Thank you for that. I appreciate it. And I yield back.

Chairwoman DAVIS. Thank you very much.

Ms. LEE.

Ms. LEE. Good morning. Thank you all for your testimony today.

Mr. Pavesic, first of all, I had the honor of touring Local 525's training facility in Las Vegas, Nevada, and I must say, it was a true gem and a true asset for our community.

Mr. PAVESIC. Thank you.

Ms. LEE. I also, in addition to serving on this committee, I also serve on the Veterans Affairs Committee, and so I was very pleased with your testimony about the UA's Veterans in Piping program, the VIP program, where you support transitioning service members and give them advanced credit toward their completion of their apprenticeship program.

I wanted to ask you, what was the UA's motivation in creating that program?

Mr. PAVESIC. Well, basically it was the right thing to do. These men and women put their life on the line to, you know, protect us and to keep our Nation safe, and it was—it really wasn't even a sale, it was a very easy program that we put together that the membership 100 percent supported. And it is supported 100 percent with membership contributions into our training fund.

Ms. LEE. Thank you. You know, suicide prevention is such an important part of what we are focusing on the Veterans Committee, and I hear again and again from veterans that it is a whole body and it is about having work and having employment and living in dignity. So thank you for that.

I wanted to ask you, talking about the success of it, can you talk about your success metrics in how successfully you transition veterans into the workplace?

Mr. PAVESIC. So, you know, it didn't come without problems. I mean when we started it we were new to it and it was actually a new program even to the military. But what we found is that as we worked more closely with the military—and what we actually do now is the military sends us the candidates. So they understand the candidates, what they are looking for, if they will be successful. Not every soldier wants to be a pipefitter or a plumber. So we wanted to make sure that if we were going to make that investment that individual was willing to do that trade and to get into that trade.

And the idea then too was then to support them. We make sure that we find a job for them when they come out. And the best part about this is that they are actually trained while they are still on active duty. So the day they transition out they go right into a job.

Ms. LEE. That is great. Thank you very much.

Ms. Carlson, the Administration recently released its 2020 budget and proposed the $160 million expansion of IRAPs rather than direct funds toward Registered Apprenticeship programs. The Department of Labor also may soon announce the first grant recipients for these new IRAPs.

I believe that with the introduction of these apprenticeship programs it is super important that we ensure that there is a strong quality control that ensures that individuals who are enrolled can also achieve the outcomes that they so desire. We have seen what weak oversight does and the pitfalls of that, or quality control, especially when it comes to for-profit schools. Certainly in my community in Las Vegas, we have seen a lot of closures and a lot of students put out without any degree as a result.

Will your organization attempt to create these new IRAPs rather than stay with the Registered programs?

Ms. CARLSON. No. My board has made the decision with me to stay in the Registered system and not engage in IRAPs.

Ms. LEE. Can you expand on what were the factors that caused you to make that decision?

Ms. CARLSON. Well, at this point, it is two really. It is that we have no directive from the employers that we work with to do it differently, and the companies want a standardized, holistic, portable system and feel that the rigor attached to the Registered system is the correct one. The IRAP system being defined as some-

thing that would be company centric takes away from that portability on the skill sets.

Second to that is that we don't have a definition of what an IRAP is. I can't engage in what I don't understand. And as we have tried to do our research on that and have sat through several committee meetings, it is still unclear what it is expected to deliver and how it will be defined.

Ms. LEE. Thank you. Mr. Pavesic, I have one more question for you.

Can you tell us what sets the UA's Registered Apprenticeship programs apart from other work force training models like the non-registered programs in your same sector?

Mr. PAVESIC. Well, I mean highly skilled jobs, the amount of money that the individuals make when they come out. And it is actually we are setting them up to be great attributes to the country, because it is not just a job that we are training, it is a career.

Ms. LEE. Great. Thank you all very much. Appreciate it.

Chairwoman DAVIS. Thank you.

Mr. GROTHMAN.

Mr. GROTHMAN. Right. Thank you very much. I do have apprenticeship programs in my district, as everybody else, you know, toward the carpenters, the operating engineers, pipe trades, that sort of thing. All very impressive and all share something in common, they can't find enough people. And employers around my district can't find enough people.

I will ask you guys, and maybe I should start with Mr. Hays, but any of you, is there anywhere in the country where we really have enough people in these sort of things, or is it a nationwide thing that these well paid professions are—frequently more well paid than what you get with a 4-year college degree—can't find people to fill them? Is there anywhere around the country where they really have enough people in these trades? Do you have anywhere or is this a nationwide problem?

Okay. I attribute part of this to the snobbishness connected with a 4-year degree, coming out advisors, high school guidance counselors, that sort of thing. This is a problem that has been going on for 20 or 25 years. I don't know why they are not up to snuff. Can you suggest what we can do to get the word out to people at age 16 or 17 about how much more money they can make and how much less in debt they will be—not to mention have, I think, more job security—to the young people than we are now.

Mr. PAVESIC. Can I answer that?

Mr. GROTHMAN. Sure.

Mr. PAVESIC. I believe that where the real answer is to the guidance counselors that are in high schools.

Mr. GROTHMAN. They need some regulation there. There is where you are going to need competence.

Mr. PAVESIC. And the biggest part of that, Congressman, is that their evaluations are based on how many children they send to college, whether they spend 1 day in college or they go the entire time. And that is how their evaluations are based. They should be based on have they sent somebody to a post-secondary education system, whether it be apprenticeship or college.

And we try to talk to guidance counselors. I mean we attend the guidance counselor conferences and we talk about it. When they see our model they think it is a great model, especially the fact that they can receive college credits while they earn and learn, but it just seems like it—that message just doesn't get down to the student or the parents.

Mr. GROTHMAN. Okay. Anybody else have any—I will ask something to combine with your answer to the last question. Well, go ahead. We let the others of you respond to that last question.

Ms. CARLSON. If I may? I think it is correct that we have to look at what the guidance counselors are doing and how they are establishing it. I think that from a national advertising campaign we need to de-stigmatize what an apprenticeship is because it is—

Mr. GROTHMAN. Oh, I think it is de-stigmatized I think among most people. I think the problem is a lot of guidance counselors, who by the way are very well paid, get very generous fringe benefits, are almost making things worse. Do you think that is true?

Ms. CARLSON. I don't know what their compensation is. I do know that they are incented to put people into college degrees and that our sector is technology and is equally as much as demand looking for people to fill the jobs as the trades are. And that wages in both industries can end up looking the same within 5 years without the benefit of a degree.

Mr. GROTHMAN. Okay. I will ask you folks, do you see a lot—one of the things that I think is very illuminating is when I hear from people in the trades or people in tech schools talking about people who got a degree that didn't lead to a skill coming back when they are 28, 29, 33, 34, getting a skill that they could have had when they were 20 years old, and they have been, you know, losing out on compensation for 13 or 14 years, not to mention frequently harnessed with a big debt as well.

Do you folks find that true around the country where people are getting involved in these programs much later than they could have?

Mr. HAYS. Oh, absolutely. I think that, you know, we see it all the time, students coming back, you know, for whatever reason—can't find work in the area that they originally studied, or bored with that, tired of it, and want to try something new. It is pretty significant in our system.

Mr. GROTHMAN. Anybody else want to comment on that?

Mr. PAVESIC. What I would say is we see more and more applicants that come into our program that have 4-year degrees just for the exact same reason, they cannot find a worthwhile job and they need to pay off their debt. And all of them, after they get in the apprenticeship program, say the same thing, that they wish they would have done that earlier.

And that also could help somewhat too to fund more vocational classes in high school so that these individuals can see that there are other jobs, there are IT jobs, and plumbers, and pipefitters, and welders that are available to them.

Mr. GROTHMAN. I am not sure it is the Federal Government's role, but I do see in my area the more on the ball school districts are beginning to do things, getting people acquainted with these skills in high school. I know they are doing it more in Wisconsin.

Maybe it is because they are a heavy manufacturing state, got a lot of good construction outfits, but is this something that you see more nationwide, more of the high schools being on the ball and realizing that we can get people on the road to these apprenticeships even when you are in high school?

Ms. CARLSON. I think we can start younger. Certainly.

Chairwoman DAVIS. Mr. Grothman, your time is up, but I must tell you that I would love to work with you on this counselor piece.

Mr. GROTHMAN. Oh, good. Thank you so much.

Chairwoman DAVIS. Thank you.

Ms. BONAMICI.

Ms. BONAMICI. Thank you, Chair Davis, and Ranking Member Smucker. And thank you to all of our witnesses for being here. This is an important discussion we are having, and I think the real key is making sure that we have a path for everyone. As a member of this subcommittee and this committee, I am certainly not going to argue that a college degree is not valuable. The key is making sure that for those who decide not to go to college, or seek a different path, that we have those opportunities for them.

Career and technical education, of course, in our schools is another way to enlighten students about different opportunities in the work force.

So I represent Northwest Oregon and as I travel around and talk with people, there are still a lot of people left behind, there is still that skills gap with people looking for work. And expanding Registered Apprenticeships is certainly a way to help address that and to get not only people into good jobs, but also to make sure that employers have people with the skills they need.

And, Ms. Carlson, I am so glad you are here also from the Pacific Northwest. I know you have offices in Oregon, work with the Technology Association of Oregon. I have been especially interested in expanding Registered Apprenticeship and that model to new sectors of the economy, like healthcare and technology.

And I worked with Chair Davis and Representative Ferguson and Guthrie to introduce the—it has a really long name—Promoting Apprenticeships through Regional Training Networks for Employers' Required Skills, but it is easy to remember because it is PARTNERS. The PARTNERS Act. So this bipartisan bill we use existing dollars to invest in industry partnerships to help businesses recruit workers, develop training curriculum, and provide, importantly, workers with the tools they need. For example, work attire, transportation, childcare, mentorship.

So, Ms. Carlson, can you talk about Apprenti's role as an industry intermediary? And how do you support both large national employers, like Microsoft, and then also the smaller businesses? And how can those industry partnerships and intermediaries help support employers that are navigating the Registered Apprenticeship process?

Ms. CARLSON. Certainly. You know, some of the feedback that we did get early on was the thought process behind filing of a standard would become very company centric, to the ethos of the company and less about the skill sets in the jobs, which is why they were all willing to come to the table and collaborate on devel-

oping the skill sets that we filed for the occupations that are in the supporting testimony.

And the roles very functionally are able to then transcend all sectors. If you are a C Sharp (C#) developer it is not only a C Sharp (C#) developer for Microsoft. That transcends every company that is working in that language, no matter what sector they are in, which is how we were able as the intermediary to establish that, and then the companies sign on to one set so that we are not having to re-craft every time, but it also means that we can keep up to the minute with whatever changes take place in the marketplace.

We then work with the companies on the curriculums and the curriculum changes for each employer based on the needs or the platform that they are on. If they are on Azure versus AWS, for example.

Ms. BONAMICI. Wonderful. Thank you for your work. And want to get another question in.

You know, we have seen women in the trades. Across the country the representation is quite low, but in Oregon we have a wonderful organization, Oregon Trades Women. We have basically more than double the national average of women in the trades. They offer work-based learning programs to organizations aiming to be inclusive of women in the trades.

Mr.—is it Pavesic? Did I say it right?

Mr. PAVESIC. Yes.

Ms. BONAMICI. In your testimony you discuss UA's outreach to traditionally underrepresented populations in the trades, including people of color and women, and that recruitment is only as good as the program that is offered.

So can you discuss why the quality and accountability provisions of Registered Apprenticeships are important to the success and retention of workers?

And as you prepare to answer, I just want to thank Ms. Carlson for including the success stories in there. There is a lot of diversity in the work you do as well.

Mr. Pavesic?

Mr. PAVESIC. Well, I mean our recruitment in outreach director is a female, is a woman. We do partner with the North American Building Trades for Women Build Nations, which is actually the Building Trades second largest conference every year. And this year it will be held in Minnesota if anybody is interested. And all are welcome.

But I mean can we do a better job? Obviously we can. The one problem that we do see is that we don't have women apply to our programs because it is not traditional, it is not a traditional job.

But one of the things that we do is there are plenty of jobs within our trades that women can do. So what we do is do outreach to try to show them that and to—so that they can see that is a viable option to them.

And the other part too is with Registered Apprenticeship, 29 C.F.R. 30 is definitely going to push more the Registered Apprenticeships toward making sure that their demographics, you know, match the demographics of the area they are in.

Ms. BONAMICI. Right. Terrific. And just in my final few seconds, I want to point out that a lot of the current technical education classes that are offered in high schools I think will help expose students to the possibilities. There was a high school in my district that for a time had a girls only welding class. So there are just a lot of opportunities for young women to see the potential there.

So thank you all and I yield back.

Chairwoman DAVIS. Thank you.

Mr. SMUCKER.

Mr. SMUCKER. Thank you, Madam Chair.

We have talked about the stigma associated with the trades and other jobs that we promote or that have been prevalent. My colleague, Mr. Grothman, will like a quote I ran across recently. This was by Robert Greenleaf, who wrote the book "The Servant as Leader", talking about the best leaders are servants first. He was a philosopher, academic, theologian, writer, businessman, but he died in 1990. And on his tomb are inscribed the words that he requested, which says "potentially a good plumber ruined by a sophisticated education". So I thought Mr. Grothman would like that.

But isn't there some truth to that? And I think we are seeing the tide turn. And, of course, we would never discourage a 4-year degree for anyone, but there are lot of opportunities out there.

And so I am thrilled that we are talking about apprenticeships. The fact of the matter is it is still a very small segment of the potential work force participating in apprenticeships. And so I think a discussion about how we can expand that is very, very appropriate at this time, particularly at a time when we have so many job openings and such a critical need for businesses to fill those jobs.

I wanted to just go back a little, because the fact of the matter is that there are a lot of employers today, to the point I just made, who hire people into their work force and train them. They may not have an education. You know, I joked just a little bit ago, someone earlier said about the criteria for hiring someone now. I was in the construction industry at a point in time where if you fog a mirror essentially you are going to get a job when you work into the work force. And that is too often what happens today.

So companies are hiring people and training them without participating in an apprenticeship program. And I think it is worth talking about the value of an apprenticeship program in the first place.

Mr. Hays, why would a company want their employees to participate in an apprenticeship program, and why would an employee not only want to participate in on the job training but why wouldn't they want be part of an apprenticeship program?

Mr. HAYS. I believe it is critical that companies have to look—because just as you mentioned, Congressman, the fact that there are labor shortages all over the country, and in a lot of cases your business' survival is going to depend on not only recruiting, but keeping a work force. Apprenticeship can be a tremendous retention tool for those employees, showing that, you know, we see workers today and they—you know, they say well what am I going to be making 6 months from how, a year from now. And a lot of em-

ployers can't tell them. With an apprenticeship, if that is laid out and say you meet these competencies, in 6 months you are going to be here, in a year you are going to be here.

Mr. SMUCKER. Yes, so isn't it the fact that it is a structure training program, No. 1, and then, two, there is some sort of certificate or journeyman—you know, there is something at the end of that process which I think is really, really valuable to parents, to employees, to students who are considering various career paths, to guidance counselor. That is why I really like what you are doing in the partnerships with community colleges, for instance. I have great partnerships in my area. HACC is a community college in my area who partners—students can then—and employees can earn certificates and then even can go on further and earn an associate degree and go as far as they like that regard

And I think that is a really important aspect of it.

We have to figure out how we can expand this. And I know the current registration program can be too cumbersome.

Mr. Hays, can you tell me how long it takes?

Mr. HAYS. I will give you an example of the one in my statement with RMS Aerospace. It took 11 months from beginning to finally the program being recognized.

Mr. SMUCKER. That is just too long. Too many businesses choose not to participate in apprenticeship programs because of that.

I completely agree we need high quality programs, but we have to look at either streamlining the process or finding other ways to help them.

Mr. Pavesic, in your testimony you say—I just want to clarify your thinking on this—a successful, and I quote, "apprenticeship program is built on a partnership between organized labor, signatory employees, and government". Do you think apprenticeship should be expanded beyond that we are seeing in organized labor?

Mr. PAVESIC. As far as beyond Registered Apprenticeships?

Mr. SMUCKER. No, beyond organized labor.

Mr. PAVESIC. Oh, absolutely.

Mr. SMUCKER. So are you willing as a member of organized labor to share best practices with companies that are not union?

Mr. PAVESIC. Well, part of the—our training programs are ERISA funded, so the Department of Labor actually restricts us from those programs that are developed using membership money to share that with non-members. But we are willing to share our model with our non-union counterparts.

We embrace Registered Apprenticeships and we are more than willing to level the playing field and say that if we are going to do this apprenticeship program and we are going to follow these regulations, and you follow the same, we are willing to do that. Absolutely, Congressman.

Mr. SMUCKER. Thank you.

Chairwoman DAVIS. Thank you. Thank you.

And we will now talk to our Chair of the Education and Labor Committee, Mr. Scott.

Mr. SCOTT. Thank you, Madam Chair.

Registered Apprenticeships have stood the test of time there is no place where they make the better point than in my district with

the Apprentice School at the Newport News Shipbuilding. That Apprentice School is over 100 years old. It has graduated more than 10,000 apprentices. It currently has approximately 800 young men and women enrolled in 28 different 4, 5, and 8-year apprenticeship programs, all approved by the Virginia State Apprenticeship Agency.

And they do such a good job and have so many applications that the odds of getting into the Apprentice School are worse than the odds of getting into an Ivy League college.

I guess a good advantage of this, you not only get a good education, but you are paid while you are doing it, so you end up—unlike many students—you end up with no debt.

Mr. Hays, in the community college you indicated there are a lot of jobs. I assume they are not filled because people can't find workers with the appropriate skills. Is that right?

Mr. HAYS. Yes, sir, that is correct.

Mr. SCOTT. And you talked about working with businesses to make sure that you have the programs that are needed. Have you been able to meet the need of the businesses in your community?

Mr. HAYS. No, sir. The need is so massive that we cannot turn out the number of people that we need, whatever traditional college programs, apprenticeships, or whatever. There is still this massive labor shortage in the Dallas-Fort Worth area.

Mr. SCOTT. And what is the barrier to meeting the need by the community colleges?

Mr. HAYS. I think the biggest barrier is the fact that, as I have said earlier, they are not buying what we are selling. The traditional approach is not working. How do we attract students, how do we get them into, whether it is traditional college programs, whether it is apprenticeship programs, any kind of training or education programs, how do we get them into that, how do we attract them? And I think we are still trying to figure that out. Around the country there are pocket of success here and there, but to take that to scale is a huge problem.

Mr. SCOTT. There are alternatives to community colleges. Can you compare what you charge students for similar programs compared to what they pay elsewhere?

Mr. HAYS. Speaking specifically for the Dallas County Community College District, our tuition rate is $59 a credit hour. Half of our students pay nothing. With the Dallas County Promise we have had 16,000 seniors that have come into our college programs this past year. That is more than the number of graduating seniors in 17 states. These students will pay nothing for their college. And then with the transfer programs worked out to 4-year institutions, they could essentially go through 4-year—get a 4-year college degree if they so choose and not have to pay very much money at all to do that.

Mr. SCOTT. Well, what are the alternative ways of getting a similar education, similar job training?

Mr. HAYS. Well, the apprenticeship programs, of course, are areas that we look at simply because we know that—you know, the old saying that not everyone is cut out for college, well that may be true, but my thing is everyone has to have some kind of post-secondary training.

Mr. SCOTT. Right. And you can get it there in—there are other ways of getting the education, a for-profit college, for example.

Mr. HAYS. Yes, sir, that is an alternative. They have had very well publicized problems around the country. But that certainly could be an alternative.

Mr. SCOTT. Well, how do your prices compare to those?

Mr. HAYS. Oh, I mean, Congressman, a student could get an associate of applied science degree at one of our institutions for less than $4,000. We don't even charge fees. We don't even charge student fees, so. We are blessed, very blessed among a lot of community colleges in this country.

Mr. SCOTT. Well, if they are buying that at a higher price, do you advertise.

Mr. HAYS. We do have some marketing, for example, with major sporting events, with social media, and that sort of thing. But television time is a different story in Dallas. A very expensive television market, so you are not going to go out and buy a lot of TV advertising, for example.

Mr. SCOTT. I have a couple of other questions, Madam Chair, but I see by the time I asked the question my time would have run out, so I will yield back.

Chairwoman DAVIS. Thank you.

Mr. Banks, you are next.

Mr. BANKS. Thank you, Madam Chair.

I want to focus a little bit too on flexibility and innovation. Everyone on this committee knows that the skills gap is a daunting challenge. While Registered Apprenticeships are an important part of closing the gap, the data makes clear that we will need more options if employers are going to fill the millions of jobs currently available.

For example, in my home state of Indiana, there are 100,000+ unfilled jobs. At the same time in 2018 there were 17,000 Hoosiers enrolled in federally Registered Apprenticeships and 3,000 graduates. That is simply not enough.

The same is true at the Federal level. The latest data shows 7.6 million unfilled jobs compared to 585,000 active apprenticeships and 72,000 graduates. Given that half of all job openings between now and 2022 will be middle skill, exactly the kind of jobs that apprenticeships can help fill, we clearly will need more options outside of the federally Registered programs.

Mr. Hays, in your testimony you talk about the DCCCD, about what they are already involved with some of these industry recognized apprenticeship programs. Given the magnitude of the skills gap and the numbers that I have mentioned, would it be fair to say that more industry recognized apprenticeships are simply an economic necessity?

Mr. HAYS. Oh, I believe so. And I think to expand this program, it is going to be critical. But I share some of my colleague's concerns here about the rigor of those programs. And part of what we need to make sure of is that there is clear guidance on those programs from the Department of Labor and that rigor is maintained.

And a lot of that—employers though are going to say that we are going to maintain the rigor simply because they are going to be our workers and we don't want workers who aren't skilled doing critical

jobs. So I think you will see a lot of that correct itself. I don't know if IRAPs are going to replace the entire world of apprenticeships. I certainly don't think so. I think there is a place for both programs, for both Registered and IRAP programs.

Mr. BANKS. I appreciate that very much.

That is all I got. I yield back.

Chairwoman DAVIS. Thank you.

Ms. ADAMS.

Ms. ADAMS. Thank you, Madam Chair, and I want to thank the ranking member as well for convening the hearing today. And to the witnesses, thank you for your testimony.

Ms. Carlson, what types of support do intermediaries provide to help lower barriers for employers to participate in Registered Apprenticeships?

Ms. CARLSON. Well, we work with the employers to identify the roles that they are willing to take, people that can't or that don't have college degrees, because that is not a requirement for getting into the program, which opens the door to everybody effectively, 18 and over. And then we provide the employers with a bank of potential of apprentices that they get to interview on a blind basis. So they don't get to know the educational attainment or prior work experience of those people, so they are comparing them purely on soft skills and their ability to have competency in the work. Our ability to do that as the intermediary allows us to kind of break down some of the barriers that they have had in hiring previously.

Ms. ADAMS. All right. Thank you very much. I was glad to see that you recommended in your testimony dedicating $250 million annually to supporting apprenticeship programs.

One of the biggest challenges to scaling successful work force training programs in our country is the lack of resources that we dedicate to the work force system. WIOA, for example, has yet to be fully funded to authorize levels. And the Trump Administration's proposed 2020 budget calls for cutting $1.2 billion, for nearly 10 percent of the Department of Labor's resources to help offset the cost of tax cuts for the wealthiest Americans.

I was also impressed by the fact that the Apprenti apprentices make roughly 155 percent jump in earnings in about 18 months of their program. Can you speak more to the positions and the wages that are coming out of your apprenticeship programs and the kinds of investments that are really necessary to scale programs like yours?

Ms. CARLSON. Absolutely. These are middle skills positions, so they are at the low end, the data center technician role, all the way up to cloud specialist and software developer, so they are true middle skills. And the range in retained salary is between $56,000 and $118,000. And we now have a large number that are in that $90–118,000 coming in. Fifty-two percent of the apprentices end up having a college degree. Once we get them into the system we find that out. But the retention looks the same on college degreed versus non-college degreed, proving that it is about competency and not the pedigree.

Ms. ADAMS. Yes, Okay. So what other actions can my colleagues and I take to help intermediaries like Apprenti expand innovative

programs, apprenticeship programs in high demand fields while maintaining program quality?

Ms. CARLSON. Well, because this is new to the tech sector in this country, one of the challenges that companies look at as they are trying to get their heads around hiring nontraditional talent into these roles is the cost. And they are already fronting the cost at about $75,000 a person for the salary and benefits for the term of apprenticeship. They are fronting a portion of the training costs, and we are working jurisdictionally across each state to identify public-private partnership to pay the remainder of the tuition so that the apprentice pays none of the training cost.

As a result, it means having to piecemeal that location by location, which makes it harder to scale with companies.

Establishing that $250 million ask would allow for that immediate match on a national scale and will alleviate some of the pressure that we have in trying to help companies understand what their investment might look like and get them more confident and comfortable in the model.

Ms. ADAMS. Thank you very much.

Madam Chair, I also want to just comment on the fact that a lot of this hearing, and rightfully so, has focused on youth apprenticeships and the benefit of starting students into the work force. As a former educator of 40 years, I understand how important that is. But I also hope that as we debate the importance of apprenticeships, that we can discuss transitioning and displaced adults, returning citizens, and the disabled as we debate not only preparing future workers for America's work force, but how to provide for those who are trying to find their way into a changing economy.

And with that, Madam Chair, I yield back.

Chairwoman DAVIS. Thank you.

Mr. NORCROSS.

Mr. NORCROSS. Thank you, Madam Chair, and ranking member for having this hearing. I really like what is coming of this.

I am a product of a 4-year apprenticeship, not a common way to get to Congress, but certainly something I understand. And I just want to echo what Ranking Member Smucker talked about very early on, is the narrative in this Nation, in order to make it you have to go to college. Well, that might be true for a few, for many, or at different times in their life, but it is not right for everyone.

Certainly, I had three brothers, they went more traditional college route. I did a 4-year, but it was non-college, it was an electrical apprenticeship program. But the narrative is from your parents to your teachers to your guidance counselors, you have got to go to college. I can't tell you how many college attending people now apply for the apprenticeship program after they go to college, spend maybe $100,000 of debt, find out it is not for them, and then find a way into one of the skilled craft trades. And that is a narrative that your comments and others that we have to change.

You might not go to college in the beginning, maybe at 25 you are ready. But we need to have on ramps and off ramps to apprenticeship programs.

And I want to thank the Chairwoman for setting up that CODEL. We went over to Switzerland to see the model that they are making. And they have in so many more industries than we do.

Our traditional apprenticeship craft workers, metal trades, and some of the shipyards, or primarily the building trades who have been doing it for well over 100 years and do it better than anybody and do it with 0 government dollars. Zero government dollars.

And that is the main difference between why I believe we are falling behind in the other areas that you talk about, Ms. Carlson, is that companies want us to pay for it. That is a difference between a model that works in the building trades and the models that you are trying to.

I think an idea of seed money to get the programs sort of going, but this is something that it becomes a gift for those companies. That we should work collectively together, whether in the union, collective bargaining agreement, or other trades that you talk about, Mr. Hays, what you do. It is that we can all do this together.

And that is one of the things, the Registered program is critical. And there are a couple of reasons why. The standards on the East Coast are the same as the West Coast, particularly in the trades and the metal trades. The electricity flows the same way here as it does there, and they are interchangeable. But the most important thing is as you go through these programs, the flexibility for market conditions. When times were tough a half dozen years ago, the apprentice rate of going in was much lower because the industry didn't need it. Now, it is on the other end. But unfortunately, when I applied for only 40 spots, there was 800 applications. Today, that is less than half, because that narrative, that somehow you have to go to college to make it.

We were just down with Bobby Scott in his shipyard where we are seeing firsthand that next generation. Because we can draw all the blueprints we want, design the fastest ships, but if there is nobody there to build them, we are in trouble.

So that brings me to the Registered Apprenticeship programs, the portability of skills. If we set up separate standards across the country, that portability gets erased. You can define it for market conditions, which is what they do so well. But so when we talk about Registered programs there are those companies out there that want to abuse apprentices, to use them for the cheaper rate. Davis-Bacon. So you have nothing but first year after first year.

So whatever we do, we have to make sure we look at the schools, the graduation rates, that they are just not churning out cheap products at first year, but are actually graduating skilled craftswomen and men.

So, as I go into my first set of questions I want to talk about that continuous feedback and the fact that zero government dollars.

Mr. Pavesic, or as I call him, Mr. UA, talk to us about the apprenticeship program, because I don't think you figure into the cost of the apprenticeship program what employers are paying apprentices. They are getting productivity back when they are paid, right?

Mr. PAVESIC. Absolutely, Congressman. You know, and the thing about that is that they are getting a skill set from an apprentice that comes in at a lower cost, they are able to blend their rates so they are more competitive with those apprentices that they bring in. But, yes, I would say absolutely.

Mr. NORCROSS. So when we talk about if we really want to do what we have talked about, and I believe everybody here under-

stands, let us create some incentives that aren't necessarily—outside of some seed money—some incentives to use apprentices to work them through on good programs that graduate.

So the bidding process comes to mind. Do you have any thoughts on, so if you use a certain amount of apprentices and they graduate at a rate, you know, 60 percent or above, how does that fit into the bidding process right now?

Chairwoman DAVIS. Excuse me. I am sorry, Mr. Norcross, your time is up and over, so I am going to switch. And if we can try and incorporate those answers into some of the other questions, that would be really helpful.

Mr. Takano next.

Mr. TAKANO. Thank you, Chairman Davis, for this hearing and thank you to our witnesses for providing your insights into this growing industry.

Registered Apprenticeships are an important part of the work force training and they are valuable for the workers and the employers, which is evident from the growing number of apprentices participating. These high-quality programs are critical pathways to ending a cycle of poverty.

California is currently a leader in Registered Apprenticeship programs with close to 3,000 active programs to date. In San Bernardino County, a neighboring county to my district, they have a successful program called Generation Go. This program serves hundreds of youth, ages 16 through 24, by providing work-based learning through a partnership within the K–12 system, community colleges, and industry that creates a pipeline for career success. This is not unique to California. States like South Carolina and Virginia have also very successful Registered Apprenticeship programs that have trained thousands of apprentices and provided them with credentials that are recognized nationwide.

My first question for Ms. Carlson is a—what I want to ask you is a common complaint about creating new Registered Apprenticeship programs, especially in new occupations, is the financial burden that employers face. How did the DOL grant, that you mention in your testimony, support the establishment of your program?

Ms. CARLSON. Well, it really worked for us kind of like seed money, as Mr. Norcross pointed out. It wasn't intended to be a long-term fund. It was built so that we could adequately staff and work with the companies to build the program. The original intent was that we would help companies set up Registered Apprenticeship for themselves within each company, and that is when they pushed back on us to staff it and become the intermediary and take on some of those responsibilities on behalf of them with this Federal Government in the filing process.

But those funds were the seed capital that was needed to get the programs running and begin to expand. The contract that we subsequently won from the U.S. DOL to be the IT sector lead is what has funded our ability to expand that on a national footprint. And our program is built to be self-sustaining in 3 to 4 years. So that is not a long-term cost that needs to be there for us. The sector will start to make that investment in us to maintain it across the country.

Mr. TAKANO. So really you can foresee with this sort of seed capital the apprenticeship becoming self-sustaining in the way that they are in the building trades?

Ms. CARLSON. Correct. Over time.

Mr. TAKANO. Over time.

Ms. CARLSON. So for us it is a green field environment. The companies in this country are trying to get comfortable with the idea and how they cultivate talent and as much as we are building this out on their behalf, they are figuring out how to operationalize it internally to become a training platform. And so this is something that over time will become self-funding, very similar to the trades.

Mr. TAKANO. My next question is for Ms. Gainer. The average age of a new apprentice in the United States is 29. What can we do to support more youth participation in apprenticeship programs?

Ms. GAINER. Thank you. The average age of the apprentice program in Chicago is younger than that, it is probably the earlier 20's. We have been recruiting people from city colleges, so you have some who are in their late 20's, a few in their early 30's, but most—we have 5 new people that just started today who are 18 and 19. So some are leaving high school and some are mid–20's, but I think it is what others have said, which is start talking about this in high school. The reason people choose college is because they know it is going to relate to a higher wage. We need to make apprenticeships just as reliable when young people are making a very important choice in their life.

Mr. TAKANO. Thank you. Ms. Gainer, can you also elaborate on why this is a financial benefit for a company, such as yours, which has been ranked globally as a top company?

Ms. GAINER. Thank you. You know, for us, it is very expensive to hire someone and have them leave after 18 months and then have to go hire a recruit and train someone else to take their place. So when you identify the roles that had higher attrition and those were the first targets, and that was in order to make the business case and try something new and different, which is inherently risky. So we reduced the cost of retention, we increase our savings by retention. But the second thing is apprentices, especially in the UK where we have been tracking this for over an UK, are much more highly engaged, and that is well proven to be a more productive employee.

Mr. TAKANO. Well, how do you suggest we incentivize more employers and businesses to actively participate and come to the table?

Ms. GAINER. I think it is about creating something that is scalable across the country. We are now beginning to start the program in New York working with IBM and others. And the idea that you can have all the learning and the development we have done on the Registered programs can be ported there, I think will be a big help.

Mr. TAKANO. Madam Chair, my time is out and I yield back.

Chairwoman DAVIS. Thank you very much.

Mr. TRONE.

Mr. TRONE. Thank you, Madam Chair. Is this one on? Oh, there we go.

First of all, thank you very much for coming out today. I think apprenticeships are absolutely a fantastic way to go. Before I go this job I was an entrepreneur, an employer. My company, I created over 7,000 jobs, so I understand the importance of it is hire, it is train, and it is retain. And the focus is train and retain. If we get those two things right, everybody succeeds. The team members succeed and the company succeeds.

So, Mr. Pavesic, talk a little bit about why UA is so committed to apprenticeship, because it is an expensive type of on the job training. There is a lot of less resource intensive ways you can go about it. But just speak to that a little bit for us.

Mr. PAVESIC. Well, part of it too is that, you know, it is funded by the membership, so there is a piece of their hourly rate that comes back into training. And the members are about preserving our trade to make sure that this trade is passed on from generation to generation. So the cost is not—to them the cost is not a matter.

But the other part of it too is we want to make sure that we have the highest skilled work force to make sure that we have the individuals that can come in and do the job.

Mr. TRONE. Thinking about entry, how do people get ready for apprenticeship programs? What are your thoughts on legislation on pre-apprenticeship programs that might help these young people be ready actually to move into an apprenticeship?

Mr. PAVESIC. Well, you talked about retain. And we support pre-apprenticeships. The one problem—probably the one issue that we have when it comes to retention, and it is usually in the first year where we lose them, is that an individual comes to us and they are in their 6 months and all the sudden they are like, you know what, this job is not for me. I don't want to work high, I don't want to be dirty, you know, I want to do something else, and we lose those individuals. And we have an investment into that individual.

So someone who has a pre-apprenticeship—we also have accelerated training programs ahead of those, you know, 16–18 weeks accelerated training programs, and boot camps. But if that individual at least sees hey, you know what, I have an interest in being plumber, I have an interest in being a pipefitter or a welder. So our retention rates are much better with pre-apprenticeship.

Mr. TRONE. Okay. Excellent. Last quick question was speak to the value to an apprentice in having a Registered Apprenticeship program with a nationally recognized credential that is stackable. You know, how does this position them for more success?

Mr. PAVESIC. Well, first of all, it is portable. So an apprentice that is trained in New York can go to Chicago, can go to California, and those skills are taught—we are not just teaching them how to be a plumber or pipefitter in New York, we are teaching them how to be a successful plumber or pipefitter throughout the country.

The other part of it too is that—is wages. I mean it is a living wage. They are able to raise a family and, you know, own a couple of cars and buy a home. And the other part of it too is no debt. And they are going to come through, they are going to earn while they learn with 100 percent employment and no debt at all.

Mr. TRONE. Okay. Thank you. I yield back my time.

Chairwoman DAVIS. Thank you very much.

We are at Mr. Sablan.

Mr. SABLAN. Thank you very much, Madam Chair.

Before I start I would like to see unanimous consent to insert into the record a statement from the International Union of Painters and Allied Trades.

Thank you.

I don't go home every weekend, I can't. It is just too far away. But when we do have a 1 week break I go home. I try to, and I usually do, visit the schools, have conversations with students. And I am one of those who tells students that not all of them are going to be doctors and engineers, that some of them are going to have to make hamburgers. I love eating hamburgers. And I tell them that there is life aside from college, because I do agree. And I am aware that students are being told that, yes, you do good in school and go to college.

I wish I could say that we have a robust apprenticeship program. We have a trade school that is not accredited. I was able to get them some money hoping that they would get an accreditation, be nationally recognized, but. So now that school is sort of teaming up with our high school and our community college so that students will get to learn the trades. I tell them about a friend of mine whose only training in life was the trade institute and has come back and built himself a business and pays himself—makes more money than most lawyers on the Island.

So we are going to get there. I continue to support that program.

Let me ask you, Ms. Carlson, if I may, your testimony calls for creating a sustainable annual $250 million Federal matching fund at states, and I hope the insular areas and territories like the Northern Marianas, get access to support the classroom training costs of developing apprenticeships in nontraditional sectors.

If this investment were made, how many additional apprenticeships do you foresee could be established annually?

Ms. CARLSON. I would see that as, doing quick math here, around 30,000. That would subsidize the classroom training of about 30,000 apprentices.

Mr. SABLAN. Thank you.

Ms. Gainer, this committee in the last Congress we made a visit to an apprentice shop, training center not far, just within driving range of Capitol Hill. And I also impress Mr. Pavesic with—because this is a shop that has union working with employers and supporting these people. These individuals come in, attend class for 1 day and the rest of the week they go and work full-time.

But, Ms. Gainer, you may not know this but in my district in the Northern Marianas, along with American Samoa, we are the only two jurisdictions for the 4-year public university. It hosts a single community college. Now, how has your organization worked with your local community college and work force to support and scale your apprenticeship program?

Ms. GAINER. Our apprenticeship program partners for all of our training with our local community college. So they work 4 days a week at Aon and then they go to community college. So there is a technical college, there is IT college, there is a business college. So it is a complete partnership with community colleges.

Mr. SABLAN. Okay. And I thought I heard you say that you also have programs in Europe?

Ms. GAINER. So the company is global and apprenticeship programs in insurance and financial services are pretty common in Europe, especially, you know, the center of the industry is in London. And it is pretty common for people to have gone through an apprentice program.

Mr. SABLAN. Because Aon is in my district actually. It is in many parts of the Pacific Islands. So maybe if you could look into that and find a way.

Ms. GAINER. Sure.

Mr. SABLAN. Because many of the students are even in cooperative education, co-ops with the high school students, they are sent to work in white collar desk jobs. You know, they are not sent to learn insurance, for example, or they are not sent to work with construction companies for some reason. And that really does a disservice to the individual students who may actually turn out to be great auto mechanics.

But I see my time is up.

Madam Chair, I will submit some questions for the record.

Thank you very much for being here today.

Chairwoman DAVIS. Thank you very much, and thank you to all of you.

As we wind up, I wanted to just ask one particular question that didn't quite get asked, although I know, Ms. Carlson, it was in your written statement and I think it was referred to as, you know, what are apprenticeships, how do we define them, how are they branded, do we run the risk sometimes of just, you know, talking about apprenticeships without having the specifics involved.

And so I wonder, Ms. Carlson, if you could respond quickly, and if others want to add something to that, that would be fine. And you can also submit that for the record if you would like so that we have that as part of our record for today as well.

Ms. Carlson, since you were the one who recommended particularly defining this.

Ms. CARLSON. Yes. I think we have regulation through DOL already on books, but having it established in a more formal setting would be I think incredibly important for us as we try to alleviate brand confusion around just terming an intern as an apprentice and changing the title to call it a training program. So I think codifying that into law and securing that would also go a long way toward making sure that we deliver on the promise and any funding that the DOL is providing in the marketplace.

Chairwoman DAVIS. Thank you. Would you generally agree with that? Suggest there is kind of a consensus?

Mr. PAVESIC. Well, I just had another comment as far as it went, Madam Chairwoman. But one of the comments that I had heard earlier today was that, you know, the manufacturers and their training programs and their, you know, the—and a lot of manufacturers bring individuals in and train them. I think where the mistake is, is to call that an apprenticeship program. There is nothing wrong with calling it a training program. But I would hate to see apprenticeship programs watered down because we bring somebody into a tool and die manufacturer, or whatever that is,

and then teach them maybe one or two skills there over a short period of time. I think the idea is to make sure that individuals have the skills to be productive for their entire life and their entire careers.

Thank you.

Ms. GAINER. I think it is useful to think of an apprenticeship is a defined period of time where you graduate and you have a specific job that is recognized across the country, not just in our own company. And so that is scalable nationally, but it is not something—you know, I think the biggest fear for us is we invest all of our own funds into this program and it becomes like an internship, where maybe you are getting coffee or maybe you are writing code, and no one knows what it means, and then thus it does not have value.

Chairwoman DAVIS. Thank you very much.

And certainly from our point of view too, in terms of the Federal role, we are talking about taxpayer dollars. And so in those instances where that does help people to navigate better, to be a little more educated in the process, that is helpful as well.

I want to turn to our distinguished ranking member for his closing statement.

Mr. SMUCKER. Thank you, Madam Chair.

I would like to thank all of the witnesses for their testimony here today. It was an excellent conversation and appreciate you scheduling this, Madam Chair.

We heard apprenticeships and on the job learning are valuable tools for providing Americans in the 21st century with the skills they need to compete and succeed in today's rapidly evolving economy.

Registered Apprenticeships are certainly a valuable aspect of this effort, but we know it is not alone filling the gap that we have today in our workplace. We just simply can't limit students to just one tool in the toolbox. We need to think about expanding the Registered Apprenticeship program or including an all of the above approach to ensure that we are able to fill these jobs and provide these lifelong jobs to the students.

Employers know better than anyone what skills they are looking for. We should ensure that they have the flexibility to empower prospective employees, whether through Registered programs, the expansion of those programs, or through other means. There is not one pathway to success.

I was, however, very encouraged to hear each of our witnesses, how they have worked in their communities to contribute to a dynamic work force, how they work with employers to meet their needs, and uphold the dignity of all work.

We must continue down this path if we want to continue to succeed and meet the demand for workers.

Thank you again.

And I yield back.

Chairwoman DAVIS. Thank you. And I just wanted to remind my colleagues that pursuant to committee practice, materials for submission for the hearing record must be submitted to the committee clerk within 14 days following the last day of the hearing.

And also, for the witnesses, if you were—we will get those questions to you. I think they have to be in within 7 days, and you have 14 days to respond to those as well. So I hope that you will take that opportunity if it is relevant for your comments.

And I really just wanted to thank you all for being here today. I think you have provided a broad range of comments. Much consensus here today and I think urgency. And that is really what we need to have and to be able to bring to the men and women of this country, young people as well as a wider range of ages; that there are those programs available to them that give them that career path that is sustaining for them and for their families, and strengthening businesses with a valuable pool of productive and committed workers.

So we recognize the importance of that. I know that we hope to have additional hearings, but we also know that we need to distinguish to a certain extent how we can proceed and how we can move forward. And so your comments have been very helpful in that.

And I thank you this evening. Thank you for being here.

[Additional submissions by Ms. Jayapal follow:]

Washington State
Department of Transportation

WSDOT Office of Equal Opportunity
Pre-Apprentice Support Services and
On-the-Job Training Support Services Program
2018 Annual Report

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Background

As required by Revised Code of Washington (RCW) *47.01.435 Highway Construction Workforce Development – Reports,* and ESSB 6106, Section 217 (1), the Washington State Department of Transportation (WSDOT), in coordination with the Washington State Department of Labor and Industries (L&I), is required to submit an annual report to the Legislature which outlines progress related to highway transportation workforce development, and the grant program funded through the Connecting Washington Program (Pre-Apprenticeship & Support Services). These statutes further Washington State's commitment to the On-the-Job Training Support Services (OJT/SS) Program, and require WSDOT to expend federal funds received under 23 USC Section 140(b) to increase diversity in the highway construction workforce. WSDOT and L&I partner to provide services that prepare individuals interested in entering the highway construction workforce, including pre-apprenticeship training, pre-employment counseling, basic skills improvement classes, career counseling, remedial training, entry barrier removal, transportation assistance, child care, mentoring, retention services, safety equipment and occupation specific tools. WSDOT is required to report on the status of grants that have been disbursed to organizations that are providing On-the-Job Training and Support Services.

Washington State Apprenticeship & Training Council
Apprenticeship Preparation Program Recognition
2018 Progress Summary

At the end of 2017, there were 18 recognized apprenticeship preparation programs. There were six new programs recognized in 2018 (a 33% increase), bringing the total to 24. The new programs related to the Construction sector are:

- Green River College Carpentry Technology Program – Carpentry
- Northwest Carpenters Institute (NWCI) Pre-Apprenticeship Program – Carpentry
- Seattle Conservation Corps – Building Trades Occupations

In addition, five of the 18 initial programs filed for continued recognition. This is a requirement every three years for programs wanting to continue state recognition. The five programs that sought continued recognition in 2018 are:

- Bates Technical College – Trade Occupations Opportunity Learning Center (TOOL Center) – Building Trades Occupations (Approved continued recognition request)
- Apprenticeship and Non-Traditional Employment for Women (ANEW) - Building Trades Occupations (Approved continued recognition request)
- Tri-Cities Apprentice Preparation Program - Building Trades Occupations (Approved continued recognition request)
- Skilled Trades Preparation (STP) Program SCC Apprentice and Journeyman Training Center - Building Trades Occupations (Approved continued recognition request)
- YouthBuild Spokane Apprenticeship Preparation Program – Building Trades Occupations (Continued recognition request moved to January 2019)

Information on all Washington State Apprenticeship and Training Council (WSATC) recognized apprenticeship preparation programs can be found on the L&I website at the following link:

https://www.lni.wa.gov/TradesLicensing/Apprenticeship/About/IntroProg/default.asp

WSDOT Office of Equal Opportunity – On-the-Job Training Program
Pre-Apprenticeship & Supportive Services Grant 2017-2019 Award Information

The following statewide organizations were awarded Pre-Apprenticeship Support Services (PASS) grant funding through a competitive selection process for the 2017-2019 biennium. PASS Grant contracts began in July of 2017, with training schedule start dates varying by organization based on their pre-existing schedules.

Pre-Apprenticeship Construction Education (PACE) - $120,000
PACE is an 11-week apprenticeship preparation program focusing on training diverse students, especially those who are low-income, minority, female, ex-offenders, or veterans. The curriculum includes tool use, material handling, basic construction skills, trades math, tours of jobsites, apprenticeship programs, and preparation for the apprenticeship application process. PACE has recently merged with Apprenticeship and Non-Traditional Employment for Women (ANEW). The two programs, ANEW and PACE, remain distinct in service delivery but unified under one organization.

JM Perry Technical Institute - $300,025
JM Perry Technical Institute is providing outreach, recruitment, and training for individuals interested in the highway construction trades through three training programs: Agriculture Equipment Technician, Construction, and Electrical. The Agriculture Equipment Technician program will prepare students interested in becoming heavy equipment repair technicians, including the mechanical skills identified as in demand for highway construction trades.

Spokane Community College - $50,000
Spokane Community College's Skills Trade Preparation Program (STP) is supplemented with support services funds to provide equipment, transportation assistance and childcare to individuals enrolled in construction trades training.

Pacific Northwest Ironworkers - $204,522
The PNW Ironworkers four-week training program prepares participants to enter into Ironworker apprenticeship and provides direct entry employment opportunities upon completion of the program. Under the grant, the program will expand participation in areas of Southwest and Eastern Washington, connecting with existing Ironworker training programs in those regions.

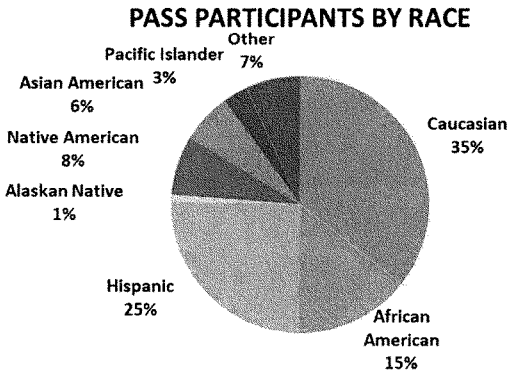
Apprenticeship and Non-Traditional Employment for Women (ANEW) – $678,110
In 2016, WSDOT began the ANEW pilot program. WSDOT is continuing this pilot that involves an extensive collaboration between ANEW, Carpenters-Employers Apprenticeship and Training Trust Fund, Cement Masons and Plasterers Training Centers of Washington, Juvenile Rehabilitation, Department of Corrections, State Board of Community Colleges, and King County Community Services Division. ANEW's pre-apprenticeship program teaches students soft skills, trades math, as well as basic hand and power tool skills. Students opting into specialized trade pre-apprenticeships receive additional trade specific training by the Carpenters and Cement Masons and earn direct entry into the selected apprenticeship program.

PASS Grant 2018 Progress Report

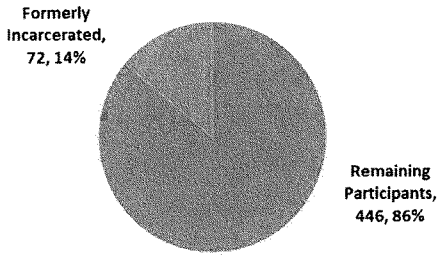
As of July 2018, there have been over 500 PASS Program participants.

- Overall program pre-apprenticeship graduation rate of 89%
- Program participation by race: 35% Caucasian, 25% Hispanic, 15% African American, 8% Native American and various others groups at less than 1%
- Participation by gender: 71% male and 29% female
- 14% of program participants listed their largest barrier as being formerly incarcerated, with various other barriers at less than 5%
- Participation by education level: 58% High School Diploma, 25% GED, and various other levels at less than 10%

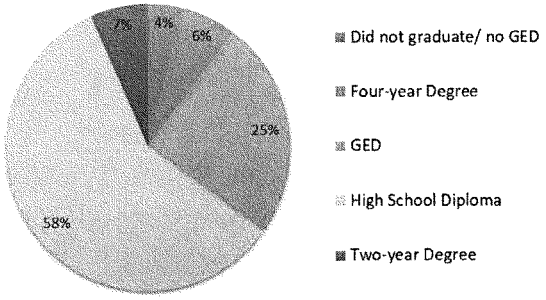
The PASS Program is reaching the traditionally underserved populations in Washington State. The following data shows that PASS dollars are reaching women, disadvantaged races, the formerly incarcerated population, and the GED population. The following Program data and graphics are extracted from PASS Program individual intake data.



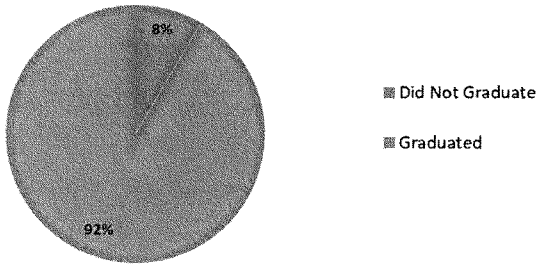
PASS PARTICIPANTS FORMERLY INCARCERATED



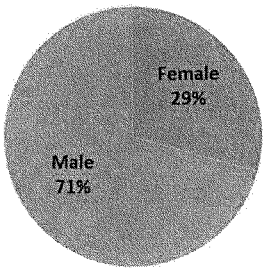
PASS PARTICIPANTS BY EDUCATION



2018 PASS GRADUATION RATE



PASS PARTICIPANTS BY GENDER



PASS Program Summaries FY 2018

ANEW, King County
ANEW offered seven 11-week classes serving a total of 143 individuals.
Program participation by:

- Race: 47% Caucasian, 28% African American, 11% Hispanic, 6% Pacific Islander, and various others groups at less than 5%;
- Gender: 58% male and 42% female; and
- Graduation Rate: Currently 91% across all training programs

ANEW also worked directly with:

- Carpenters Union: 1-2 week cohorts; and
- Cement Masons Union: 3-week cohorts

JM Perry Technical Institute, Yakima
JM Perry Technical Institute served 102 individuals.
Program participation by:

- Race: 71% Hispanic, 14% Asian American, 8% Caucasian, Native American 5% and various other groups at less than 5%; and
- Gender: 98% male and 2% female

Due to the structure of their academic year, the majority of students are still enrolled in their programs, but have been placed in construction internships. The Construction Technology and Agricultural Equipment Technician programs are one year, and the Electrical Technology program is two years.

Spokane Community College (SCC), Spokane
SCC offered three 11-week pre-apprenticeship courses serving a total of 61 individuals.

Program participation by:

- Race: 40% Caucasian, 25% First Nation, 10%, Other Race, and various other groups less than 10%;
- Gender: 52% male and 48% female; and
- Graduation Rate is currently 86%

These classes run concurrently with the academic calendar, and run Fall, Winter, and Spring quarters.

PACE, King County
PACE offered two 11-week pre-apprenticeship classes, serving a total of 28 individuals.
Program participation by:

- Race: 38% African American, 32% Caucasian, 11% Hispanic, 11% Asian and various other groups less than 10%;
- Gender: 93% male and 7% female; and
- Graduation rate is currently 96%

Pacific Northwest Ironworkers, Western Washington
The Pacific Northwest Ironworkers offered four 1-week pre-apprenticeship classes multiple times a year, serving a total of 69 participants.
Program participation by:

- Race: 35% Caucasian, 18% Hispanic, 16% African American, 12% Pacific Islanders, and various other groups less than 10%
- Gender: 81% male, 18% female, 1% other
- Program completion rate is 91%
- Retention rate 79% over the course of 2 years
- Total apprentice hours reported: 60,219
- Total Hourly Wages: $1,566,183.28
- Total Wages and Benefits: $2,073,728.53 thru August 2018

With PASS funds, the Ironworkers have completed five Ironworker Pre-Apprenticeship cohorts (classes). The Ironworkers have been able to reach and serve under represented populations in the state of Washington, and provide training with direct entry into a career with a livable family wage.

PASS Program Funds also went to support the following efforts: sponsorship of an outreach event by R3 Community Services, a non-profit organization targeting services to under-served communities from Tacoma; Quinault Nation Career Outreach day sponsorship targeting tribal community outreach; Genesis Group outreach and recruitment event targeting inner-city Tacoma clients; and a sponsorship to the Women Build Nations event held October 12-14, 2018, in Seattle.

Paving the Way with Pre Apprenticeship Support Services: Success Stories

ANEW welcomed a 52-year-old single mother, originally from Mexico and living in Washington, who has not had an easy path. She worked odd jobs to make ends meet, but was not satisfied with her career and wanted more. She heard about pre-apprenticeship training and was intrigued by the career opportunities ANEW offered, and the benefits and pension that come with working union construction. After attending an informational session, she was hopeful this opportunity might change her life. She learned she could have a career, provide for her family, and be able to send her daughter to college one day. When entering training, she realized she lacked both the experience and knowledge, but wanted to participate and earn her way. She endured the 11 weeks of training and kept up with her classmates, the majority of which were men. She showed everyone that age and size was not a factor, that she had the drive, and that if given the opportunity, she would take full advantage of it. As a result of her stellar attendance and consistent hard work, she was selected to begin working with Local Union 528 Cement Masons and Plasterers. She graduated ANEW's Pre-Apprenticeship Training Program and immediately went to work and is currently a Finisher working on a tunnel project for the Washington State Department of Transportation. She loves her work and is quickly making a name for herself and working to fulfill her dreams, earning $24.20 an hour.

Pacific Northwest Ironworkers Pre-Apprenticeship Direct Entry Cohort, May-June 2018
In June 2018, fourteen pre-apprentice trainees graduated from their four-week direct entry program that was funded by WSDOT's PASS Grant, with dispatch papers to go to work the following Monday. One graduate wrote, "I am so grateful that your team...came together to help my class. The importance of such a class is tremendous indeed. Not just in the preparation of the people physically. The tools to go to work and being taught safety was a huge help. Thank you from me and my family. Please don't stop Programs like this that impact me and others' lives in the end. Thank you." Other notable successes from this cohort include the highest marks of four women who came from the Department of Corrections' Trades Related Apprenticeship Coaching (TRAC) Program directly into the Ironworkers Pre-Apprenticeship Program after being released from incarceration. These four women led the way in attendance, time trials, and test scores.

The PASS Program invested $17,789.00 into the FY18 May-June Cohort. As of October 2018, the total earnings reported for this cohort was $7,322,611.82. The Return on Investment (ROI) of this cohort is 411.64%.

WSDOT Office of Equal Opportunity
FHWA On-the-Job Training Support Services Program

For Federal Fiscal Year (FFY) 2018, WSDOT received funds from the Federal Highway Administration (FHWA) for the OJT/SS program in the amount of $101,699.58.

Program Summary

The primary goal of WSDOT's On-the-Job Training Support Services (OJT/SS) program is to prepare minorities, women and other disadvantaged individuals for entry into the highway construction trades and highway construction related careers, and create a pipeline of individuals ready to work on highway construction projects statewide.

Washington State is experiencing new growth in the construction sector, which has spurred a shift in the previous focus of the OJT/SS program from recruitment to assisting with retention, placement, and the continued employment of minorities and women in the trades. The rebound of the construction industry has contractors, union, and trade organizations alike scrambling to replace the retiring workforce and meet additional workforce demands, which are already reaching deficit levels in the Puget Sound area. Women and minorities continue to be disproportionately represented in the State's construction workforce compared to the diverse demographic population of the State of Washington.

This year has seen a dramatic increase in agency and partner collaboration statewide, and this has had the effect of dramatically shifting progress in areas such as outreach and recruitment. Continued support for apprentices once they are working continues to be an issue, as retention data is low. Approximately 50% of all apprentices (minority, female and white male) are canceling out of apprenticeship programs before they reach Journeyman status.

Progress of the performance period of 2018 includes an increased regional and statewide collaborative effort and partnerships in the region to improve the quality of training, support services, and job placement efforts.

Program Goals

WSDOT will continue to expand coordination and partnership efforts statewide to include state agencies, community based organizations, and other qualified service providers. Coordination of efforts will result in more efficient use of funds, create sustainable partnerships, and lead to higher success in outreach efforts.

Through partnerships with Workforce Development, city, county, and state organizations, WSDOT will continue to coordinate services in an effort to eliminate duplication of services and create unified partnerships at the regional and statewide levels with colleges, workforce development councils, unions, apprenticeship and other agencies. Through regional partnership efforts, of which WSDOT has been a part, systems are being developed to provide assistance with barriers such as driver's license reinstatement. DSHS has services available for worker retraining that include supportive services and assistance with child support and job search and placement assistance. An increased focus on coordination of programs will not only increase sustainability, long term success, and provide a less complicated pathway to services, but it will increase the number of training program options available for individuals statewide.

WSDOT developed a plan to achieve the following five goals for the October 1, 2017 through September 30, 2018 performance period:

Goal 1

Development and implementation of outreach services coordinated with the DSHS Employment Pipeline, Workforce Development and other agencies that service job seekers and other similar organizations to allow for recruitment from this ready-made "pool" of qualified individuals taking part in dislocated worker/worker retraining programs. Community organizations will be utilized to assist in identifying individuals and helping to direct them to services and training as appropriate. Recruitment and outreach efforts will continue to be expanded into disadvantaged populations such as immigrant communities, disadvantaged youth and those transitioning back into society from incarceration.

Accomplishments

Note: On December 1 of 2017, the OJT/SS Program underwent a staffing change on short notice.

During FFY 2018, the OJT/SS Program Coordinator and/or a Program Designee attended the following:

Monthly:
Regional Public Owners Meetings (RPO). The goal of this group, which includes the Port of Seattle, King County, City of Seattle, Seattle Housing Authority, Sound Transit, and WSDOT, is to diversify and expand the workforce to meet the regional public construction project demand. This is achieved by working collectively on messaging, sharing program updates, and working to understand shared information to meet the common RPO goal.

Regional Pre-Apprenticeship Collaborative (RPAC). The RPAC has a mission to build an equitable, regional pre-apprenticeship system which provides a direct and sustainable pathway to high-paying careers (with benefits) for local, low-income residents – especially women, black Americans, and other people of color. RPAC is committed to funding and supporting a region-wide approach to outreach, recruitment, education and training resulting in the systematic entry of local, qualified individuals into construction apprenticeships; and to ensure these apprentices successfully complete their apprenticeship and journey out.

Program Updates between OJT/SS Program Coordinator and the WSDOT Apprenticeship Utilization Coordinator. This monthly meeting serves as an opportunity for program sharing and information gathering to understand how goals are being met for apprenticeship utilization on federally funded projects. Over the course of the past year, progress has been made with better communication across programs to increase partnership and collaboration.

Quarterly:

OJT/SS Program Coordinator attended the Apprenticeship Utilization Advisory Committee Meeting in Lakewood with representatives from the WSDOT Construction office, and representatives from Union trades and Construction companies.

Goal Two

Marketing and promotion of the program by utilizing multiple media sources and different types of events/venues and taking advantage of technology to create informative program information. Target tailored recruiting efforts to the desired audience, keeping in mind age, preferences for social or printed media, etc.

Accomplishments
The OJT/SS Program supported the following Construction Career Days (CCD) Statewide to facilitate youth recruitment into the highway construction trades throughout the year:

- Spokane, October 11-12, 2017, approximately 850 students
- Tri-Cities, October 1, 2018, approximately 630 students
- Spokane, October 10, 2018, approximately 620 students
- King County, October 11, 2018, approximately 700 students; and
- Pierce County, November 14, 2018, approximately 1300 students

At each event, OJT/SS representatives were on hand to talk about On-the-Job Training Support Services. The OJT/SS Program also covered insurance for the events statewide.

Goal Three

Develop a contract for award to provide recruitment, training and job placement services.

Accomplishments

Apprenticeship and Non-Traditional Employment for Women (ANEW) was contracted to provide recruitment, training, and job placement services.

A highlight of ANEW's accomplishments is:

ANEW ran seven 11-week classes serving a total of 143 individuals. Program participation by:

- Race: 47% Caucasian, 28% African American, 11% Hispanic, and various others groups at less than 10%
- Gender: 58% male and 42% female

ANEW worked directly with the Carpenters Union: 1-2 week cohorts, and the Cement Masons Union: 3-week cohorts, and the program graduation rate is currently 91% across all training programs.

Goal Four

Provide supportive services in the form of limited tuition and program assistance for highway construction-related existing pre-apprenticeship training programs. This will include providing support for training programs in the form of classroom materials related to training, limited equipment rental, and other approved activities that are designed to increase the overall participation of minorities and women in federal-aid highway construction projects. Priority will be given to programs in areas of the state where there are limited opportunities to participate in pre-apprenticeship and apprenticeship training or to females and minorities in need of assistance with no other funding alternatives.

Accomplishments

- A total of $15,404.33 was invested to support 62 individuals with an average of $248.45 per individual
- Support Services provided by race: 35% Caucasian, 18% Multi-race, 16% African American, 11% Hispanic, and various other groups at less than 10%

Goal Five

Continue to develop the scholarship program to provide assistance to individuals interested in attending a preparation program in the identified highway construction areas OJT supports. A pre-determined number of scholarships will be available, with criteria for application, selection and award developed. Relative applicant information will be collected, and tracking from enrollment through program completion and employment will be gathered to determine usefulness and effectiveness of a scholarship program.

Accomplishments

The OJT/SS Program was awarded $14,000 to administer in scholarships and tuition assistance. Candidates who met all the application requirements were considered.

Scholarships were awarded in the total amount of $12,815.00. Recipients included several formerly incarcerated men and women, people of color, and other minorities and those facing disadvantages. Scholarship and tuition assistance went to those in the following construction trades: Inside Lineman Electrician, Operating Engineers, Diesel Tech Mechanics, CDL training, and Pre-Apprenticeship training costs.

The scholarship and tuition assistance funds were awarded across the state, including these cities: Renton, Spokane, Yakima, Burlington, and Ellensburg.

Paving the Way with On-the-Job Training Support Services: Success Stories

One scholarship was awarded to a formerly incarcerated female who was driven to apply for, and was accepted into, the Operating Engineers Program that has a rigorous, competitive application process, and they only take new students once per year. This individual was given a glowing recommendation from the Apprenticeship Coordinator, and her essay highlighted her life story including her incarceration and her determination to create a new life for herself in the construction trades. Since her program spans more than this fiscal year, the OJT/SS Program Coordinator will reach out in 2019 for her progress report.

Another scholarship was awarded to a formerly incarcerated man who had spent seven years in prison. While there, this individual was transformed by taking part in the available educational opportunities, and upon release, enrolled in Walla Walla Community College to finish his education as a Diesel Technician. The OJT/SS Program was able to award him tuition assistance toward his CDL Training and Diesel Technician Program.

[Additional submissions by Mr. Sablan follow:]

Written TESTIMONY of Chris Sloan, Government Affairs Director, International Union of Painters and Allied Trades

"Innovations in Expanding Registered Apprenticeship Programs"

Subcommittee on Higher Education and Workforce Investment (House Committee on Education and Labor)

Wednesday March 27th 2019, 10:15 a.m. 2175 Rayburn House Office Building.

Chairwoman Davis and Ranking Member Smucker:

Chairman and Ranking Member, I write to share the International Union of Painters and Allied Trades perspective on the great opportunities for all people in looking to work in the construction sector. Our apprenticeship program supports people of all backgrounds joining the trades including women, people of color and veterans.

The IUPAT represents Industrial & Commercial Painters, Drywall Finishers, Glaziers, Sign & Display and Floor Coverers across North America.

A few examples of our high profile work include the painting of the Capitol Dome and installation of the exterior and interior glazing at Apple's new headquarters. As a matter of fact, our glaziers set the largest piece of glass ever installed in the cafeteria of Apples new headquarters. Training and education are the vehicles to performing high quality work to maintain a leading edge in our industry. We utilize our Finishing Trades Institute (FTI) which is the education and training arm

of the IUPAT. Our joint labor/management relationships drive the success in the training of apprentices and journey workers.

There are many positive results for promoting apprenticeship programs with job creation being the primary reason. Effects of apprenticeship utilization can been seen in the lives of those who have gone through North American Building Trades Unions apprenticeship programs. Attention to successful apprenticeship programs has created dialogue around the need to expand apprenticeship to new industries. We applaud this effort but maintain serious concern for the protection and preservation of the North American Building Trades Model of apprenticeship.

The model consist of a jointly funded, labor-management, model. All of our apprenticeship funds across the country, are funded through contributions agreed to by labor/management paid on every hour worked. These opportunities and hours of work are tied to construction market forces. Should there be an uptake in the use of our construction services, apprenticeship utilization will increase and vice versa.

We should protect and preserve this model of apprenticeship.

This partnership enables our membership to pursue lifelong learning opportunities. Nearly two-thirds of all registered apprentices in the United States work in the construction industry. Among construction apprentices, roughly three quarters are enrolled in union-sponsored apprenticeship programs.

The needs of tomorrow's workforce require us to adjust to the rapid changes in the technology of our industry. This Committee should consider ways to strongly encourage the use of apprentices on federal construction projects, as we know this is the best way to increase apprenticeship opportunities. This in turn will increase the number of apprentices placed in career paths in the construction industry. Incentivizing other less successful programs will make apprenticeship less effective in the long run. Thank you for this opportunity.

[Questions submitted for the record and their responses follow:]

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DANIEL MEUSER, PENNSYLVANIA
WILLIAM R. TIMMONS, IV, SOUTH CAROLINA
DUSTY JOHNSON, SOUTH DAKOTA

April 4, 2019

Ms. Jennifer Carlson
Co-Founder & Executive Director
Apprenti/WTIA Workforce Institute
2200 Alaskan Way, Suite 390
Seattle, WA 98121

Dear Ms. Carlson:

I would like to thank you for testifying at the March 27, 2019, Subcommittee on Health, Education, Labor, and Pensions hearing on "Innovations in Expanding Registered Apprenticeship Programs."

Please find enclosed additional questions submitted by Committee members following the hearing. Please provide a written response no later Friday, April 12, 2019, for inclusion in the official hearing record. Your responses should be sent to Katie McClelland of the Committee staff. She can be contacted at the main number 202-225-3725 should you have any questions.

We appreciate your time and continued contribution to the work of the Committee.

Sincerely,

ROBERT C. "BOBBY" SCOTT
Chairman

Enclosure

Higher Education and Workforce Investment Subcommittee Hearing
"Innovations in Expanding Registered Apprenticeship Programs"
Wednesday, March 27, 2019
10:15 a.m.

Chairman Robert C. "Bobby" Scott (VA)
As we consider opportunities to expand apprenticeship programs to new populations, justice involved individuals, including current or formerly incarcerated, seem to present a clear opportunity for targeted support and engagement.

- **Will you describe your programs' engagement with justice involved individuals, and if you are not currently engaged, what barriers your program or industry face in engaging incarcerated or formerly incarcerated individuals?**

Representative Susan A. Davis (CA)
Ms. Carlson, in addition to providing an initial grant award, what role did DOL play in supporting the establishment of your new apprenticeship programs?

- **Based on your experience, what is the appropriate role of the Department of Labor with regard to apprenticeship programs?**
- **What is the appropriate role regarding program review, validation, and standards?**

Representative Lori Trahan (MA)
Ms. Carlson, a common complaint about creating new registered apprenticeship programs, especially in new occupations, is the financial burden that employers face.

- **How did the DOL grant you mentioned in your testimony support the establishment of your program?**

MAJORITY MEMBERS:

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RON WRIGHT, TEXAS
DANIEL MEUSER, PENNSYLVANIA
WILLIAM R. TIMMONS, IV, SOUTH CAROLINA
DUSTY JOHNSON, SOUTH DAKOTA

April 4, 2019

Ms. Bridget Gainer
Vice President, Global Public Affairs
Aon
200 E Randolph, 4th Floor
Chicago, IL 60601

Dear Ms. Gainer:

I would like to thank you for testifying at the March 27, 2019, Subcommittee on Health, Education, Labor, and Pensions hearing on "Innovations in Expanding Registered Apprenticeship Programs."

Please find enclosed additional questions submitted by Committee members following the hearing. Please provide a written response no later Friday, April 12, 2019, for inclusion in the official hearing record. Your responses should be sent to Katie McClelland of the Committee staff. She can be contacted at the main number 202-225-3725 should you have any questions.

We appreciate your time and continued contribution to the work of the Committee.

Sincerely,

ROBERT C. "BOBBY" SCOTT
Chairman

Enclosure

Higher Education and Workforce Investment Subcommittee Hearing
"Innovations in Expanding Registered Apprenticeship Programs"
Wednesday, March 27, 2019
10:15 a.m.

Chairman Robert C. "Bobby" Scott (VA)
As we consider opportunities to expand apprenticeship programs to new populations, justice involved individuals, including current or formerly incarcerated, seem to present a clear opportunity for targeted support and engagement.

- **Will you discuss your programs' engagement with justice involved individuals, and if you are not currently engaged, what barriers your program or industry face in engaging incarcerated or formerly incarcerated individuals?**

Representative Susan A. Davis (CA)
Ms. Gainer, what role did DOL play in supporting the establishment of your new apprenticeship programs? Based on your experience, what is the appropriate role of the Department of Labor with regard to apprenticeship programs?

A frequent criticism of registered apprenticeships is that they lack the flexibility to be applicable in high-demand sectors and occupations outside of the construction trades.

- **What has been your experience regarding the level of flexibility in developing your apprenticeship programs?**

Ms. Gainer, you mentioned in your testimony that Aon first created internship opportunities before turning to registered apprenticeships to address your talent pipeline needs.

- **Why did Aon and the employers you worked with determine that this intervention was necessary as compared to other forms of work-based learning or on-the-job training?**

We often hear complaints that the registration system is too cumbersome for employers to navigate.

- **Did you find this to be the case, and do you have any recommendations on simplifying this process while maintaining the program quality?**

MAJORITY MEMBERS:

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DANIEL MEUSER, PENNSYLVANIA
WILLIAM R. TIMMONS, IV, SOUTH CAROLINA
DUSTY JOHNSON, SOUTH DAKOTA

April 4, 2019

Mr. Mark Hays
Vice Chancellor of Workforce & Economic Development
Dallas County Community College District
1601 S. Lamar Street
Dallas, TX 75215

Dear Mr. Hays:

I would like to thank you for testifying at the March 27, 2019, Subcommittee on Health, Education, Labor, and Pensions hearing on "Innovations in Expanding Registered Apprenticeship Programs."

Please find enclosed additional questions submitted by Committee members following the hearing. Please provide a written response no later Friday, April 12, 2019, for inclusion in the official hearing record. Your responses should be sent to Katie McClelland of the Committee staff. She can be contacted at the main number 202-225-3725 should you have any questions.

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Representative Gregorio Kilili Camacho Sablan
Mr. Hays, Dallas County Community College District (DCCCD) offers a number of Registered Apprenticeships in both traditional trades, and in non-traditional apprenticeship sectors like Cloud Support Engineering and Pharmacy Technician. What inspired DCCCD to offer registered apprenticeship programs in these new sectors and what are the costs to your schools and for students to participate?

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DUSTY JOHNSON, SOUTH DAKOTA

April 4, 2019

Mr. James G. Pavesic
Director of Education and Training
United Association and International Training Fund
3 Park Place
Annapolis, MD 21401

Dear Mr. Pavesic:

I would like to thank you for testifying at the March 27, 2019, Subcommittee on Health, Education, Labor, and Pensions hearing on "Innovations in Expanding Registered Apprenticeship Programs."

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Mr. Pavesic, your testimony notes that the UA apprenticeship programs are tied to for-credit programs that can lead to college degrees, including up to 45 college credits by the completion of the apprenticeship program.

- **What challenges has UA faced in going through the accreditation process?**

As we consider opportunities to expand apprenticeship programs to new populations, justice involved individuals, including current or formerly incarcerated, seem to present a clear opportunity for targeted support and engagement.

- **Will you discuss your programs' engagement with justice involved individuals, and if you are not currently engaged, what barriers your program or industry face in engaging incarcerated or formerly individuals?**

Representative Gregorio Kilili Camacho Sablan (MP)
Mr. Pavesic, from your experience working with an accreditor to provide college credit to apprentices while participating in a registered apprenticeship program, what recommendations can you make to improve this process and better align apprenticeships and higher education, in particular for community college students?

Representative Ilhan Omar (MN)
Clean energy employs 59,079 Minnesotans. My state's clean energy sector has added more than 1,500 jobs since 2016 – growing more than 2 times faster than the overall job growth in the state. In the next year, Minnesota's clean energy employers project they will add almost 2,700 jobs – that's a growth rate of 4.6%

- **Mr. Pavesic, how can we make sure these are family sustaining, union jobs?**

- **What support do unions need to expand registered apprenticeship programs to train workers for these growing sectors?**

In Minnesota alone, we know there is an urgent need for $4.99 billion in investment in our wastewater infrastructure over the next 20 years – and thousands of workers will be needed to meet that need. According to recent reports, the water sector is aging, with employers struggling to attract and hold onto skilled workers, particularly younger and more diverse workers. A "silver tide" of retirements is expected to cut into the pool of skilled, qualified workers in many utilities and result in staffing vacancies of up to 50% in some cases. Meanwhile, a lack of public

visibility, combined with declines in career and technical education, has reduced interest and experience among prospective workers who could fill water-related positions.

- **Mr. Pavesic, how is your union working to ensure a qualified workforce can meet the needs of our water sector?**

- **Mr. Pavesic, can you talk about the difference in the quality of work product between someone who has gone through a registered apprenticeship program and someone who hasn't – and what impact those differences might have for our environment and public health?**

Representative Lori Trahan (MA)
Mr. Pavesic, I was struck by the statement in your written testimony that the UA invests over $200 million per year in training – and that those are private dollars. That's extraordinarily impressive.

- **Can you talk a little bit about how UA is able to generate those funds for apprenticeships?**

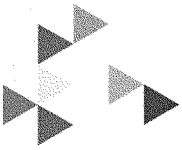
- **What kinds of investments are you making in new technologies?**

Mr. Pavesic, you recommend that Congress amend federal procurement laws to encourage the use of contractors who participate in registered apprenticeship programs.

- **How would this help to address the skill shortages we constantly hear about?**

Mr. Pavesic, you noted that UA produces videos designed for guidance counselors to explain the value of your apprenticeship program as a high-quality postsecondary education option. This bias against paths other than the 4-year degree is something I have witnessed myself, so I really commend UA for taking this head-on.

- **However, has there been any thought given to going earlier than high school? Some might say that if we wait until kids are that age, then we will be too late in some cases. What do you think?**



APPRENTi
The path, the plan, your career in tech.

1721 8th Ave N
Seattle WA 98109
206.707.0194

To: The Honorable Bobby Scott,
Chairman of the House Education and Labor Committee
CC: Katherine McClelland, Staff, Committee on Education and Labor
From: Jennifer Carlson,
Co-Founder & Executive Director Apprenti/WTIA Workforce Institute
RE: Responses to questions following hearing on "Innovations in Expanding Registered Apprenticeship Programs
Date: April 11, 2019

Chairman Scott,
Thank you for inviting Apprenti to speak on registered apprenticeship and how it is being employed in the tech sector. What follows are responses to the additional questions asked by the sub-committee.

Chairman Robert C. "Bobby" Scott (VA)
As we consider opportunities to expand apprenticeship programs to new populations, justice involved individuals, including current or formerly incarcerated, seem to present a clear opportunity for targeted support and engagement.

- **Will you describe your programs' engagement with justice involved individuals, and if you are not currently engaged, what barriers your program or industry face in engaging incarcerated or formerly incarcerated individuals?**

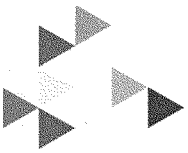
Apprenti offers employment for all, including formerly incarcerated. Its process is designed to mitigate and eliminate, where possible, recruiting biases related to education, prior work experience or criminal background.

As for barriers in the industry, please note Department of Defense contractors, companies engaging in government contracts, cyber roles working with personally identifiable information (PII), to name a few, are unable to hire persons previously involved in the justice system due to related risk factors or regulatory limits.

Representative Susan A. Davis (CA)
Ms. Carlson, in addition to providing an initial grant award:

- **What role did DOL play in supporting the establishment of your new apprenticeship programs?**

The US Department of Labor's American Apprenticeship Initiative grant provided the seed funding needed to build the Washington state pilot. This pilot funded Apprenti's ability to attract companies, build and file a registered, industry-driven model of apprenticeship and recruit diverse talent while managing the first five-years of cohorts as a proof of concept. The DOL and Washington's Department of Labor and Industries worked with Apprenti to understand the regulations surrounding the Registered Apprenticeship model, and where there was license to craft the requirements to fulfill the tech sector's needs.



• Based on your experience, what is the appropriate role of the Department of Labor with regard to apprenticeship programs?

Based on our experience, the Department of Labor's role should be to perform three functions:

1. Its primary role should be oversight and validation of registered apprenticeship programs that conform to its regulations and/or law governing Registered Apprenticeship.

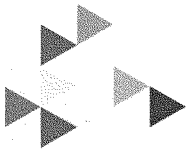
    a. Registered Apprenticeship is a tried and true training platform, DOL should be stimulating adoption across a wide range of sectors that can benefit from its systematic talent development process. Apprenti was presented with three Registered Apprenticeship models by DOL at inception:

        i. Time Based – typically utilized by the trades who invest 6,000-10,000 cultivating talent with heavy focus on hands-on training, but has classroom training at a minimum of 150 hours annually
        ii. Competency Based – a process that allows for testing and demonstrating of skills to establish one's ability to perform the work without a set time requirement, however requires standardized testing for competency.
        iii. Hybrid – Mix of the minimum 150 hours of classroom, with project delivery or empirical testing to establish competency combined with the minimum 2,000 hours of hand-on work experience.

    b. Apprenti is a Hybrid program because most tech companies/departments employ "internships" in a 3-6-month duration and find that the interns are still not yet "work ready". Further, each company engages in its own system of internship, making establishing competency within the internship system difficult to validate from one company to the next. Hence, the desire by tech to engage in the Registered Apprenticeship system in order to standardize a baseline of both classroom training and job skills.

        i. From a regulatory level, not all of these options work in all sectors. For example, organizations have registered for a competency-based apprenticeship program in tech, which allowed for short term training, i.e., internship level duration under the name of apprenticeship, providing access to federal funding while not delivering strong outcomes, and seeing little oversight of industry defined competency testing. The process for certifying each level of the apprenticeship is not consistent.

2. Funding expansion of current programs and intermediaries that have ability to scale nationally and develop programs and intermediaries in new and emerging sectors.
    a. Core to the US DOL's Registered Apprenticeship expansion has been the tracking of new programs, I.e., counting each new set of occupational standards, each company filing standards, and each intermediary. However, few of the



aforementioned register apprentices at scaled numbers or conform to the minimum required term of 1-year, guaranteed, paid work experience.

i. Apprenti challenged the norm of the Registered system in how it implements the classroom, compressed to front end, and the roles defined by the sector versus Labor's expectations (Middle skills vs entry level.) In our opinion, DOL should focus less on number of programs/occupations filed and focus instead on the requirements and outcomes of Registered Apprenticeship by sector. This includes numbers of placements, completion rate, retention with employer/in industry, salary improvement pre vs. post, and diversity targets. From this, DOL would be able to direct further investment into scaling programs that meet regulations, are filed and performing.

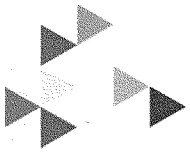
ii. Scaling success: Apprenti has a three-year sustainability model. Thus, each market Apprenti enters needs $1.0M in seed funding to staff and operate the program through the market's pilot phase, which drives income and investment from companies to become sustainable. While Apprenti received the AAI grant to start Washington state's pilot, it must work with local investors, private foundations and state Labor agencies to fund similar scale expansion to new markets, which is both time and labor-intensive. (Previously requested appropriation of $20M per year to scale new 20 markets annually; 3-5 years will cover core of U.S.)

iii. Further, Apprenti collects significant data on apprentices beyond EEO including prior education, prior income, disability status, etc. Our program can demonstrate an ~$50,000 income delta from prior to post apprenticeship and more than $1.0M in improved lifetime earnings. Outcomes should be tracked consistently across sectors for investment consideration and comparative analysis.

3. Recommend legislation and policies that would stimulate adoption of registered apprenticeship, remove barriers to participation for both companies and apprentices, and work with the 25 State Apprenticeship Agencies (SAA) to unify its approach with more consistency. For example:

   a. At present 25 states operate independently from the US DOL. While the DOL supersedes the state regulatory environment; however, states funding portions of new sector expansions require programs to register at the state level in addition to the US DOL. These states generally have stricter standards for Registered Apprenticeship than the Federal level, and each state's funding has different performance and reporting requirements, which can be daunting. Federally funding scale through appropriation would alleviate much of this pain.

   b. Feedback has been provided that companies willing to engage in Registered Apprenticeship for tech roles are hesitant to cover 100% of classroom training expenses as the candidates are still an unproven quantity. This significant cost,



roughly $15,000 per person, is currently being subsidized by a combination of states, philanthropy, labor agencies, Apprenti directly and companies. Most of this funding has a narrow window of access, one to two years. Companies would like to see a national, stable, 10-year funding strategy to subsidize the classroom training costs as they learn how to operationalize apprenticeship and scale adoption. If the tech sector trained 5,000 apprentices annually, with a 50% federal subsidy, it would consume roughly $40M per year with companies paying the difference in addition to apprentice salary and benefits. (Previously requested $250M annually for multi-sector approach)

c. While existing flexibility within the registered apprenticeship system can help with adoption, there are commonalities across sectors using the system. Just as an electrician works with wiring the same way across the country, and nurses draw blood in the exact same fashion in all states, writing code – language by language – is also standard. Having DOL work to standardize as much as possible, based on industry or respective industry intermediary's directive, would allow for broader consumption and portability of skills and credentials. This would be a shift from the company-by-company approach currently tracked by DOL.

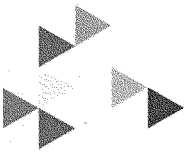
d. The Department of Labor, by name, instills a belief and focus that the department is focused on the Trades or Unionized industries. Bifurcating the DOL into Labor and Industries could allow for different language in the standards that does not include collective bargaining, which is challenging in sectors like tech, structure oversight by committees staffed by people knowledgeable in the sector, and ability to determine the appropriate registered models to implement by sector.

• What is the appropriate role regarding program review, validation, and standards?

The appropriate role for the DOL with regards to program review, validation and standards is, in a word, compliance. It has been the validating body, responsible for conferring the credentials of completion for apprenticeships in the U.S.

In the case of technology, we as the sector's intermediary, have worked with a large and broad consortium of employers to define the job skills needed and competency frameworks for a dozen, high-demand tech occupations. The DOL looks to us, the industry subject matter experts, to craft those with the input of industry, to meet the tech sector's needs.

Based on that industry defined set of competencies, each apprentice receives a credential from the US DOL, as the national certifying body. That credential is now portable and companies can easily understand its value proposition, if using the single approved occupational job framework. Apprenti works to socialize frameworks across companies, states and sectors to ensure its standardization, and continuously update them to meet changing industry requirements. This enables the DOL to certify the credential and that the skills learned are compliant with the sector and apprenticeship regulations.



Representative Lori Trahan (MA)
Ms. Carlson, a common complaint about creating new registered apprenticeship programs, especially in new occupations, is the financial burden that employers face.

- **How did the DOL grant you mentioned in your testimony support the establishment of your program?**

The WTIA Workforce Institute's original charter via the grant was to help companies set up and file discrete apprenticeship programs. As we engaged with more employers, many of whom are national or multi-national and cross industries, they shifted that focus to working across sectors and states to create a more holistic apprenticeship approach for tech– seeing this as a one-time, green field opportunity.

Apprenti, as it evolved into the role of the Intermediary, took on many of the responsibilities that companies identified as costly or barriers to entry including program and apprentice registration, diverse talent attraction and screening, compliance and support resource mapping to name a few. This alleviated many of the pain points and financial burdens companies would have experienced building infrastructure internally. The grant funded our ability to look at ways and means of constructing a nationalized system to serve the sector, and also to create business solutions, which enabled companies to adopt apprenticeship while working through operational challenges. The model was designed from day-one with scale in mind, so Apprenti can operate and port to any market and work with any org or company.

Response to Additional Questions
By Mark Hays, Vice Chancellor of Workforce & Economic Development
Dallas County Community College District

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• Will you discuss your programs' engagement with justice involved individuals, and if you are not currently engaged, what barriers your program face in engaging incarcerated or formerly incarcerated individuals?

Response: The Dallas County Community College District (DCCCD) engages with justice-involved individuals on several levels. These offerings include coursework and certificates in entrepreneurship, HVAC, logistics, high school equivalency, and work readiness at the Federal Correctional Institution in Seagoville, Texas. These courses are coordinated by the DCCCD through Cedar Valley College. High school equivalency courses are also offered to individuals at the Dallas County jail.

The Federal Bureau of Prisons, in a partnership with the US Department of Labor Office of Apprenticeship, has apprenticeship programs at many federal correctional facilities. In the North Texas area, apprenticeship programs are available to inmates at federal facilities in Seagoville, Texarkana, and Fort Worth. DCCCD has had preliminary discussions with Office of Apprenticeship employees in Dallas to explore the possibility of more involvement by the college district in these apprenticeship programs. DCCCD is well-equipped to offer related technical instruction in several occupational areas, as evidenced by our involvement with traditional coursework in the Seagoville facility. DCCCD staff could be utilized with our extensive employer contacts to be a facilitator in connecting trained offenders with excellent jobs, before and after release. Obviously, it is important to connect the offender with the right apprenticeship. Training in occupations that restrict hiring due to criminal background could not be offered as apprenticeships in the correctional facilities. We would not want to build false hope and waste anyone's time by training in areas where the possibility of employment for the ex-offender is not feasible.

Outside of the correctional system, DCCCD works with apprenticeship programs where ex-offenders are currently being trained in jobs that provide middle-class wages. Most of these occupations are in the construction and manufacturing trades. Employers are aware of the apprentice's criminal background and are willing to employ the individual.

Representative Gregorio Kilili Camacho Sablan
Mr. Hays, Dallas County Community College District (DCCCD) offers a number of Registered Apprenticeships in both traditional trades, and in non-traditional apprenticeship sectors like Cloud Support Engineering and Pharmacy Technician. What inspired DCCCD to offer registered apprenticeship programs in these new sectors and what are the costs to your schools and for students to participate?

Response: DCCCD worked with employers that were facing a serious talent gap and wanted to explore different methods to recruit and retain workers. We wanted to let employers know about apprenticeships and how they could be an effective tool to recruit new employees, upskill incumbent workers, and build loyalty across a variety of occupations within a company. Apprenticeships are not just about the traditional jobs in manufacturing and construction but could be applicable for almost any job and any company. While construction and manufacturing employers were acquainted with apprenticeships, employers in other sectors often knew little about how apprenticeships could help them.

While Dallas has thousands of jobs in manufacturing and construction, it is also well represented across all industry sectors. That's what makes the economy in North Texas so robust – a variety of strong industry sectors. The region is not ultra-dependent on only one or two primary industries. However, this positive also had a down side. Such robust employment led to very keen competition for workers across all industry sectors. Employers were looking for an edge when it came to recruitment and retention.

Working with the Office of Apprenticeship, DCCCD assisted employers with curriculum development and recruitment in sectors that were not known for apprenticeships. Programs such as pharmacy technician with CVS and IT occupations with Amazon Web Services came about because of critical skill shortages in these companies. DCCCD could quickly bring expertise to the table in setting up an apprenticeship and work closely with the Office of Apprenticeship and Texas Workforce Commission to relieve some of the anxiety some employers felt when dealing with a government agency. This allowed for a "triangle of trust" to be built between DCCCD, the employer, and government agencies that led to what we all wanted – workers earning middle-class wages and companies that filled their workforce needs.

DCCCD costs related to these programs is minimal. Our goal is to help workers get the skills they need and help companies fill their workforce gaps. If our colleges do the related technical instruction, tuition is charged to the employer. Apprentices are not charged tuition, nor do they pay for learning materials. DCCCD as of today does not charge a fee to be a facilitator in apprenticeship programs. That day may come but is not being contemplated at this time.

James Pavesic Responses
to Questions for the Record

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- **What challenges has UA faced in going through the accreditation process?**

  James Pavesic: The forty-five college credits that are available to any apprentice who successfully completes a UA apprenticeship are awarded through the Washtenaw Community College ("WCC"). The UA and WCC have an ongoing relationship for decades and as part of that relationship, WCC reviewed the curricula of the various UA apprenticeship programs and concluded that under its guidelines successful completion of a UA apprenticeship warranted the awarding of forty-five college credits. The process was not difficult and required the UA to make its curricula available to WCC and provide information about the qualification of the instructors who teach UA apprentices.

  Separate and apart from the relationship the UA has with WCC, the UA has also sought and received accreditation of its apprenticeship programs from the Council on Occupational Education ("COE"). Obtaining this was a more involved process, but well worth the time. The process entailed direct interaction with COE, the adoption of various policies, procedures and the creation of review committees as well as on-site inspections and visits.

As we consider opportunities to expand apprenticeship programs to new populations, justice involved individuals, including current or formerly incarcerated, seem to present a clear opportunity for targeted support and engagement.

- **Will you discuss your programs' engagement with justice involved individuals, and if you are not currently engaged, what barriers your program or industry face in engaging incarcerated or formerly individuals?**

  James Pavesic: UA apprenticeship programs are not limited to people with mistake-free histories and seek to share information about opportunities with persons of all backgrounds. They will accept applications from anyone who meets the program's minimum eligibility criteria, which is generally, eighteen years of age with a high school diploma or a GED. Thus, to the extent that a formally incarcerated individual meets those qualifications, they can apply for admission to a UA apprenticeship program. The ability of such an individual to successfully complete the program, however, can be significantly curtailed by any background check requirements imposed by private-sector employers and government. Since apprenticeship involves both successfully completing a classroom based curriculum and performing so many hours on the job, any limitation on where an apprentice can work reduces the chances for successful completion of the program.

Representative Gregorio Kilili Camacho Sablan (MP)
Mr. Pavesic, from your experience working with an accreditor to provide college credit to apprentices while participating in a registered apprenticeship program, what recommendations can you make to improve this process and better align apprenticeships and higher education, in particular for community college students?

> **James Pavesic:** Accreditation is a third party seal of approval that demonstrates that a given educational program has met or exceeded a set of established criteria. Accreditation is therefore helpful but not enough to award college credit. In order for college credit to be awarded, there must be a working partnership between the apprenticeship program and the institution of higher education that will award the college credits. For the institution to agree to award college credit, it must be satisfied that the apprenticeship program is teaching college grade courses in a manner and setting consistent with the institution's own policies. Registered apprenticeship programs, such as those involving the UA, are able to make this demonstration due to their commitment to, and the investments they make in, high-quality education.
>
> Apprenticeship and higher education will continue to become better-aligned when higher education institutions are both willing to provide an honest assessment of an apprenticeship program's curriculum and award college credit on the basis of that assessment. Furthermore, community colleges could partner with the sponsor of a registered apprenticeship program to become the source of the related training required in all apprenticeships. Under this model, the apprentice would be an employee of an employer participating in the apprenticeship program as well as an enrolled student at the community college.

Representative Ilhan Omar (MN)
Clean energy employs 59,079 Minnesotans. My state's clean energy sector has added more than 1,500 jobs since 2016 – growing more than 2 times faster than the overall job growth in the state. In the next year, Minnesota's clean energy employers project they will add almost 2,700 jobs – that's a growth rate of 4.6%

- **Mr. Pavesic, how can we make sure these are family sustaining, union jobs?**

> **James Pavesic:** The best way for the federal government to promote family sustaining jobs, whether union or non-union, is to adopt laws and policies which promote and reward high-road employers. In my written testimony, I cited, as one example, updating the federal government's own procurement policies to give meaningful credit to construction contractors that invest in registered apprenticeship programs and use registered apprentices to build their projects. In my experience, government procurement policies tend to be much more rigid than the private sector, requiring contracts to be awarded to the lowest bidder without adequate consideration of other factors. This has the effect of creating a race-to-the-bottom in which the winner is the contractor who can cut the most corners, use the lowest skilled and paid workers, and invest the least in training.
>
> Another effective way to promote family sustaining jobs is to ensure that larger construction projects funded or assisted by the federal government are built under Project Labor Agreements ("PLAs"). PLAs are pre-hire agreements in which the terms and conditions of employment are

agreed to in advance. Many times they will incorporate the terms of the local collective bargaining agreements, thus ensuring that those working on the project are paid a true living wage. PLAs have a long and strong record of success, having been used in all 50 States and the District of Columbia—by private sector companies and government at all levels—to deliver cost savings on the basis of quality, safety and timeliness instead of the race-to-the-bottom discussed above.

Ensuring that any federally funded or assisted projects pay a prevailing wage by attaching Davis-Bacon requirements to the legislation is also helpful. Davis-Bacon prevailing wage requirements historically have been something that members of both parties can agree on, based in part on a belief that government participation in the private marketplace should not have the effect of driving down local market-driven wages and benefits.

- **What support do unions need to expand registered apprenticeship programs to train workers for these growing sectors?**

  James Pavesic: As noted above, one step that government can take generally to expand registered apprenticeship opportunities to adopt procurement laws and policies which reward contractors that support registered apprenticeship programs and use registered apprentices on their projects. Making government projects available to such high-road contractors allows these contractors to expand their operations, which, in turn, increases their demand for registered apprentices and enables unions, such as the UA, to take in, train and put to work increasing numbers of apprentices.

  Providing such support to the contractors who participate in UA apprenticeship programs and employ our apprentices will also have the effect of supporting the efforts of the UA and our apprenticeship programs to provide cutting-edge training in green building and clean energy construction. For example, the UA partners with organizations like the Urban Green Council to provide and enable our members to receive sustainable technology certifications in partnership with the Council's Green Professional Training Trades (GPRO) Program.

In Minnesota alone, we know there is an urgent need for $4.99 billion in investment in our wastewater infrastructure over the next 20 years – and thousands of workers will be needed to meet that need. According to recent reports, the water sector is aging, with employers struggling to attract and hold onto skilled workers, particularly younger and more diverse workers. A "silver tide" of retirements is expected to cut into the pool of skilled, qualified workers in many utilities and result in staffing vacancies of up to 50% in some cases. Meanwhile, a lack of public visibility, combined with declines in career and technical education, has reduced interest and experience among prospective workers who could fill water-related positions.

- **Mr. Pavesic, how is your union working to ensure a qualified workforce can meet the needs of our water sector?**

  James Pavesic: The UA prides itself on being a national leader on water issues. Our training related to water is both rigorous and cutting-edge, and our members work on all facets of water and wastewater treatment systems. In addition to investing in top-notch training, the UA has studied and provided policy recommendations on water quality issues and, last year, established a UA Water Quality Task Force. To provide a recent example of our work, we have adopted a comprehensive water quality program that involves the testing of water quality and the

implementation of remedial efforts to address issues such as lead and other contaminants in the water supply as well as the presence of Legionella and other harmful bacteria. Training in this program is provided to both contractors and UA members, including journey persons and apprentices. In addition, UA training programs are leading the way in providing training, qualified manpower and expertise in the installation of rainwater and stormwater harvesting systems, which are enabling property owners to capture and conserve water that has historically been wasted.

Overall, we are confident in our ability to train the workforce necessary to address our country's crumbling water infrastructure and to translate water conservation and water quality goals into actual results. The bigger issue with respect to water infrastructure specifically is funding. The UA can provide a highly skilled workforce, but until the federal government significantly expands funding for water infrastructure programs like the EPA SRF (State Revolving Funds) and WIFIA, we will continue to fall behind. In addition, the federal government should mandate consistent and more thorough testing of our water delivery systems.

- **Mr. Pavesic, can you talk about the difference in the quality of work product between someone who has gone through a registered apprenticeship program and someone who hasn't – and what impact those differences might have for our environment and public health?**

James Pavesic: Participants of UA registered apprenticeship programs are generally required to complete 8,000-10,000 hours of on-the-job training along with over 1,200 hours of certified instructor-led classroom work. In addition to the comprehensive, rigorous and current training they receive in the technical aspects of the craft, they receive OSHA authorized and other instruction aimed at ensuring that they are not just the most highly-skilled craftspeople, but also the safest. Continuing education is important in our industry, which is why our programs also offer a broad array of post-graduate instruction opportunities to UA journeypersons and forepersons.

The registration process also provides an important opportunity for existing apprenticeship programs in the industry to comment on the design of a new program, including its length and the content of its curriculum. This type of peer review ensures that registered programs meet industry standards. In addition, to maintain registration, apprenticeship programs must provide data on key components including the program's retention and graduation rates. This critical oversight assists apprenticeship programs in maintaining high standards and prevents them from offering only the illusion of training. Programs that voluntarily elect to operate under such a regulatory regime will necessarily produce a higher quality journeyperson than programs who are not supervised or reviewed by an independent entity such as the United States Department of Labor.

The importance of excellent training to our nation's public health and environment cannot be overemphasized. For example, if a worker is not adequately trained in backflow prevention or installs or maintains an automatic sprinkler system incorrectly, catastrophic contamination of the water supply and or loss of life could occur. Our water resources and systems are simply too important to entrust to individuals who do not have the kind of training the UA provides.

Representative Lori Trahan (MA)
Mr. Pavesic, I was struck by the statement in your written testimony that the UA invests over $200 million per year in training – and that those are private dollars. That's extraordinarily impressive.

- **Can you talk a little bit about how UA is able to generate those funds for apprenticeships?**

  James Pavesic: UA Apprenticeship programs are funded through hourly contributions to jointly trusted labor-management funds. The contributions themselves are negotiated as part of a fringe package by unions and employers signatory to a collective bargaining agreement. As I explained in my written and oral testimony, these contributions, and the training they make possible, come at no cost to the apprentice, let alone the taxpayer. The UA is able to generate these contributions because the UA, our Local Unions, and the employers signatory to our collective bargaining agreements all believe very strongly in the value of training to the worker, to the employer, to the industry, and to the project owners and members of the public who benefit from our projects. We all understand the need for, and benefit from, comprehensive and successful training programs.

- **What kinds of investments are you making in new technologies?**

  James Pavesic: The UA makes substantial investments in technology, understanding that our industry is ever changing and that the needs of today's young craftsmen and women are different than those of past generations. In addition to utilizing tools like Blackboard to deliver distance education and providing WebBooks and access to online resource libraries in lieu of paper textbooks, we utilize Augmented Reality to bring technical aspects of their education to life, as well as Virtual Reality to create simultations in which students are able to apply what they have learned by, for example, responding in a life-like way to a service call or performing equipment safety checks. Moreover, we are currently developing an apprenticeship program that will focus on digital drafting and design, including cutting-edge 3D Building Information Modeling.

Mr. Pavesic, you recommend that Congress amend federal procurement laws to encourage the use of contractors who participate in registered apprenticeship programs.

- **How would this help to address the skill shortages we constantly hear about?**

  James Pavesic: Quality registered apprenticeship programs can provide the training necessary to address the skill shortages that exist in the construction trades. Individuals must, however, want that training. To attract increasing numbers of qualified applicants, programs need to be able to deliver on their promise to put every apprentice they take in to work while they learn. Government can help by encouraging the use on its projects of contractors that participate in registered apprenticeship programs and employ registered apprentices.

  In my experience, government procurement policies tend to be much more rigid than the private sector, requiring contracts to be awarded to the lowest bidder without adequate consideration of other factors, such as a contractor's investments in registered apprenticeship programs. By providing appropriate credit in the procurement process to high-road contractors who participate in registered apprenticeship programs and use registered apprentices, such contractors will have greater access to government projects. This will enable them to expand their operations and

demand for registered apprentices, which, in turn, will enable our apprenticeship programs to take in, train and put to work more apprentices. In other words, in order to combat rather than worsen the problem of skill shortages, government needs to support contractors that are making the investments necessary to meet our country's workforce needs, and dispense with procurement laws and policies which promote a race-to-the-bottom in which the winner is the contractor who is able to cut the most corners, use the lowest skilled and paid workers, and invest the least in training.

Mr. Pavesic, you noted that UA produces videos designed for guidance counselors to explain the value of your apprenticeship program as a high-quality postsecondary education option. This bias against paths other than the 4-year degree is something I have witnessed myself, so I really commend UA for taking this head-on.

- **However, has there been any thought given to going earlier than high school? Some might say that if we wait until kids are that age, then we will be too late in some cases. What do you think?**

  James Pavesic: Yes, this an idea that we have been thinking more and more about. The UA believes it is important to instill in children early on that a career in the trades is something to aspire to, something that is deeply fulfilling to a great many men and women in this country, and something that adds tremendous value to our society. One way we have done this is by partnering with the Boy Scouts of America to develop a merit badge for plumbing—a highly successful and rewarding effort. We encourage our programs to work with schools, educators, parents and students at all levels to communicate the personal benefits and societal value of a career in the trades, so when students transition to high school and begin to consider what comes next, the trades, including registered apprenticeship programs in the trades, are already on their minds.

  At the high school level, we believe that it is important for schools to make trade related classes not only more readily available, but also broadly encouraged, so that students who are interested in construction can learn basic construction skills and get a taste for what a career in the construction trades will entail. Encouraging career guidance counselors in schools to talk about the benefits of building trades apprenticeships would also be beneficial. Currently, high school guidance counselors receive incentives if they send students to a four year college. These same kinds of incentives should also apply to registered apprenticeship programs.

[Whereupon, at 12:43 p.m., the subcommittee was adjourned.]