



**BLUEPRINT FOR THE FUTURE: FRAMING THE ISSUES OF
WOMEN IN SCIENCE IN A GLOBAL CONTEXT – A WORKSHOP**

April 4, 2011

**Keck Center
The National Academies
Washington, DC**

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Agenda

Blueprint for the Future: Framing the Issues of Women in Science in a Global Context - A Workshop

11:30 AM – 11:45 AM Welcome and Overview of Workshop (Lunch Served)

Lilian Wu, Program Executive, Global University Programs, IBM, and Chair, Committee on Women in Science, Engineering, and Medicine

Carol Stoel, Program Officer, Division of Graduate Education, Education and Human Resources Directorate, National Science Foundation

Catherine Didion, Director, Committee on Women in Science, Engineering, and Medicine

11:45 AM – 1:00 PM Panel I—Cross-Cultural Issues:

- Knowledge and Data Sources
Wendy Hansen, Senior Researcher, University of Maastricht, and
Angelica Salvi Del Pero, Administrator (Gender) Social Policy Division, Directorate for Employment, Labour and Social Affairs, OECD
- Socio-Historical Trends
Mariko Ogawa, Professor, Humanities, Law and Economics, Mie University, Japan
- Higher Education
Anne MacLachlan, Senior Researcher, Center for Studies in Higher Education, University of California, Berkeley and
Cheryl Leggon, Associate Professor, School of Public Policy, Georgia Institute of Technology
- Workforce Segregation
Alice Abreu, Regional Coordinator, Rio + 20 Initiative, International Council for Science (ICSU)

Discussant: *Anneke Sengers*, Scientist Emeritus, NIST and Chair, Working Group on Women, Inter American Network of Academies of Science (IANAS)

1:00 – 2:15 PM

Panel II—Focal Disciplines:

- Chemical Sciences
Robert Lichter, Principal, Merrimack Consultants, LLC, and
Willie Pearson, Jr., Professor, School of History, Technology, and Society, Georgia Institute of Technology
- Computer Science
Joanne Cohoon, Associate Professor, Science, Technology and Society Department, School of Engineering and Applied Science, University of Virginia
- Mathematics and Statistics
Keith Crank, Assistant Director, Research and Graduate Education, American Statistical Association, and
Ingrid Daubechies, Professor, Duke University and President, International Mathematical Union (IMU)

Discussants: *Lilian Wu*, Program Executive, Global University Programs, IBM; *Allan Fisher*, Senior Vice President, Laureate Education Inc.; and *Bradley Miller*, Director, Office of International Activities, American Chemical Society.

2:15 PM – 2:30 PM	Break
2:30 PM – 3:45 PM	<p>Panel III—Cross-Cutting Themes:</p> <ul style="list-style-type: none">• Role of Professional Societies <i>Lisa M. Frehill</i>, Senior Program Officer, the National Research Council• Promising Programs <i>Daryl Chubin</i>, Director, Center for Advancing Science & Engineering Capacity, American Association for the Advancement of Science (AAAS)• Promising Policies <i>Connie L. McNeely</i>, Professor of Public Policy, and Co-Director, Center for Science and Technology Policy, George Mason University, and <i>Cheryl Leggon</i>, Associate Professor, School of Public Policy, Georgia Institute of Technology <p>Discussants: <i>Jessie DeAro</i>, Program Director, Alliances For Graduate Education and the Professoriate (AGEP), Education and Human Resources Directorate, National Science Foundation; <i>Kathie Bailey-Mathae</i>, Director, Board on International Scientific Organizations (BISO), The National Academies; and <i>Patricia Taboada-Serrano</i>, Early-Career Representative, Women for Science Working Group, InterAmerican Network of Academies of Sciences</p>
3:45 PM – 4:30 PM	<p>Concluding Discussion</p> <p><i>Shirley M. Malcom</i>, Co-Chair, Gender Advisory Board, UN Commission on Science and Technology Development (UNCSTD), and Head, Education and Human Resources, American Association for the Advancement of Science (AAAS)</p>
4:30 PM	Adjournment

Committee on Women in Science, Engineering, and Medicine

The Committee on Women in Science, Engineering and Medicine (CWSEM) was established in 1990 as a standing committee of the National Research Council (NRC). The committee collects and disseminates information on the education and employment of women scientists, engineers and health professionals, and recommends ways to enhance women's advancement. CWSEM's mandate is to coordinate, monitor, and advocate action to increase the participation of women in science, engineering, and medicine and states the following:

The committee will increase the participation of women in the labor force by:

- 1) Serving as a resource for organizations and individuals seeking information and analysis about the status of women in science, engineering, and medical employment and education;
- 2) Formulating strategies to collect, analyze, and disseminate information on the needs and status of opportunities for women in science, engineering, and medical fields;
- 3) Reviewing relevant policies of federal agencies, universities, and industry designed to enhance the role of women;
- 4) Initiating and overseeing ad hoc committees to hold workshops and issue consensus reports with findings and recommendations for effective policies and programs to remove barriers to the participation of women in sciences, engineering and medicine; and
- 5) Serving as an institutional focal point in support of complementary activities across the National Academy of Sciences (NAS), the National Academy of Engineering (NAE), the Institute of Medicine (IOM) and the National Research Council (NRC).

Current Committee Members:

Lilian Wu, *Chair*, Program Executive, Global University Programs, IBM

Alice Agogino (NAE)*, Professor, Mechanical Engineering, University of California, Berkeley

Florence Bonner, Senior Vice President for Research & Compliance, Howard University

Allan Fisher, Senior Vice President, Laureate Education, Inc.

Lydia Villa-Komaroff, Chief Scientific Officer, Cytonome/ST, LLC

Vivian Pinn (IOM), Director, Office of Research on Women's Health, National Institutes of Health

Pardis Sabeti, Assistant Professor, FAS Center for Systems Biology, Harvard University

Susan Wessler (NAS), Distinguished Professor of Genetics, University of California, Riverside

Staff:

Catherine Didion, Director

Lisa M. Frehill, Senior Program Officer

Wei Jing, Research Associate

* Denotes membership in the National Academy of Sciences, the National Academy of Engineering, or the Institute of Medicine.

Biographies of Speakers

Alice R. de P. Abreu is *Emeritus Professor* of the Federal University of Rio de Janeiro in Brazil and the Regional Coordinator of the ICSU Rio+20 Initiative. She is the former Director of the Regional Office for Latin America and the Caribbean of the International Council for Science (ICSU), ending her mandate in December 2010. She received her doctoral degree in Sociology from the University of São Paulo Brazil (1980), and her M.Sc. in Sociology from the London School of Economics and Political Science of the University of London (1971). A full Professor of Sociology from the Federal University of Rio de Janeiro until 2005, Professor Abreu has published extensively in sociology of work and gender. She also held a number of important positions within the academic community of Brazil and internationally, which included the Vice Presidency of the National Research Council for Scientific and Technological Development in the Ministry of Science and Technology of Brazil, and Director of the Office of Education, Science and Technology of the Organization of American States, in Washington D.C. Abreu served on the Executive Committee of International Sociological Association (ISA) for two mandates, 2002-2006 and 2006-2010. Professor Abreu received the *Ordem Nacional do Mérito Científico* (*Comendador*) of the Science and Technology Ministry, Brazil in 2001; the *Palme Académiques* (*Officier*), of the *Ministère de la Jeunesse, de l'Éducation Nationale et de la Recherche. République Française*, in 2003. She was awarded the Florestan Fernandes Prize in 2009. Professor Abreu is, since 2010, a Foreign Member of the *Academia de Ciencias Médicas, Físicas y Naturales de Guatemala*.

Kathie Bailey-Mathae, Director of the Board on International Scientific Organizations (BISO), began her career at the National Academies in February 2005 when she joined BISO as a Program Officer. After serving as Senior Program Officer and BISO's Deputy Director, she was appointed Director in May 2007. Her responsibilities in BISO have included six U.S. National Committees in math and physical sciences, NAS representation on the U.S. National Commission for UNESCO, and visa policy. Prior to coming to the National Academies, Bailey Mathae worked for the Association of American Universities for 14 years. Prior to that, she worked for Congresswoman Lindy Boggs (D-LA) as associate staff for VA-HUD appropriations and special projects assistant. Bailey Mathae has a B.A. from Milligan College and a J.D. from Tulane University.

Daryl Chubin became founding Director of the AAAS Center for Advancing Science & Engineering Capacity, at the American Association for the Advancement of Science, in August 2004. Prior to that, he served 3+ years as Senior Vice President, Research, Policy & Programs, at the National Action Council for Minorities in Engineering (NACME) Inc., after nearly 15 years in federal service. Posts included three years (1998-2001) as Senior Policy Officer for the National Science Board at the National Science Foundation (NSF); Division Director for Research, Evaluation and Communication in NSF's Directorate for Education and Human Resources (1993-98); and (on detail) Assistant Director for Social and Behavioral Sciences (and Education) at the White House Office of Science and Technology Policy (1997). He began his federal career in 1986 at the Congressional Office of Technology Assessment. Chubin has also served on the faculty of four universities, including Georgia Tech, where he was promoted to full professor. Since 1991, he has been an adjunct professor at the Cornell in Washington Program. He has published eight books and numerous policy reports, articles, and commentaries on issues in science policy, human resource development, program evaluation, and engineering education. Among his honors are: AAAS Fellow, Past Chair of the AAAS section on Societal Impacts of Science and Engineering, Fellow of the Association for Women in Science, co-recipient of the American Society of Engineering Education Wickenden Award for best paper published in the 2003 volume of *The Journal of Engineering Education*, Quality Education for Minorities/MSE 2006 Giant of Science, and Sigma Xi Distinguished Lecturer 2007-2009. Today, he participates on the board of directors of three not-for-profit organizations and on the editorial board of three professional journals.

Joanne Cohoon is an Associate Professor at the Department of Science, Technology, and Society at the University of Virginia. She teaches Gender, Technology, and Education and supervises both graduate and undergraduate student research. Cohoon is a sociologist who researches, publishes, and speaks on women's under-representation in IT and gender segregation in higher education. She has conducted nationwide studies of departmental factors that influence recruitment and retention at the undergraduate and graduate levels of computer science. Cohoon is a Senior Research Scientist at the National Center for Women in IT Social Science Network, a member of the Georgia Tech College of Computing Diversity Advisory Board, the PROACT Advisory Board, and the Working Committee on Women in Computing of ACM-W. She has a BA in Philosophy (Ramapo College, New Jersey), an MA in Student Personnel Administration in Higher Education (Columbia University), and a PhD in Sociology (Dissertation on Non-Parallel Processing: Gendered Attrition from Undergraduate Computer Science) from the University of Virginia.

Keith Crank is the Research and Graduate Education Manager at American Statistical Association (ASA). Prior to joining the ASA, he was a program officer at the National Science Foundation, primarily in the probability program. Crank has a BS in mathematics education and an MS in mathematics from Michigan State University and a PhD in statistics from Purdue University.

Ingrid Daubechies (NAS) received both her Bachelor's and Ph.D. degrees (in 1975 and 1980) from the Free University in Brussels, Belgium. She held a research position at the Free University until 1987. From 1987 to 1994 she was a member of the technical staff at AT&T Bell Laboratories, during which time she took leaves to spend six months (in 1990) at the University of Michigan, and two years (1991--93) at Rutgers University. Since 1993, Daubechies has been a full professor at Princeton University, where she is active especially within the Program in Applied and Computational Mathematics. She was the first female full professor of Mathematics at Princeton. In January 2011 she moved to Duke University to serve as a professor of Mathematics. Daubechies is the first woman president of the International Mathematical Union (2011–2014). Her research interests focus on the mathematical aspects of time-frequency analysis, in particular wavelets, as well as applications. In 1998 she was elected to be a member of the National Academy of Sciences and a Fellow of the Institute of Electrical and Electronics Engineers. The American Mathematical Society awarded her a Leroy P. Steele prize for exposition in 1994 for her book "Ten Lectures on Wavelets," as well as the 1997 Ruth Lyttle Satter Prize. From 1992 to 1997 she was a fellow of the John D. and Catherine T. MacArthur Foundation. She is a member of the American Academy of Arts and Sciences, the American Mathematical Society, the Mathematical Association of America, the Society for Industrial and Applied Mathematics, and the Institute of Electrical and Electronics Engineers.

Jessie DeAro joined the U.S. Department of Education as a Presidential Management Fellow in 1999 after receiving her doctorate in physical chemistry from the University of California at Santa Barbara. Within the Department of Education she worked with Minority-Serving Institutions to strengthen the quality of education programs and institutional infrastructure. In 2003 she joined the National Science Foundation as a program director working with programs to diversify the STEM workforce including the Historically Black Colleges and Universities-Undergraduate Program and ADVANCE. She recently spent a year detailed to the White House Office of Science and Technology Policy where she worked on STEM education and workforce diversity policy. She is once again at the NSF working on issues related to graduate education, postdoctoral training, and academic careers, as program director for the Alliances for Graduate Education and the Professoriate (AGEP) program.

Catherine “Kitty” Didion is the Director of the Committee on Women in Science, Engineering, and Medicine (CWSEM) of the National Academies. In addition, she is a Senior Program Officer at the National Academy of Engineering (NAE). Her charge there is to provide staff leadership to the Academy's efforts to enhance the diversity of the engineering workforce at all levels. As part of her

responsibilities she is currently the Project Director for the \$2 million Engineering Equity Extension Service Project (EEES) which is working with engineering societies to enhance their gender equity principles within their programs. Before joining the National Academies, Didion was Vice President of the Didion Group, a public affairs and communications firm, as well as a director of the International Network of Women in Engineering and Science (INWES). Didion previously served 14 years as the Executive Director of the Association for Women in Science (AWIS). During her tenure AWIS was awarded the U.S. Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring and she was the principle investigator for 17 U.S. government and foundation grants. Didion has presented testimony before the United States Congress and U.S. federal agencies. She has worked extensively with the European Commission, the South African Ministry of Science and Technology, the Organization of American States, and many other organizations on these issues. She has been an invited speaker on mentoring, networking, and women in science and engineering at over 200 conferences and has authored over fifty publications on women in science and engineering. She was the editor for Women in Science Column for the Journal of College Science Teaching from 1993-2002. Didion has extensive experience on Capitol Hill in Washington, DC including staff positions at the U.S. Senate Commerce, Science, and Transportation Committee, the U.S. Senate Computer Center, and the U.S. Senate Press Gallery.

Allan Fisher is the Senior Vice President of Laureate Education, Inc. He previously was co-founder, President and CEO of iCarnegie Inc., an online higher education subsidiary of Carnegie Mellon University, and before that served until 1999 as faculty member and Associate Dean for Undergraduate Education in the School of Computer Science at Carnegie Mellon University. During that time, he worked in high performance computing and networking research and also led the creation of Carnegie Mellon's B.S. program in Computer Science. In the late 1990s, he and Dr. Jane Margolis carried out a program of research and intervention that helped to increase the proportion of women entering the computer science program from 7% in 1995 to 42% in 2000. This work is described in their book, *Unlocking the Clubhouse: Women in Computing*, published in 2002 by MIT Press. He received a bachelor's degree in chemistry from Princeton University, studied at the University of Cambridge, and received the Ph.D. in computer science from Carnegie Mellon University. He serves on a number of advisory committees for projects and organizations working toward diversity in technology fields, including the Anita Borg Institute and the National Research Council Committee on Women in Science, Engineering and Medicine.

Lisa M. Frehill is a Senior Program Officer at the National Academies. In addition to her work at the National Academies she is the Director of Research, Evaluation and Policy at the National Action Council for Minorities in Engineering (NACME). Since earning her doctoral degree Frehill has developed expertise in the science and engineering workforce with a focus on how gender and ethnicity impact access to careers and international participation and collaboration in these fields. As an associate professor of sociology at New Mexico State University, she was the Principal Investigator and Program Director of the National Science Foundation funded ADVANCE: Institutional Transformation program, which sought to increase women's success in academic science and engineering careers. She has consulted with numerous colleges and universities on gender equity issues. Frehill has worked with the Society of Women Engineers on several projects including a retention study and the annual review of literature on women in engineering. She was the lead author of the Motorola Foundation-funded study released by NACME in 2008 titled "Confronting the 'New' American Dilemma: Underrepresented Minorities in Engineering: A Data-Based Look at Diversity" and the NACME databook. Research in progress includes projects funded by the National Science Foundation on women's international participation and collaboration in science and engineering and on career outcomes of engineering bachelor's degree recipients.

Wendy Hansen is a Senior Researcher at the United Nations University (UNU) Maastricht Economic and Social Research Institute on Innovation and Technology (MERIT). Hansen studied sociology at Carleton University in Canada and joined Statistics Canada's Postsecondary Education Projections/Analyses Section. In the fall of 1988, she moved to Industry Canada where she has been a Senior Policy Analyst, Industry and Science Policy. Wendy joined MERIT as a Senior Research Associate in May 1997 to continue her research on knowledge workers. Her research focuses on knowledge workers, in particular scientists and engineers, and falls in a range of S&T policy issues as well as Information Society. Her research addresses the change in the skill base of the labour force, including the development of new measures for linkages between knowledge workers and technological change, as well as more specific measures of human capital in a digitised society.

Cheryl Leggon is an Associate Professor at the School of Public Policy in Georgia Institute of Technology. Leggon's research focuses on African American, Mexican American, Puerto Rican, Native American, and Native Pacific Islander women in science and engineering; this focus developed while she was a Staff Officer in the Office of Scientific and Engineering Personnel at the National Research Council, National Academy of Sciences. Her work underscores the criticality of disaggregating data by race/ethnicity AND gender in order to develop policy, programs and practices that enhance and expand the science and engineering talent pool in the United States. Currently, she is Co-Principal Investigator on two grants funded by the National Science Foundation: "Inside the Double Bind - A Synthesis of Literature on Women of Color in Science, Technology, Engineering, and Mathematics" (REESE); and "Cross-Disciplinary Initiative for Minority Women Faculty" (ADVANCE Leadership). Leggon earned the PhD in Sociology from the University of Chicago, and the BA in Sociology from Barnard College, Columbia University.

Robert Lichter, Principal of Merrimack Consultants, LLC, received his A.B. *cum laude* from Harvard College in 1962 and his Ph.D. from the University of Wisconsin-Madison in 1967, both in chemistry. He was a NIH postdoctoral fellow at the Technische Universität Braunschweig, Germany, from 1967 to 1968, and a research fellow at the California Institute of Technology from 1968 to 1970. After 13 years in the chemistry department at Hunter College of the City University of New York, including four years as department chair, he became regional director of grants at Research Corporation from 1983 to 1986. From 1986 to 1989 he served as vice provost for research and graduate studies at the State University of New York at Stony Brook. Before embarking on his current position in 2002, he was executive director of the New York City-based Camille and Henry Dreyfus Foundation from 1989, where he directed the strategies and administration of ten programs and related activities that yielded about \$6 million in grants and awards in the chemical and closely related sciences for research, education, science communication, and human resource development. Among his professional activities, Lichter was Chair of the American Association for the Advancement of Science's (AAAS) Section on Chemistry for 2001-2002, and was Secretary of the Section for 2004-2009. At the American Chemical Society (ACS), Lichter has been a member of the ACS's Committee on Science and its Committee on Minority Affairs, and the latter's subcommittee on the ACS Scholars Program. Lichter has served on and has chaired numerous national panels and advisory boards dealing with broad educational and scientific issues, including many for ACS, the National Science Foundation (NSF), and the National Research Council (NRC).

Anne Maclachlan is a Senior Researcher at the Center for Studies in Higher Education at the University of California at Berkeley and affiliated with the Department of Molecular and Cell Biology as an evaluator of its NSF REU program. She is also the evaluator of a STEM program for underrepresented students at City College of San Francisco. Her research areas for the last 20 years include the issues of access and success of women and minorities in science in postsecondary education from freshmen, community college student through faculty and leadership positions with a special focus on graduate students. A significant part of this research is on discrimination and bias. She also has organizes and gives

professional development programs for REU students currently drawing on twenty years experience creating and giving employment and professional development programs for graduate students, postdocs and undergraduates. She is finishing a book on Minority Success in STEM Ph.D. programs and is currently developing an institutional evaluation of STEM education in the California Community Colleges. Her work has been supported by the NSF, the Spencer Foundation, the Max-Planck-Institute, among others. Examples of her service on campus (Coalition for Excellency and Diversity at UCB, Science Seminar for URM Graduate Students), state (California Post Secondary Education Commission (CPEC) Gender Gap Project, CCST), and national service (reviewer for NIH, Sloan, NSF, and NSF ADVANCE site visitor, AAAS Capacity Center, Planning Committee for 3rd Understanding Interventions Conference). Her most recent talk at UC Berkeley (3.28.2011) was on “Federal Support for Science in the Research University: The Social Consequences between 1947 and the Present.”

Shirley Malcom (NAS) is Head of the Directorate for Education and Human Resources Programs of the American Association for the Advancement of Science (AAAS). The directorate includes AAAS programs in education, activities for underrepresented groups, and public understanding of science and technology. Malcom serves on several boards—including the Heinz Endowments and the H. John Heinz III Center for Science, Economics and the Environment—and is an honorary trustee of the American Museum of Natural History. In 2006 she was named as co-chair (with Leon Lederman) of the National Science Board Commission on 21st Century Education in STEM. She serves as a Regent of Morgan State University and as a trustee of Caltech. In addition, she has chaired a number of national committees addressing education reform and access to scientific and technical education, careers and literacy. Malcom is a former trustee of the Carnegie Corporation of New York. She is a fellow of the AAAS and the American Academy of Arts and Sciences. She served on the National Science Board, the policymaking body of the National Science Foundation, from 1994 to 1998, and from 1994–2001 served on the President's Committee of Advisors on Science and Technology. Malcom received her doctorate in ecology from Pennsylvania State University; master's degree in zoology from the University of California, Los Angeles; and bachelor's degree with distinction in zoology from the University of Washington. She also holds 15 honorary degrees. In 2003 Malcom received the Public Welfare Medal of the National Academy of Sciences, the highest award given by the Academy.

Connie L. McNeely received the Ph.D. in Sociology from Stanford University. She is currently Professor of Public Policy and the Co-Director of the Center for Science and Technology Policy at George Mason University. Her teaching and research address various aspects of politics, organizational behavior, science and technology, governance, social theory, and culture. Emphasizing comparative and historical perspectives, her work has engaged questions on international development and organization and on issues related to race, ethnicity, and nation, and gender. She also has conducted research on education, science and technology, and healthcare, and has ongoing projects examining cultural and institutional dynamics and matters of citizenship and polity participation. Professor McNeely is currently working as part of a larger initiative on democratizing education in the United States and elsewhere, and is Principal Investigator on a major research project examining institutional outcomes and policy impacts on women in science, technology, engineering, and mathematics in higher education. She is also active in several professional associations, serves as a reviewer and evaluator in a variety of programs and venues, and sits on several advisory boards and committees.

Bradley Miller, Director of the American Chemical Society (ACS) Office of International Activities, has worked for ACS since 1999 developing programs, products, and services to advance chemical sciences through collaborations in Africa, Asia, Europe, Latin America and the Middle East. At ACS, the world's largest single disciplinary scientific society, he works to create opportunities for chemistry to address global challenges through in-person and web-based scientific network development and research and educational exchange. In 2006 Miller was recipient of an NSF Discovery Corps Fellowship to catalyze and sustain US/Brazil collaboration in chemistry of biomass conversions to biofuels. He has worked for

university-based international programs, for a higher education association focused on principles of quality assurance for transnational educational offerings, and for a private voluntary organization dedicated to international allied-health sciences. With a Ph.D. from the University of Arizona (and research interests / experience in scientific, professional and academic mobility), a master's degree from the University of Northern Colorado and a baccalaureate degree from University of Virginia - Wise, Brad speaks French, Spanish and Portuguese and has published nine articles and book chapters.

Mariko Ogawa is the Executive Advisor to the President, Director of the Support Office for Women Researchers, and Professor of History of Science and Science Studies, Mie University, Japan. Ogawa's teaching and research interests are in the history of biology and medicine in nineteenth-century England and Germany, and in gender in science. She is the author of *Uneasy Bedfellows, Bulletin on History of Medicine* (2000), *The Mysterious Mr. Collins, Journal of History of Biology* (2001), *Robert Koch's 74 Days in Japan* (Humboldt Universitat, 2003), *Liebig and the Royal Agricultural Society Meeting at Bristol, 1842*, Ambix (2008), and of two books in Japanese: *Feminism and Technology / Science* (Tokyo: Iwanami, 2001) and *Darwin Redux: Narrative in Evolutionary Theory* (Tokyo: Iwanami, 2003). Recently she has been engaged in several coauthor works, and has also translated many books into Japanese, especially those relating to gender in science. With her translation, four excellent books by Professor Londa Schiebinger, former Director of the Clayman Institute, Stanford University, are now available in Japanese.

Willie Pearson, Jr. is professor of sociology, School of History, Technology, and Society, Georgia Institute of Technology. In 1993, he received Southern Illinois University's College of Liberal Arts Alumni Achievement Award. He specializes in the sociology of science and sociology of the family. He is the author or co-editor of six books and monographs and numerous articles and chapters. His most recent book is entitled *Beyond Small Numbers: Voices of African American PhD Chemists* (2005). He has held research grants from the National Science Foundation, National Endowment for the Humanities, Sloan Foundation, and Department of Justice. He has held postdoctoral fellowships at the Educational Testing Service and the Office of Technology Assessment, U.S. Congress. He is a Fellow of the American Association for the Advancement of Science (AAAS). He has served as a lecturer in Sigma Xi's Distinguished Lectureship Program; chair of the Committee on Equal Opportunities in Science and Engineering (CEOSE), Executive Office, National Science Foundation and chair of the Committee for Science, Engineering and Public Policy, American Association for the Advancement of Science. In 2001, he was designated a lifetime National Associate of the National Academies. Currently, he serves on advisory committees in the Education and Human Resources Directorate (National Science Foundation), the Burroughs Wellcome Fund, and the National Academy of Sciences. His PhD is from Southern Illinois University in Carbondale (1981).

Angelica Salvi Del Pero is a policy analyst at the OECD, where she is the administrator of the OECD Gender Initiative, which aims at identifying the main barriers to gender equality in education, employment and entrepreneurship in OECD countries and other regions and assess the experience with policies to address these barriers. Before joining the OECD in July 2010, Salvi Del Pero was a research fellow at Centro Studi Luca d'Agliano, an Italian think tank, and a consultant for the World Bank. She also held a post doc position at the University of Pavia. She has worked extensively poverty and income distribution in developing countries as well as on firm performance and investment climate issues. Salvi Del Pero has taught various economics courses at the University of Milan. Salvi Del Pero holds a Ph.D in Economics from the University of Milan, a M.Sc in Economics from the University of Wisconsin–Madison and a B.A in Business and Economics from the University of Turin. She is an Italian national.

Anneke Levelt Sengers (NAS and NAE) is a native of the Netherlands where she obtained her PhD in physics in 1958. She immigrated to the US in 1963, and made her career at the National Institute of Standards and Technology in Gaithersburg, Maryland. Her expertise is in the area of thermodynamics

and critical phenomena in fluids, with application to industrial fluids. In particular, she worked in an international context on standards for the properties of water and steam on behalf of the electric power industry. She is a member of the US National Academy of Sciences and the National Academy of Engineering. She is the 2003 L'Oreal-UNESCO for Women in Science Laureate for North America. Within the framework of IAP, the Global Network of Academies of Sciences, she coauthored the InterAcademy Council Advisory Report "Women for Science," which was adopted by IAP in 2006. She is presently the chair of the Women for Science Working Group of the InterAmerican Network of Science Academies (IANAS).

Carol F. Stoel is a program director in Division of Graduate Education, Education and Human Resources Directorate at the National Science Foundation. Her program responsibilities at NSF include Ethics Education in Science and Engineering (ESEE), Integrative Graduate Education and Research Traineeship Program (IGERT), and Science Master's Program (SMP).

Patricia Taboada-Serrano is the early-career representative in the Women for Science Working Group of the InterAmerican Network of Science Academies (IANAS). She received her PhD in Environmental Engineering from Georgia Institute of Technology in 2005. She was a postdoctoral research associate at the Oak Ridge National Laboratory from 2006 to 2008. From 2008 to 2010, she served as an adjunct professor in Bolivian Catholic University.

Lilian Wu is Program Executive, Global University Programs, IBM Technology Strategy and Innovation and a research scientist. She chairs the National Research Council's Committee on Women in Science, Engineering, and Medicine and is a Councilor of the Association for Women in Science (AWIS). She is a member of the S&E Workforce Committee of the Government-University-Industry Research Roundtable of the National Research Council; and a member of NSF's Advisory Committee on International Science and Engineering and NSF's Corporate Alliance. She received her PhD in Applied Mathematics from Cornell University and an Hon LHD (Honorary Doctor of Humane Letters) from Marymount College. Her major research interests are analysis of technology enabled and people intensive complex systems, particularly in the services sector. She is also a member of the Board of trustees of the New School University and Fordham University in New York City, and the President's Council of Olin College. She was a member of President Clinton's Committee of Advisors on Science and Technology (PCAST), NSF's Committee on Equal Opportunity in Science and Engineering (CEOSE) and served on the Advisory Committee of NSF's Engineering Directorate. Among her other professional services, she served on AAAS's Committee on Public Understanding of Science and Technology and DOE's Secretary of Energy's Laboratory Operations Advisory Board.

List of Participants

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