

I'm not robot!











Use of K-12 science education and public understanding of science. He is a board member of the Center for Arms Control and Non-Proliferation and is the chairman of the board for Society for Science & the Public. At the National Research Council, he has served on the Committee on Education and Employment of Women in Science and Engineering; the Panel for National Science Education Standards and Television Project; the Board of Overseers; and the Communications Advisory Committee. He has a B.S. in mathematics and an M.S. in chemistry from Stanford University. He has an A.M. in physics and a Ph.D. in chemical physics from Harvard University. Linda P.B. Katschi is chancellor of the University of California, Davis. Previously, she served as provost and vice chancellor for academic affairs at the University of Illinois at Urbana-Champaign, the John Edwardson dean of engineering and professor of electrical and computer engineering at Purdue University, and associate dean for academic affairs and graduate education in the College of Engineering and professor of electrical engineering and computer science at the University of Michigan. She led the effort to establish the Purdue School of Engineering Education, the first department at a U.S. university focused explicitly on engineering education, particularly on K-12 engineering curricula, standards, and teacher Page 359 Share Cite Suggested Citation:"Appendix C: Biographical Sketches of Committee Members and Staff." National Research Council. 2012. A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas. Washington, DC: The National Academies Press. doi: 10.17226/13165. × education. She is a member of the National Academy of Engineering, a fellow and board member of the American Association for the Advancement of Science, chair of the nominations committees for the National Medal of Science and National Medal of Technology and Innovation, and a member of the Kauffman National Panel for Entrepreneurship. She is currently a member of a number of National Academies committees, the Advisory Committee for Harvard Radcliffe College, and the Engineering Advisory Committees for Caltech, the University of Washington, and the University of California, Los Angeles. She has an M.S. and a Ph.D. in electrical engineering from the University of California, Los Angeles. Thomas E. Keller is a senior program officer with the National Research Council's (NRC's) Board on Science Education. In his current role, Keller is co-director of an NRC study committee that is developing a conceptual framework to guide new science education standards. In 2010, he was the vice president for education at the Biotechnology Institute in Arlington, Virginia. At the Institute, he was responsible for planning and implementing state leadership programs and teacher professional development programs, including the National Biotechnology Teacher Leader Program. In 2007, while a program officer at the National Research Council, he directed the development of the award-winning Surrounded by Science: Learning Science in Informal Environments. From 1986 to 2007, he held several positions in K-12 education, including director of secondary instruction and state science supervisor for the Maine Department of Education. He served a term as president of the Council of State Science Supervisors and of the Maine Curriculum Leaders Association. He was a member of the NRC's Committee on Science Education K-12 and the National Committee on Science Education Standards and Assessment, which produced the National Science Education Standards. Keller has also served on the National Science Teachers Association board of directors. He has an Ed.D. in science education from the University of Massachusetts and has experience teaching high school science. John C. Mather is a senior astrophysicist at the U.S. space agency's (National Aeronautics and Space Administration) Goddard Space Flight Center in Maryland and is an adjunct professor of physics at the University of Maryland, College Park. He won the Nobel Prize in physics jointly with George Smoot for their work on the Cosmic Background Explorer Satellite (COBE). COBE was the first experiment to precisely measure the black body form and anisotropy of cosmic Page 360 Share Cite Suggested Citation:"Appendix C: Biographical Sketches of Committee Members and Staff." National Research Council. 2012. A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas. Washington, DC: The National Academies Press. doi: 10.17226/13165. × microwave background radiation, helping cement the Big Bang theory of the universe. He is also the senior project scientist for the James Webb Space Telescope. At the National Research Council, he was a member of the Board on Physics and Astronomy and the Committee on Physics of the Universe. He has a B.A. in physics from Swarthmore College and a Ph.D. in physics from the University of California, Berkeley. Brett D. Moulding is director of the Utah Partnership for Effective Science Teaching and Learning, a five-district professional development collaborative. He was the director of curriculum and instruction at the Utah State Office of Education before retiring in 2008. He was the state science education specialist and coordinator of curriculum from 1993 to 2004. He taught chemistry for 20 years at Roy High School in the Weber school district and served as the district science teacher leader for 8 years. Moulding received the Governor's Teacher Recognition Award, the Presidential Award for Excellence in Mathematics and Science Teaching, and the Award of Excellence in Government Service from the Governor's Science and Technology Commission. He served on the Triangle Coalitional Board and the National Assessment of Educational Progress 2009 Framework Planning Committee and was the president of the Council of State Science Supervisors from 2003 to 2006. He has an administrative supervisory certificate from Utah State University; a B.S. in chemistry from the University of Utah, Salt Lake City; and an M.Ed. from Weber State University. Jonathan Osborne holds the Shirram family professorship in science education at Stanford University. Previously, he was a professor of science education at King's College, University of London. His research focus is a mix of work on policy and pedagogy in the teaching and learning of science. In the policy domain, he is interested in exploring students' attitudes toward science and how school science can be made more worthwhile and engaging, particularly for those who will not continue with the study of science. In pedagogy, his focus has been on making the case for the role of argumentation in science education, both as a means of improving the use of a more dialogic approach to teaching science and improving student understanding of the nature of scientific inquiry. He led the project on Enhancing the Quality of Argument in School Science Education, from which IDEAS (Ideas, Evidence and Argument in Science Education) materials to support teacher professional learning were developed. He was one of the partners in Page 361 Share Cite Suggested Citation:"Appendix C: Biographical Sketches of Committee Members and Staff." National Research Council. 2012. A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas. Washington, DC: The National Academies Press. doi: 10.17226/13165. × the Centre for Informal Learning and Schools. He has a Ph.D. in education from King's College, University of London. James W. Pellegrino is liberal arts and sciences distinguished professor and distinguished professor of education at the University of Illinois at Chicago (UIC). He is co-director of UIC's interdisciplinary Learning Sciences Research Institute. His current work is focused on analyses of complex learning and instructional environments, including those incorporating powerful information technology tools, with the goal of better understanding the nature of student learning and the conditions that enhance deep understanding. A special concern of his research is the incorporation of effective formative assessment practices, assisted by technology, to maximize student learning and understanding. At the National Research Council, he has served on the Board on Testing and Assessment and co-chaired the Committee on the Cognitive Science Foundations for Assessment, which issued the report Knowing What Students Know: The Science and Design of Educational Assessment. He recently helped the College Board build new frameworks for curriculum, instruction, assessment, and professional development in Advanced Placement biology, chemistry, physics, and environmental science. He has a B.A. in psychology from Colgate University and M.A. and Ph.D. degrees from the University of Colorado. Stephen L. Pruitt is the chief of staff for the Office of the State Superintendent of Schools in the Georgia Department of Education. He is the current president of the Council of State Science Supervisors. Previously, he taught high school science for 12 years. He supervised the revision and implementation of Georgia's new science curriculum. The Georgia Performance Standards have taken the state in a new direction in education with an emphasis on conceptual learning and inquiry. In the position of director of the Division of Academic Standards, he supervised the implementation of all content areas' new curriculum. Currently, as the chief of staff for assessment and accountability, he supervises the development and operation of all state testing and adequate yearly progress determinations. He has a B.S. in chemistry from North Georgia College and an M.Ed. from the State University of West Georgia. He is currently completing a Ph.D. in chemistry education from Auburn University. Brian Reiser is professor of learning sciences in the School of Education and Social Policy at Northwestern University. His research examines how to make scientific Page 362 Share Cite Suggested Citation:"Appendix C: Biographical Sketches of Committee Members and Staff." National Research Council. 2012. A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas. Washington, DC: The National Academies Press. doi: 10.17226/13165. × practices, such as argumentation, explanation, and modeling, meaningful and effective for classroom teachers and students. Reiser leads the MoDeLS project (Modeling Designs for Learning Science), to develop an empirically based learning progression for the practice of scientific modeling, and BGULE (Biology Guided Inquiry Learning Environments), developing software tools for supporting students in analyzing biological data and constructing explanations. Reiser is also on the leadership team for IGWST (Investigating and Questioning our World through Science and Technology), a collaboration with the University of Michigan developing a middle school project-based science curriculum. He was a founding member of the first graduate program in learning sciences, created at Northwestern, and chaired the program from 1993 to 2001. He was co-principal investigator in the Center for Curriculum Materials in Science, exploring the design and enactment of science curriculum materials. At the National Research Council, he served on the panel authoring the report Taking Science to School. He also served on the editorial boards of Science Education and the Journal of the Learning Sciences. He has a Ph.D. in cognitive science from Yale University (1983). Rebecca R. Richards-Kortum is the Stanley C. Moore professor of bioengineering at Rice University. She is a member of the National Academy of Engineering. Her work has focused on translating research that integrates advances in nanotechnology and molecular imaging with microfabrication technologies to develop optical imaging systems that are inexpensive and portable and provide point-of-care diagnosis. This basic and translational research is highly collaborative and has led to new technologies to improve the early detection of cancers and other diseases, especially in impoverished settings. Over the past few years, Richards-Kortum and collaborators have translated these technologies to low- and middle-income countries (Botswana, Brazil, India, Mexico, and Taiwan). She served on the inaugural National Advisory Council for Biomedical Imaging and Bioengineering for the National Institutes of Health (2002-2007) and was elected fellow of the American Association for the Advancement of Science and Biomedical Engineering Society (2008). At the National Research Council, she served on the Committee on Being a Scientist: Responsible Conduct in Research. She has a Ph.D. in medical physics and an M.S. in physics from the Massachusetts Institute of Technology. Heidi A. Schweingruber is the deputy director of the Board on Science Education at the National Research Council (NRC). She has worked in some capacity Page 363 Share Cite Suggested Citation:"Appendix C: Biographical Sketches of Committee Members and Staff." National Research Council. 2012. A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas. Washington, DC: The National Academies Press. doi: 10.17226/13165. × on most of the major projects of the board since it was formed in 2004. She served as study director for a review of the National Aeronautics and Space Administration's pre-college education programs in 2007 and co-directed the study that produced the 2007 report Taking Science to School: Learning and Teaching Science in Grades K-8. She co-authored two award-winning books for practitioners that translate findings of NRC reports for a broader audience: Ready, Set, Science!: Putting Research to Work in K-8 Science Classrooms (2008) and Surrounded by Science (2010). Prior to joining the NRC, Schweingruber worked as a senior research associate at the Institute of Education Sciences in the U.S. Department of Education where she administered the preschool curriculum evaluation program and a grant program in mathematics education. Previously, she was the director of research for the Rice University School Mathematics Project. She holds a Ph.D. in psychology (developmental) and anthropology and a certificate in culture and cognition from the University of Michigan. Walter G. Secada is senior associate dean of the School of Education and chair of the Department of Teaching and Learning at the University of Miami (UM). Previously, he was professor of curriculum and instruction at the University of Wisconsin-Madison and the director of diversity in mathematics education. His research interests have included equity in education, mathematics education, bilingual education, school restructuring, professional development of teachers, student engagement, and reform. He was associate director and co-principal investigator of Promoting Science among English Language Learners (P-SELL) with a High-Stakes Testing Environment, associate director and co-principal investigator of Science Made Sensible, and a member of the university's social sciences institutional review board. He has worked on the development of a secondary school mathematics and science academy at UM. As director of the U.S. Department of Education's Hispanic Dropout Project, he was senior author of its final report, No More Excuses. He has a B.A. in philosophy from the University of Notre Dame and an M.S. in mathematics and a Ph.D. in education, both from Northwestern University. Deborah C. Smith is assistant professor in the Department of Curriculum and Instruction at Pennsylvania State University. She teaches elementary science methods and graduate courses in science curriculum; the history, philosophy, and sociology of science; and science teacher knowledge. She is a former preschool and elementary school teacher, with a background in biology. Her research Page 364 Share Cite Suggested Citation:"Appendix C: Biographical Sketches of Committee Members and Staff." National Research Council. 2012. A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas. Washington, DC: The National Academies Press. doi: 10.17226/13165. × focuses on how teachers and young children build communities of scientific discourses and practices in the early years of schooling. She was the author and co-principal investigator on a 5-year grant to the Lansing (Michigan) School District and Michigan State University, in which grade-level groups of K-8 teachers studied scientific content, standards-based and inquiry-oriented curriculum design, research-based teaching practices, and their students' science learning. At the National Research Council, she served on the Teacher Advisory Council and was a consultant for the popular publication, Ready, Set, Science! She has a B.S. in biology from Boston University, an M.A.T. in science education from the Harvard Graduate School of Education, and a Ph.D. in curriculum and instruction from the University of Delaware. Page 355 Share Cite Suggested Citation:"Appendix C: Biographical Sketches of Committee Members and Staff." National Research Council. 2012. A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas. 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