

**FORTY YEARS AND COUNTING:
THE TRIUMPHS OF TITLE IX**

HEARING
OF THE
**COMMITTEE ON HEALTH, EDUCATION,
LABOR, AND PENSIONS**
UNITED STATES SENATE
ONE HUNDRED TWELFTH CONGRESS

SECOND SESSION

ON

EXAMINING TITLE IX, FOCUSING ON FORTY YEARS AND COUNTING

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JUNE 19, 2012
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Printed for the use of the Committee on Health, Education, Labor, and Pensions



Available via the World Wide Web: <http://www.gpo.gov/fdsys/>

U.S. GOVERNMENT PUBLISHING OFFICE

92-384 PDF

WASHINGTON : 2015

For sale by the Superintendent of Documents, U.S. Government Publishing Office
Internet: bookstore.gpo.gov Phone: toll free (866) 512-1800; DC area (202) 512-1800
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C O N T E N T S

STATEMENTS

TUESDAY, JUNE 19, 2012

Page

COMMITTEE MEMBERS

Harkin, Hon. Tom, Chairman, Committee on Health, Education, Labor, and Pensions, opening statement	1
Enzi, Hon. Michael B., a U.S. Senator from the State of Wyoming	2
Mikulski, Hon. Barbara A., a U.S. Senator from the State of Maryland	4
Hagan, Hon. Kay R., a U.S. Senator from the State of North Carolina	40
Franken, Hon. Al, a U.S. Senator from the State of Minnesota	42
Blumenthal, Hon. Richard, a U.S. Senator from the State of Connecticut	45
Murray, Hon. Patty, a U.S. Senator from the State of Washington	47

WITNESSES

King, Billie Jean, Former Professional Tennis Player, New York, NY	6
Prepared statement	8
Hogshead-Makar, Nancy, J.D., Olympic Swimming Gold Medalist, Professor of Law, Florida Coastal School of Law, Jacksonville, FL	10
Prepared statement	12
Jemison, Mae Carol, M.D., Physician and Retired NASA Astronaut, Houston, TX	21
Prepared statement	23
Stosz, Rear Admiral Sandra L., Superintendent of the U.S. Coast Guard Academy, New London, CT	30
Prepared statement	32

ADDITIONAL MATERIAL

Statements, articles, publications, letters, etc.:	
Lisa Maatz, Director of Public Policy and Government Relations, American Association of University Women (AAUW)	51
National Women's Law Center (NWLC), letter	54
Response to questions of Senator Enzi by:	
Billie Jean King	55
Rear Admiral Sandra L. Stosz	56
Response to questions of Senator Murray by:	
Billie Jean King	56
Rear Admiral Sandra L. Stosz	57

FORTY YEARS AND COUNTING: THE TRIUMPHS OF TITLE IX

TUESDAY, JUNE 19, 2012

U.S. SENATE,
COMMITTEE ON HEALTH, EDUCATION, LABOR, AND PENSIONS,
Washington, DC.

The committee met, pursuant to notice, at 10:08 a.m., in room SD-430, Dirksen Senate Office Building, Hon. Tom Harkin, chairman of the committee, presiding.

Present: Senators Harkin, Enzi, Mikulski, Murray, Hagan, Franken, and Blumenthal.

OPENING STATEMENT OF SENATOR HARKIN

The CHAIRMAN. The Senate Committee on Health, Education, Labor, and Pensions will please come to order.

Over the past century, women have made remarkable strides toward equal rights and equal participation in American society. We now just take it for granted the idea that any little girl can grow up to become a doctor, a lawyer, a famous tennis player, or an astronaut, or the superintendent of the Coast Guard Academy—whatever she wants to be.

Today, America's leadership on the issue of equality for women and girls is unmatched anywhere around the globe. However, there was a time in our country when we could not envision this kind of progress. The passage of title IX of the Higher Education Act in 1972 truly opened the door of opportunity for women in academics, sports, and the workforce. Today, we are here to celebrate the successes of title IX.

Championed by Representatives Patsy Mink and Edith Green in the House and Senator Birch Bayh in the Senate, title IX states that no person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance. That's it—very simple and very straightforward.

And let me underscore two things. Title IX is gender neutral. It ensures equality under the law for men and women. And, second, title IX applies to any education program or activity receiving Federal assistance. This means that everybody gets a chance to take the course of study they wish, to participate in athletics, and to attend school or go to work in an environment free from harassment and discrimination.

It is a commonly held belief that title IX only applies to athletics, but that is not the case. Title IX applies to all activities at educational institutions receiving Federal funding.

We all benefit from gender equality. The highest growth, highest wage careers today, careers that are critical to America's economic success and national security, are the same careers that were traditionally off limits to women before title IX's passage. Well, that has changed dramatically.

For example, according to the U.S. Department of Education, today, girls in high school are taking science and math at higher rates than boys and doing better in those subjects, too. And though there is more progress to make, the percentage of women receiving doctorate degrees in all STEM fields—science, technology, engineering, and math fields—has risen steadily since 1972.

When title IX was passed, almost no women participated in career and technical education. Today, one-quarter of career and tech students are women. To state what ought to be obvious, by doubling our potential talent pool in all academic disciplines, careers, and sports, we become stronger as a nation.

Today, we will hear from a distinguished panel: an accomplished athlete, a legal scholar, an astronaut, and an admiral, who will discuss how the world has changed for women since title IX's passage. In the last 40 years, we have seen many firsts: the first woman Supreme Court Justice, the first woman in space, and the first woman Speaker of the House. Today, outstanding women scientists, athletes, business executives, and military officers are not only role models for other women and girls, but they are role models for all of us.

Title IX has so much in common with the great civil rights laws of the 20th century, including the Civil Rights Act of 1964 and the 1990 Americans with Disabilities Act. These laws are about expanding the scope of freedom, opening doors of opportunity, and ensuring fair and equal treatment for every member of our American family.

With that, I will introduce Senator Enzi for his opening statement.

OPENING STATEMENT OF SENATOR ENZI

Senator ENZI. Thank you, Mr. Chairman. This is one of my favorite days of the year. I get to meet some famous people, and those famous people have opened the doors so that generations to come will have a lot more famous people, famous women.

And, Dr. Jemison, I've got to tell you I'm a little intimidated by you. I was part of the rocket boy generation, when Sputnik went up and we found out we were way behind. And so to meet an astronaut is particularly a pleasure.

I've, of course, gotten to see Ms. King and her famous swimmer here as they performed. And that's always exciting.

I do come from Wyoming, which was the first State to allow women to vote. And they did that while we were still a territory. They were hoping to increase the number of voters so that we could become a State.

[Laughter.]

Senator ENZI. There's more to the story, though. When we did apply for statehood, they said, "Well, you can be a State as long as you will take away that right for women to vote and to own property." And to the credit of that all male legislative body, they said, "We'd rather not be a State," and they waited a while longer for statehood.

But when it happened, we had the first woman judge, first woman Governor, first woman councilman, first women's—most everything, including the first woman to own a bank. So I'm pleased with title IX and feel that it fits in with the Wyoming tradition. I think it's one of the most important civil rights laws, and it's an example of what Congress can do when we work together to do what's right.

We need only look at the statistics to see the profound impact title IX has had on opening opportunities for women over the past 40 years. In 1975, degree attainment by men far exceeded that of women. However, women now exceed men in both undergraduate and graduate degree attainment. According to the Department of Education, women today earn nearly 60 percent of the bachelor's degrees and more than half of the doctoral degrees.

Any discussion of title IX is not complete without acknowledging the role it has had in opening opportunities for women in athletics. As Senator Murray has pointed out before, only 295,000 girls participated in high school sports in 1972 compared to 3.67 million boys. That was just 7.4 percent of all high school athletes. Since then, participation in women's sports has grown exponentially. Today, 3.2 million girls participate in high school sports compared to 4.5 million boys.

Despite this progress, we cannot afford to be complacent. America's economy is at a crossroads, and we need to graduate more engineers, scientists, and mathematicians if we are to continue to be the world's technological leader. This is where I see the greatest possibilities for young women. Right now, women continue to receive far fewer jobs in STEM-related fields. We need to do more to achieve progress in that area.

Our witnesses today are four extraordinary individuals who have had remarkable achievements throughout their careers. Each of these women represent exactly what Congress set out to achieve when it passed title IX, that is, to make sure that women and girls have the same opportunities to succeed that men have enjoyed for decades. And these four women not only made sure that they took advantage of those opportunities, they became leaders and role models, encouraging other young women to live up to their potential.

I look forward to hearing from each of you and discussing how we can continue to encourage even greater achievements from future generations of women.

Thank you, Mr. Chairman.

The CHAIRMAN. We usually just have opening statements by the chair and ranking member. But because she has been such a leader in this area for all of her adult life, including all of her life here in the House and the Senate, I'd like to recognize Senator Mikulski for a statement.

STATEMENT OF SENATOR MIKULSKI

Senator MIKULSKI. Thank you very much, Senator Harkin, and for your extra courtesy here today. We are celebrating the 40th anniversary of the passage of title IX, and we salute Patsy Mink, who led the fight in the House, and Birch Bayh, our colleague here in the Senate.

In 1972, I never thought I'd have warm thoughts toward Richard Nixon. But here we are today, and I think we need to acknowledge President Nixon's leadership in moving the title IX legislation forward. Without his support, I don't believe we would have been successful.

Title IX is regarded as one of the most important pieces of legislation in advancing opportunities for women and girls. Often, the biggest press goes to sports achievements. But title IX was meant to open doors and establish parity, particularly, in the field of education, and along with that would be equal participation in college athletics.

In 1972, women were not in many universities. Harvard, Princeton, my own hometown of Johns Hopkins was all male and mostly all white. Women were not included in the protocols at the National Institutes of Health. And whenever a woman achieved something, she was viewed as a celebrity rather than a scholar or as an outstanding athlete.

So much has changed. And today we'll hear from, really, the founding mothers and the first to be able to move so many of these advances forward. Each and every one of them in their own way has an incredible personal narrative, and we support them.

Billie Jean King. I remember the famous tennis match with Bobby Riggs, when we chose sides and you all fought it out. We saw you give the word "glove" a new meaning in terms of that challenge.

But I also remember, as we moved the title IX legislation forward—and Dr. Jemison, as a physician, you'll appreciate this—Dr. Edgar Berman testified at one of our hearings, a distinguished Hopkins doctor, a wonderful man, 21st century science, but 19th century attitudes toward gender. He said women shouldn't be given equal access to a number of things because we have raging hormones. And I said in my own way, subtle and discreet, "I have raging hormones because of guys like you."

Well, we're beyond raging hormones. We're beyond celebrity status. We're into the achievement status. And thanks to title IX, women are no longer viewed as novelties when they make achievements. Women are no longer viewed as celebrities when they achieve things. They're viewed as athletes, as scholars, as physicians, as scientists, as superintendents of our great educational military institutions, like the Coast Guard Academy.

Admiral Stosz is a Maryland woman, so I am especially proud of her. And we're reminded of the fact that Dr. Bernice Sandler, then a doctoral student at the University of Maryland, was denied a faculty teaching position and was told she was just too bossy for a woman. Well, we in Maryland have heard that before, and we don't put up with it. I didn't put up with it, and I am bossy. But Dr. Sandler began to organize. That was the aegis of title IX.

There have been many achievements, and my colleagues in their own way have outlined those. But we're very proud of all of you. You are the founding mothers. You broke the glass ceilings. And while we think of you as being the first, for a long time, you were the only. But because of your legacy, you were not only the first, but the first of many.

Thank you for what you did. Thanks to President Nixon. And thanks to all who have made this possible.

The CHAIRMAN. Thank you very much, Senator Mikulski.

Now, we'll go to our panel. We have a very distinguished panel, as has been said. First, I'll just introduce all of them, and we'll just go from left to right.

Billie Jean King. Ms. King, one of the all-time great professional tennis players, has won 71 singles, 21 doubles titles, including a record 20 Wimbledon titles. She achieved the world's highest ranking five times between 1966 and 1972 and held a place in the top 10 for a total of 17 years.

She also has a history of promoting social change and equality for women. She founded the Women's Tennis Association, the Women's Sports Foundation, the Women's Sports Magazine, and co-founded Grand Slam, an environmental initiative for the sports industry. In August 2009, another first, Ms. King was awarded the Presidential Medal of Freedom, the Nation's highest civilian honor. Ms. King was the first female athlete to be honored with the Medal of Freedom and was presented the award by President Obama at the White House.

Next, we'll hear from Professor Nancy Hogshead-Makar, who is a three-time Olympic gold medalist in swimming, Professor of Law at Florida Coastal School of Law, and the senior director of advocacy at the Women's Sports Foundation. Professor Hogshead-Makar has testified before Congress numerous times on the topic of gender equity in athletics and is co-chair of the American Bar Association, Committee on the Rights of Women.

She has received much recognition and many awards for her commitment to athletics, including being listed by Sports Illustrated magazine in 2007 as one of the most influential people in the 35-year history of title IX, and was awarded the title IX Advocate Award from the Alliance of Women Coaches in 2012.

We're also joined by Dr. Mae Carol Jemison, a chemical engineer, physician, scientist, teacher, and astronaut. She was the first African-American woman to travel in space when she went into orbit aboard the space shuttle Endeavor in September 1992. In 1993, Dr. Jemison founded her own company, the Jemison Group, that researches, markets, and develops science and technology for daily life.

She has also appeared on a variety of TV shows, including "Star Trek: The Next Generation," something that I like. She holds nine honorary doctorates and in 2004 was inducted into the International Space Hall of Fame.

Our final witness is Rear Admiral Sandra L. Stosz, the Superintendent of the U.S. Coast Guard Academy in New London, CT. She previously served as the director of reserve and leadership at Coast Guard Headquarters here in DC, where she was responsible for developing policies to recruit, train, and support approximately

8,100 Coast Guard Reservists. Rear Admiral Stosz's personal awards include three Legion of Merit medals, four Meritorious Service medals, two Coast Guard Commendation medals, and two Coast Guard Achievement medals.

Again, we thank all of you for being here today, and for your lifetime of advocacy and work. Your statements will all be made a part of the record in their entirety. We'll go from left to right. If you can sum up in 5 or 6 minutes or so, then we can get into discussion.

Ms. King, we'll start with you. Welcome and please proceed.

**STATEMENT OF BILLIE JEAN KING, FORMER PROFESSIONAL
TENNIS PLAYER, NEW YORK, NY**

Ms. KING. I want to thank you, Chairman Harkin, Ranking Member Enzi, Senator Mikulski, and distinguished Senators that are also here. It's a privilege to be here with Nancy Hogshead-Makar, Dr. Jemison, and Rear Admiral Stosz. It's such an honor.

It's a privilege to testify before you this morning as we celebrate the 40th anniversary of title IX. Title IX is one of the most important pieces of legislation of the 20th century, and the 37 words which comprise the language of the amendment have proven powerful enough to change our society and provide opportunities in the classroom and on the athletic stage for countless young men and women.

I'm a pre-title IX student athlete. When I attended California State College at Los Angeles in the 1960s, we were still a full decade away from the enactment of title IX. Financial assistance was available for all the athletes and for the tennis players, but only for the men athletes and tennis players.

Two of the top men's tennis players of the time were attending college down the road from me. Stan Smith was on a full ride at USC and Arthur Ashe had a full scholarship at UCLA.

Even though I was arguably the best tennis player at Cal State LA and had already won a Wimbledon title, I was not receiving any financial assistance. I did have two jobs, one of which was handing out gym equipment in the locker room, and I thought I was living large. But men and women did not have equal opportunities.

I am very thankful to the people who made title IX possible. They are my heroes and my heroes. The efforts of Congresswoman Edith Green, known as Mrs. Education, and Senator Birch Bayh, who presented title IX to the Senate, Congresswoman Patsy Mink, Senator Ted Stevens, and Dr. Bernice Sandler and many others paved the way for us to right this wrong when title IX was signed into law by President Richard Nixon on June 23, 1972.

So often people think title IX is just about sports and athletics, and that is because athletes are so visible. But the amendment is about education and equal rights. Just a little more than 1 year after the passage of title IX, I played Bobby Riggs in a much heralded match at the Astrodome in Houston, TX. This event, which was called the Battle of the Sexes, may have been a tennis match, but, to me, it was about social change.

I wanted King/Riggs to change the hearts and minds of people to more closely align with the legislation of title IX. I was afraid if I did not win we would give people a reason to weaken title IX.

It was definitely a pressure-packed moment and crystalized my belief that pressure is a privilege.

Let's take a moment to look at the progress we have made in the last 40 years. Since the passage of title IX, girls' participation in varsity sports has gone from 1 in 27 to 2 in 5 at the high school level. In women's collegiate programs, the increase is more than 500 percent.

Tremendous progress has been made since 1972. And the Women's Sports Foundation, an organization I founded in 1974, has been the Guardian Angel of this legislation. All of us at the Women's Sports Foundation care so deeply about title IX and the protection of the legislation because of the tremendous benefit it brings to education and sports, specifically in terms of impact on health, emotional, and academic growth of our young people.

We know we must remain committed to keeping girls in the game. Today, there are 1.3 million fewer opportunities for girls than boys at the high school level. It's pretty simple to me. Girls or boys can't play if they don't have the opportunity. We must remain committed to providing access to sporting and athletic activities for all of our children.

At its very core, title IX is truly about the issues this committee deals with every day—health, education, labor, and the future of this Nation. It's about health and getting our children active and committed to reversing the obesity trend and pass boot camp. It's about education, because children who participate in sports and physical activity perform better academically.

It's about our workplace, because we know that boys and girls who are active and participate in sports develop confidence and leadership skills which will help them succeed in life. It's about our future and getting more girls and boys to participate, benefit, and succeed. The health of our Nation is depending on us to do the right thing.

I'd just like to take a moment—as you know, Senator Birch Bayh was instrumental in writing and championing title IX. Wherever the statute has been challenged, Senator Bayh has continued to champion its intent to ensure that both girls and boys could look forward to the benefits of education. In 1971, he wrote title IX, just one sentence, and in his honor, I would like to submit to the committee for public record Senator Bayh's own words of how important he knew title IX was when he wrote those 37 words in 1971, because it's just as important now.

Senator Bayh was inspired by his late wife, Marvella, who educated him about discrimination against women in higher education after her experience of being told by the University of Virginia that women need not apply. And he was inspired by his father, Birch Bayh, Sr., Superintendent of Physical Education for the DC school system for 30 years.

One morning in 1940, at the family breakfast table, Birch Bayh, Sr., told his daughter and son that he was going to be testifying before Congress that day. "What are you going to tell them, Daddy?" his kids asked. He said, "I'm going to tell them that little girls need strong bodies to carry their minds around, just like little boys."

Thank you for your time and thank you for your dedication to the celebration of title IX.

[The prepared statement of Ms. King follows:]

PREPARED STATEMENT OF BILLIE JEAN KING

Thank you Chairman Harkin, Ranking Member Enzi and distinguished Senators. It is an honor and a privilege to testify before you this morning as we celebrate the 40th anniversary of title IX.

Title IX is one of the most important pieces of legislation of the 20th century and the 37 words which comprise the language of amendment have proven powerful enough to change our society and provide opportunities in the classroom and on the athletic stage for countless young men and women.

I'm a pre-title IX student athlete.

In high school I attended Long Beach Poly in Long Beach, CA—a school which is well known as a sports powerhouse. But when I attended in the late 1950s and early 1960s, only the boys' teams played competitive sports against other schools in California. The girls never traveled to compete against other schools. We were only allowed to compete against our fellow students at Poly.

When I attended California State College at Los Angeles in the 1960s we were still a full decade away from the enactment of title IX. Financial assistance was available for tennis players . . . but only available to the men players.

Two of the top men's tennis players of the time were attending college down the road from me. Stan Smith was on a full ride at USC and Arthur Ashe had a full scholarship at UCLA.

We did things differently at our school. Scotty Deeds, the coach of the men's tennis team and Dr. Joan Johnson, the coach of the women's team felt our tennis program would be stronger if the men and the women practiced together.

Even though I was arguably the best tennis player at Cal State LA and had already won a Wimbledon title, I was not receiving any athletic scholarship funds. I did have two jobs on campus—one of which was handing out gym equipment in the locker room—and I will tell you I thought I was living large.

But I knew things just were not right. Things were not equal.

Thanks to the heroic and committed efforts of Senator Birch Bayh, Senator Ted Stevens, Congresswoman Edith Green, Congresswoman Patsy Mink and countless others, we righted this wrong when President Richard Nixon signed title IX into law on June 23, 1972.

So often people think title IX is just about sports. The amendment is primarily about education and completely about equal rights. But, so often people think the amendment is about sports. Why do they think that—because athletes are so visible.

Just a little more than 1 year after the passage of title IX, I played Bobby Riggs in a much heralded match in Houston, TX. This event—which was dubbed the “Battle of the Sexes”—was a tennis match only on the outside. In reality, it was much more about social change than tennis.

I wanted the King/Riggs match to change the hearts and minds of people to more closely align with the legislation of title IX. I was scared and I was afraid if I did not win we would give people a reason to weaken title IX. It was definitely a pressure-packed moment and so many people were counting on me to win.

Sometimes you have to “see it to be it.” King/Riggs was one of those times. I felt I could be an example to show women what we *could do* if we just had the opportunity *to do*.

I learned from the King/Riggs match that title IX is so important that we must always keep moving forward and we cannot allow ourselves to go backwards.

Let's take a moment to look at the progress we have made in the last 40 years.

Since the passage of title IX girls' participation in sports has gone from 1 in 27 to 2 in 5 at the high school level.

Tremendous progress has been made and the Women's Sports Foundation, an organization I founded in 1974, has been the “Guardian Angel” of this legislation.

Girls and women were underserved at that time and it was important to galvanize resources to address the inequities—to enable them to achieve their potential in academics, in athletics, in life. The Women's Sports Foundation exists to advance the lives of girls and women through sports and physical activity. Today the Women's Sports Foundation has leveraged its leadership in advocacy to become a recognized research organization, a respected program provider in underserved communities, and a champion for sports and physical activity as a necessary opportunity for all girls and women to be healthy, confident, strong, and successful.

All of us at the Women's Sports Foundation care so deeply about title IX and the protection of the legislation because of the tremendous benefit it brings to education and sports, specifically in terms of its impact on the health, emotional and academic growth of our young people.

We also have learned we must remain committed to keeping girls in the game. Also in 1974 I co-founded World TeamTennis, a groundbreaking co-ed professional tennis league.

If you have ever seen a WTT match, you have seen my philosophy of life in action. We have men and women competing on the same team, on a level playing field with equal contributions from both genders. We feel it is important for the players to experience both a leadership and a supporting role.

More than 25 years of research from the Women's Sports Foundation shows us that by age 14 girls drop out of sports at twice the rate of boys, for many reasons including:

- *Lack of access.* Girls have 1.3 million fewer opportunities to play high school sports than boys have. Lack of physical education in schools and limited opportunities to play sports in both high school and college mean girls have to look elsewhere for sports—which may not exist or may cost more money. Often there is an additional lack of access to adequate playing facilities near their homes that makes it more difficult for girls to engage in sports.

- *Safety and transportation issues.* Sports require a place to participate—and for many girls, especially in dense urban environments, that means traveling to facilities through unsafe neighborhoods or lacking any means to get to a good facility miles away. And if there isn't a safe option like carpooling with other families, the only option for a girl and her family may be to stay home.

- *Cultural barriers.* It's true that in some homes, girls have responsibilities that boys simply don't have, like taking care of younger siblings or older family members. These commitments often take precedence over extracurricular activities including sports. And in some cultures, adults may promote or allow boys to participate but limit girls' participation.

- *Decreased quality of experience.* As girls grow up, the quality level of their sports experience may decline. The facilities are not as good as the boys' venues and the playing times may not be optimal. The availability of quality, trained coaches may be lacking in their community or these coaches may be more focused on the boys' programs that have more money for training. Equipment, and even uniforms aren't funded for many girls' programs at the same levels as boys so their ability to grow and enjoy the sport is diminished. In short, sports just aren't "fun" any more.

- *Cost.* School sports budgets are being slashed every day, all across the country. Fewer opportunities within schools mean families must pay to play in private programs while also footing the bill for expensive coaches, equipment and out-of-pocket travel requirements. This additional expense is just not possible for many families.

- *Lack of positive role models.* Girls are bombarded with images of external beauty, not those of confident, strong female athletic role models. To some girls, fitting within the mold that they are constantly told to stay in is more important than standing out. Peer pressure can be hard for girls at any age; when that pressure isn't offset with strong encouragement to participate in sports and healthy physical activity, the results may lead girls to drop out altogether (see www.womenssportsfoundation.org for more information).

It's pretty simple to me. Girls or boys can't play if they don't have an opportunity to play.

I feel it is important we continue those traditions today. We must remain committed to providing access to sporting and athletic activities for all of our children.

At its very core, title IX is truly about the issues this committee deals with every day—Health, Education, Labor and the future of this Nation.

It's about health—and getting our children active and committed to reversing the obesity trend.

It's about education—because children who participate in sports and physical activity in school perform better academically.

It's about our workforce—because we know that boys and girls who are active and participate in sports develop confidence and leadership skills which will help them succeed in life.

It's about our future . . . and getting more girls and boys to participate, benefit and succeed.

The health of our Nation is depending on us to do the right thing.

The CHAIRMAN. Thank you, Ms. King. Thank you for that little history lesson. I did not know that. That's very interesting—1940.

Ms. KING. Yes.

The CHAIRMAN. That is pretty impressive.

Senator MIKULSKI. And thank you for reminding us about Senator Ted Stevens. I think that's an important note, because our experience has always been that Senator Stevens was a great champion for women.

Ms. KING. Yes, he was.

Senator MIKULSKI. It's often not acknowledged as it should be. Thanks for reminding us.

The CHAIRMAN. Thank you.

Dr. Hogshead-Makar, please proceed.

STATEMENT OF NANCY HOGSHEAD-MAKAR, J.D., OLYMPIC SWIMMING GOLD MEDALIST, PROFESSOR OF LAW, FLORIDA COASTAL SCHOOL OF LAW, JACKSONVILLE, FL

Ms. HOGSHEAD-MAKAR. Thank you, Chairman Harkin and Ranking Member Enzi and Senator Mikulski and distinguished Senators here.

Title IX of the Education Amendments of 1972 expresses the Nation's collective aspirational belief that girls and boys, men and women, deserve equal educational experiences and opportunities. Today's world is almost unrecognizable through the 1972 lens, except for perhaps trailblazers like Billie Jean King.

I speak with three voices today, one as a female athlete who is a direct beneficiary of title IX, also as a lawyer and a professor of law and the senior director of advocacy for the Women's Sports Foundation, and also as a parent of both a son and twin daughters. To this day, I am so proud of being able to represent my country in the 1984 Olympics. And I'm also so proud of earning a full scholarship. And make no mistake—I earned it, getting up at 4:45 in the morning from seventh grade until I graduated from high school.

But neither one of those things would have been possible without this statute. And if you ever doubt for a second whether or not the work that you do impacts people, look at my life and look at the lives of millions of girls and women who have been able to not only have a sports experience but be able to access education broadly.

As a lawyer and a professor, I can tell you that right now, title IX has been challenged in every way imaginable, through the courts, through this legislative body. Title IX actually had to be passed twice, both in 1984 and again in 1987 with the Civil Rights Restoration Act. The lawsuits and the challenges have gone on, and I'm hoping that with this celebration of the 40th anniversary that those are going to be over and that we can move on now to figure out how to fully implement the law.

Unlike critics' claims, title IX is overwhelmingly supported by public opinion. I'm aware of three major polls between 2000 and 2001 that tell a very consistent story. Approximately 80 percent of men, women, Democrats, Republicans, Independents, young, old, with kids, without kids are all very supportive of title IX.

A hundred years ago, this country did something unique that the rest of the world did not do, which is we linked education with ath-

letics to make better men, to make better citizens. And it turns out that the intuitive belief turned out to be true, and we now have a lot of academic research. The Women's Sports Foundation has a great publication that combines about 2,500 different independent academic and peer-reviewed research studies that looks at what is the effect of a sports experience on a girl's life, from pregnancy to academics to osteoporosis to breast cancer to behaviors like cutting and binge drinking and you name it.

And what we know is that a sports experience is one of the most important things a girl can have in terms of her lifelong health, her educational pursuits, and her economic productivity in the country. Sports has now done its job in terms of showing that there is a good reason why we spend our tax dollars on athletics. We know that athletics alone uniquely benefit kids, both boys and girls, who play those sports.

There are other areas that title IX applies to, it's not just athletics. Let me touch on two of them. One is pregnancy, and the other one is sexual harassment and assault. Title IX applies to both of those. They're both prohibited under title IX. We've seen a lot of changes in those areas since title IX was passed.

Sexual harassment, in particular, is a big problem. More than half of all girls and 40 percent of boys in grades 7 through 12 report being sexually harassed. Nearly two-thirds of college students found some form of sexual harassment, and among gay, lesbian, bisexual, and transgendered students, or LGBT students, harassment is even more prevalent. Eighty-five percent report being verbally harassed, and 19 percent report being physically attacked.

I could go on about the different areas that apply to title IX. But as a parent, I want to say that I'm disturbed right now at how title IX is used to be some technical compliance or blamed for why they have to tell the boys no.

Let me give you an example. My son is 11, and my twin girls are 5 years old. When they were born, his lifestyle absolutely went down, particularly as it related to how much time he could spend with us. But he wasn't being discriminated against. He had to share family resources now with a larger pool of people.

Right now, the number of boys and girls that are knocking at the door, saying, "We want to play. We want more math programs. We want more STEM programs"—the number of kids that are knocking at the door far exceeds schools' ability to be able to comply. But when they tell the boys no, it's almost always because of title IX or because of the girls. I think this is an unethical way that we talk about this.

Also, as a parent, I'm very concerned that girls lag behind men in every measurable criteria, whether it's participation opportunities or recruiting or how they get treated or their facilities and locker rooms and their equipment—every way possible. Because sports are one of the only sex segregated areas in all of education—probably athletics and bathrooms are sex segregated—it doesn't just send a powerful message to those athletes that are in that softball program that isn't getting the same facilities. It sends a message out there to the math program and to the student body generally and, indeed, to our entire public that can see that in the one place that we sex segregate, we treat girls much, much less. It's

hypocritical of adults to then go try to tell kids, “Hey, you should respect women,” when it’s clear that the school is engaging in formal discrimination in itself.

Looking forward, at the Women’s Sports Foundation, we are busy answering about 40 calls a month. Many are families trying to get equitable treatment for their daughters. We have to empower them to help schools overcome the stubborn gender inequities without litigation. Right now, we know that however you slice up the pie, whether or not you’re looking at the resources that the school has, the different regions in the country, whether you’re looking at it by State, whether it’s by urban, rural, suburban, or town, girls get less.

Girls in Maine have twice the sports experiences that boys in Florida do. So how much sports kids want—a lot of it has to do with what’s offered, what’s provided there. We have these stubborn—it doesn’t matter how you slice the pie, girls are getting less. We at the Foundation are trying to do something about it, but without litigation.

Litigation in athletics cases is not the answer. The case law is very clear now. We’ve had tons of litigation, and it’s not economically smart to do. And, instead, we need to have the Department of Education, through the Office of Civil Rights, to commit to compliance reviews that are on a region or a State level, rather than what is affectionately termed as the whack-a-mole routine, which is getting one school at a time. It needs to be a bigger regional area.

The Department of Education has to make information more easily available to high school students so that they know whether or not it’s fair to go and ask for more resources. It’s time to pass the High School Sports Data Transparency Act.

And, finally, all students should be protected from sexual harassment and bullying, including our LGBT students.

Mr. Chairman, I want to thank you for this opportunity, and I look forward to hearing your questions.

Thank you.

[The prepared statement of Ms. Hogshead-Makar follows:]

PREPARED STATEMENT OF NANCY HOGSHEAD-MAKAR, J.D.

Mr. Chairman and members of the committee, thank you for providing me with the opportunity to testify today regarding Title IX of the Education Amendments of 1972, a landmark civil rights law passed 40 years ago to eliminate sex discrimination in American education.

Title IX of the Education Amendments of 1972 expresses our Nation’s collective aspirational belief that girls and boys, women and men, deserve equality in educational experiences and opportunities. Our country has been shaped by principles of equality, tolerance, freedom and the rule of law. By contemporary standards, it seems peculiar that equality for males and females in federally supported education was ever considered to be a radical idea. Yet here we are, in a world almost unrecognizable through 1972 lens, except for the trailblazers like Billie Jean King.

Title IX applies to every aspect of federally funded education programs, including access to higher education, athletics, career education, pregnant and parenting students, employment, science technology, engineering and math (STEM) classrooms and sexual harassment and assault, to name a few. Women now make up more than 50 percent of college graduates. In 1972, women earned about 7 percent of law degrees. In 2011, women earned about 50 percent of medical and law degrees.

Other than the constitutional right to vote, possibly no other piece of legislation has had a greater effect on women’s lives than title IX. Education has been this country’s ticket to improve income potential and social class mobility. When women

were formally excluded or limited in higher education opportunities, it prevented them from advancing themselves economically and socially. Title IX is cracking the barriers to women's ability to have equal opportunity to pursue education.

During my testimony today I speak with three voices: one as a female athlete who was a direct beneficiary of title IX; as a lawyer and professor of law in the field, and as a parent of a son and twin daughters.

To this day, I'm most proud of representing my country as part of the 1984 Olympic Team, and of earning a full athletic scholarship to Duke University. If I had been a few years older, world records, swimming 4 hours a day, lifting weights and running, for 50 weeks a year would not have been enough to earn an athletic scholarship, and my career would have been truncated by 4 years, ending after the 1980 boycott of the Olympics.

If you ever question whether your public service in passing a law makes a difference in the individual lives of citizens, look no further than the impact title IX has had on my life.

As a lawyer and professor of law, and as a long-time advocate for women in sports, I have been in the trenches defending the law from numerous attacks from all three branches of government. Today, 40 years after the passage of title IX, the challenges have made the law stronger. The legislature has passed title IX twice, in 1972 and again in 1987 with the Civil Rights Restoration Act, affirming the bed-rock principles of equality in education. Case law and the administrative regulations interpreting the law are uniquely consistent throughout the country.

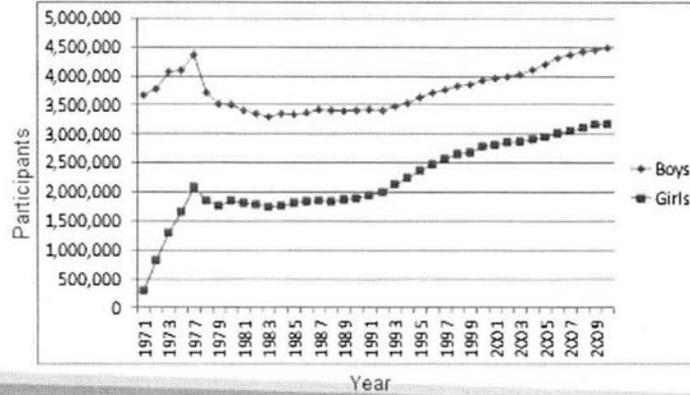
Title IX is overwhelmingly supported by public opinion. I'm aware of three major polls between 2000 and 2011¹ that tell a consistent story of the public approval of title IX. Approximately 80 percent of men, women, Democrats, Republicans, Independents, and people with and without children all support title IX. Unlike the law's critics claim that the law is "controversial," title IX has stood the test of time and is widely embraced.

In addition, concerns that girls and women's gains would come at the expense of boys and men has not materialized. The slide below demonstrates three major points. First, the gap between male and female sports participation rate is enormous. Girls in high school are provided with 1,300,000 fewer sports opportunities than boys. Second, at no point in the history of the law do the two lines curve together. In other words, female gains have not come at the expense of males. Instead, when girls' sports are increasing, boys are also gaining. And finally, since 2000, while overall sports for boys and girls are growing, the gaps between males and females have actually grown.

¹NBC—Wall Street Journal, 2000; Mellman Poll, 2007, available at: www.fairplaynow.org/TitleIXpollresults.pdf; New York Times/CBS News Poll: Title IX, 2011. <http://www.nytimes.com/interactive/2011/04/26/sports/26-poll-titleIX.html>.

High School Athletics Participation Survey Totals 1971-2010

Boys' High School Sports Participation
2010-11 = 4,454,406 - The Highest in History



WOMEN'S SPORTS FOUNDATION

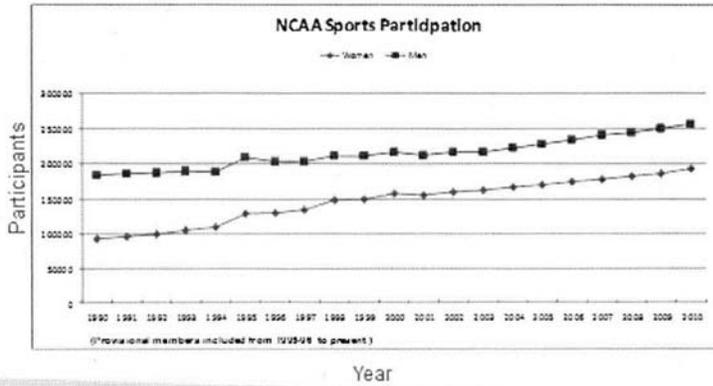
Source: National Federation of State High School Associations 2010-11 Athletics Participation Summary

The slide below tells much the same story for NCAA collegiate athletics. There are still significant gaps, the lines never curve together, and since 2000 the gaps differences between men and women have actually grown.

Sponsorship Levels – Total Participants

1990-91 – 2010-11

(Figures include emerging sports & non-championship sports)



WOMEN'S SPORTS FOUNDATION

Source: NCAA Sponsorship & Participation Data Report 1991-92 – 2010-11

To compare high school and college sports participation in a snapshot, see the graphs below that highlight the widening pace of male sports growth.

High School Participation

	<u>Male</u>	<u>Female</u>
1971-72	3,666,917	294,015
2010-11	4,494,406	3,173,549
	+ 22.6%	+ 979.4%

Girls in High School
 = 41% of student athletes
 = 49% of students

Between 2009-10 and 2010-11, increases were:
 Girls = +912 Boys = +38,666



NCAA College Participation

(Figures include emerging sports & non-championship sports)

	<u>Male</u>	<u>Female</u>
1971-72	170,384	29,977
2010-11	256,344	193,232
	+ 50%	+ 545%

Women in College
 = 43% of student-athletes
 = 56% of students

Between 2009-10 and 2010-11, increases were:
 Females = + 6,772 Males = + 7,037



LESSONS FROM TITLE IX IN ATHLETICS

Title IX has given scholars an opportunity to study the effect of athletics on the lives of children. The girls following the passage of the law make an ideal research group, because of the lack of opportunities followed by significant participation. A large body of research confirms what we intuitively knew: that—despite the “dumb jock” myth—interscholastic sports participation provides boys and girls from diverse socioeconomic, racial, and ethnic backgrounds measurable positive educational impacts, including higher educational aspirations in their senior year, improved school attendance, increased math and science enrollment, more time spent on homework, and higher enrollment in honors courses.² A sports experience provides a positive health trajectory for girls, including reducing the risk for obesity, heart disease,

² Ellen Staurowsky et al., Women's Sports Found., *Her Life Depends On It II: Sport, Physical Activity, and the Health and Well-Being of American Girls and Women* 48 (2009). See id. at 13–15, 28, 32–33, 37.) Available at: <http://www.womenssportsfoundation.org/home/research/articles-and-reports/mental-and-physical-health/her-life-depends-on-it>.

breast cancer, osteoporosis, tobacco and drug use, unwanted teen pregnancy, sexually transmitted diseases, depression, and suicide.³

Similarly, research by Professor Betsey Stevenson from Wharton found that title IX was responsible for one-fifth of the rise of female educational attainment for the generation that followed the new policy, as well as a 10 percent increase in women working full-time and a 12 percent spike in women in traditionally male-dominated occupations, such as accounting, law and veterinary medicine. While her research focused on girls, there is no reason to think that these benefits would not be just as applicable for boys. In short, sports are an excellent investment in our public tax dollars, making both boys and girls healthier and more productive members of society.

Despite this body of research, schools that are dropping sports altogether are increasing.

Pie Graph 1: The Percentage of All U.S. High Schools That Never Offered Sports, Started To Offer Sports, Offered But Lost Sports, and Continually Offered Sports, 1999-2000 and 2009-2010

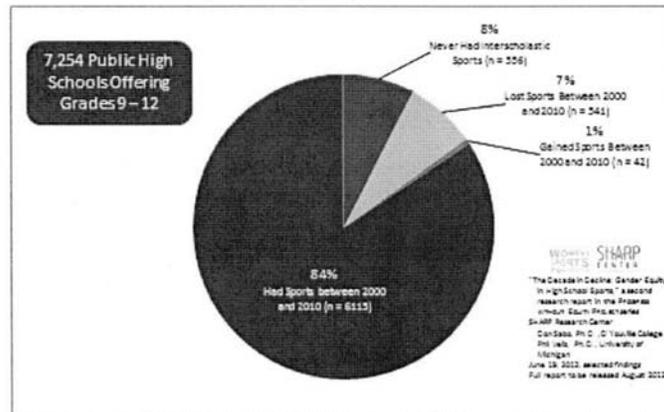
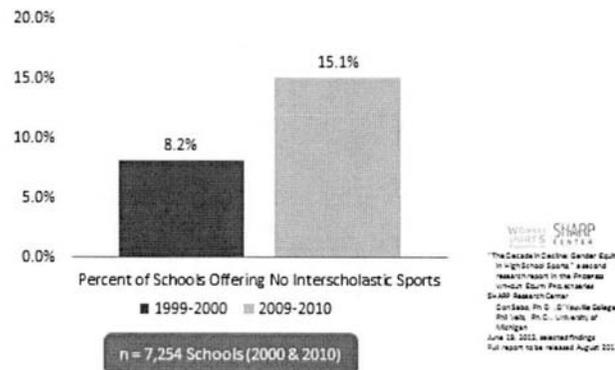


Table 13: The Percentage of High Schools That Did Not Offer Interscholastic Sports, 1999-2000 and 2009-2010



This strong connection between athletics and academic engagement, workforce participation, obesity and pregnancy prevention is not trickling down as it should.

³Id.

PREGNANCY AND PARENTING STUDENTS

Pregnancy and parenting are significant barriers to education for both males and females. The title IX regulations set forth a general ban on pregnancy discrimination, stating that schools must treat pregnancy and all related conditions in the same way they treat any other temporary disability.⁴ In other words, pregnant students are to be treated the same as students with a knee injury or mononucleosis. In addition, the regulations provide special protection for pregnant students by requiring an institution to provide them with necessary medical leave, and to reinstate them to the same status as they held when the leave began, even if the school does not have a leave policy or if the students do not qualify under its policy.⁵ In this way, title IX's protections for pregnancy are similar to those barring pregnancy discrimination in the workplace.⁶ While employees have a general expectation that they will not be forced to stop working arbitrarily, they will not lose their jobs due to pregnancy, and they will be able to return to work when it is medically safe to do so.⁷ Because of title IX, students should have the same expectations regarding their educational pursuits.

Athletics remains an excellent tool for preventing pregnancy. While there are some signs of improvement in graduation rates for pregnant and parenting students,⁸ the problems lie with enforcement and an unsophisticated, vulnerable group that may not know of these protections for them.

SEXUAL HARASSMENT AND ASSAULT

Sexual harassment affects student's ability to succeed academically. More than half of girls and 40 percent of boys in grades 7 through 12 reported being sexually harassed during the 2010–11 school year. Nearly two-thirds of college students aged 18–24 experience some form of sexual harassment. The numbers for men and women are similar, although women report greater emotional and educational disruption from harassment. Among lesbian, gay, bisexual and transgender students (LGBT) harassment is even more prevalent; 85 percent report being verbally harassed and 19 percent report being physically attacked. In addition, being called gay or lesbian in a negative way is a common form of harassment in middle and high schools.⁹

Sexual harassment is another form of sex discrimination and is prohibited by title IX. Schools must prevent the harassment, remediate it and prevent its recurrence.¹⁰ The permissive culture of academics and athletics in particular have not protected students from sexual harassment in the way employees are protected from similar conduct. The boundaries of workplace harassment has normalized the impermis-

⁴ 34 CFR §106.40(b)(4). Throughout this memo, the term “pregnancy” encompasses “pregnancy, childbirth, false pregnancy, termination of pregnancy or recovery therefrom,” as set forth in the regulations.

⁵ 34 CFR §106.40(b)(5); see also, Deborah L. Brake, *The Invisible Pregnant Athlete and the Promise of Title IX*, 31 HARV. J.L. & GENDER 323 (Summer 2008), available at: <http://www.law.harvard.edu/students/orgs/jlg/vol312/323-366.pdf>.

⁶ The Pregnancy Discrimination Act of 1978, (“PDA”) (P.L. 95–555, 92 Stat. 2076) amended Title VII of the Civil Rights Act of 1964, which bars employment discrimination, to make it clear that discrimination on the basis of sex includes discrimination on the basis of pregnancy. The PDA was passed to reverse the Supreme Court's decision in *General Electric Company v. Gilbert*, 429 U.S. 125 (1976), which had reached the opposite conclusion. Title IX actually created stronger protections for students than title VII does for employees because of its absolute guarantee of a medical leave and reinstatement right to the same status. 34 CFR §106.40(b)(5).

⁷ *Cleveland Board of Education v. LaFleur*, 414 U.S. 632 (1974) (school district policies that forced pregnant teachers to leave work early in their pregnancies, regardless of whether or not they were able to work, and permitted them to return only 3 months after childbirth, were unconstitutional.) [The title IX regulations are actually stronger than the PDA because of their absolute guarantee of a medical leave and right to reinstatement to the same status. 34 CFR §106.40(b)(5)].

⁸ The Pregnant and Parenting Students Access to Education Act, introduced in the House of Representatives in July 2011, authorizes the U.S. Secretary of Education to make State and local grants to promote education for pregnant and parenting students. Also, the Pregnancy Assistance Fund, a component of the Affordable Care Act, provides \$25 million annually for fiscal years 2010 through 2019 for the purpose of awarding competitive grants to States and Native American tribes or reservations. The law provides for up to 25 grants of \$500,000 to \$2 million a year. See, NCWGE, “Working to Ensure Gender Equity in Education” 2012. Available at: <http://ncwge.org/>.

⁹ See NCWGE, “Working to Ensure Gender Equity in Education” 2012. Available at: <http://ncwge.org/>.

¹⁰ Title IX of the Education Amendments of 1972, 20 U.S.C. §§1681–88, and 28 CFR §54.135(b) (requiring schools to “adopt and publish” policies and procedures “providing for prompt and equitable resolution” of student complaints).

sibility of quid-pro-quo sexual harassment and hostile environment harassment, but many still view sexual and romantic relationships as permissible, so long as both parties are above the legal age of consent, and there is no overt coercion. In recognition of this permissible culture, many educational and sporting organizations have developed ethical policies that explicitly prohibit romantic and sexual relationships between professor and student, coaches and athletes, regardless of the age of the victim or whether there is consent.¹¹ In other professional settings, like attorneys and clients, physicians and patients, clergy and parishioners that are marked by an imbalance in power and a duty of care, the ethical standards governing professors and coaches should be designed to safeguard the well-being of persons for whom they are responsible, rather than for the benefit of those in power.

Again, the problem lies in enforcement, and an unsophisticated, vulnerable group that may not know of these protections for them.

Finally, I speak as a parent of three young children and it disturbs me how gender equity is communicated. For example, our son was born 5 years ahead of our daughters. When they were born, his standard of living declined, particularly the standard of time that we were previously able to devote to him. Rather than being discriminated against, he had to share family resources with a larger group. Conversely, it would not be fair or equitable to deny our daughters educational opportunities just because our son was born first.

I could easily make my son resent his sisters if, when he asked for more than our family resources can accommodate, I said, “you deserve it, but because of the law, you cannot have it. Sorry, it isn’t my fault.” Yet schools regularly blame the law when denying a male group’s request for resources. Title IX is invoked as an excuse for an administrator’s decision to allocate resources fairly.

I am also concerned about the inequitable resources and opportunities for all my children. When boys experience more and better funded sports, it’s hypocritical for adults to then tell males that they should respect females. Males are being taught that they are more important. Because sports are one of the rare areas in education that are sex-segregated, how adults value girls’ and women’s sports speaks louder than any lesson. When children see flagrant disparities in resources and attention between the boys’ and girls’ sports programming, the school sends a visible message to everyone, on-campus and off-campus, that formal discrimination is acceptable.

Just a short while ago, girls heard that professions like science and the law were for our boys, yet today women account for 50 percent of medical school students and law school students. The stereotype that boys are innately better than girls at math and science is also widespread. But recent trends in achievement and scientific studies demonstrate that this notion is simply incorrect. Scientific research has not demonstrated that innate differences exist between boys and girls in terms of mathematical or scientific abilities.¹² Spatial reasoning abilities and math performance are not biologically “programmed” by gender. In fields like biology, psychology, and chemistry, girls now make up close to, or more than, half of those receiving bachelors or postgraduate degrees. However, participation rates of women in technical fields, particularly engineering and computer science, are still very low.¹³ To accept the notion that women are less interested in sports or science or technology than men would simply maintain existing discrimination and curtail opportunities at artificially limited levels.

Many vocational degrees still remain divided by gender. For example, programs in cosmetology, child care, and health services have large majorities of female students, while programs in fields like auto mechanics and construction remain high in male enrollment. Women in the highest-paying sector of women-dominated fields make less than men in the lowest-paying sector.

In athletics, the stereotyped notion that girls are less interested in sports translates into fewer opportunities in every type of school, in wealthier schools and schools serving a higher percentage of students receiving federally subsidized lunches, as the two tables demonstrate.

¹¹Deborah Brake and Mariah Burton Nelson, “NCAA; Staying in Bounds: A Model Policy to Prevent Inappropriate Relationships Between Student-Athletes and Athletic Department Personnel” (2012); “Recognizing, Reducing and Responding to Misconduct in Sport: Creating Your Strategy” USOC, 2012. Available at: <http://pressbox.teamusa.org/Article%20Documents/USOC-Safe-Sport-Handbook6289729f-d229-47be-a627-1390d20a6ced.pdf>. See also, Safe4athletes, an organization dedicated to preventing athlete abuse in all its forms, particularly in club sports. www.safe4athletes.org.

¹²See, NCWGE, “Working to Ensure Gender Equity in Education” 2012. Available at: <http://ncwge.org/>.

¹³*Id.*

Table 2: The Percentage of Athletic Participation Opportunities that U.S. High Schools Provided to Girls and Boys, by the Type of Community Where the School Is Located, 1999-2000 through 2009-2010

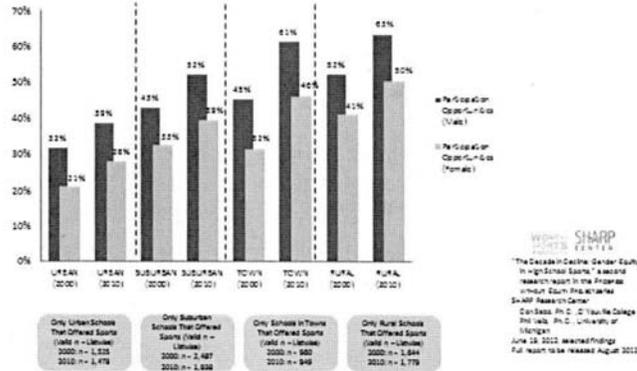
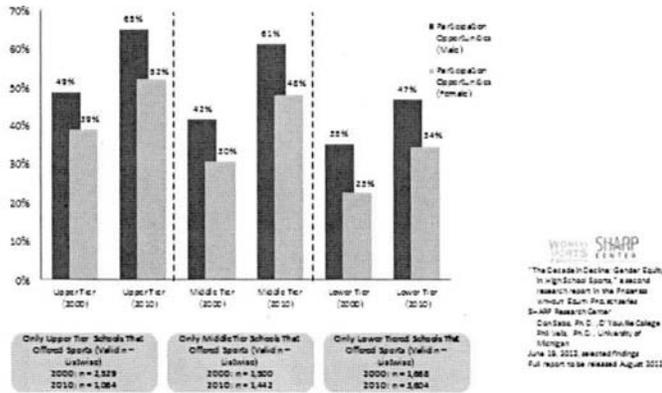
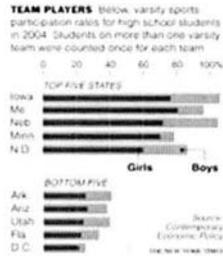


Table 3: The Percentage of Athletic Participation Opportunities that U.S. High Schools Provided to Girls and Boys, by Extent of Economic Resources, 1999-2000 through 2009-2010



Put another way, interest in athletics, for both boys and girls, is dictated by opportunities that our schools provide to participate in athletics. At the Women's Sports Foundation, we know that kids will participate in sports if they are offered. As the chart below demonstrates, high school girls in Iowa and Maine have twice as many sports opportunities as boys in Arkansas, Arizona, Utah, Florida and DC. It is not that boys in these states are uninterested in sports; it is that they do not have the opportunity provided to them. This comports with most people's experience. Ask just about anyone why they became interested in their career or a hobby, and they'll tell you they were given an opportunity to try it and it stuck with them.

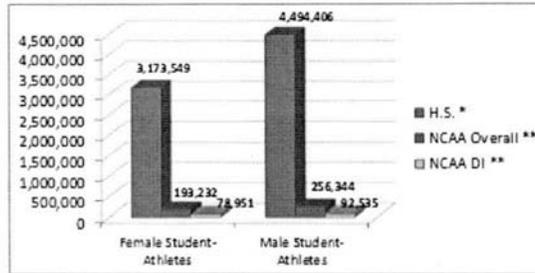
“Interest” in Sport is Dictated by Opportunities



While fewer than 30,000 women participated in college sports before title IX, today that number is almost 200,000—over six times the pre-title IX rate. Girls in high school now are participating at a rate of 3.1 million per year—a 1,000 percent increase from pre-title IX participation rates.

Demand for sports participation by *both* boys and girls far exceed our schools' resources. There are more than 6 million boys and girls playing high school sports today who are vying for fewer than 450,000 college athletic participation slots. With 3.1 million girls playing high school sports, it is inconceivable that schools cannot find women to play on the teams they create.

Demand - H.S. v. NCAA Participation



*2010-2011 National Federation High School Athletic Association (www.nfhs.org) athlete data
 **2010-2011 NCAA® Sports Sponsorship and Participation Rates Report (<http://www.ncaa.org/athletics/athletics>)



Although athletic gains have been sweeping, women continue to lag behind men by every measurable criterion, including participation opportunities, scholarships, budgets, facilities, and recruiting. As a parent, I am concerned about the overt messages these discrepancies send to both my son and my daughters.

CONCLUSION

Mr. Chairman, we have many reasons to celebrate this 40th Anniversary of title IX. It is enabling girls and women access to education, and is a tool to make the

educational experience more valuable, by addressing pregnancy and parenting students and sexual harassment and assault.

While the statute, case law and regulations interpreting title IX may seem daunting, they all arise from the simple principle that is relevant to every question raised today: whether girls and boys, men and women, are receiving equal educational opportunities.

As it relates to athletics the NCAA put it this way when it adopted Operating Principle 3.1:

“An athletics program can be considered gender equitable when the participants in both the men’s and the women’s programs would accept as fair and equitable the overall program of the other gender.”

It is imperative that we continue to work together around the shared goals embodied in title IX to ensure that our daughters and our sons will have as many educational opportunities, and as meaningful opportunities open to them in the future.

Thank you.

The CHAIRMAN. Great. Now we’ll turn to Dr. Jemison. Please proceed.

**STATEMENT OF MAE CAROL JEMISON, M.D., PHYSICIAN AND
RETIRED NASA ASTRONAUT, HOUSTON, TX**

Dr. JEMISON. Chairman Harkin, Senator Enzi, Senator Mikulski, I really want to thank you for allowing me to testify today on the 40th anniversary of title IX.

As we’ve heard from each person who has spoken before, this landmark legislation has really changed our lives here in the United States. And what I’m going to do, in addition to really thanking some of the people who have continued to make it happen—and, particularly, I just have to thank the American Association of University Women for bringing me here this week and making sure that this stays at the forefront.

What I want to do is to just jump right into things and talk about something that was very important to me. It’s how title IX has affected STEM programs, science, technology, engineering, and mathematics. And, also, I want to use that in a lens of the space program, as well as some of the other things that have happened over the past years.

I was really honored to have the opportunity to be the first woman of color in the world to have flown in space aboard the space shuttle Endeavor, this mission between the United States and Japan. I met with really a strong responsibility to fly on behalf of those who came before me, who because of gender or race had been denied the opportunity that I now had. I was also aware that in many ways, I was making this flight on behalf of others who would come after me, others who with hard work and determination would be able to achieve their dreams without the barriers of prejudice and misrepresentation.

I really imagine that Dr. Sally Ride, Dr. Kathryn Sullivan, Colonel Eileen Collins, Dr. Ellen Ochoa, who each shattered part of the space program barrier—I think they probably felt very much the way that I did, because, you see, Sally, Kathy, Eileen, and Ellen and I—we all grew up at a time when there were no women in the American space program.

Even as a child, I was aware of this lack of inclusiveness. In the 1960s, on the south side of Chicago, I remember being so excited about space exploration. But there was always just one type of person in Earth orbit or in Mission Control, and they didn’t look like

me. And even though as a country, we would proudly rally and root for the space program, so many of us felt left out.

When I finally did fly in space, the first thing I saw on Earth—no kidding—the first thing I saw on Earth from orbit was Chicago—no kidding, because I had been working on the mid-deck, I was called up, and there it was. And it was such a magnificent moment. It was such a significant moment, because looking out the window of the shuttle, I thought about that little girl who grew up on the south side of Chicago, and I knew that she would have had a great big grin on her face. In this Nation right now, we accept women in space as routine. But that was not the way before title IX.

I want to give you a short story about space exploration. In 1959, Brigadier General Donald Flickinger and Randy Lovelace decided that they wanted to test women for the astronaut program, because they said, actually, women have some engineering advantages, and I can talk about that later.

But, basically, what they did—when they started testing these women, they had women pilots who had more flight time than a lot of the male astronauts, and they did incredibly on these tests, the exact same tests men had. The women—68 percent of them passed with no medical reservations, compared to 56 percent of the men. And they were considered that they should be there. But in 1962, just even the testing of them stopped.

When I'm talking today, this is not meant to be a story that's construed about who is better, men or women. It's really a story about how different the American space program would have been if title IX had been in effect in the 1950s. Indeed, it's a story about how different the course of American science, technology, engineering, medicine, environmental science, art, literature, sports—I could go on and on—how different they would have been if title IX had been in place.

When we look at what's going on, I want to talk about the impact of title IX, because the impact is when we had a sanctioned lack of educational opportunities, it permeated everything. We would see that girls didn't have expectations that they would do better. They thought of themselves as only being able to be full-time wives, mothers, nurses, secretaries, and teachers. We never had people say men should be full-time fathers and husbands, but that's another question.

What we have to do is we have to understand that title IX changed expectations that women had of themselves. Last year, just a few months ago, Bayer Corporation released a study called the Bayer Facts of Science 15. It was a survey of chairs of science, technology, engineering, and mathematics departments at the Nation's top 200 universities.

What we saw from that was very surprising. What I take away from that is a story that says that a failure of university departments to understand their role in making sure that women succeed is important. By the chairs' own account, women students arrive at college the best prepared academically to succeed in STEM fields, yet they graduate in much fewer numbers, and people throw this away.

Other studies have shown that, for example, people assume that women and boys are just different in terms of their capacity to do science and mathematics. But study after study shows that that's just not the truth. When we look at it scientifically, we find that if girls are given drafting classes, it makes a difference.

I also want to point out that some of the things that I've seen in these studies reflect my personal experiences. I was the first and only girl in my high school to take drafting classes. And the drafting teacher came and asked my homeroom study teacher was this a joke, was she really serious? But it was important for engineering and mathematics and going into engineering in school.

While in high school, I also had an opportunity to participate in something called the Junior Engineering Technical Society Program at the University of Illinois. This was a program that exposed urban students to engineering, and it gave you an opportunity to think that, yes, I can participate in this.

And yet when I went to Stanford at 16 years of age, it was really lucky that I went that young, because I had the arrogance of, you know, a kid going off to college in California at 16. And that arrogance took me through, because many times, some of my professors didn't seem to want me there. Now, I must acknowledge that for the record I value my Stanford experience. I consider it the best engineering and science university I could have attended, and I'm happy and proud to say that I'm a Stanford alum. Yet I regret to say that I may have earned that engineering degree in spite of, not because of my professors.

I have given a lot more information in my written statement, and I'd love to answer more questions. But I want to tell you that I still look back at that inclusiveness. I still know that it's important, from the International Science Camp that I created with girls who always apply in higher numbers than boys, because they think, "Oh, well, it's Dr. J's camp, so I can participate," to my new project which is called 100-Year Starship. That's an initiative sponsored by DARPA that's looking at how do we make sure that humans have the capability in the next 100 years to go to another star system.

Fundamental to that, to me, was including women in the program—inclusiveness. That is fundamental and is a part of the program.

Finally, I just want to introduce someone who is actually sitting behind me. It's Dr. Ronke Olabisi, who is going to be a biomedical engineering professor at Rutgers University. It's one of those things where she benefited from title IX in terms of athletics—wave, Ronke—they introduced in terms of title IX. But it's important that you look back and you look forward, making sure that people are around.

I wear a bracelet all the time. It says "Reality Leads Fantasy." The reality that we create for our children today will determine the fantasies that they hold for tomorrow.

Thank you.

[The prepared statement of Dr. Jemison follows:]

PREPARED STATEMENT OF MAE C. JEMISON, M.D.

Chairman Harkin, Ranking Member Enzi and members of the committee, thank you for inviting me to testify at this hearing on the 40th anniversary of title IX. This landmark civil rights law has opened doors for women and girls on and off the

field, and continues to be the source of new educational opportunities. There are so many who have taken the spirit of this law to heart, including many Members of Congress such as yourselves who have championed the law over the years. I would also like to thank the advocacy organizations for their important efforts to educate the public about title IX, and to work with Congress and the Administration to ensure its fair application. I'd like to extend a special thanks to the American Association of University Women for bringing me here this week, not only for this important hearing, but also for other activities celebrating the impact of title IX at 40.

While title IX is most associated with increasing opportunities in athletics, I want to focus on the aspect of the law that is nearest to my heart. I grew up loving science and always knew that I would go into space someday, despite the barriers I faced as an African-American woman. My parents made sure I had the educational opportunities I would need to excel in academics, even moving to Chicago when I was very young, so that I could enroll in quality schools.

I am honored to have had the opportunity to be the first woman of color in the world to have flown into space. I flew aboard the Space Shuttle *Endeavor* on STS-47, an 8-day Spacelab cooperative mission between the United States and Japan.

I felt a strong, special responsibility to fly this mission on behalf of those who had come before me and who, because of gender or race, had been denied the opportunity I now had. And I was also aware that in many ways I was making this flight on behalf of others who would come after me . . . Others who, with hard work and determination, would be able to achieve their dreams without the barriers of prejudice and misperception.

I imagine Dr. Sally Ride felt a little like I did when, in 1983, she became the first American woman in space . . . And Dr. Kathryn Sullivan when, in 1984, she became the first American woman to walk in space.

And I like to think so did Colonel Eileen Collins when she shattered barriers twice in her Space Shuttle career . . . once as the first woman pilot in the world to pilot a spacecraft in 1995 and again in 1999 as the first woman in the world to command a Space Shuttle mission.

You see, Sally, Kathy, Eileen, and I all grew up at a time when there were no women in the Astronaut Program. There were also no African-Americans or Asian-Americans.

Even as a child, I was aware of this lack of inclusiveness.

When I was growing up in the 1960s on the south side of Chicago, I remember being so excited about space exploration! I wanted to be involved!

But, there was always just one type of person in earth orbit or in Mission Control. And they did not look like me. Even though, as a country, we would proudly rally and root for the Space Program, so many of us felt as though we were left out.

When I did finally fly in space, the first thing I saw from earth orbit was Chicago, my hometown. I was working on the mid deck where there aren't many windows, and as we passed over Chicago, the commander called me up to the flight deck. It was such a significant moment, because ever since I was a little girl I had always assumed I would go into space. Looking out the window of that Space Shuttle, I thought if that little girl growing up in Chicago could see her older self now, she would have a huge grin on her face.

Today, although women still represent a minority of the Astronaut Program, our Space Program is more inclusive. And, as a nation, we accept women in space as a routine occurrence.

It was not that way before title IX.

A SHORT STORY OF SPACE EXPLORATION

Please allow me to recall for you this morning what is perhaps a forgotten chapter in the history of American Space Exploration . . . a chapter that might have been written quite differently had title IX come into effect far earlier than it did.

The story goes something like this . . .

In 1959, an Air Force Brigadier General by the name of Donald Flickinger and a forward-thinking Harvard medical school graduate by the name of Dr. Randolph "Randy" Lovelace II began contemplating an Astronaut Program that included women. Their reasoning was scientifically practical on a number of fronts.

From an engineering perspective, it made more sense to send a woman into space. Women have lower body weight and less oxygen requirements than men. Since there were concerns about how microgravity would affect the cardiovascular system, women were known to have fewer heart attacks than men. Also, it was believed that a woman's reproductive system was less susceptible to radiation than that of a

male; and preliminary data suggested that women could outperform men in enduring cramped spaces and withstanding prolonged isolation.¹

An independent researcher, Dr. Lovelace had developed the tests for NASA's male astronaut selection. He now decided to pursue the "Women in Space Program (WISP)."

Dr. Lovelace began medical and physiological testing of 19 accomplished women pilots in 1960. Over 700 women pilots had applied, but no candidates with fewer than 1,000 hours of flight experience were selected.² Many of the women selected for testing had more flying time experience than their male counterparts because several of them had been employed as flight instructors. The women were subjected to the same tests as were the original Mercury astronauts, with the addition of gynecological examinations.³

Of the 19 women who underwent these rigorous physical and physiological tests, 13 (or 68 percent) of the women passed with "no medical reservations." In comparison, of the men who underwent the testing, 18 of the 32 men (or 56 percent) passed the testing.⁴

According to Donald Kilgore, a doctor who evaluated both men and women for space flight, "They were all extraordinary women and outstanding pilots and great candidates for what was proposed. They came out better than the men in many categories."⁵

On August 19, 1960, Dr. Lovelace announced at the Space and Naval Medicine Congress in Stockholm, Sweden, "We are already in a position to say that certain qualities of the female space pilot are preferable to those of her male colleague." He added, "There is no question but that women will eventually participate in space flight; therefore, we must have data on them comparable to what we have obtained on men."⁶

However, despite the promising results, further testing was suddenly stopped. The Women in Space Program terminated in 1962.⁷

This is not meant to be, nor should it be construed to be, a story about, "Who is better, men or women?"

This story is really a story about how different the history of the American Space Program might have been had title IX been in effect in the late 1950s.

Indeed, one might argue that this is really a story about how different the course of American science, technology, engineering, medicine, environmental science, art, literature, sports . . . I could go on and on . . . would have been if title IX had been in effect long before it was finally passed.

No, there was no title IX in 1959 or in 1962.

Interestingly, in July 1962, Republican representative Victor Anfuso from New York convened public hearings before a special Subcommittee of the House Committee on Science and Aeronautics to investigate the possibility of gender discrimination in astronaut selection.

These hearings were a testament to how discussions about women's rights were more strongly emerging on the political landscape 2 years before the Civil Rights Act of 1964. Yet, it was a long 10 years later before title IX declared:

No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance.

And it is important to point out that title IX offers no special advantages or benefits for women and girls. Because it is gender-neutral, title IX actually benefits men and boys who also want equal access to all education and career options.

As a matter of fact, as a medical doctor, I can tell you that since title IX, men have made significant gains within healthcare in several areas that have been historically dominated by women.

¹Kathy L. Ryan, Donald E. Loeppsky, and Donald E. Kilgore, Jr. "A Forgotten Moment in Physiology: The Lovelace Woman in Space Program (1960–1962)," *Advances in Physiology Education* (September 2009), pp. 157, 159.

²"Mercury 13," *Wikipedia*, p. 1.

³Ryan, *et al.*, *op.cit.* pp. 157, 160.

⁴*Ibid.*, p. 161.

⁵Brandon, Keim, "Right Stuff, Wrong Sex: NASA's Lost Female Astronauts," *Wired News* (October 6, 2009), p. 1.

⁶Ryan, *et al.*, *op.cit.*, p. 160.

⁷"Meet the Women of Mercury 13," CBS NEWS Video (July 15, 2009). According to Jerrie Cobb of the Mercury 13:

"I finally got to talk with Vice President Johnson and he said, 'Jerrie, if we let you or other women into the space program, we have to let blacks in, we'd have to let Mexican-Americans in, we have to let every minority in and we just can't do it.'"

What title IX specifically did for the Space Program is help create an environment in which incredibly talented, intelligent, dedicated, courageous, qualified, and success-oriented women like the Mercury 13 could no longer be arbitrarily excluded from career positions within our country's Space Program simply because they happened to be a group of people who happened to be women.

In the 1970s, when once again the subject of women in the Space Program came up, had it been up to NASA management at the time, women might not necessarily have been given the opportunity to compete in the Astronaut Selection process.

Title IX made the difference!

In 1977, NASA did announce that it was looking for qualified scientists, technicians, and pilots to compete for positions within the Astronaut Corps.

- 8,000 people responded.
- 1,000 were women.
- 35 Astronaut Candidates were chosen.
- 6 of them were women.

In what perhaps was regarded as the most demanding career in science, engineering, and technology, women would now be given the opportunity to fly in space.

That opportunity did not exist before title IX.

Indeed, the world before title IX was dramatically different from the world after title IX.

THE IMPACT OF TITLE IX

Before title IX, because of the *sanctioned* lack of educational opportunity combined with the gender stereotypes that permeated classrooms and textbooks, most girls could only see themselves as women who were full-time wives and mothers, secretaries, nurses, or teachers—portrayals that restricted the career choices.⁸

With title IX, though gender stereotypes continued to exist, broader arrays of opportunities were made available. Girls were now able to think of themselves in future careers not only as full-time wives and mothers, nurses, secretaries, teachers but also as full-time scientists, doctors, engineers, and lawyers. (One might ask when we last saw terms like “full-time husbands and fathers?”)

Title IX has changed the expectations women and girls have for themselves . . . the expectations and possibilities fathers now have for their daughters.

Unfortunately, today title IX is still needed.

It is instructive to note that when children in the United States are asked to draw a picture of a scientist, overwhelmingly most draw a man in a white coat. Few draw a picture of a woman.

Just a few months ago, the Bayer Corporation released the study the “Bayer Facts of Science Education XV,” a survey of chairs of the science, technology, engineering, and mathematics (STEM) departments of our Nation's 200 top research universities.⁹

As an astronaut, medical doctor, chemical engineer, and Ivy League college professor, I believe the crucial story that emerges from this survey is the failure of universities, STEM departments and professors to recognize and understand the role they play in undermining or promoting women and underrepresented minority students' success in seeking and completing STEM degrees.

By department chairs' own account, women students arrive at college the best prepared academically of all students for STEM degree success, but graduate with STEM degrees at lower rates than their male counterparts.¹⁰ And while half the chairs considered underrepresented minorities less well prepared, these chairs acknowledged that even minority students well-prepared academically for STEM success graduated at lower rates.

So clearly, there is something about the interaction and engagement of women and underrepresented minority students in college that affects these students adversely—whether it is courses that disproportionately “weed out” students, few women professors, or discouraging those who are not the stereotype of a successful STEM student.

A prior study, Bayer Facts of Science XIV, surveyed women and minority members of the American Chemical Society. These were professionals who had successfully completed degrees in chemistry and chemical engineering. Yet, more than 40

⁸“Learning Environment,” *Title IX Info*, The Margaret Fund of the National Women's Law Center. (Washington, DC: 2012).

⁹“STEM Education, Science Literacy and the Innovation Workforce in America: Analysis and Insights from the Bayer Facts of Science Education Surveys 1995–2011,” Bayer's STEM Diversity And Higher Education Forum (Washington, DC: April 18, 2012).

¹⁰*Ibid.*

percent of these STEM graduates stated that they were actively discouraged from pursuing STEM fields in college by a college professor, the most commonly cited instances of active discouragement. Conversely, these individuals also noted that internships, mentoring and hands-on experiences in science throughout K–12 and college where positive influences in their choice of a STEM career.¹¹

College STEM departments are critical choke points in education—that point early in students’ lives where they make important decisions about their careers. Interestingly, my own personal academic experiences echo these studies.

PERSONAL REFLECTIONS

In my high school, I was the first and only girl to take drafting classes. But when the drafting instructor, Mr. Okelpec saw my name on the roster, he asked my homeroom teacher Mrs. Roberts if this was a joke. Yet no such question was posed when my brother signed up for the class.

Mrs. Roberts explained that I intended to pursue science and engineering and, to his credit, Mr. Okelpec made sure that I did all the kinds of machine drawings, blueprints, and designs that an engineer would expect to encounter.

While in high school, I also took advantage of a 2-week program sponsored by the Junior Engineering Technical Society (JETS) at the University of Illinois at Urbana that exposed urban students to engineering. It was on that campus when I really learned about engineering and made the decision to pursue engineering in college.

I was 16 when I entered Stanford University and I was full of all of the arrogance that a 16-year-old who left Chicago to go to California on her own might have. That extra dose of confidence proved critical, however, because it got me through STEM courses in which some of the professors did not seem to want me. Professors outside the sciences seemed far more welcoming to me and this enabled me to emotionally re-charge and surmount the challenges posed by the poor reception I received from my professors in STEM courses—hurdles the male students did not encounter. For the record, I value my Stanford experience and consider it the best engineering and science research university I could have attended and I am happy to have attended. I am a proud Stanford alumni. Yet, I regret to say, that I may have earned that engineering degree in spite of, rather than because of, some of my professors.

Fortunately, while I went to Stanford, I had a scholarship from Bell Laboratories that provided me intense research environments in science and engineering, as well as a host of supervisors—engineers, computer programmers, and scientists—who clearly expected me to do well.

THE FACTS OF WOMEN AND STEM

Although debunked by scientific research, stereotypes about male and female abilities in STEM persist and are seriously sabotaging women’s success.

Implicit gender biases can have a major influence on a girl’s or woman’s decision to remain in a STEM field. Gender biases may directly or indirectly determine whether a woman is hired. Gender biases may also directly or indirectly impede the promotion rate and career advancement of female employees.¹²

Early on, such biases may prevent a female student from even considering an academic pursuit or career in STEM. These biases have also been shown to influence whether parents and faculty encourage a female student to pursue a career in science or engineering, or any of the other STEM disciplines.¹³ What seems obvious has also been scientifically proven over and over again. These biases negatively affect a female student’s academic performance in a STEM course.

For example, in one landmark study, girls who were made to feel inadequate performed significantly worse than their male counterparts on a challenging math test. However, girls in the control group who had not been influenced by a negative stereotype threat condition scored similarly to their male counterparts.¹⁴

Some 300 additional studies supporting this finding have been published since this precedent-setting 1999 study.¹⁵ One such study (Kane and Mertz) was just published in January of this year and it further confirmed that the cultural influence

¹¹“Female and Minority Chemists and Chemical Engineers Speak about Diversity and Underrepresentation in STEM,” Bayer Facts of Science XIV (March 2010).

¹²*Title IX at 40*, American Association of University Women, The National Coalition for Women and Girls in Education, (2012), p. 18.

¹³*Ibid.*

¹⁴S.J. Spencer, et al. “Stereotype Threat and Women’s Math Performance,” *Journal of Experimental Social Psychology*, 35 (1), 1999.

¹⁵*Title IX at 40*, op.cit., p. 19.

of gender stereotypes and biases *against* women in STEM disciplines is related to gender differences in performance.¹⁶

Scientific research *has not* demonstrated what the stereotypes would have us believe—that there are innate differences between boys and girls when it comes to mathematical or scientific abilities. Study after study has shown that spatial reasoning abilities are not pre-ordained by gender. Instead, exercise of these abilities is influenced by social context and the degree of gender equality in a society.¹⁷

This investigation further demonstrated a strong link between the implicit gender-science stereotype of a country and the subsequent gender difference in test performance.¹⁹ The study evidences that differences between male and female students' performance in math and science are caused by cultural, rather than innate or biological factors.¹⁸

By focusing on the varying percentages of participation by women in science, technology, engineering, and mathematics in different countries, the study effectively documents the impact of culture on performance.¹⁹ For example, 40 percent of the students at the University of Puerto Rico at Mayaguez's engineering programs are women.²⁰ In Romania, 44 percent of researchers in engineering and technology are women. Yet, in the United States, only 11 percent of engineers are women.²¹

THE 3 E'S

The critical importance of culture and learning environments on student abilities, interests, and performance must not be overlooked, ignored, or underestimated. The factors that I see as key to women and girls and minorities succeeding in STEM fields are, in fact, supported by the core values of title IX.

I call those factors "the 3 E's—Exposure, Expectation, and Experience."

For students, "Exposure" means knowing what careers in the STEM fields entail, and interacting with individuals in these various disciplines to develop a level of comfort with the fields.

"Expectation" means seeing oneself as a potential member of the discipline, recognizing that one has the right to participate in STEM courses, and that one should have expectations of success and contributions.

Students who gain "Experience" in the STEM fields will have the opportunity to compete with their talented counterparts and build the confidence necessary to meet challenges effectively.

When President Maria Klawe, Ph.D. arrived 6 years ago at Harvey Mudd College in southern California, 33 percent of the student body was female, but only 10 of the computer science majors were female. She took several deliberate steps to address this problem, including making small changes to the curriculum to require more introductory classes and ease the practice of "weed out" classes. Today, 42 percent of the student body is female, and 40 percent of computer science majors are women.

Girls who grow up in an environment that cultivates their success in science and math will be more likely to develop skills and confidence, and to consider a future in STEM.

That is why the Dorothy Jemison Foundation for Excellence engages girls and boys in science through programs like our 4-week residential summer camps specifically designed for middle school and secondary school students, ages 12–16. These camps successfully increase our students' science literacy, their problem-solving skills, their knowledge of the impact of science and technology on society, and their understanding of societal and environmental impact on science endeavors. Their learning occurs in an encouraging and exciting atmosphere where they are supported, while being challenged to reach their greatest potential. Interestingly, our *The Earth We Share*TM international science camp receives far more applications from girls than boys!

Women make up over 50 percent of our population. Failure to seek, nurture, and develop their talent is a failure to capitalize on a great national resource. Notably, the attrition rate of women and girls from academics and careers in science, technology, engineering, and mathematics *does not* benefit their male counterparts.

¹⁶Jonathan M. Kane and Janet E. Mertz, "Debunking Myths and Gender and Mathematics Performances," *Notices of the AMS* (January 2012).

¹⁷*Title IX at 40*, op.cit., p. 18.

¹⁸*Ibid.*

¹⁹Kane and Mertz.

²⁰Catherine Pieronek, "The State of Women in Engineering," Presentation given at the University of Notre Dame (October 12, 2011).

²¹*Title IX at 40*, op.cit., p. 18.

Rather, the loss of talent and contribution by a significant segment of our population seriously endangers our Nation's economic competitiveness at a time when our Nation needs to take advantage of our country's intellectual resources and full capacity for innovation.

In a global marketplace increasingly driven by technology, promoting the talents and contributions of women and minorities is an essential strategy to maintain our Nation's scientific vitality, economic prosperity, and national security.

To be at the forefront of technology at the international level, the United States must continue to produce technological and scientific talent capable of meeting the challenges of tomorrow regardless of the gender or race of that talent—talent that resides as much in our female and minority population as it does in the more traditionally recognized STEM populations.

And title IX has had an impact that goes beyond numbers, because it is also about the perspectives that women bring to an issue.

For example, when I was in medical school, breast cancer was treated by mastectomy. Not only was the procedure disfiguring, but it was also based on the paradigm that an invasive surgery with significant unpleasant sequela was the primary and best we could offer. It was not until women physicians, in significant numbers, insisted there might be other medical alternatives and investigated other options. Now, there are treatment options like lumpectomy, localized radiation, anti-hormonal therapy that lead to better success.

Accompanying me today is Dr. Ronke Olabisi, a biomedical engineer who is leading breakthrough research in growing new bone precisely where and when it is needed. Dr. Olabisi is a young woman whose scientific and athletic opportunities in college were positively impacted by title IX.

I cannot emphasize enough the importance of culture, and a positive and encouraging learning environment to students' excelling.

I never forgot those childhood feelings and experiences. The lessons I learned about the need for inclusiveness stayed with me through my life, and even today, remain enduring principles that influence my beliefs, my attitudes, my behavior, and my ideals.

For example, recently the Dorothy Jemison Foundation for Excellence won a grant by the Defense Advanced Research Projects Agency (DARPA), to assist in the creation of what DARPA described as "persistent, long-term, private sector investment" to develop the technology and capabilities for long-distance space travel.

Called the *100 Year Starship (100YSS)*, the program is an exciting leadership initiative which emphasizes the importance of "inclusion" specifically as a primary means toward the achievement of such an audacious goal. The success of the 100 Year Starship Program requires we take advantage of the full wealth of talent, insight, experience and expertise our country has to offer. Just as 100YSS works across disciplines, it is very important to me that the Program also makes space travel more accessible to the public, both as beneficiaries and as participants. The Dorothy Jemison Foundation for Excellence is very excited about the 100 Year Starship Program and, through the 100 Year Starship Program, the ideals of title IX will be represented.

Title IX has significantly closed the gap between male and female performance in science, technology, engineering, and mathematics. But cultural biases and persistent stereotypes continue to impede the advancement of girls, women, and minorities in these fields.

The female and minority attrition rate in STEM at every level of education is still unacceptably high, and these attrition rates occur at a dangerous cost to United States competitiveness in the global marketplace.

Knute Rockne, one of college football's greatest coaches, once said, "*Your success in the future depends on the present. Build well.*"

Our country is rich with resources of talent, intelligence, and determination. Americans have great capabilities motivated toward success and a selfless passion for personal contribution.

But America's success in the future depends on the present. As a nation, we must build well.

We need more scientists, technologists, computer specialists, mathematicians, engineers—bright, well-educated, and highly motivated.

And if title IX achieves its full potential, we will one day be a nation not of female engineers or black scientists, but a nation of very talented engineers, scientists, and physicists who happen to be women or black or white or male, but who are respected for our talents and capabilities . . . and our commitment to our country's successful future.

Title IX was designed to be a strong and comprehensive measure that would attack all forms of sex discrimination in education and, in so doing, provide edu-

cational opportunities formerly closed to women and girls. While title IX has indeed succeeded in opening doors in the classroom and on the athletic field, inequities and barriers still remain. Through good enforcement and heightened public attention to these issues, even more progress can be made—the future is bright.

As we celebrate the 40th anniversary of title IX, the message we send to young girls is one that encourages their interest in STEM and provides opportunities for them to fully develop and explore their interest. We must help young scientists become the astronauts and professional scientists, mathematicians and engineers of the future. They deserve the chance. And our Nation needs them.

Thank you very much. I look forward to your questions.

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The CHAIRMAN. Thank you very much, Dr. Jemison. That was excellent.

And now Admiral Stosz.

STATEMENT OF REAR ADMIRAL SANDRA L. STOSZ, SUPERINTENDENT OF THE U.S. COAST GUARD ACADEMY, NEW LONDON, CT

Admiral STOSZ. Good morning, Chairman Harkin, Senator Enzi, Senator Mikulski, and distinguished members of the committee. I am Rear Admiral Sandra Stosz, Superintendent of the United States Coast Guard Academy. It is a pleasure to be here today to talk about the triumphs of title IX.

I must start by thanking the many women who went before me on whose shoulders I stand, including the remarkable women to my right, the female athletes, and the members of the Coast Guard Women's Reserve and all the women and men who supported similar legislation that offered women like me opportunities never before available. I am continually thankful to have been born at exactly the right time to benefit from title IX and other equal rights legislation.

By the time I entered high school, title IX had been in place for 2 years, and I participated as an active member of the varsity bas-

ketball and field and track teams. Athletics shaped and focused me and gave me the confidence to realize that through perseverance and hard work, I could pave my own way to success. Winning the State championship in my track and field event was a life changing experience for me, and I am confident it is what motivated me to set my sights high and helped distinguish me when applying for admission to the Coast Guard Academy.

Receiving a high school education rich in science and math also played an important role in preparing me for success in life. My father was a scientist, and as a young girl, I always dreamed of becoming a biologist, zoologist, ornithologist, or anything ending in ologist. I took all the science, technology, engineering, and math courses available to me in high school and built my confidence as a result of induction into the National Honor Society and graduating in the top 5 percent of my high school class.

In 1976, when I was a rising junior in high school, the U.S. Coast Guard Academy led the Federal armed service academies in opening their doors to admit women for the first time. In 1978, I entered the Coast Guard Academy as a member of just the third class of women. Although the Academy's science, technology, engineering, and math majors were all open to women at the time, varsity sports had to be started from scratch.

I graduated from the Coast Guard Academy in 1982 and now 30 years later have the distinct honor and privilege of serving as superintendent of my alma mater. Although I benefited greatly from title IX, the real success story is evident in the achievements of the young women who now comprise one-third of the cadet corps. These young women are in STEM degrees and compete in varsity or club sports in basically the same proportion as their male counterparts—and that's about two-thirds of our cadets—either earn one of our six STEM majors or compete in varsity or club sports, both men and women equally.

I am very proud of our women's varsity sports teams. This year, our women's volleyball team won the conference championship, and our women's varsity crew placed seventh in the NCAA Division 3 national rowing championship, and that was led by All-American Ensign Sarah Jane Otey, one of our cadets that just graduated, a scholar athlete who has been nominated as the NCAA Woman of the Year.

Finally, our women's softball team, led by All-American pitcher, Hayley Feindel, who has broken almost every record for Division 3 softball, placed third in the NCAA Division 3 regional tournament.

When the Coast Guard Academy first admitted women in 1976, the decision was made to offer women parity with men in a significant manner beyond academic majors and sports. Women were offered access to every operational specialty available to a man in the Coast Guard. This fostered a healthy culture of inclusion and equality versus the perception that women are less capable of performing the more demanding roles.

I am thankful that the Coast Guard and the Coast Guard Academy provided me equal access and parity from the very start, as opposed to some of the other service academies who were excluded by combat exclusion laws and that sort of thing. I am thankful for

the Coast Guard Academy, that they provided me equal access right from the start. Through hard work and perseverance, it was a natural progression that a woman like me could rise through the ranks to serve as the first female superintendent of a Federal service academy.

A generation after implementation of title IX and other laws offering women equal opportunity, I am proud to see young women and men graduating with confidence and competence from the Coast Guard Academy as leaders of character and selfless service to their nation. Although title IX benefited me and provided me the opportunities necessary for a successful personal and professional life, I am most thankful for its lasting impact on successive generations of young women who will some day replace me looking forward.

I want to close by thanking the committee for offering this chance to reflect back on a significant moment in our Nation's history. Title IX had a huge positive impact. We owe it to those who worked so hard to provide us with these priceless opportunities to reflect back with thanks for what they did and to look forward with conviction to do our part to make this great Nation even better for the next generation.

Thank you for the opportunity to testify today. I look forward to your questions.

[The prepared statement of Rear Admiral Stosz follows:]

PREPARED STATEMENT OF REAR ADMIRAL SANDRA L. STOSZ

Good morning Chairman Harkin, Senator Enzi, and distinguished members of the committee. I am Rear Admiral Sandra Stosz, Superintendent of the U.S. Coast Guard Academy.

Thank you for inviting me to speak about the impact of title IX. I must start by thanking the many women who went before me—the female athletes and members of the Coast Guard Women's Reserve—and all the women and men who supported seminal legislation that offered women opportunities never before available. These opportunities provided equal access to athletic activities and institutions of higher education from which girls and women were previously excluded.

As the eldest of four siblings, I was a tomboy raised with three brothers. My parents never denied me opportunities at home, and as a youth, I participated with my brothers in competitive swimming and tennis at a local summer recreation facility. By the time I entered high school in 1974, title IX had been in place for 2 years, and I took physical education class and participated as an active member of the varsity basketball and track & field teams.

As a shy teenager, athletics shaped and focused me and gave me the confidence to realize that through perseverance and hard work, I could pave my own road to success. Winning the State championship in my track and field event was a life-changing experience for me, and I am confident it is what motivated me to set my sights high and helped distinguish my application for admission to the Coast Guard Academy.

Receiving a high school education rich in science and math also played an important role in preparing me for success in life. My father was a scientist, and as a young girl I always dreamed of becoming a biologist, zoologist, ornithologist, or anything ending in "ologist." I took all the Science, Technology, Engineering and Math courses available in high school. Induction into the National Honor Society and graduating in the top 5 percent of my high school class built my confidence in my own abilities.

In 1975, when I was a junior in high school, a second piece of seminal legislation was enacted requiring the Federal service academies to open their doors to admit women. Living in Ellicott City, MD, I read an article in the "Baltimore Sun" describing the Naval Academy and the wealth of opportunity available to those who could persevere through the incredibly demanding nomination and admissions process. Straight away I started the application process, eventually achieving a coveted nom-

ination to the U.S. Naval Academy from Senator Paul Sarbanes. At that point my application entered the competition for an appointment.

An observant guidance counselor informed me that there was a Coast Guard Academy in New London, CT, that offered virtually the same opportunities, but operated on the direct admission process. I applied to the U.S. Coast Guard Academy initially as a backup, but when I was quickly offered an appointment, I sent in my deposit, pleased and proud to have been accepted to a high quality institution of higher education that valued me entirely on my own merit.

In 1978, I entered the Coast Guard Academy as a member of just the third class of women to be admitted. Women's sports teams were still being established, and there were not enough women to field full teams. Sailing was easy to adopt as a coed sport, so that was where I applied myself for most of my 4 years as a cadet. Learning seamanship and boat handling as a cadet also prepared me well for my career at sea as an officer. I also swam for a season as the first woman ever on the men's swim team, and took pride in having helped pave the way when the Academy eventually stood up a women's swim team.

As a result of my interest in science, I initially pursued the Marine Science major at the Coast Guard Academy. However, I shifted over to Government as a result of broadening interests. Today, the Marine Environmental Science major is one of six technical majors offered at the Academy, and it is a huge draw for women. The Academy also offers degrees in Management and Government. All degrees conferred are Bachelor of Science degrees as a result of our Science, Technology, Engineering, and Mathematics (STEM) based core curriculum. Over the past decade, nearly two-thirds of our women have graduated with STEM degrees, which is on par with their male counterparts. All Ensigns graduate with their degree, along with a commission in the U.S. Coast Guard and guaranteed employment in service to their nation.

I graduated from the Coast Guard Academy in 1982 and now, 30 years later, have the distinct honor and privilege of serving as Superintendent of my alma mater. I am very proud of the fact that women, who made up just over 5 percent of the cadet corps when I entered in 1978, now comprise one-third of the cadet corps. Although I benefited greatly from title IX, the real success story is evident in the achievements of the young women who make up today's generation. In their lifetimes, these young women have always had comparable access and parity with their male counterparts. They are expected and encouraged to participate in sports and to pursue STEM majors.

The Coast Guard Academy offers 21 National Collegiate Athletic Association (NCAA) sports—11 for men, 9 for women and 1 (rifle), which is for both men and women. We also offer eight chartered club sports including both men's and women's lacrosse and men's and women's rugby. As the percentage of women has increased at the Academy, we have likewise increased the number of our women's varsity sports, without adversely impacting our men's sports. Nearly 80 percent of our cadets are involved in a varsity or club sport.

This past year, our women's varsity teams performed better than our men's teams. Our women's volleyball team won the Conference championship. The women's varsity crew team recently won the Petite Final, placing seventh in the NCAA Division III national rowing championship and led by All-American Ensign Sarah Jane Otey, a scholar-athlete who has been nominated as the NCAA Woman of the Year. Finally, our women's softball team, led by All-American pitcher Ensign Hayley Feindel, went further than ever before in the post-season, placing third in the NCAA Division III regional tournament.

When the Coast Guard Academy first admitted women in 1976, the decision was made to offer women parity with men in a significant manner beyond academic majors and sports: women were offered access to every operational specialty. Aside from the obvious opportunity this parity provides women, it also fosters a healthy attitude of inclusion among their male counterparts. Excluding women from certain operational specialties and roles creates a perception that women are less capable of performing the more demanding roles. I am thankful the Coast Guard Academy provided me equal access and parity from the start. Through hard work and perseverance, the progression of women through the ranks was natural. As the first female superintendent of a Federal service academy, I am one example of what parity has yielded.

A generation after the implementation of title IX and other laws offering women equal opportunity, I am proud to see young women and men graduating with confidence and competence from the U.S. Coast Guard Academy as leaders of character in selfless service to their nation. Although title IX benefited me, and provided me the opportunities necessary for a successful personal and professional life, I am most thankful for its lasting impact on successive generations of young women who will someday replace me.

I want to close by thanking the committee for offering this chance to reflect back on a significant moment in our Nation's history. Title IX had a huge, positive impact. We owe it to those who worked so hard to provide us with these priceless opportunities to reflect back with thanks for what they did and to look forward with conviction to do our part to make this great Nation even better for the next generation.

Thank you for the opportunity to testify today. I look forward to your questions.

Senator MIKULSKI. Senator Harkin, excuse me—

The CHAIRMAN. Thank you very much, Admiral.

Senator Mikulski.

Senator MIKULSKI. I have to leave to go to another hearing. I'd like to thank you for convening this.

The CHAIRMAN. If you have some questions, go ahead.

Senator MIKULSKI. Well, what I just wanted to say was, first of all, thank you for convening this. And rather than a self-congratulatory retro look at what's been accomplished, I think the panel has laid out very interesting data, statistics, recommendations on where we are, both the experience of girls in our society, but also for the boys as well, and I think particularly in the area of STEM education, where there's such a crying need for talent in our country.

You heard Dr. Jemison talk about the work of one of our professors, who improved graduation rates in not only STEM, generally, but also in computer science, where we're running a workforce shortage. So I think there's a lot here to not only be retro, but to look ahead particularly at what this means. I want to comment on Admiral Stosz. She's a Marylander.

And, if I could, I'd like to direct questions to you. I'm on the Board of Visitors at the Naval Academy, and now that women are being admitted, the question is graduation rates. One of the things that we've heard from other service academies, Admiral—and I wonder if you have experienced or observed this in your career—is that one of the predictive rates of success is if a girl had high school athletic experience, and that high school athletic experience, even if it was intramural, when she came to the academy she was, first of all, physically fit for the rigors of a military academy, but also had this attitude of competition; get out there, play, don't be afraid of losing the ball—all the attitudes exhibited in sports, because in sports, even if you make a mistake, you go ahead.

So I wonder, at the Coast Guard Academy, have you seen the correlation between graduation rates and athletic participation in high school?

Admiral STOSZ. Thank you for the question, Senator.

Senator MIKULSKI. Does it go to what happened to them in high school, not only their SAT scores, but what they did in field hockey, which is what I played.

Admiral STOSZ. Thank you for the question, Senator. We have not done an analysis on the high school background of our young women cadets. But that's an intriguing question. Our women do graduate at about the same percentage that their male counterparts do from the Coast Guard Academy. I can get you those exact numbers.

I'm intrigued by the analysis. Most of our young cadets coming into the Coast Guard Academy have a strong background in ath-

letics. Eighty percent of our cadets—about 80 percent—participate in either varsity sports or club sports at the Coast Guard Academy.

But, ma'am, we'll get back to you on the exact graduation rates, and we'll take a look at the research behind the varsity sports in high school as a predictor for success at the academy. We have not done that.

Ms. HOGSHEAD-MAKAR. Can I add something? Senator Mikulski, there's some great research by an economist at Wharton, Betsey Stevenson. What she looked at was the generation just before and just after title IX. The rates of participation just flew up right away, and I provided in my formal testimony those graphs.

She was able to look at the different States that provide different amounts of sports, and by sort of teasing out these numbers, she was able to show that sports is not just associated with more education. You said 80 percent. That's really high. It's not just associated with it. It actually causes more education and causes girls, in particular, to go into non-traditional careers, things like STEM, going to law school or medical school, and not only that, but being employed and working full-time.

We have all the data and the scholarship necessary for us to say that sports are a very good investment in our public dollars, for what it means for our country to be competitive, as you said, for the rest of their lives and healthy for the rest of their lives. Sports participation is the No. 1 prevention of obesity. It's the No. 1 thing that you can do as a youth that will prevent obesity for the rest of somebody's life.

And yet we have more schools who are not providing sports at all. It went in the last 10 years from 8 percent of all schools not providing sports now to 15, and we still have these huge gaps. I mean, think about being admissible into the Coast Guard or into Stanford University here if sports participation is associated with these things, and we're giving girls 1.3 million fewer of these opportunities in high school.

Senator MIKULSKI. Well, thank you. I know my time is up, and I know we'll continue the conversation through the other questions. Thank you all for what you've done, and thank you for the challenge about what we need to do.

Mr. Chairman.

The CHAIRMAN. Thank you very much, Senator Mikulski. Again, I want to thank the entire panel.

I think I'll just start a round of 5-minute questions here. I think one of the important things that was stated here this morning and that should be repeated often is that because women gained under title IX, men didn't lose. It's often been presented that way, and that's what a lot of the court cases have been about. But if you look at the data, for example, just in STEM fields, in 1972, women's share of Ph.D.s in science, engineering, math, and medicine was 11 percent. In 2006, in that same group, it's 40 percent.

In high school athletics—this is where you get the idea that if women gain, men lose. In the 1971–72 school year in high school, only about 294,000 girls participated in high school sports, compared to 3.6 million boys. That was about 7 percent. In 2010–11, the number of female athletes had increased more than tenfold to nearly 3.2 million, 41 percent of all high school athletes. Men saw

an increase as well—4.4 million male high school students now involved in sports. So both gained.

College athletics—1971–72, fewer than 30,000 women participated in college sports, compared to 170,384 men. In 2010–11, 193,000 females participated in college athletics, a six-time increase over 1971, and men went from 170,000 to 256,000. There was a gain there, also. It's just not simply because women gained in sports and other areas that the men lost.

The second thing I would like to ask you all is, let's look at sports. I want to get to STEM, but let's look at sports. I have been very much involved in trying to encourage physical exercise in schools for little kids, kids in elementary school and middle school. Some kids don't take to competitive sports very well. I don't care how hard I tried, I could never be a tennis player like Ms. King. I could never be a swimmer like you. There's just nothing I could ever do to do that. I don't have those attributes. I could do a little bit of this and a little bit of that.

But address yourself to competitive sports versus non-competitive exercise for all kids in school who may not be able to engage in a competitive sport but need exercise at an early age in school so that they can stay healthy all their lives. Have you factored that in at all, thinking about that?

Ms. KING. It's all about exercise. It's all about moving. My mother just turned 90 years old, and one saying she always has is you have to keep moving or it's over. She always reports to me every day how many times she's walked around this pathway in the home with her walker, and she always reports to me every evening when I call her. I've had that mantra be a part of me.

Also I have a younger brother who is a professional baseball player, Randy Moffitt, who played most of his career with the San Francisco Giants as a relief pitcher. He and I were always moving.

But it's not important that you be in a competitive sport all the time, even though I do think it teaches you lessons in life and how to succeed. But the most important thing is to get them to dance, get them to walk, get them to run, get them to play. Play is very important.

I'm on the President's Council for Fitness, Sports, and Nutrition, and some of the things that I've been learning because I'm on the President's Council is that if you'll get a child or young people to move even a minute to get circulation going—if they will exercise 20 minutes before they take a huge exam, they do better. And it's very obvious when you think about your circulation, getting oxygen to the brain. I'm not a scientist. I'll defer to people over here that have a lot better education than I do in that area.

But it's so obvious that that works. It just helps everyone academically. It teaches them all kinds of things. But you don't always have to be the super competitive athlete.

The CHAIRMAN. I went to a small country school, but we had 15 minutes in the morning, 15 minutes in the afternoon, and a half-hour lunch. One hour a day, we had to go outside and do something.

Ms. KING. Right.

The CHAIRMAN. And move around. That was every day.

Ms. KING. Yes.

The CHAIRMAN. Today, the figures show—the figures that we have in this committee is that most kids in elementary school in America get less than 1 hour of P.E. or any kind of exercise per week.

Ms. KING. Right. Yes. And they're supposed to have 1 hour at least five times a week.

The CHAIRMAN. I think so, yes.

Ms. KING. Under 18. That's the recommended time.

The CHAIRMAN. I've just been rolling this around in my head that perhaps we ought to think about it in terms of sports. And when it comes to mind, sports—you're playing against somebody. It's a basketball or—don't get me started on football, but, anyway, that type of thing.

But maybe sports ought to be something else that maybe involves just exercise, getting your heart rate up and things—that you engage in that kind of a sport, an individual kind of a sport. Anyway, think about it. Maybe that ought to be redefined a little bit.

Ms. KING. Actually, a lot of the manufacturers of video games are creating more and more exercise video games, because the young people have 7 to 8 hours of screen time a day. And they're figuring, "Well, if they're going to be looking at the screen, if we can get them to exercise, then it'll work." We're actually working together with the different companies.

Dr. JEMISON. Senator Harkin, I was wondering if I could throw in something that actually ties the STEM and the arts and all of that together. One of the best questions I was ever asked by someone was by a little girl, who asked me—she was about 11 years old—asked me did dance—because everybody then knew I danced a lot when I was in high school and college. She said, "How did dance help you with the astronaut program?" And, of course, everyone laughed at her.

But the reality is what you get from trying to dance very hard or other things is practice. You get a discipline and a commitment that you have to do. That discipline and commitment made it easy to go through, for example, what you have to do in medical school, where you just have to practice over and over again physical exams, the same kind of practice that you do in the astronaut program when you're training for something.

Sometimes it's the discipline, the physicality to it, which also becomes one of those issues that you see with girls. Instilled in their confidence is the physicality of doing things, where you don't just look pretty all the time. You're sweating and you're doing all those other things.

I think it's a combination of things, and I think it has an impact, yes, about obesity and other things that we're interested in, but very far reaching in terms of how we see ourselves as humans and the confidence that we develop and its application to many other things that are not directly associated.

The CHAIRMAN. Thank you.

Admiral STOSZ. Senator, I'd like to put a push in for educating and training those young people at the young elementary school age in sports, in academics, so that we can develop them so they can be qualified to enter as applicants into the Federal service

academies truly having the athletic ability and being healthy enough to enter in and serve their nation should they so volunteer and choose to do so. It's incredibly important for our national security.

And to answer your first question, should women's sports, if they rise, bring down men's, at our Coast Guard Academy, we do have 11 men's varsity sports and nine women's. But as we increased our women up toward the one-third percentage of our corps size now, we haven't deleted any men's programs. We've increased the women's programs, and we've been committed to finding various funding mechanisms to do that, through non-appropriated funds and volunteer donations, to make sure that our women have the same opportunities.

Coaching is the same. We just hired our first ever all full-time women's basketball coach. We're providing the equal opportunities without reducing the men's. And we provide a lot of club sports. We require our cadets to do sports, because we understand the value of that activity, the physical exercise, toward their long-term health and service and ability to do their educational activities.

We have club sports like Ultimate Frisbee and all that. Any given day, you can see cadets out on the fields, running around in loosely structured club sports in addition to the varsity programs.

Ms. HOGSHEAD-MAKAR. Can I just add that sports isn't for everyone, but it is for a lot more children than we are currently serving. Most athletic programs could literally double in size. As schools get bigger, the basketball team is still 15 kids. We could add lots of new different kinds of sports. And we need to make sure that kids who are late bloomers or who are genetically normal or who are already obese—that they still can fit into our sports program.

What title IX does as a legal matter is it compares like programs. If you're giving boys this educational program called athletics, then girls need to have that, too. But there's no reason not to have an "and" situation—and yoga, and dance, and—but you would offer those probably on a gender neutral basis, not on a sex segregation basis for all of our kids. But it's not one or the other.

I think part of what makes dance and what makes athletics valuable is because it's hard, because you do have to really commit yourself, because you really do have to put yourself out there. And I think that's what makes it so good for our country.

The CHAIRMAN. Thank you all very much.

Senator Enzi.

Senator ENZI. Thank you. I made a lot of notes here, and I appreciate the testimony.

Ms. King, I really appreciate the impediments that you listed in your testimony. And I think some of those impediments are probably for the academic part as well as the athletic part, and so I'll pay some attention to that.

I also liked what you just said about keeping moving. Because of this committee, I've done some research, and I found that most people who die are retired.

[Laughter.]

Ms. KING. So keep working.

Senator ENZI. Now, that's the usual reaction that I get. People think it's funny. But they retire, they quit moving, and they die.

Ms. KING. Right.

Senator ENZI. The ones that keep moving after they retire that do something that maybe they wanted to do all of their life live longer. So I appreciate your emphasis on that, and I still have some difficulties, I guess, with my thoughts, because I got to go to an aircraft carrier. And the specific reason they wanted me to see an aircraft carrier was to see the berthing rooms for women, and I thought surely for an event like that, they could let them go ashore. I didn't realize that was b-e-r-t-h, the berths. I probably should have figured that out.

[Laughter.]

I was involved with starting some kids soccer and midget basketball. And when we started those programs, they were so small that the boys and the girls played on the same teams. And that's been one of the best things that's happened to sports in our community. There isn't any—now, when they get older in high school, they pick up—they have to play girls' basketball or boys' basketball. They have to play girls' soccer or boys' soccer.

But I can tell you the ones that played in that mixed program do much better. My daughter was in the soccer program, and one summer, she wanted to start going to summer camps. And I did a lot of research on it, and I found a camp that I thought would be perfect for her. She's very academic, and at this one, they were supposed to get half academic classroom training in soccer and then the other half play soccer.

I was pretty sure I'd made a mistake when I got to the camp and there were people juggling the ball over their shoulder and talking about a shootout they had in Kenya or something. At the end of the week, when I went to pick her up, she was a little discouraged. She said, "You know, everybody at this camp is better than I am." And I'd gotten to watch her play a little bit, and I said, "Yes, but you are now better than every boy in your school." And she became all-State, so some of those things pay off.

Dr. Jemison, I appreciate the three E's that you presented in your testimony, the exposure, expectation, and experience. I think it's very important, and I can hardly wait to read your book, *Find Where the Wind Goes*.

On Fridays, because of the time change with Wyoming, I can get on a plane here and usually be in Wyoming in time to talk to some classrooms. And one of the things I talk to them about is the importance of decoding. Kids are usually into decoding. I don't know whether it's from *Star Trek* or what. But I tell them that's actually what reading is. It's learning to decode books.

And there are so many books out there on so many topics that anything they want to know about, they can find in a book if they can learn to decode it. And if they don't learn to decode it, somebody else is going to be reading that book, and they are going to be doing much better than them. And I like to ask how many are athletes and if they're reading books about their sport, and that helps.

But it sounds like this could be an opportunity to exchange books. They tell me books that I ought to read, and I mention some books that they ought to read, and I suspect this is one that I'll be suggesting that can help girls quite a bit.

I've used up my time, but I will submit some questions for the record, if you'd do me the honor of answering them. Most of the questions came up here while we were doing this, and I appreciate all of the testimony and the answers that you've given today—a tremendous help. And there are things that we need to do on this, and that's what the questions will be about, what the next steps are.

Ms. Hogshead-Makar, I appreciate your comments about we don't need litigation, that we need probably some data transparency and some compliance reviews. And I'll take a look at that and have some questions on that.

Go ahead.

Ms. HOGSHEAD-MAKAR. There's only two things to argue about in a lawsuit: what are the facts, and what is the law? In most athletic cases, the facts are really clear, and now after 40 years of litigation, the law is really clear. So schools should be doing—usually, their behavior—but we do need to have the law there in case.

But one of my favorite lines is, when I'm talking to an athletic director, "You can either believe me or a Federal judge." I'm glad to have the backup behind me. It's not just my personal good idea that these girls should have the same educational experience that the boys have.

Senator ENZI. I think the law is essential, and I appreciate that comment from a law professor. Thank you.

The CHAIRMAN. Senator Hagan.

Senator HAGAN. Mr. Chairman, I believe Senator Franken is next.

The CHAIRMAN. Well, I always recognize in order of appearance. You were here before, even though you had to duck out. But if you would like to yield to Senator Franken, I will recognize—

Senator HAGAN. OK. Thank you.

STATEMENT OF SENATOR HAGAN

Dr. Jemison, I do apologize for leaving, but I am aware of the written testimony that you've submitted, and it's certainly inspiring. We must counter the notion that the STEM field is a male-only club. Women like you have long played an important role in the global quest for innovation. But as you well know, women still account for only 40 percent of our Nation's science and engineering degrees and just 25 percent of math and computer science jobs. And I think the challenges of the next century are too great for half of our population to sit them out. We have to start thinking outside the box.

What are your thoughts, specifically, on ways for us at the Federal level to better support girls and young women in the STEM fields? I've heard so many times that we lose so many of our girls in middle school, that that's the age when all of a sudden they're no longer as interested in math and science as they should be.

I'll have to admit, as a mother—I have one daughter who has her Ph.D. in geology—I know how hard it is to be sure to find all of those science programs, and after-school activities. There are lots of sports activities now, thank goodness to title IX, but we also need a lot more science and engineering.

Dr. JEMISON. What I'd like to start off with saying is that what we do to correct and help STEM field and STEM achievement for women will also improve STEM achievement for males. And the first thing we need to do is to really look at teacher training, because teachers in elementary school, which is where kids get a lot of that zest for life, the enthusiasm they have for what's going on in the world around them—in elementary school, that's beaten out of them by people who teach just by looking at the right answers. We need hands-on education.

Teacher training is important because most elementary school teachers don't take any science classes in college. That means that what they're bringing to bear is whatever their biases and everything were when they were in high school. That's where they had their last science classes.

Hands-on education makes a difference. Can you imagine trying to learn how to read without having a book to practice from? That's what reading is about. Science—you need to do experiments. It has to be hands-on. Kids love the bugs, the snails, the stuff in the couch—what is this? They love it. You have to be able to allow them to experiment, because it's really about the critical thinking, the problem solving skills, the confidence that you gain when you try something out, when you mix something.

And that doesn't mean putting a computer in front of kids and watching things on computers. It means putting the plant, the potato plant, in the cup, measuring how fast the little eyes grow into stems. Those are the kinds of things that allow a child to explore the world. Those are the kinds of things that we need to do early on.

I think one of the other things that we have to really pay attention to—and I don't know how we do this at a Federal level in terms of the Government, but particularly nationally—is to change the expectations of what kids do. Right? We say all the time—we excuse poor accomplishment in STEM, right, in mathematics—I'm not so good at mathematics, but that's OK. That's not appropriate, because everyone can do these things. It's just a matter of us paying attention to it and making a difference.

I would also like to say that when we start talking about the loss of talent—yes, when we don't include women, and they don't graduate, or they don't get involved in STEM jobs, whether it's jobs that require 4-year degrees, whether they're machinists or things like that, yes, we're losing a lot of the talent that we have available. But I think that there's something just as important. We're losing the perspective that women bring to different issues. And I don't mean in terms of whether they pay attention to what's going on at home or not. It's literally a perspective. Different people bring different perspectives.

I wrote in my testimony that I remember when I went to medical school, the correct "therapy," was a mastectomy for breast cancer. It's a very disfiguring and also harmful kind of a surgery. Yet it wasn't until women were involved that we actually started doing lumpectomies.

When I was in medical school, people tried to help with testicular cancer. They'd do anything they could to keep from removing a testicle. And I just bring this up because it's a difference in perspec-

tive. We have different perspectives that bring to bear, and it would be a shame if we lost that perspective.

Finally, Senator Harkin had mentioned earlier about people's perception that folks lose out when women come in, that men lose out. Because of title IX, how many nurses did you see who were male before title IX? I know, fundamentally, it's changed things for the better for men as well.

Thank you.

Senator HAGAN. Mr. Chairman and Ranking Member Enzi, I really do appreciate you holding this hearing today. I think there is a lot of good information. Thank you.

The CHAIRMAN. Thank you, Senator Hagan.
Senator Franken.

STATEMENT OF SENATOR FRANKEN

Senator FRANKEN. Thank you, Mr. Chairman. I second that.

Dr. Jemison, in your answer to Senator Hagan's question, you kind of immediately went to teachers, the STEM teachers. And I think STEM teachers are really important. If you're a STEM teacher and a really good one, your value on the marketplace, if you have those STEM skills, might be higher than, you know, the great English teacher who teaches Moby Dick. But if you have science and technology and engineering and mathematic skills and talent, your value on the open market is higher.

So I put in a piece of legislation called the STEM Master Teacher Corps, which is basically to support excellent STEM teachers and to give them a little bit of elevated salary, but also to give them a responsibility to mentor newer or less accomplished STEM teachers so that we retain them. I mean, we're spending money to recruit them. Let's retain STEM teachers in our junior highs and in our high schools.

What do you think of that approach?

Dr. JEMISON. I think the approach of having master STEM teachers is very important. Yes, it's important in high school, but I'm going to harken back and go back to elementary school, because it's elementary school where kids still are fascinated by science, and they haven't learned that they're not supposed to be. It's in middle school where they start to fall out. So unless they have the really effective science education early on, it won't make a difference. And I should add that most of the STEM education, most of science, mathematics education in elementary school is done by general teachers, right, in first, second, third, fourth, fifth grade. Rarely do you have a teacher who specializes in STEM.

I would add onto that that master teachers should be available to help proctor, mentor, augment, provide professional development for elementary school teachers, because that's where we really have to take advantage and exploit that incredible capacity that students have for learning. It's right there where you can capture them, and then they get through eighth grade and puberty and hormones and everything OK, and they're able to go on through high school and maintain that same enthusiasm. And then your master teachers there can also help to change the way teachers teach in high school.

Senator FRANKEN. Thank you for that answer, and I agree with you. I think that's a great function for these STEM master teachers to be there for elementary school teachers.

I'll throw this open to everyone. I once read that the No. 1 determinant of whether a kid graduates from high school is whether he or she identifies with her school. This can be through an athletic program. It can be through a dance program. It could be through the chess team. It can be through anything. But it seems like we have put this emphasis on testing and testing and testing in a very narrow way and not enough on those kinds of extracurriculars that are associated with the school for those students who maybe their identity—their feeling of identity with their own school comes through something else.

Does anyone have any comment on that? And, again, this is about high school, not about college.

Ms. KING. So identifying with the school?

Senator FRANKEN. Yes. In other words—

Ms. KING. I went to Long Beach Poly, and I absolutely loved going there, because every morning, I looked up to my left and saw the home of scholars and champions—scholars first, champions—and we mean champions in life as well as everything. And then as I would enter the school, it said, "Enter to learn. Go forth to serve."

Every single day, I went to school, which was almost every day. I absolutely embraced those two things, absolutely embraced them. We had great scholars at our school, and we had great athletes. In fact, we've probably had more NFL players and baseball and other sports than any other—the girls—that was a different situation when I attended. Now, it's obviously much better.

But to add—can I just ask something about the order that math is taught, because I've talked to Dr. Sally Ride, who you've mentioned, and she said that most countries do the math in a different progression, that physics comes first, and then—but I know I had algebra first, and I would love to understand—does that make a difference? That was a big discussion I've been involved—I mean, I love science and math. I'm not any good at it, but we know we have to be strong in that area in this country.

Dr. JEMISON. Some people teach physics before they teach biology because they say physics is actually much simpler to learn. But you do need the algebra and other things to underpin the physics, so you need the algebra and the geometry.

Some people think that you can teach algebra much earlier in school, so in seventh and eighth grades, students are capable of taking algebra and geometry. So I think that we do have to go back and really review our curriculum and whether or not some of the ideas that we held before are really—

Ms. KING. Because I keep hearing that other countries teach physics almost first because it's in everything. So I'm asking you. You're the pro.

Senator FRANKEN. Ms. King, I'm asking the questions here.

[Laughter.]

Ms. KING. Sorry, Senator.

[Laughter.]

Ms. KING. I thought we—

Senator FRANKEN. Go ahead.

Ms. KING. No, go ahead. But I don't understand—to your point, anyway, to get back to schools—

Senator FRANKEN. Are you competitive in some way?

Ms. KING. Yes, but I identified with the school thing. But, anyway, that was my school story. I just have this math question that drives me crazy. Sorry. You guys started it.

Senator FRANKEN. No, I'm fascinated, and I think—yes.

Ms. KING. Senator Hagan and Senator Franken, you started this teacher thing in the math and science—the STEM things.

Admiral STOSZ. Senator, as a recipient of young high school graduates into the Coast Guard Academy, I can attest that they are thirsting for identity in a world filled with more and more choices. An innumerable number of choices, and not always the direction that we would like to see them get with those kinds of targeted instructors, teachers, when they're in elementary school to develop them early on without necessarily the sense of core values and character that we need to see in them when they come to us. They are thirsting for identity. They are thirsting to be part of something bigger than themselves.

Dr. JEMISON. And I would just echo that the engagement makes a difference, that as you have students engaged in part of what they're doing, it makes a difference. I put together a program called The Earth We Share. We have 12- to 16-year-olds. I like to play with that hard age group.

They solve problems in teams, and, fundamentally, they appreciate the fact that we're asking them to solve problems and asking them to give their answers in front of everyone, because that means that they're engaged, and it makes a difference that they, that individual, was a part of the process. They couldn't have been anyone else and come with that same answer, and I think that that's part of the identity that we see both with recognizing high schools, what high schools you went to, as well as whether or not you belong to some group that's doing well.

Senator FRANKEN. Ms. Hogshead-Makar, I saw that you had a comment.

Ms. HOGSHEAD-MAKAR. Yes. I hate to be a kill-joy here, but let me point to two different research studies, one, again, Betsey Stevenson, same research I was quoting before that looked at athletics, and she compared it with other afterschool activities—yearbook, debate team, et cetera—and found that sports uniquely provided this bump in education that other activities did not. I don't know if it's gender identity or—not gender—I don't know if it's identity with the school.

And there's one more interesting study that was done by Professor Clotfelter out of Duke University that looked at men who attend schools with successful football and basketball programs. And when the school is in season, they actually do worse in school and do not make it up later on in their academic career. So it has this negative bump that only affects males. Having a successful team does not affect females and their grade point averages. But there are fewer downloads of scholarly articles that never get made up later on with—it's not like we have Saturday and Sunday and there's more articles that are done.

At the high school level, I had not heard that research before and I'm interested to dig more into it and see how this other research makes sense with that, because it seems like a very successful football and basketball program for men has a—it may provide identity with the school, but it has a very negative impact on their education.

Senator FRANKEN. Well, we've gone well over my time. I blame Ms. King.

[Laughter.]

Ms. KING. I'm sorry. I apologize, Senator Franken. You got me thinking. It's all your fault.

Senator FRANKEN. Well, you're a hero of mine, so you're forgiven, I guess.

[Laughter.]

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Senator Franken.

Now Senator Blumenthal.

STATEMENT OF SENATOR BLUMENTHAL

Senator BLUMENTHAL. Thank you, Mr. Chairman.

And I just want to make clear that if you want to ask questions of each other, fine with me. You can even ask questions of me. I am not at all threatened. I am impressed.

[Laughter.]

Let me first of all thank you, Mr. Chairman, for having this hearing. It has been extraordinarily useful.

Thank you for being here, each of you. You are genuinely heroes, not only role models for other women and girls, but really heroes.

And I want to thank, particularly, Admiral Stosz. Thank you for your leadership at the Coast Guard Academy. You and I have seen each other in a variety of occasions and ceremonies, and I can attest, personally, to the difference that you've made in just a year at the Academy.

I want to ask you, first of all, what do you think are the most difficult challenges you face in leading that educational institution, in attracting and keeping and supporting women? And what are the lessons that you think we can apply to other military academies in that way?

Admiral STOSZ. It's interesting you ask that question about the biggest challenges we have at the Coast Guard Academy in attracting women, because, actually, that's one of the strong points of our Coast Guard Academy. We offer young women a chance to serve their nation as a part of one of the five Federal service academies.

But we offer in the Coast Guard so many various missions, as you know, 11 different broad missions from law enforcement to search and rescue to marine environmental protection. And our biggest major for women at the Coast Guard Academy of our eight majors, six of them being STEM, is our marine environmental science major.

We find that we attract women in huge numbers. In fact, the bulk of our applicants this year in the class of 2016 coming in were women more than men this year. And 37 percent of our incoming class this year will be women. We actually find it a wealth of op-

portunity to reach out to the young women and attract them to the Coast Guard Academy.

I guess the biggest challenges with retention come after graduation from the Coast Guard Academy. When young women graduate and start to have to make these tough tradeoff decisions of marriage and having children and serving their country, moving around a lot, there comes the retention challenge when all these choices add up to very tough tradeoff decisions for young women.

Senator BLUMENTHAL. Thank you. And those are really the same kinds of choices that face women in many different professions.

Admiral STOSZ. Yes, Senator.

Senator BLUMENTHAL. Let me ask you, Professor Hogshead-Makar—I've said to people at various points, because I was attorney general of our State for 20 years, "you can believe me or believe a Federal judge." I know that sometimes you have to tell someone that. But I wonder whether you have found that enforcement by the Federal Government has been sufficient, because, as you know as a professor of law, any law is only as good as the enforcement of it.

What would be your judgment on how well Federal or other authorities are doing?

Ms. HOGSHEAD-MAKAR. I think that if you get a good investigator with the Office for Civil Rights, the OCR, you can get a very good result. But many times, you either don't get a good investigator or—after a complaint is filed, then the two parties come together, the school and the OCR. Those two parties get together, and the school will have some cockamamie excuse about—and that's a legal term—about why it is that they're doing something or why it is that something should be considered legal. And the plaintiff, or the person that filed the complaint, is completely left out of the process.

So it can be very effective, and sometimes it's not. But what's really missing in terms of enforcement is having the Department of Education through the Office of Civil Rights go in and get an entire region, go and get an entire State. Forget this one-by-one school. We just have too many, and we don't have the resources for it. Let them go and file complaints and get compliance reviews and then have the school come and say, "Well, here's our defense" or "Here's why we're not giving boys and girls the same amount."

Senator BLUMENTHAL. So a broader enforcement approach.

Ms. HOGSHEAD-MAKAR. A broader enforcement approach, yes. There's a guy that's been previewed in numerous magazines. His name is Herb Dempsey. Herb Dempsey is a retired guy whose daughters played sports, and has gone around and done this whack-a-mole kind of thing, and he's tired of it. He has tried to file these broad complaints, and the Department of Education has said—I mean, frankly, right now, they just don't have the resources. We need to give them the resources to be able to for all the reasons that I talked about before.

There is no reason 40 years later—I used to be sympathetic to schools—oh, gosh, that's too bad. You didn't build the same softball facilities you built for the men's baseball, and now there's a budget crisis, and what are you going to do? Hey, 40 years—I'm not sympathetic anymore, like you couldn't plan, you couldn't figure this

out in 40 years? This is not new news for anybody as to what they need to be doing.

Senator BLUMENTHAL. Thank you. My time has expired, but I'd very much like to followup on this issue. And if you have further thoughts, perhaps we can talk about it some more.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Senator Blumenthal.
Senator Murray.

STATEMENT OF SENATOR MURRAY

Senator MURRAY. Well, thank you very much to all of our witnesses for being here and your testimony.

Chairman Harkin and Senator Enzi, thank you so much for holding this hearing. It's just really exciting to me that 40 years ago, a mere 37 words really threw open the doors to athletics, education, and success for so many women in our country today. It was very simple, title IX, but it was very powerful, and it really has delivered some pretty amazing results. When you look at the statistics back in 1972, only 7 percent of high school athletes were girls. In 2011, 42 percent were girls. We've made a lot of progress.

But it isn't just about statistics. It is about real people. And I've seen it in my own family. When I went to college at Washington State University, there was maybe one or two opportunities for women, and, scholarships in athletics were unheard of. And 15 years later, watching my own daughter go to watch her classmates compete in high school basketball State championships and watching my daughter play soccer, and all of her friends who really succeeded in athletics—it is just really great to watch. I'm really proud of the progress we have made.

But I also know the work is not yet done, and you've talked a little bit about that today. And we can't let up, because we need to keep expanding opportunities so my granddaughter one day will be able to say, "And now here's where we are." And that's why I have co-sponsored bipartisan legislation with Senator Olympia Snowe to strengthen title IX and make sure it continues to deliver results for every young woman.

Our bill is the High School Data Transparency Act, and what it does is shine a really bright light on how high schools are treating their female athletes, to make sure that we have good data on the numbers of female and male students and athletes as well as their budgets and expenditures. It'll give us the information at that level.

Professor Hogshead-Makar, I wanted to ask you today: How have female college students benefited from the transparency that surrounds funding and resources for men's and women's college, and what have been the implications of not having that data at the high school level?

Ms. HOGSHEAD-MAKAR. You're referring to what's called the Equity in Athletics Disclosure Act that was passed, I believe, like 1990 or 1995, right around there—that you can go onto a Web site and look at what are the participation opportunities and what are the budgets and all those kinds of things.

They do a number of things. No. 1, they tell girls before they go to the school whether or not they should go to that school. Are they

really going to be valuing boys' and girls' sports experiences. If they want to go to a particular school that has the kind of elite or not elite level of sports that they want, it lets them know what that is. But it also lets them know whether or not it's fair for them to go into the athletic department and say, "I want to start a new sport," or whether or not for a club team to go in and say, "We want to be elevated up to varsity status."

So the first thing that happens—Jacksonville, FL, or University of North Florida cut its women's swimming team. I went onto the Equity Athletics Disclosure Act. I talked to the president of the university and said, "Here's the numbers I have. Unless you can show me something different, you cannot cut your women's program." And within a week, the program was reinstated. It should be that easy.

With high school, it's not so easy. Parents are very typically unsophisticated, and for them to be able to get that kind of data to make those spot changes of either not closing or adding new programs—it's very difficult for them to get that information. It's also the way that they're usually given information—most schools do provide boys and girls in the high school level with the same number of sports. But the boys' sports have a lot more participation. Football is 125, baseball is 35, basketball is 15. And here over on the girls' side, you'll have—tennis will be 8, golf will be 8, cross country will be 10.

Looking at numbers of teams doesn't tell you very much. That's why we need to have this Transparency Act that will avoid litigation, as I was saying earlier, and enable families to go in—this is what we do. We sit there with a phone, and I try to educate them enough so that they can go and talk to their own athletic department and explain and get the resources that they need for their girls' teams.

Senator MURRAY. I served on a school board many years ago. Believe me, to parents, knowledge is a powerful thing. So that information is important.

Ms. King, did you want to add anything to that?

Ms. KING. No. I just would love to have this passed so we can get the data. We've been trying for years on the Hill to get this passed, because we know it's so necessary to what Nancy alluded to.

Ms. HOGSHEAD-MAKAR. Schools already have the data, and they already have to report it to the Department of Education. This is just making it available on a public Web site so that every family can see this information.

Ms. KING. And look at the numbers, not just the sports numbers, but the actual individual numbers.

Ms. HOGSHEAD-MAKAR. They already know how many kids are playing tennis or swimming or golf or lacrosse.

Senator MURRAY. OK. Mr. Chairman, we are working very hard on that. I think it's a very important step in making sure that 80 years from now we can really celebrate.

Thank you, Mr. Chairman. I appreciate this hearing.

The CHAIRMAN. Thank you very much, Senator Murray.

I wanted to ask about that act. I'm glad you came. You're the chief sponsor of it, and, hopefully, we can get it through. I think

the data is important and that we make sure that the public knows the data.

Did anyone have—yes, Dr. Jemison.

Dr. JEMISON. I wanted to just add something in terms of data and transparency of data that sometimes comes not just from looking at what we're doing in the United States, but looking in other places. Right now, we're very comfortable with saying how many women are in engineering and thinking that as we're here in the United States that we're probably best in the class. But that's not true.

One of the transparencies of data that I'd like for us to understand is, for example, that culture and biases do impact women strongly, and that bias keeps them from doing things even if you have the programs there. For example, we know that 40 percent of the students at the University of Puerto Rico at Mayaguez's engineering programs are women. That's something that would be different to us. We know we have engineering programs, but how many are women?

In Romania, 44 percent of the researchers in engineering and technology are women. Yet in the United States, only 11 percent of the engineers are women. In some kind of way, as we're starting to look at the data, we also need to compare and see if there are other places we can go that we can start to understand and tease out what that data means and how do we respond to it.

The CHAIRMAN. Again, role models like you help. But also, I think, in our elementary and secondary education, we've got to do more to focus on young women—in our grade schools and middle schools—to get them involved in more science and engineering. When I was a kid, engineers were men. That was just it. It was just men, and young women didn't aspire to that.

But I think we have to do a better job in early grade school, making sure that they have the right course of instruction, and the support to know that they can become engineers or scientists or medical researchers. We haven't done as good a job as we should have in the past. We've got to do better in that area.

Anything else that anybody wants to add that I didn't ask or didn't bring up or hasn't been said?

Ms. HOGSHEAD-MAKAR. I'll say one thing. The National Women's Law Center is today releasing something on pregnant and parenting students, that pregnant and parenting for both boys and girls, men and women, is something that keeps them from achieving their educational activities. Pregnancy discrimination is prohibited under title IX. But a lot of people don't know—what does that mean? I mean, if the girl has to go to have a physician's appointment, is that—I'm treating her just like I'm treating everybody else.

In fact, the regulations are pretty clear that you need to treat that, No. 1, the same way you would treat any other short-term disability. And two is that pregnancy is a special category. Even if you don't take care of mononucleosis or you don't take care of a knee injury, you still need to take care of pregnancy in a way that's different. But, certainly, we need to make sure that women, not just in athletics, but women broadly are able to participate regardless of their pregnant or parenting status.

The CHAIRMAN. Thank you.

Senator Blumenthal, did you have anything else?

Senator BLUMENTHAL. Thank you, Mr. Chairman. I might just read one sentence, which I think is very telling, from that report. And it's,

“Unfortunately, four decades after its passage, far too few lawmakers, school officials, parents, and students are aware that title IX’s prohibition against sex discrimination protects pregnant and parenting students.”

I think that lack of awareness is very, very important.

I wonder, Ms. King, and also, Professor, what your foundation is contemplating in terms of raising awareness or other steps that you're thinking about taking.

Ms. HOGSHEAD-MAKAR. Sure. I had the privilege of working with the NCAA to write model pregnant and parenting policies for schools. What was happening was Julie Foudy, a colleague of ours at the foundation, went and did a story on “Outside the Lines” showing that girls that were pregnant were being forced to have abortions or give up their scholarships.

And right away, the NCAA got on it, hired me and a Ph.D. nurse practitioner, and we wrote out a legal memo and sort of an overall piece, but—policies that the schools can just literally take out of the material and put into their student handbook to let them know that they don't need to slink away and go off into the future, that their scholarship is protected, and that their ability to come back is protected, and that their rehabilitation is protected, and that—we need to make sure that our biases on what pregnancy does to a woman's body and whether or not women can still perform—a lot of coaches think like, “Oh, after pregnancy, it's all over,” and it's just not.

We know in the tennis world and swimming world, we have Dara Torres, who is a parent and is still doing well. So, yes, there are model policies out there, particularly for athletics.

Senator BLUMENTHAL. Thank you, Mr. Chairman.

The CHAIRMAN. I'd like to thank each of our witnesses for their excellent testimony. With the trails that you have all blazed and the important work that each of you do, you are an inspiration to all of us.

For me, indeed, for the entire committee, this has been a very valuable hearing. It has reminded us of the many important advances that title IX has made possible for boys and girls, men and women, our entire country.

We have come a long way since 1972. I am grateful for the opportunity to reflect on the positive strides we've made over the last 40 years in this issue, but also for the reminders that achieving full equality will require continued effort.

We'll leave the record open for 10 days. I want to thank my colleagues for all their hard work, not just on gender equality but also the other important issues we work on in this committee.

The HELP Committee will stand adjourned.

Thank you.

[Additional material follows.]

ADDITIONAL MATERIAL

PREPARED STATEMENT OF LISA MAATZ, DIRECTOR OF PUBLIC POLICY AND GOVERNMENT RELATIONS, AMERICAN ASSOCIATION OF UNIVERSITY WOMEN (AAUW)

Chairman Harkin, Ranking Member Enzi, and members of the committee, thank you for the opportunity to submit testimony for the hearing “Forty Years and Counting: The Triumphs of Title IX.”

The American Association of University Women is a membership organization founded in 1881 with more than 145,000 members and supporters and 1,000 branches nationwide. AAUW is proud of its 131-year history of breaking through barriers for women and girls and has always been a strong supporter of gender equity in education. Today, AAUW continues its mission through education, research, and advocacy. Among AAUW’s member-adopted public policy principles is a commitment to the “protection of programs that meet the needs of girls and women in elementary, secondary, and post-secondary education, including vigorous enforcement of title IX and all other civil rights laws pertaining to education.”¹

Title IX has created enormous opportunities for women and girls in education, opening doors that were previously closed. But not all doors have been opened. A recent report by the National Coalition for Women and Girls in Education, which AAUW is honored to chair, found that

“Girls and women have made great strides in education since the passage of title IX. Time and again, girls and women have proved that they have the interest and aptitude to succeed in areas once considered the exclusive purview of males. Despite tremendous progress, however, challenges to equality in education still exist.”²

ADDRESSING GAPS IN ATHLETIC OPPORTUNITIES

One key success of title IX has been the exponential increase of female participation in sports. In response to greater opportunities to play, the number of high school girls participating in sports has risen tenfold in the past 40 years, while six times as many women compete in collegiate sports. These gains demonstrate the principle underlying the legislation: women and girls have an equal interest in sports and deserve equal opportunities to participate.

Despite the substantial benefits of participation in sports and title IX’s protections against sex discrimination, the playing field is still not level for girls. Girls are twice as likely to be inactive as boys, and female students have fewer opportunities to participate in both high school and college sports than their male counterparts. Greater enforcement of title IX and diligent efforts to advance women and girls in sports are still necessary to achieve truly equal opportunity on the playing fields.

This gap in opportunity is why AAUW supports the bipartisan High School Data Transparency Act (S. 1269), which was introduced by Senators Olympia Snowe (R-ME) and Patty Murray (D-WA). This bill would require that high schools report basic data on the number of female and male students participating in their athletic programs and the expenditures made for their sports teams. This is not a new burden for schools, which already collect the data required under this legislation. However, currently this data is not publicly available. This bill would make this baseline title IX information available to parents, students, teachers and anyone interested in monitoring a school’s effort to provide equal athletic opportunities for all students.

The importance of reporting data related to athletics lies at the heart of title IX enforcement. A record number of women are now actively participating in collegiate sports in large part due to the accountability requirements under the Equity in Athletics Disclosure Act of 1994, which requires colleges and universities to publicly account for how their athletic opportunities, resources, and dollars are allocated among male and female athletes. AAUW believes that in many cases sunshine can be the best of disinfectants, and that reporting requirements might account for part of the success in the narrowing athletics gap at the college level.

It has been a significant drawback to title IX enforcement that no such accountability requirement exists at the high school level. While colleges must be transparent about their athletic opportunities and funding, high schools are not required

¹AAUW. (June 2011). *Public Policy Principles 2011–13*. Retrieved June 22, 2012, from www.aauw.org/act/issue_advocacy/principles_priorities.cfm.

²National Coalition for Women and Girls in Education. (June 2012). *Title IX: Working to Ensure Gender Equity in Education*. Retrieved June 22, 2012, from <http://ncwge.org/TitleIX40/TitleIX-print.pdf>.

to report data on either statistic to any higher authority. As a result, students, parents, and policymakers do not know which high school girls are being deprived of the opportunity to play sports. National studies show that while girls comprise half of the high school population, they receive only 41 percent of all athletic participation opportunities—1.3 million fewer participation opportunities than male high school athletes.³ Statistics have shown that girls thrive when they participate in sports, and are less likely to get pregnant, drop out of school, do drugs, smoke, or develop mental illness.⁴

In addition, increasing children’s physical activity can help combat childhood obesity, which is at an all-time high. Over the past three decades, childhood obesity rates in the United States have tripled, and today, one in three American children are overweight or obese.⁵ The issue is receiving even more attention after the creation of the Presidential Task Force on Childhood Obesity and the Let’s Move program. The High School Data Transparency Act could aid in decreasing childhood obesity by helping to ensure that schools are providing all of their students with equal opportunities to benefit from school sports programs. The *New York Times* has highlighted research that found that the “increase in girls’ athletic participation caused by title IX was associated with a 7 percent lower risk of obesity 20 to 25 years later, when women were in their late 30s and early 40s.” The study notes that while a 7 percent decline in obesity is modest, “no other public health program can claim similar success.”⁶ Simply put, properly enforcing title IX and increasing children’s physical activity can lower obesity risks even into adulthood.

Because the benefits girls receive from participating in sports can lead to success in all aspects of life, AAUW supports the passage of the High School Data Transparency Act (S. 1269).

CONFRONTING SEXUAL HARASSMENT AND BULLYING IN SCHOOLS

AAUW believes that quality public education is the foundation of a democratic society, and strongly supports equitable school climates free of harassment and bullying.⁷ A recent AAUW report, *Crossing the Line*, found that nearly half of all middle and high school students report being sexually harassed in school.⁸ Sexual harassment and bullying have a damaging impact on the education of students, and disrupts students’ ability to learn and succeed in their studies.⁹

Under title IX, schools have both the authority and obligation to tackle these problems. As the Department of Education Office for Civil Rights (OCR) said in 2010:

Title IX prohibits harassment of both male and female students regardless of the sex of the harasser—*i.e.*, even if the harasser and target are members of the same sex. It also prohibits gender-based harassment, which may include acts of verbal, nonverbal, or physical aggression, intimidation, or hostility based on sex or sex-stereotyping.¹⁰

OCR also found that title IX protects students from sexual harassment, finding that in 2011 that:

³ National Federation of State High School Associations. (2009). 2008–2009 High School Athletics Participation Survey. Retrieved March 9, 2010, from www.nfhs.org/content.aspx?id=3282&linkidentifier=id&itemid=3282 and National Center for Educational Statistics. 2006–07. Retrieved March 9, 2010 from <http://nces.ed.gov/>.

⁴ Women’s Sports Foundation. (December 12, 2007). *Women’s Sports & Physical Activity Facts & Statistics*. Retrieved January 16, 2008, from www.womenssportsfoundation.org/binary-data/WSF_ARTICLE/pdf_file/191.pdf.

⁵ The *New York Times* (February 16, 2010). *As Girls Become Women, Sports Pay Dividends*. Retrieved March 1, 2010, from www.nytimes.com/2010/02/16/health/16well.html.

⁶ Ibid.

⁷ American Association of University Women. (June 2011). *2011–13 AAUW Public Policy Program*. Retrieved December 6, 2011, from www.aauw.org/advocacy/issue_advocacy/principles_priorities.cfm.

⁸ AAUW. (2011). *Crossing the Line*. Retrieved June 22, 2012, from www.aauw.org/learn/research/crossingtheline.cfm.

⁹ American Association of University Women. (2001). *Hostile Hallways: Bullying, Teasing, and Sexual Harassment in School*, 4. Retrieved on February 15, 2011, from www.aauw.org/learn/research/upload/hostilehallways.pdf.

¹⁰ U.S. Department of Education Office for Civil Rights. (October 26, 2010). *Dear Colleague Letter*. Retrieved June 28, 2012, from www2.ed.gov/about/offices/list/ocr/letters/colleague-201010.pdf.

“The sexual harassment of students, including sexual violence, interferes with students’ right to receive an education free from discrimination and, in the case of sexual violence, is a crime.”¹¹

Yet while Federal laws currently protect students on the basis of their race, color, sex, religion, disability or national origin, no Federal statute explicitly protects students on the basis of actual or perceived sexual orientation or gender identity. The Student Non-Discrimination Act (H.R. 998/S. 555) would do just that. It would protect students from various forms of bullying and harassment, such as sex stereotyping and bullying based on a student’s actual or perceived gender identity.

Another critical law is the Safe Schools Improvement Act (H.R. 1648/S. 506). This bipartisan legislation would help provide a safe learning environment for all our children at schools nationwide. It would make sure that States, districts, and schools have policies in place that prohibit bullying and harassment; that schools and districts establish complaint procedures to effectively respond to instances of harassment; and that States include information regarding bullying and harassment in their required drug and violence prevention reports. The SSIA would also provide opportunities for States, districts, and schools to offer professional development to faculty and staff to learn how to prevent bullying and harassment, and also to implement student education programs designed to teach students about the issues around, and consequences of, bullying and harassment.

AAUW believes it is past time to pass the Student Non-Discrimination Act (H.R. 998/S. 555) and the Safe Schools Improvement Act (H.R. 1648/S. 506).

CLOSING THE GENDER GAP IN STEM EDUCATION

Other challenges to gender equity in education persist, such as women and girls’ lagging engagement in science, technology, engineering, and math fields. Although women now comprise a majority of college students, earning 57 percent of undergraduate degrees in 2006–7,¹² they are underrepresented in STEM fields.

Even when women do pursue STEM careers, their academic achievements still have not translated into workplace parity—particularly in academia. Women represent fewer than one in five faculty members employed in computer science, mathematics, engineering and the physical sciences.¹³ In engineering in particular, women account for just over 1 in 10 faculty members.¹⁴ A National Academy of Sciences study, *Beyond Bias and Barriers: Fulfilling the Potential of Women in Academic Science and Engineering*, notes that women faculty are slower to gain promotion than men, are less likely to reach the highest academic rank, have lower salaries, and are awarded less grant money than their male colleagues.¹⁵ At the university level, perceptions of equity vary among faculty. Through research at Virginia Tech, the Society of Women Engineers has found that 78 percent of male faculty members believe that faculty members are treated fairly regardless of gender, versus only 41 percent of female faculty members.¹⁶

Further, *Beyond Bias and Barriers* concludes that women face a lifetime of subtle biases that discourage them from careers in science and engineering.¹⁷ AAUW highlighted the same problem in its report *Why So Few*, which found that girls who pursue STEM fields are still stigmatized, and that harmful stereotypes persist regarding girls’ lack of ability and/or interest in STEM. Girls in K–12 are discouraged from pursuing mathematics and science courses; undergraduate women transfer out of STEM fields before graduating because of unsupportive classroom environments characterized by lack of role models, a limited peer group, and outdated pedagogy;

¹¹ U.S. Department of Education Office for Civil Rights. (April 4, 2011). *Dear Colleague Letter*. Retrieved June 28, 2012, from www2.ed.gov/about/offices/list/ocr/letters/colleague-201104.pdf.

¹² U.S. Department of Education, National Center for Education Statistics. (2009). *The Condition of Education 2009* (NCES 2009–081). Retrieved March 22, 2012, from <http://nces.ed.gov/pub2009/2009081.pdf>.

¹³ Commission on Professionals in Science and Technology. *CPST (2006) Professional Women and Minorities: A Total Human Resources Data Compendium*. 16th ed. Washington, DC.

¹⁴ *Ibid.*

¹⁵ National Academies of Science. (2006). *Beyond Bias and Barriers: Fulfilling the Potential of Women in Academic Science and Engineering*. Retrieved March 22, 2012, from www.nap.edu/catalog.php?record_id=11741#toc.

¹⁶ Layne, Margaret Edith. (June 19, 2007). “U.S. House Committee on Education and Labor Hearing, 110th Congress: Building on the Success of 35 Years of Title IX.” Retrieved March 22, 2012, from http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_house_hearings&docid=f:35961.pdf.

¹⁷ National Academies of Science. (2006). *Beyond Bias and Barriers: Fulfilling the Potential of Women in Academic Science and Engineering*. Retrieved March 22, 2012, from www.nap.edu/catalog.php?record_id=11741#toc.

and women scientists and engineers earn less and advance more slowly than men in both academia and the private sector.¹⁸

To overcome these challenges, AAUW supports requiring Federal agencies to broadly and proactively conduct title IX compliance reviews. Title IX regulations require recipients of Federal education funding to evaluate their current policies and practices, and adopt and publish grievance procedures and a policy against sex discrimination. All agencies are required by law to ensure they are not violating title IX; however very few title IX reviews are conducted outside of the Department of Education. Simply put, title IX reviews ensure that women are not being discriminated against. Federal agencies and departments should conduct title IX compliance reviews at grantee institutions regularly. AAUW believes that it should be a government-wide priority that agencies use their contracting and grant making authority to ensure universities receiving agency funding are complying with title IX.

These and other challenges affect the ability of all students—male and female—to get the most out of their education. This in turn endangers the ability of U.S. schools and universities to produce skilled workers who can succeed in an increasingly competitive global marketplace. Title IX is an important law, and has a critical role in the quality of our students' education. We must ensure that it is as robust as possible.

Thank you for this opportunity to submit testimony to the committee on this important issue.

NATIONAL WOMEN'S LAW CENTER,
WASHINGTON, DC 20036,
June 19, 2012.

TOM HARKIN, *Chairman*,
MICHAEL ENZI, *Ranking Member*,
Committee on Health, Education, Labor, and Pensions,
U.S. Senate,
Washington, DC 20515.

DEAR CHAIRMAN HARKIN AND RANKING MEMBER ENZI: Thank you for the opportunity to submit a letter for today's hearing, "Forty Years and Counting: The Triumphs of Title IX." The National Women's Law Center has worked since 1972 to advance and protect the legal rights of women and girls across the country. The Center focuses on major policy areas of importance to women and their families, including education, employment, health and reproductive rights, and economic security—with particular attention paid to the concerns of low-income women. The Center is grateful that the committee is shining a spotlight on the tremendous progress that has been made for women and girls over the last four decades. We also know that title IX's important work to remove discriminatory barriers is far from complete.

Today the Center released a comprehensive report that shows the impact of pervasive discrimination against an often overlooked area of title IX—pregnant and parenting students. *A Pregnancy Test for Schools: The Impact of Education Laws on Pregnant and Parenting Students*¹⁹ details the many obstacles to completing their secondary education that pregnant and parenting students face, include discouragement from teachers and school administrators—and in some cases pressure to drop out or attend an inferior alternative program; policies that penalize them for pregnancy-related absences and do not allow them to make up missed work; denial of access to homebound instruction when absent for an extended period due to pregnancy or childbirth; and dismissal from participation in extracurricular activities or eligibility for school honors. All of these barriers violate title IX and push pregnant and parenting students out of school, particularly in light of the other difficulties they face finding and paying for child care, accessing safe and affordable transportation to and from school and their child care facility with an infant or small child, and juggling schoolwork, parenthood, and even a job.

Title IX can and should play a vital role in ensuring that our most vulnerable students meet their educational goals. The dropout statistics for pregnant and parenting students are stark: only about 50 percent of teen mothers get a high school diploma by age 22, compared with 89 percent who do not have a child during their

¹⁸ AAUW. (2010). *Why So Few? Women in Science, Technology, Engineering, and Mathematics*. Retrieved October 21, 2011, from aauw.org/learn/research/upload/whysofew.pdf.

¹⁹ "Pregnancy Test for Schools: The Impact of Education Laws on Pregnant and Parenting Students" may be found at www.nwlc.org/site/default/files/finding_nwlc_pregnantparenting_report.pdf.

teen years. One-third of teen mothers never get a G.E.D. or a diploma. And the children of dropouts are more likely to drop out themselves. But research data demonstrate that when pregnant teens are given support to stay in school, their high school graduation rates rise.

On the 40th anniversary of title IX, equal opportunities and educational support for pregnant and parenting students should be a priority for Federal policymakers. The Center's report is part of its larger campaign to address discrimination against pregnant and parenting students and schools' diminished expectations of them. A *Pregnancy Test for Schools* offers concrete solutions for policymakers to address the needs of pregnant and parenting students so our country can reap the benefit of these students' talents and skills.

We look forward to working with you to ensure that all of our Nation's children have equal opportunities to learn and achieve economic security. If you have any questions, please feel free to call Fatima Goss Graves or Lara S. Kaufmann at 202-588-5180.

Sincerely,

FATIMA GOSS GRAVES,
Vice President for Education & Employment.

RESPONSE TO QUESTIONS OF SENATOR ENZI AND SENATOR MURRAY
BY BILLIE JEAN KING

SENATOR ENZI

Question 1. As each of you have discussed, title IX has had a profound impact over the past 40 years and has helped open up opportunities for millions of women. With that in mind, what more needs to be done? In what ways has title IX not achieved its goals? Where are we still failing in our efforts to provide equal access to women and girls in education?

Answer 1. Enforcement. Currently schools can offer wildly skewed sports opportunities because there is no oversight by the Government, the NCAA or other athletic associations. Unless a teenager or young adult is willing to either file a complaint with the OCR or file a lawsuit in Federal court, schools are structuring their athletic departments according to their own perceptions of suitable sports offerings for boys and girls.

Currently, the OCR is only reviewing schools one at a time for compliance after a complaint, and only focusing on the discrepancies mentioned in the complaint. Because of the well-known, widespread gender-equity issues in athletics, the OCR should instead be reviewing entire States or school districts for compliance. Moreover, these reviews should not focus on one area of compliance, like facilities or equipment, but should focus on the entire athletics department: participation, treatment and scholarships, if applicable.

Some issues need to be addressed, but title IX may not be the correct remedy. While title IX has increased the numbers of girls able to participate in and enjoy the benefits of sports in school, its impact has been in comparing the number and quality of opportunities offered to boys. Unfortunately, it doesn't help us reach girls in schools and communities that have limited resources, where sports programs for both girls and boys are either reduced or eliminated due to budget constraints. This means girls in underserved communities, especially dense urban environments and rural areas, aren't able to participate at the same levels as girls in areas of higher income, such as suburban communities. We have to address these inadequacies to ensure all girls can benefit from sports, from the positive health outcomes to increased self-confidence and success as an alternative to risky behaviors.

Question 2. What advice would each of you give to today's generation of young women?

Answer 2. Pressure is a privilege. It's important to step up to the challenges we face and overcome them for ourselves and others. Sometimes pressure will take you out of your comfort zone. There will likely be setbacks, but if we make the effort, then even "failure" becomes a learning point to help achieve success in our next efforts. And ask for help.

Asking for help is a simple element in embracing and working with pressure. Find a mentor, a counselor, a good friend, or therapist to help you achieve success. These people can offer feedback and ideas to help you approach your challenge, and you'll find that many people want to help.

The moments of great pressure in your life are borne out of the importance of the situation. It is a privilege to have opportunities, to be trusted to lead a team, to

be asked to head a project, to love someone or be loved—and if you can see it that way, you can handle almost anything with calm and grace.

It is our hope that many of the students will take it upon themselves to make sure their school is treating boys and girls equally in athletics, and all other aspects of the school. They can get started here, “Step by Step: A Practical Guide for Achieving Gender Equity in School Sports”: <http://www.womenssportsfoundation.org/home/athletes/for-athletes/know-your-rights/parent-resources/step-by-step-guide-school-sports>.

If they have any questions, they can call the Women’s Sports Foundation at 1–800–227–3988, or e-mail at: Advocacy@WomensSportsFoundation.org.

Question 3. Besides title IX what other effective steps have institutions and States been taking to improve educational opportunities for women?

Answer 3. I applaud the school districts that have put physical education and physical activity back into the curriculum for their students, because sound minds need sound bodies for both boys and girls. Due to funding constraints, many school districts do not offer quality PE and many have been cutting after-school sports; however, schools are now looking to partner with community-based organizations to return physical activity to the school environment. The Women’s Sports Foundation’s GoGirlGo! program is a strong example of getting girls in underserved communities the right attention and direction they need to learn how to be physically active, through a sports-based curriculum which also shares life lessons on how to cope with the stress factors girls face. Through GoGirlGo! and similar community-based programs, girls are able to overcome stereotypes, bullying, drugs, peer pressure, and other negative influences to become confident and successful students, greatly enhancing their success rates as adults.

Several States have passed their own version of the High School Data Transparency Act. Pennsylvania is the most recent State to have adopted this law, along with New Mexico, Kentucky and Georgia. <http://womenslawproject.wordpress.com/2012/07/03/victory-for-womens-athletic-equity-pa-high-school-disclosure-bill-passes/>.

SENATOR MURRAY

Question 1. In your testimony, you indicated that girls have 1.3 million fewer chances to play sports in high school than boys. While colleges are required to report data on gender equity in sports, there is no such requirement for high schools. In what ways does this lack of data and transparency make it more difficult to ensure fairness in athletic opportunities at the high school level?

Answer 1. The Women’s Sports Foundation is fully supportive of your bill, the High School Data Transparency Act. Each year we carry the message to all of Congress during National Girls and Women in Sports Day, the first Wednesday of each February.

Knowledge is power. Schools regularly report to the Women’s Sports Foundation that they do not know if they are in compliance with title IX or not.

A reporting requirement would make it clear that schools were offering girls lopsided athletics opportunities.

Question 2. Research indicates that access to sports has a positive impact on girls, yet we have no ongoing Federal data collection on equality of access to, funding for, and quality of girls’ organized sports in the middle or high school. The High School Data Transparency Act of 2011, would require schools to report this information. What effects would the increased transparency and data have on your work at the Women’s Sports Foundation?

Answer 2. The Women’s Sports Foundation could use this data to advance our efforts toward equality in a number of ways. The Women’s Sports Foundation and the University of Michigan have teamed up to establish the Women’s Sports, Health and Activity Research and Policy Center (SHARP). Goals include supporting evidence-based public debates and policies that help eliminate obstacles girls and women face in sports participation. Without the data, there can be no research to study the effect on low-income girls or girls of color, how their health, employment and educational trajectory may be changed by playing a sport.

RESPONSE TO QUESTIONS OF SENATOR ENZI AND SENATOR MURRAY BY REAR ADMIRAL SANDRA L. STOSZ

SENATOR ENZI

Question 1. As each of you have discussed, title IX has had a profound impact over the past 40 years and has helped open up opportunities for millions of women.

With that in mind, what more needs to be done? In what ways has title IX not achieved its goals? Where are we still failing in our efforts to provide equal access to women and girls in education?

Answer 1. In the past year within Athletics Division at the U.S. Coast Guard Academy, we have formed a Council on Women's Sports in our department—led by the senior woman administrator and composed of our faculty athletic representative, assistant athletic director for facilities and head coaches of women's varsity NCAA teams. The Council meets three times annually to discuss issues currently faced by our women's sports programs, and to help guarantee that gender equity is always at the forefront of our strategic planning processes.

Question 2. What advice would each of you give to today's generation of young women?

Answer 2. At the Coast Guard Academy, the 1,000 member corps of cadets is comprised of approximately one-third women. Each cadet, regardless of sex, has equal access to academic majors and varsity, club, and intramural sports. In addition, when cadets graduate with Bachelor of Science degrees and commissions as ensigns in the U.S. Coast Guard, every specialty is open to women and men alike, including the most challenging operational specialties such as aviation and surface operations (assignments to pilot aircraft and to command ships and other operational units).

My advice to today's generation of cadets, specifically our women cadets, is to seize every opportunity and take these tough, challenging assignments that stretch a person beyond their comfort zone. Young women and young men will develop the confidence they need to succeed in their personal and professional lives if they reach for every opportunity, find their passion, work hard and persevere to achieve their goals and finally, believe in themselves and their personal choices.

Question 3. Besides title IX what other effective steps have institutions and States been taking to improve educational opportunities for women?

Answer 3. At the Coast Guard Academy the keys to our success have included our intense focus on providing strong female role models within the professoriate (military and civilian) and becoming more involved in generating interest in grades five through eight, where the mathematics and science preparation and interest are at a critical crossroad, particularly for young girls. The Academy also continuously reinforces the "growth mind set" as a necessary characteristic of a leader for our Service. As a result, all cadets become very involved in developing professional skills that greatly complement science, technology, engineering, and mathematics (STEM) related skills. Success in developing and applying these skills promotes confidence in one's ability to think critically and solve complex problems.

We have made great progress in motivating young women to pursue science, technology, engineering, and mathematics (STEM) degrees. In 2011, the Coast Guard Academy was recognized by Forbes magazine as one of the "Top Ten Colleges for Women in STEM" because of our level of representation by women in those educational fields. <http://www.piersystem.com/go/doc/2487/1008971/>

For example, a Deepwater Horizon-like oil spill or an earthquake in Haiti create tremendous technical challenges in mitigating the damage to societies and ecosystems. Tragic events such as these offer case studies in which cadets can participate in the development of real-life solutions to real-life problems. How fast is the oil plume moving? What is the flow rate? How much oil is left in the water? What is the probability of a disease outbreak? These are all questions that are addressed within the context of our curriculum at the Academy.

SENATOR MURRAY

Question. As Superintendent of the U.S. Coast Guard Academy, what steps have you taken to increase access for women to the academy and graduation rates of women at the academy?

Answer. The Coast Guard Academy is committed by its "Build a Community of Inclusion" strategy to actualize the educational potential and retention opportunities that having a critical mass of women and underrepresented minorities offer. The Academy is confident that simultaneously increasing the number of women faculty, coaches, and staff will positively affect the retention and quality of experience women cadets will have in their educational and professional experience. We are also confident that diversifying our curriculum will further enhance the experience for women in a positive manner.

Two years ago the first ever Gender and Race in the Military course was developed in the Humanities Department, allowing for a theoretical and experiential educational opportunity that became the genesis for the now active cadet Women's Leadership Council. Women comprise 28 percent of our current faculty, which has

allowed for greater mentoring and professional development. This has resulted in the creation of the cadet Women's Leadership Council, which has significant faculty, senior, and junior women officers heavily involved in professional development and mentorship opportunities.

Our aspirational goals are to continue to increase the number of women at all levels in the organization, based on the mentorship and professional development contact doctrine. We are in the process of developing an Equity Scorecard to track complex inter-relational aspects of the cadet experience that impact retention based on demographics, to ensure all groups are graduating in equitable proportions. In general, longitudinal data since 2009 shows that there is relatively little statistical difference in retention and graduation rates for women at the Academy.

Retention and Graduation Rates by Gender: Classes 2002 to Present ¹

	CGA Cadet class year (In percent)										
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Graduated	60	59	64	75	72	77	72	74	77	85	77
Female	58	60	72	75	71	81	75	77	69	85	76
Male	61	58	61	74	72	75	71	73	79	84	77

¹ Graduation percentages are as of July 5, 2012 and include extended opportunity graduates.

[Whereupon, at 11:50 a.m., the hearing was adjourned.]

