



Women in Science and Engineering: What the Research *Really* Says

A panel discussion co-sponsored by WISELI and the Science Alliance.

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Biotechnology Center Auditorium, University of Wisconsin – Madison

Opening remarks: “Women in Science and Engineering: What the Research *Really* Says”

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I’d like to thank you all for coming to our evening symposium on Women in Science and Engineering. And we’d like to talk tonight about, as our title said, what the research really says. And our title came from the comments of President Larry Summers that were made three months ago today – actually to the day, January 14th – at Harvard. And we’re not going to spend a lot of time talking about Summers but we do want people to know where the impetus for this symposium came from and why we have chosen the topics that we’ve chosen to talk about women in science. So we call it the Summers spark because it sparked quite a national debate and discussion. He made, actually when you go through the text of his speech, one particularly quoted, cited and offensive comment which was that there was a “different availability of aptitude at the high end” between men and women. And that this was one of his three hypotheses for why there was a lack of women in science. And so that really led to what I think we’ve had, a sort of unusual opportunity

during the last three months in that everybody wanted to talk about was Summers right? And one of the things I should say that started the idea of this symposium was the concern that a number of us heard students say, “Well, maybe he is right. Maybe women aren’t as smart as men or maybe they can’t do science.” And we felt it was really important for everyone in our community to hear why Summers is wrong.

So, why was Larry wrong? A number of pieces of evidence shows [sic.] that the data he used to argue that there are fewer women at the high end of the aptitude curve shows that the data he used were absolutely not predictive of ability. So tonight we’re going to hear some of that. That standardized math tests, which is one of the pieces of data he cited, really don’t predict people’s performance. He ignored the roles of all of the other factors in being a successful scientist, mathematician, or engineer. He seemed to think it was all intellectual aptitude and that we had a way of measuring that that showed that in fact women have less of that aptitude than men.

He also ignored an enormous body of evidence that suggests, that shows that it’s really difficult to demonstrate a biological basis for differences between men and women. And we’re going to hear some of that tonight. And that doesn’t say that there aren’t differences between men and women, hopefully we’ve all figured out there are a few differences that we can observe. But we don’t have any evidence that intelligence, as might be indicated by the brain, is gender related.

Even more important, he really ignored the literature that shows that being the subject of prejudice has a big impact on people's performance. And we're going to hear about that tonight as well.

And then toward the end we'll start talking about, in an academic setting and other job related settings, the impact of biases and assumptions and prejudices that we all make on the evaluation of women as one other reason why women may not be as well represented as men in academic science. And one of the things that many people pointed out very early in the debate after Larry made his egregious comments, was that we have no evidence that shows that men are smarter than women but we have an enormous amount of evidence showing that there's a lot of bias against women. And so anybody who knows even basic arithmetic should know that if you want to make a difference in this subject – even if there is a teeny statistical difference some place that we haven't picked up in the intelligence factor – if you want to make a difference, go for where there is a large effect. And of course that's the biases and assumptions that we make.

And finally, he ignored the fact that women excel in science and engineering far better at other institutions than at Harvard. And the differences among institutions are something that is really worth looking at. And we're going to hear about that today as well.

So, the other evidence that we have that Summers was wrong is Summers himself. And it's been an interesting process to watch his learning curve on this subject. And he gave a speech last week, on April 7th, to a group of young women talking about the future of

women in science and engineering. And he posed three propositions. And the first one he said is that “the advancement of women in science is profoundly important,” and in fact it has never been more important to Harvard and to the country to advance women in science. So this was a little bit different from his original comment. The second was that he cited a lot of the literature and said that “this means everyone looking within themselves and thinking about their attitudes and their judgments,” should be looking at their attitudes and their judgments, “as they go about their work.” And he went on and on talking about how as we make decisions we need to be a little bit more self-conscious and aware of the prejudices, the biases and the assumptions that we’re bringing to our decisions. And he cited quite a few studies, including one from the world of music, that have demonstrated that when people don’t know the gender of the subjects they’re evaluating they come up with much more equal evaluations than if they do know the gender, in which case women tend to suffer.

And his third proposition was that “science is a team sport, it is a social activity, and the environments we create will have a very large impact on the choices that people make.” And in this he cited his own personal experience, actually in Physics, in which he said he was discouraged from going on in Physics because he didn’t solve a problem and he didn’t understand a problem that a Physics teacher put to him about a sphere and a charge near a sphere and what would happen. And he says that the look that he got from the teacher – which he read as, “How could you be so stupid?” – was one of the reasons that he never went forward in Physics. And he said maybe it’s not a bad thing, I’ve done okay

in Economics. But he certainly understood, based on that story, what the environment does to people's decisions about their careers.

So, today we're going to hear from a number of speakers, one of which is cut off. I don't know if someone, it happens to be the Chancellor so I wonder if you could perhaps move the screen up. So, we're going to hear first from three speakers. Paul Whalen from the Department of Psychiatry who studies brain structure is going to talk about whether there are gender differences in brain structure. Dr. Linda Oakley from the School of Nursing will talk about how the brain responds to social settings. And then Dr. Caitlyn Allen from the Department of Plant Pathology and the Women's Studies Program will talk about evidence for gender disparities in mathematical test scores that Summers cited. At that point we'll take a break and have time for questions and then we'll go to the other two speakers. Hopefully by then they'll both be on screen. So I'd like to turn it over now to Paul.