Vicki Bier: Professor Shalala is currently the president of the University of Miami in Florida. Originally she had a career in administration as president of Hunter College in New York City, then came to University of Wisconsin-Madison as Chancellor. John Wiley at the reception last night talked about how radically Donna changed and diversified the upper reaches of the administration on campus here, but I wanted to mention that she also had a huge impact on diversifying the professoriate on campus. The incentives that she set up were responsible for the hiring of many of the women in science and engineering who are currently on campus – and many of them you see in this room today, including myself – who remained often full professors either here or even at other institutions, if some of them have gone elsewhere since then. But Dr. Shalala is responsible for bringing in a whole cohort of women faculty members in the sciences that really has changed the face of the campus at a faculty level. She left Wisconsin to serve as Secretary of Health and Human Services in the Clinton administration, where she served for eight years and is described as one of the most successful government managers in modern times. And after that she joined the University of Miami. Recently, with Senator Bob Dole, she co-chaired the president's Commission on Care for Americans Returning Wounded Warriors for dealing with some of the aftermath of the wars in Afghanistan and Iraq and elsewhere, and I think that shows the bi-partisan support and respect that she has for abilities and accomplishments. And one of the reasons that the organizing committee thought it was particularly appropriate to bring Dr. Shalala here as our keynote speaker is that she really came full-cycle with Denice in her career. She was here during Denice's years as an assistant professor on campus as chancellor, and then most recently worked with Denice when Dr. Shalala chaired the Committee on Maximizing the Potential of Women in Academic Science and Engineering, which produced the *Beyond Bias* report for which you have a brochure, a summary, in your packet. So she saw, really, the full arc of Denice's career from assistant professor to an influential national leader. And with that I'm happy to introduce Dr. Shalala. [*Applause*]

Donna Shalala: I'm delighted to be here. Thank you very much, Vicki, for that very nice introduction. It's always fun to be back in Madison and to see old friends. The fact that one of the distinguished scientists that I recruited is now a photographer is stunning to me. [*Laughter*] Jo Handelsman would not give up on getting me here to do this. Then she changed the date about fourteen times to see whether I could fit it into my schedule.

As I saw Gerda Lerner I was thinking that this is the third memorial program that I've spoken at for women scientists who have passed on here at Madison. The first when I first arrived was of course the great Ruth Bleier. And I want to acknowledge Ruth and her own leadership of women in science on this campus and in this community, because she really had an impact on a whole generation of women here. And the second, who had more of an impact on the community, but also on a number of us that were her close friends, was of course the great Elizabeth Karlin. If you use the word "fearless," the word

applies to Ruth Bleier and Elizabeth Karlin, and Denice Denton. So I think it's important that we remember that, in this community in particular, there have always been fearless women in the sciences, in the social sciences, in the humanities, that made Madison, and UW-Madison in particular, a very remarkable place, and a laboratory, as Wisconsin always has been, for social experimentation, but more importantly, in the word of the current war – "embedding" – into the institution itself those women and men who were committed to changing the face of the institution.

I knew Denice Denton at the beginning of her career and at the end of her life. In between we had numerous conversations, including some arguments about whether she should take certain positions. And I would always say, "Denice, why did you call me if you wanted to get an affirmation of what you've already made up your mind to do anyhow?" When the National Academy of Sciences approached me about chairing their commission – it's very prestigious to be invited by the National Academy of Sciences and Academy members, of which I am one (there are three academies of course: engineering, medicine, and sciences) – basically you don't turn them down. But this was a political trick, because Larry Summers had just made his obnoxious comments, and they had to figure out who was going to respond to them. And who else but a member of the Clinton cabinet who was a friend of Larry's, who was also a college president? And I kept saying, "But I'm not a scientist, not a particular expert on women in science, or I know something about the hiring process," and they kept saying, "You're the only one that could do this in a way in which it's not seen as a direct hit on Larry." Well, Larry thought it was a direct hit anyway, no matter how much explanation. As part of the responsibility of chair of the commission, you get two appointments. All the other members are either members of the National Academy – the vast majority have to be members of the National Academy under their rules – and they always pick some college presidents. We had Nannerl Keohane, Bob Birgeneau, and Ruth Simmons on the panel – all of whom were very knowledgeable and very experienced in this area. And I picked two people. I picked Jo and Denice Denton in large part because when I looked at the panel, they felt like two people I knew that actually knew the subject matter, and had actually tried to do something. A lot of the others either had been college presidents, or cared a lot about the issue and had worked on the subject or written about it, but weren't as familiar with implementation as both Jo, who had a remarkable job with Molly and so many of the rest of you here at Wisconsin, or Denice, who had been banging the drums for her entire career. And that turned out to transform a panel that could've been the usual dull National Academy panel [into a panel] that was anything but dull. It was like managing rearing horses most of the time for me. When Denice died, we decided to dedicate the report to her, and I'd like to read the dedication that I wrote as part of your assembly of tributes to Denice: "Denice Dee Denton (1959-2006). A valued member of this committee, Denice Denton was an extraordinarily talented scholar and educational leader and relentless voice for progress. She helped shape the direction of our nation's science and engineering enterprise through her research, teaching, technology, development, service,

leadership, mentoring, public communication of science and engineering, initiatives to promote diversity and inclusion, and outreach to our schools. She was bigger than life. She opened doors and stood in them to let others through. She mentored young scholars and students. Her enthusiasm for science was clear and infectious. She was a force – a magnificent force. She pushed the institutions she inhabited to be better than they wanted to be. With her tragic death we have lost a friend, a colleague, and a champion. We proudly dedicate this report to her. We will miss her." And that is the way myself and my colleagues felt about Denice Denton. Most of them had not really known her before we started the process of writing an Academy report. To put some of this in context, I'd like to talk a little, first, about my own graduate school experience and then come back and talk about the recommendations of our National Academy study. Even though many of the recommendations are things that you already know, when the National Academy of Science says it, not just because of the panel, but because of the review process (which is horrendous, which caused me to develop more skills that made it easy to work with Bob Dole) [*laughter*], and one of the reasons I want to start with this is to point out that discrimination – not only has it always been there, but it was more overt for a generation of women scholars who now dominate higher education.

When I started graduate school a Syracuse in the late 1960s, my department chair informed me that I wouldn't be eligible for a fellowship because I was a woman. He literally said that. But he did something else that I will never get – he pulled out the statistics, which demonstrated that women didn't finish their Ph.D. programs, and if they did (he had actually tracked the women that went through the Ph.D. programs) they interrupted their careers to stop and getting married and have children. And therefore, he had concluded – and they rarely went back to catch up with their peers – he said that women were a bad investment for the department, and that he had the statistics to prove it. Needless to say, I went and complained to the Dean – I have a long tradition of complaining to Deans and Chancellors and Presidents – and a more progressive member of the faculty, and I did finish my Ph.D. at Syracuse, and Syracuse hates when I tell this story. They have a woman chancellor [now], so it's easier for them. Then I went to New York to begin my academic career at Columbia. Actually, I started first at City University of New York at Baruch because Columbia wouldn't have a position for a year or two. So I took the job at Baruch on the recommendation of a very distinguished woman political scientist, Marilyn NAME. And then it happened to me again – at the end of my second semester of teaching, the chairman of the department called me in, and he said that he was a little embarrassed, but it was also a little embarrassing to the department, that not only did I have the highest teaching ratings in the department, but I published more than the entire department put together. And he said, "You know, this is a problem for us because you're not going to get tenure. We have never tenured a woman, and we never will tenure a woman." Well I immediately complained to the dean, who assured me, of course, if I kept to the process that I would indeed get tenure at the City University. And in fact, I was part of the famous

class action at the City University. I actually got money. Peace was not the goal of a very famous lawyer by the name of NAME. The guy basically brought this class action suit on behalf of the women faculty at the City University using cases like mine, which reinforced the view that there was blatant discrimination. Huge financial settlement. And then we all gave our money (I was president of Hunter at the time – I was embarrassed to take money from the administration of the City University), but we all got together and decided to give the money to the Women's Studies Program at the City University of New York. So all of us actually gave it back. But everybody was given something like $50,000, which I immediately gave back. I of course went on to Columbia, and it never happened again. Never happened again, in part because there were a lot of white guys at Columbia who had already made up their minds about what was going to happen in higher education, and in particular, NAME, who was an old curmudgeon, a very famous political scientist at Columbia, and the great Lawrence Cremin, the great historian of American education, neither of whom appeared to be feminists on the outside. But they had thought deeply about the issue of promoting and providing opportunities to women, and they were convinced that their institutions could only be competitive if they recruited the best of the best. And they could not leave out a very significant number of Ph.D.s or of the population in terms of recruiting. And they felt clearly – and articulated it – that there would be no future in American higher education if Americans in particular left out part of the population and, therefore, part of the talent in the country. And so the beginning of my career – and I had gone to a women's college, so I was sort of stunned going through Syracuse and there were no tenured women. One tenured woman in the Maxwell School when I was going through Syracuse. The fact that it didn't happen again, even in government, is important. And I've always said that as you move up the power ranks it actually gets reduced. People ask me whether as the Secretary of Health and Human Services I was ever discriminated against by the "old boys' club" of the White House, and I said no because I had power. They had to deal with me as a person of power. Wherever their gender hang-ups were, they had to get over themselves, because I had the money and I had the power. So they had to deal with me in those contexts.

But getting on with the report – I think that there were a couple of contributions that we made, and actually Janet Hyde's work was very helpful. First of all, for the first time, we rigorously reviewed the research literature in the field for the academy. All of the research on gender issues in science and engineering, including innate differences in cognition, implicit bias, and faculty diversity, we examined the culture and the practices in the academy that contribute to and discourage talented people. We looked at faculty practices, and in this area, this work at Wisconsin became very important to us. We met over a year-and-a-half, I think, and while physically we met three times with each other, we did a lot of conference calling. And every member of the commission, I think, Jo, it's fair to say, everybody participated. I've never been on a commission in which everybody showed up all the time. And you

always knew when Denice was on the phone. And about a year ago we submitted our report and I want to talk about each of the findings to give you a sense.

It's hard for me to give you a sense of the importance of the report, though all of you know the importance of the National Academy of Sciences. We pooled together the literature in one place, and hit out of the park the whole issue of innate differences. And the first finding really, we had a discussion about what the first finding should be. I was absolutely convinced we had to look directly at the issue that Larry had raised and use that as our first finding. It ran this way: Women do indeed have the ability and drive to succeed in science and engineering, and that studies prove that there are no significant biological differences between men and women in performing science and mathematics that can account for the lower representation of women in faculty and scientific leadership positions. Over the last forty years, female performance in high school math has improved and now matches that of males, and the same is true of their numbers in advanced math and science courses. That single finding was as important as anything else we could do, because as far as we were concerned, we wanted to close down the debate. Now, it is very carefully worded because it doesn't say there are no differences between men and women. What it does say is in relationship to performing science, there is nothing there that we could find that would explain what's happening in terms of recruitment, and people getting into graduate programs, and being hired by a university.

The second finding was just as fresh and interesting from my point of view, and that is women interested in science and engineering careers are lost at every educational transition. And that is a point that, in fact, that while we had closed the gaps in high school, and you know with all you can say about high schools and elementary schools and junior high schools, and those of us in higher education are absolute elitists – we think that the United States gives third-rate education at the elementary school and junior high school and high school. But they have closed the gaps. Whatever their weaknesses are, there is significant evidence that gaps are closed in our public schools, in our private schools. So while much of our focus was on higher education, it's also clear that, as I'll make a later point, that the pools are there.

We have also closed the gap in large part in many disciplines at the undergraduate level. And therefore, our number three recommendation was that the problem was not the pipeline; that at the elementary and secondary level, and at the undergraduate level – when we all went to hear Sheila Tobias, she had a different tune, just the progress that we have made since people were talking about math gaps and science gaps. So we actually, at the core level, have done a pretty good job. But we've got a long way to go. We were talking about Electrical Engineering last night at dinner in terms of how far we have to go in some of the disciplines, and clearly we've lost some ground in the computer area in terms of who's going in. But in biology we have the pipeline. So it's a problem no longer, and people still have in their heads the problem is the pipeline. The supply of qualified women exists. In several

areas the pipeline has actually reached gender parity. The key here is that it gets narrower as people go up – with more people graduating from high school with those types of science, more women in particular, with more women participating at the undergraduate level, and then it starts narrowing down in terms of who goes on to graduate school, and gets even narrower when you talk about the top institutions. We focus specifically at the top academic institutions – the big research universities in this country – and the fact is that even when women get their Ph.D.s they're not being hired in the appropriate numbers by the top research universities in this country. So we have a completely different situation than we had when I went to graduate school. A completely different situation. And I also start out talking about this because I want you to keep in mind that we've made tremendous progress. We still have the same attitudes we had when we didn't make progress, but we have made tremendous progress. Now it's a question of whether we can get the major research universities to both put women and support them in their Ph.D. programs, as well as to hire them once they complete those Ph.D. programs.

When I went to the University of Miami, the physics department had never interviewed a woman. And one of our findings was that if a woman gets interviewed, she gets hired. They had never interviewed a woman. They were pretty sheepish went I sent them a copy of the report. The University of Miami spent a lot of money buying copies of the report. I autographed them for all the scientists. So our finding number four was of course the one that you'd expect, that women are very likely to face discrimination in science and engineering. In story after story – we had a cadre of very distinguished women scientists, all of whom both dispelled the myths and had stories to tell. The plural of anecdote is data. And using stories to inform your findings gives you a feel when you're doing a report like that. Same thing happened in the commission that I just chaired with Bob Dole. But the stories were absolutely fascinating, and of course women who were in minority groups aren't even on the radar screen, who are coming through, if they can get into Ph.D. programs. Madison, again, has made some efforts to get minority students, and I know John Wiley in particular gets it and is committed to imaginative ways to try to get more minority students here. In many departments, particularly those that are all male, they take a look at a young woman and think, "Does that look like a scientist?" And of course minority women have dual discrimination.

Now, finding number five – and this may surprise some of you – there's a substantial body of evidence that establishes that most people, both women and men, hold implicit biases. Now this was a very important finding because we really now have decades of research that report that most of us carry prejudices of which we're unaware. But they really color our evaluations of people and their work. The studies, of course, have always demonstrated that people are less likely to hire a woman than a man for identical qualifications, but they're also less likely to ascribe credit to a woman than a man for identical accomplishments. And when the information is scarce, they'll the give the benefit of the doubt to a man

rather than to a woman. But we found enough evidence that women themselves also – even the most progressive of them – have some of these inherent biases, and that overcoming that is part of it. Now, we've always known about the queen bees. I once had a dinner with Rosalyn Yalow and Mildred Dresselhaus. Now, who knows who the two of them are? Rosalyn Yalow's a Nobel Laureate who is actually a Hunter graduate – it was while I was president of Hunter – who had won her Nobel Prize years after she and her partner had finished the work. They wanted to see whether she could really maintain the level of science before they gave her the Nobel Prize for medicine. And she was at the VA, and never been able to get an academic appointment, except at Hunter where she had taught in the evening. She taught physics in the evenings at Hunter, partly to support her family, and then got on at the VA. The VA actually has two or three Nobel Laureates in part because they couldn't get traditional appointments. But Rosalyn Yalow was the first American educated woman to win a Nobel Prize. The second woman, Mildred Dresselhaus, was the Abby Rockefeller professor of electrical engineering at MIT, and she had been a student of Rosalyn Yalow at Hunter. And Mildred was the leader of the Women in Science movement at MIT. In many ways, a lot of this started at MIT with Mildred Dresselhaus and her enormous efforts. And she didn't know anything about the literature on women in science; she was just an extraordinary woman that looked around her at MIT – and she was actually chair of the department at that time. And so I was having dinner with the two of them thinking this was going to be one of these great dinners in which we're going to laugh a lot and they're going to tell these stories. They got into it on whether you needed support systems to expand women in science. Rosalyn Yalow was a queen bee. She said, "If I can make it, everybody can make it," even though her lecturing – she came here once to lecture – she would throw up on the screen the research that won her the Nobel Prize with all the reject letters from the journals for that. And one of the scientists on our panel actually said she used only her initials when she submitted articles. As you know, many of the journals now do blind reviewing. But Rosalyn Yalow's position was, "If I can make it, everybody can make it. We don't need these special programs. We don't need affirmative action efforts. If I can make it, everybody can make it, and we don't need programs," (particularly not at her beloved Hunter College) "to help women to get on with science and to get into Ph.D. programs." Mildred Dresselhaus said, "Rosalyn, you haven't been in higher education in three decades, you don't know what you're talking about; you should come to MIT and see the efforts that we're making." But she consistently took Rosalyn Yalow's arguments apart at that dinner. It was one of the great experiences of my life. You will not believe – well maybe you will – I didn't say a word. I paid the check and I didn't say a word. But I will never forget that conversation. And one of the reasons I finally accepted taking on the panel was because I remember that conversation. And it was time to give back in the field. But it was very clear.

Finding number six was women faculty are paid less, are promoted more slowly, receive fewer honors, and hold fewer leadership positions than men. And we didn't find any evidence that any of those

decisions were based on productivity or the significance of their work or any other measure of performance. The other thing is that the characteristics that were often selected on the basis of little evidence in the literature to relate to scientific creativity, stereotypical male traits such as assertiveness and single-mindedness were given greater weight than other characteristics such as flexibility, diplomacy, curiosity, motivation, and dedication, which were far more vital to success in science. The kinds of characteristics – male characteristics – that are attributed to great science simply don't hold up when you actually look at who does great science in this country. But we have them in our heads, and certainly search committees and promotion committees have them in their heads.

Number seven: organizational structures and rules contribute significantly to the underuse of women in academic science and engineering, expectations, and were designed in higher education in a way that everybody had to have a traditional wife. At Madison we worked on this issue forever. And even when we gave people leave, we found more men took it than women for a period of time because women were concerned about the attitudes in their department if they took time off. So we still haven't overcome that not having a wife is often seen as having a serious disadvantage. However, if you look at the facts, the majority of scientists no longer have that kind of support. About 90% of the spouses of women in science and engineering faculty are employed full-time, and close to half the spouses of male faculty also work full-time. So the world has changed, even though higher education is still organized in a very strange way.

And our final finding, of course, is related to why we need to act – not just for moral reasons – we need to act. And we were pretty, I think Jo will tell you, we were pretty rigorous about not simply making a moral argument; we made an economic argument. In fact, Alice Rivlin, the great economist, was on our panel, and she kept saying, "We've got to make an economic argument on why we have to do this. We can't just make it only a moral argument." And our point was the consequences of not acting will be detrimental to the nation's competitiveness. Before I came to Wisconsin I went to Japan. In fact, when the regents interviewed me – there's two stories about the regents – when they interviewed me I told them that I was going to Japan because I had this fabulous fellowship to go to Japan for six months and I wouldn't be here until December of '87. And they said, "Well, what would happen if we didn't give you the job?" And I said, "If you don't understand that the Chancellor at the University of Wisconsin at Madison ought to have experience in Japan, and ought to take a sabbatical before she comes here, then I'm just not coming in." Katharine Lyall told me to say that. She said I'd intimidate them. Actually there's a funny story about getting the job. There were actually a number of candidates for the job, including a number of very distinguished men. We all had about the same academic credentials. But I knew they were very worried about athletics, and I, of course, was coming from Hunter – didn't have a football team. And I was actually trying to decide between Michigan or Wisconsin, but Harold Shapiro told me not to go Michigan – he was going to Princeton from Michigan –

because they had an elected political board, state-wide elected, and he said that's a disaster. He said, "Don't go to Michigan; take Wisconsin if you can get Wisconsin." And so they waited around, hemmed and hawed, tried to figure out how to ask me about athletics. I think buzz had told them that they couldn't ask me about athletics, [*laughter*] but they desperately wanted to ask me about athletics. And I could tell because they weren't ending the interview, and finally I said, "Well, do you want to know my views on athletics?" and they all sort of jumped out of their seats. And I said, "Well what is it you want from your athletic program?" And one of them piped and said, "Well we just want to be competitive." And I looked at him straight in the eye and I said, "I'm not your person." I said, "I come from New York, and I only know how to put together strategies to be number one." [*Laughter and applause*] So they gave me the job, obviously. And I read *Sports Illustrated*, the college issue, coming out to Bascom. David Ward, oh, he thought that was the funniest thing – that I really didn't know anything about it. But I did know how to put together strategies and how to hire good people. I went to Japan, and when I was in Japan, everywhere I went, in 1987 when they were booming, people asked me, "What's the secret in the United States? How are you going to compete against us? How are you going to beat us?" in terms of industry and the economy and creativity, and, of course, they were putting all of their money into Todai and Kodai, the great research universities. And, you know, I didn't know the answer to that question, but finally my last day they had this big dinner for me with all these captains of education and industry, and it was a room about this size. They asked me the question again for the final time, and I said, "Okay, I'll tell you the secret," I said, "but you've got to close the doors." So they got up and they closed the doors [*laughter*] and they all moved their chairs closer. And I looked at him straight in the eye and said, "The way we're going to compete against you – we're going to do something that you will never do – we're going to use all of our talent. We're going to use our women and we're going to use our minorities, and we're not going to get hung up on gender or discrimination, because the only way we're going to compete in this world is to use every bit of talent we have in our country, and that's how we're going to beat all of you." That was our final recommendation, and that was the underpinning for all of this. And that, in fact, is why industry has moved faster than higher education. They get it. You talk to Jeff Immelt at GE, and he gets it. Or even the investment banking guys – if you read the *Wall Street Journal*, there are women being promoted all the time. They can't afford not to make decisions based on merit. Sure there continues to be a glass ceiling. In higher education, we've broken into a lot of that glass ceiling, and what we need to do now is be shrewd about helping to mentor women in those positions to survive in those positions. When Nan Keohane went to interview for Duke, she called me to find out what to say about athletics. And that was a big breakthrough. I think everyone – Judith Rodin – all the women that made the breakthrough in the Ivy Leagues called me to find out how I handled the interview. I told all of them the story about UW-Madison and the football team. I said, "You just go in there and keep talking about excellence, no matter what it is. You talk about you know how to hire

people, you know how to recruit people, you know how to keep them, but just keep talking about excellence."

I think we did a very important report. Jo and I have some follow-up to do with the NIH director and some of the NSF people. I hope you all read it; it gives very specific recommendations. Sure, the barriers are still there, but we've made so much progress in, literally, two generations, that we have to keep going. If we don't keep going, this enterprise that we love, these great research universities, simply will not survive. There will be alternatives to them. But more importantly, we won't be number one any longer, which is what we're after. When I was in Japan, I visited the garden of a foreign minister, and it was one of the beautiful Japanese gardens. It was just amazing. And I said to him, "Can I borrow your gardener to go back to Madison? I want to take your gardener back with me," because I thought that garden was beautiful. And he said, "To get a garden this beautiful, it will take my gardener and fifty years." That's the story of the great research universities. We want to make progress faster than that, but if you look over the last fifty years, we have made progress, but we are involved in a very fragile enterprise, and learning how to work it – whether it's mastering how to run the University Committee, or making those committees work for us the way Denice was so shrewd at doing. And we need the Denice Dentons of the world. We also need some of the Donna Shalalas, who may have a different style. But we need all of you, all of you who have demonstrated a talent and commitment, and more than anything else we need what she taught us, and that is that you never give up. Thank you very much. [*Applause*]

For about five minutes I'll be happy to answer any questions you might have. Jo, do you want to say anything about the report?

Jo Handelsman: After you? No.

[*TAPE BREAK*]

Vicki Bier: Okay, well thank you very much. [*Applause*] I now want to invite the panel members to come up to the podium so we don't lose time for the panelists. Gerda Lerner, Bassam Shakhashiri, Lydia Zepeda, Reza Ghodssi, Jeanne Swack, Betty Walker Smith, and Jeanne Narum. There are seats for you here, and notes on the tables. While our panelists are coming up to the table, it also occurred to me that there's one more person I need to acknowledge. This beautiful portrait of Denice was done by a colleague of hers, Maria Klawe, who's a computer scientist in – can one of the other members of the committee remind me where she is currently working?

Committee member: President of Harvey Mudd.

Vicki Bier: Thank you. She graciously allowed us to use her portrait of her to – let's see, people may have ducked out for restroom breaks. I'll wait for a couple of minutes until the rest of our panelists get back and then we'll get started.