

PANEL BIOGRAPHICAL SKETCHES



Robert Litan (Co-chair) is vice president for research and policy at the Kauffman Foundation where he oversees the program for data collection and research on entrepreneurship and economic growth. He also serves as a senior fellow in economic studies at the Brookings Institution. During his career, Dr. Litan has authored or co-authored 22 books, edited another 15, and authored or co-authored over 200 articles in journals, magazines, and newspapers. Since the onset of the financial crisis, he has authored or co-authored a number of essays on financial reforms for the Brookings website. He served in several capacities in the federal government: as associate director of the Office of Management and Budget; deputy assistant attorney general, Antitrust Division, Department of Justice; and staff economist, Council of Economic Advisers. He has a B.S. in economics (summa cum laude) from the Wharton School of Finance at the University of Pennsylvania, a J.D. from Yale Law School, and M. Phil. and Ph.D. degrees in economics from Yale University. He is a member of the DBASSE Committee on Social Science Evidence for Use.



Andrew Wyckoff (Co-chair) is director of the OECD's Directorate for Science, Technology, and Industry (STI). Prior to this he was head of the Information, Computer, and Communications Policy (ICCP) division at the OECD, which supports the organization's work on information society as well as consumer policy issues. Before heading ICCP, he was head of STI's Economic Analysis and Statistics Division, which develops methodological guidelines, collects statistics, and undertakes empirical analysis in support of science, technology, and innovation policy analysis. His experience prior to the OECD includes being a program manager of the Information, Telecommunications, and Commerce program of the U.S. Congressional Office of Technology Assessment (OTA), an economist at the U.S. National Science Foundation (NSF), and a programmer at The Brookings Institution. He has an undergraduate degree from the University of Vermont, and a degree in public policy from the Kennedy School of Government at Harvard University.



Carter Bloch is research director at the Danish Centre for Studies in Research and Research Policy at the University of Aarhus in Denmark. His research centers on innovation measurement, innovation policy, and the relationship between R&D, innovation, and economic performance. He has been involved in a number of projects concerning innovation indicators and policy, and is currently heading a project on the measurement of innovation in public sector organizations. He has an undergraduate degree in economics from the University of Wisconsin-Madison, and a Ph.D. in economics from the University of Aarhus, Denmark.



Nicholas Chrisman is professor of geomatics sciences at the Université Laval (Québec City), a position he has held since 2005. His main assignment is to serve as scientific director of the GEOIDE Network, a Network of Centres of Excellence in the field of geomatics. His career has revolved around geographic information systems (GIS). In particular, his research has concentrated on time in GIS, data quality testing and the social and institutional aspects of GIS. From 1987-2004, he was professor of geography at the University of Washington, and from 1982-87, he was assistant professor in the Department of Landscape Architecture at the University of Wisconsin-Madison. In this job, he participated in a multidisciplinary team applying GIS to soil erosion planning. This project helped provide the impetus for the Wisconsin Land Records Committee that led to the current state-wide GIS program. From 1972-82 he was a programmer at the Harvard Lab for Computer Graphics. He participated in the design of prototype GIS software. For 30 years, his writing has tried to connect the technical details of GIS to larger issues of philosophy and culture. Recently, he has joined in an interdisciplinary group that studies the interactions of science, technology, and society. He graduated magna cum laude with a B.A. in geography from the University of Massachusetts-Amherst. He received his Ph.D. in geography from the University of Bristol, England.



Carl Dahlman is the Henry R. Luce professor of international relations and information technology at Georgetown University's Edmund A. Walsh School of Foreign Service. Dr. Dahlman previously had more than 25 years of service at the World Bank, where he served as senior advisor to the World Bank Institute. In this role, he managed the Knowledge for Development (K4D) program—an initiative providing training on the strategic use of knowledge for economic and social development to business leaders and policy makers in developing countries. Prior to developing the K4D program, he served as staff director of the 1998-1999 World Development Report, *Knowledge for Development*. He has also conducted extensive analytical work in major developing countries including Argentina, Brazil, Chile, Mexico, Russia, Turkey, India, Pakistan, China, Korea, Malaysia, Philippines, Thailand, and Vietnam. He is currently finishing a knowledge economy study on Mexico, working on a book on the challenge of the knowledge economy for education and training in China, and collaborating with research teams in Finland, Japan, and Korea to produce books on each country's development strategies. He served as a member of the NRC Committee on Comparative Innovation Policy: Best Practice in National Technology Programs. He has a B.A. in international relations from Princeton University, and a Ph.D. in economics from Yale University.



Geoff Davis is a senior researcher in the User Experience Group at Google. He earned his Ph.D. in applied mathematics from New York University's Courant Institute, and has since employed his doctoral education in a variety of capacities. He has been an assistant professor in the Mathematics Department at Dartmouth College, the Texas Instruments visiting assistant professor in the Electrical and Computer Engineering Department at Rice University, a researcher in the Signal Processing Group at Microsoft Research, a developer at San Francisco-based startup company 4charity, a visiting scholar at Sigma Xi, the Scientific Research Society, and a Werthheim fellow at the Labor and Worklife Program at Harvard Law School. His mathematical research centers around representations of information, with a particular focus on wavelets and related transforms. His work on image coding led to an NSF Mathematical Sciences Postdoctoral Fellowship and the 2000 IEEE Leon K. Kirchmayer Prize Paper Award. Dr. Davis has had a longstanding interest in science education and policy issues. In 1997, he created the PhDs.org web site, which currently receives approximately 200,000 visitors each month. He later ran the National Graduate School Survey with NAPGS and the Sigma Xi Postdoc Survey. He was also a past member of the National Bureau of Economic Research's Science and Engineering Workforce Project.



Katharine Frase is vice president of industry solutions and emerging business at IBM Research. Prior to this she was vice president of technical and business strategy at IBM Software Group (SWG). Her team is responsible for technical strategy, business strategy, business development, standards, competitive analysis, and the application of advanced technologies across SWG. Prior to this role, she was vice president of technology at IBM where she was responsible for technical resources, recognition, assessment, and strategy across IBM. In 2006, in recognition of her distinguished contributions to engineering, she was elected as a member of the National Academy of Engineering (NAE). Earlier IBM responsibilities included management of process development, design/modeling methodology and production for chip carrier assembly and final test for IBM silicon products. Her research interests include mechanical properties/structural interactions in composites, high temperature superconductors, solid electrolytes (fast ionic conductors), ceramic powder synthetic methods, and ceramic packaging. She chaired an IBM/Academy workshop on Lead Solder reduction actions, and in 1998 served as the Packaging Assurance manager for IBM worldwide. She is an ex officio member of the NRC's Board on Assessment of National Institute of Standards and Technology Programs and is currently the chair of the Panel of Materials Science and Engineering. She has an A.B. degree in chemistry from Bryn Mawr College, and a Ph.D. in materials science and engineering from the University of Pennsylvania.



Barbara Fraumeni is associate dean of research, chair of the Ph.D. program, and professor of public policy at the Muskie School of Public Service of the University of Southern Maine. She previously served as chief economist of the Bureau of Economic Analysis and was a research fellow of the Program on Technology and Economic Policy at the John F. Kennedy School of Government at Harvard University. Her areas of expertise and research interests include measurement issues and national income accounting; human and nonhuman capital, productivity, and economic growth; market and nonmarket accounts; investment in education and research and development; and measurement of highway capital stock and the real output of government by function. Dr. Fraumeni served on the National Research Council's Panel to Study the Design of Nonmarket Accounts. She has a B.A. from Wellesley College, and a Ph.D. from Boston College.



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Fred Gault is a professorial fellow with the United Nations University–Maastricht Economic and social Research and training centre on Innovation and Technology (UNU-MERIT). He is also professor extraordinaire at the Tshwane University of Technology (TUT) in South Africa and a member of the TUT Institute for Economic Research on Innovation (IERI). He worked with the Organization for Economic Cooperation and Development (OECD) as a member of the Management Team coordinating the OECD Innovation Strategy. Prior to joining UNU-MERIT, he held a visiting fellowship at the Canadian International Development Research Centre (IDRC) in Ottawa. He was chair of the OECD Working Party of National Experts on Science and Technology Indicators and of the Working Party on Indicators for the Information Society. Before joining Statistics Canada, he was senior lecturer in theoretical physics at the University of Durham, England. He holds a Ph.D. in theoretical physics, and a B.Sc. in economics from the University of London. He is a fellow of the Institute of Physics, a member of the British Computer Society, and has served on the CNSTAT Panel to Review Research and Development Statistics at the National Science Foundation.



David Goldston is director of government affairs at the National Resource Defense Council. Prior to this he was a visiting lecturer in the Science, Technology, and Environment Program at Princeton University's Woodrow Wilson School of Public and International Affairs. From 2001 through 2006, he was the chief of staff of the U.S. House of Representatives Committee on Science, which has jurisdiction over much of the federal research and development budget. He was also a key player in most environmental debates in the House from 1995, when he became legislative director to Representative Sherwood Boehlert of New York, until the end of 2006. Mr. Goldston wrote the monthly column "Party of One" on Congress and science policy for the journal *Nature*. He graduated from Cornell University, and completed the course work for a Ph.D. degree in U.S. history at the University of Pennsylvania. He is a member of the Aeronautics and Space Engineering Board of the National Academies and a member of the Committee to Organize a Workshop on Measuring Economic and Other Returns on Federal Research Investments under the STEP Board. He served on the CNSTAT Panel on *Modernizing the Infrastructure of the NSF Federal Funds for R&D Survey*.



Michael Mandel is chief economic strategist at the nonpartisan Progressive Policy Institute in Washington, DC, and a senior fellow at the Mack Center for Technological Innovation at the Wharton School. His main areas of study include: how innovation drives growth, the impact of regulation on innovation, and improvements in economic statistics to better track the global economy. His current research focuses on how offshoring and import price bias can cause potentially significant overestimates of productivity and output growth. Mandel, who holds a Ph.D. degree in economics from Harvard University, formerly served as chief economist at *Business Week*, where he directed the magazine's coverage of the domestic and global economies. He received multiple awards for his stories on economic growth and innovation. He is the author of four books, including an introductory economics textbook, *Economics: The Basics*, currently being updated.



John E. Rolph is professor of statistics emeritus at the Marshall School of Business of the University of Southern California, where he also holds appointments in the mathematics department and the law school. Previously, he spent 24 years as a statistician at the RAND Corporation, 12 of them as head of the statistical research and consulting group. His areas of expertise include statistics and public policy and empirical Bayes estimation. He served as a member of the National Research Council's Committee on National Statistics and as chair of the committee from 1998 to 2004. He has also served on the NRC's Committee on Law and Justice. He has served on several NRC panels, on topics including statistical and operational test design in defense systems, methods for assessing discrimination, and decennial census methodology. He is an elected member of the International Statistical Institute, a fellow of the American Statistical Association, a fellow of the Institute of Mathematical Statistics, and a lifetime national associate of the National Academies. He has an A.B., and a Ph.D. in statistics from the University of California, Berkeley.



Leland Wilkinson is the executive vice president of SYSTAT Software Inc., adjunct professor of statistics at Northwestern University, and adjunct professor of computer science at the University of Illinois Chicago. Dr. Wilkinson wrote the SYSTAT statistical package and founded SYSTAT Inc. in 1984. After the company grew to 50 employees, he sold SYSTAT to SPSS in 1994 and worked there for 10 years on research and development of visualization systems. SPSS eventually sold SYSTAT to Cranes Software International and then Dr. Wilkinson rejoined SYSTAT in 2008. Dr.

Wilkinson is a fellow of the American Statistical Association, an elected member of the International Statistical Institute, and a fellow of the American Association for the Advancement of Science. He has won best speaker award at the National Computer Graphics Association and the Youden prize for best expository paper in the statistics journal *Technometrics*. He has served on the Committee on Applied and Theoretical Statistics of the National Research Council and has been vice chair of the board of the National Institute of Statistical Sciences. In addition to authoring journal articles, the original SYSTAT computer program and manuals, and patents in visualization and distributed analytic computing, Dr. Wilkinson is the author (with Grant Blank and Chris Gruber) of *Desktop Data Analysis* with SYSTAT and *The Grammar of Graphics*. He has an A.B. from Harvard University, an S.T.B. degree from Harvard Divinity School, and a Ph.D. from Yale.