

2009 Arthur M. Bueche Award Acceptance Remarks
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I am deeply honored to receive the Arthur M. Bueche Award and to join the list of previous winners, many of whom have been my colleagues and mentors. I feel most fortunate.

I often characterize my life in the engineering and scientific community as surfing on the leading edge of a wave, a wave of heightened sensitivity and activity to increase the role of women in science and engineering and the role of the many people who have reached out to help make this increased role a reality.

In my case, I was very fortunate. When I won the science fair in Tacoma, Washington, I was approached by the owner of a local specialty construction firm who had a Ph.D. in civil engineering from MIT. He said, "You should go to MIT." And I said, "OK, where's that?" He and his fellow Seattle alumni made it all possible through their scholarship support.

At MIT, my strongest mentor was Professor Holt Ashley, a colleague of many of you. When I was a sophomore, he said to me, "You should go to graduate school." And I said "OK." He made it all possible for me. Only now do I realize what that takes.

Then there was Bob Cannon, who came up to me on the podium after I had won the Outstanding Young Man of the Year Award from AIAA. He said, "I'd like you to come to Washington and be the first director of the Office of University Research at DOT." And I said "OK." Holt Ashley was instrumental in getting AIAA to start a Congressional Fellow's Program so that my husband Bill could have a position with the House Committee on Science dealing with the NASA budget.

Then there was the call from Bill Carey, the executive officer of AAAS. He said, "Are you a member of AAAS?" I said "No." And he said, "Would you be willing to join?" I said "Why would I do that?" He said,

“We’d like you to run for the Board.” And I said “OK.” Following my service on the Board, I was president of AAAS.

I think you might be hearing a theme playing in the background. It’s a theme from “Oklahoma”—I’m just a girl who can’t say no. And it has served me well!

Through the AAAS connection, I met David Hamburg, the former president of the Institute of Medicine who served as President of AAAS. At that time, David was president of the Carnegie Corporation of New York. He asked me to serve as a trustee. I said—let’s hear it!—“OK.”

David had an incredible public policy agenda. One of his strong areas of focus was the role of the scientific and engineering community in providing advice to the government on important scientific, technical, and public policy issues. To that end, Carnegie Corporation established the Carnegie Commission on Science, Technology and Government. Members of this commission included Bueche Award winners, Norm Augustine, Bill Perry, and Guy Stever. I felt privileged to serve. Jack Gibbons was also active with the commission in his role as head of Office of Technology Assessment for the US Congress.

I served as vice chair of the Board of Trustees of the Carnegie Corporation. Warren Christopher was chair. Fast forward to fall and the election of 1992. With the election of Bill Clinton, Warren Christopher was asked to help identify cabinet members and other senior officials for the new administration. Carnegie lost four board members—Bob Rubin to Treasury, Donna Shalala to HEW, Warren Christopher to State, and me to the Air Force. The Carnegie Commission on Science, Technology and Government contributed Bill Perry to Defense, and Jack Gibbons was tapped as presidential science advisor.

In December 1992, David Hamburg called me and said, “Sheila, I’ve got a great idea, and I’ve talked it over with Sam Nunn and Les Aspin—who had been tapped as Defense Secretary— and they think it’s a great idea. I said “David, what is it?” He said, “We think you should be secretary of the Air Force.” And I said, “David,

that's a great idea!" When the offer began to jell, I was windsurfing in Aruba. I went to the board shop and made two phone calls to ask my mentors for advice. Both calls were to Bueche Award winners, Chuck Vest and Bob Seamans.

I probably should also mention my week sailing in the Caribbean with Jerry Wiesner. Under the stars, we had long discussions of why women would want to go into science and technology. Jerry was instrumental in opening doors for women faculty and students at MIT in those early days.

So what's my message? That at critical points in my life, members of the scientific and engineering community reached out to me and gave me incredible opportunities for growth. Every woman I have spoken to on this issue reports that someone reached out to encourage her to advance her career. Given the statistics, in most cases, that someone would have been a man. I urge members here today to include young women in their web of support. The leverage toward increasing the role of all women and tapping into their potential will be enormous. I don't know any other way it can happen. Former Bueche Award winners have been my family, my mentors, and my supporters.

I have also actively encouraged young women to pursue careers in science and engineering. In my AAAS presidential lecture, "Voices from the Pipeline"— available on the Web at <http://web.mit.edu/aeroastro/www/people/widnall/webpublications.html> — I described the environment facing women who want to enter science and engineering fields and identified the aspects of that environment that makes them feel less than welcome. In my later work, a lecture called "Digits of Pi," I gave Sheila Widnall's list of top ten issues that make women students feel less than welcome and, more importantly, less than capable. At MIT, we made an important discovery—that the Math SAT under-predicts the performance of women students. Being data driven, we applied this knowledge, and in one year the number of women admitted rose from 26 percent to 38 percent. Their performance validated our expectations based on the data. By the way, the percentage has continued to climb. Women now comprise 48 percent of

MIT undergraduates and are a majority of the undergraduate students in half of our engineering departments. Clearly, we are in a time of intense change.

In many ways, the engineering community is also surfing at the leading edge of a wave, poised to tackle the incredibly complex problems facing our society—problems of energy, environment, sustainability, and the health and strength of our industrial base, which provides jobs to support the dignity of the American workforce. Interaction with government and the larger society is essential to ensuring that appropriate and effective policies are conceived and implemented. NAE and the extended Academy complex play a crucial role at this interface and is deserving of your support.

So guys, get out your surfboards.