National Academy of Sciences
National Research Council
Board on Science Education

Committee on Successful Out-of-School STEM Learning
Committee Bios

CHAIR

ERIC JOLLY is president of the Science Museum of Minnesota. Before coming to the Science Museum, he served as senior scientist and vice president at the Education Development Center in Newton, Massachusetts. He was a member of the NRC's Board on Mathematical Sciences. He has published numerous articles, books, and curricula, and lectured around the world on the importance of science learning in contemporary societies and the importance of participation in Science, Technology, Engineering, and Math (STEM) education. In October 2012, Jolly was appointed by President Barack Obama to the National Museum and Library Services Board (NMLSB). Dr. Jolly works with a number of groups promoting STEM education, including the American Association for the Advancement of Science, the National Action Council for Minorities in Engineering, the National Council for Teachers of Mathematics, and the National Science Teachers Association. He is also active in many youth, family, and community organizations, including Youth Alive!, The Innovation Center, American Youth Policy Forum, the American Museum of Natural History, the Open Society Institutes' youth media programs, and the Healthy Families 2010 project of the American Association for the Advancement of Science. Dr. Jolly also serves on numerous national advisory boards, including the Smithsonian National Museum of the American Indian, Committee on Opportunities in Science for the American Association for the Advancement of Science, and the Cornell Laboratory of Ornithology. He is a member of numerous honor societies, including Sigma Xi, Phi Eta Sigma, Mortarboard, and Golden Key, and is also a life member of the Society for Advancement of Chicanos and Native Americans in Science. Dr. Jolly has a Ph.D. in psychology from the University of Oklahoma, and studied physics and psychology as an undergraduate.

BRONWYN BEVAN is Director of the Exploratorium Institute of Research and Learning. She serves as Principal Investigator on several projects including the NSF MSP Research+Practice Collaboratory; the California Tinkering Network; and the NSF-funded Relating Research to Practice website. Bevan's work in both research and professional development focuses on how different institutional settings shape opportunities for learning. She sits on the California statewide STEM Afterschool Advisory Committee and is co-editor of the Science Learning in Everyday Life section of the journal Science Education. Bevan holds a doctorate in urban education from the Graduate Center of the City University of New York.

JANE BUIKSTRA (NAS), is Regent's professor of bioarchaeology in the School of Human Evolution and Social Change, and director of the Center for Bioarchaeological Research at the Arizona State University. Dr. Buikstra is a member of the National Academy of Sciences. She is credited with forming the discipline of bioarchaeology, the international field that applies biological anthropological methods to the study of archaeology. She is president of the board of directors of the Center for American Archeology, an institution known for its informal education programs for and about Native Americans. She has been a research associate at a number of museums including the National Museum of Natural History. Her international research encompasses bioarchaeology, paleopathology, forensic anthropology and paleodemography. Among current research projects she is investigating the evolutionary history of ancient

tuberculosis in the Americas based on archaeologically-recovered pathogen DNA. Among recent honors, Dr. Buikstra was awarded the T. Dale Stewart Award by the American Academy of Forensic Sciences, and the Charles R. Darwin Lifetime Achievement Award from the American Association of Physical Anthropologists. In 2011, she also received the Eve Cockburn Award for Service from the Paleopathology Association. She is the president of the Center for American Archaeology and has served as past president of the American Association of Physical Anthropologists, the American Anthropological Association and the Paleopathology Association. Professor Buikstra is also the inaugural editor-in-chief of the International Journal of Paleopathology. She has published more than 20 books and 150 articles and has mentored more than 40 doctoral students. Her recent work includes the 2012 book The History of Paleopathology: Pioneers and Prospects, which she co-edited with Charlotte Roberts. Dr. Buikstra received her B.A. in anthropology from DePauw University and her M.A. and Ph.D. in anthropology from University of Chicago.

JACQUELYNNE ECCLES is distinguished professor of education at the University of California, Irvine. Dr. Eccles was previously the McKeachie-Pintrich Distinguished University Professor of Psychology and Education at the University of Michigan and a research scientist at the Institute for Social Research, Research Center for Group Dynamics at the University of Michigan. She is a member of the NRC Board on Science Education and chaired the Committee on Community-Level Programs for Youth. Professor Eccles's research interests include family and school influences on development; development in high risk settings; development of self-esteem, activity preferences, and task choice; adolescent development; identity formation; transition into adulthood; biosocial influences and development; gender role development; and role of ethnicity in development and socialization. Professor Eccles' recent work includes investigations of (a) declines in adolescents' motivation, self-concept, and mental health associated with the junior and senior high school transitions; (b) development of self-schema and motivational beliefs during middle childhood years in the context of family and school environments; and (c) impact of family, social class, school, neighborhood, and ethnicity on the development of motivation, self-schemas, mental health, and engagement in both positive and risky activities among a large sample of African-American and Caucasian adolescents. Most recently, Dr. Eccles has been awarded the American Psychological Foundation 2013 Gold Medal for Life Achievement. She received her Ph.D. in developmental and social/personality psychology from the University of California, Los Angeles.

JOHN FALK is Sea Grant Professor of Free-Choice Learning and the founding interim director of the Center for Research on Lifelong STEM Learning at Oregon State University. Dr. Falk is internationally known for his research on how people learn outside of school. He has authored over 150 scholarly articles and chapters in the areas of learning, biology, and education, more than a dozen books, as well as helped to create several nationally important out-of-school educational curricula. His research focuses on the study of learning in free-choice learning settings (with particular focus on museums and eco-tourism venues); understanding the role of situated identity in leisure/tourist decision-making and learning; and investigating the impact that free-choice educational institutions have on long-term public understanding of science. Dr. Falk is currently leading an effort to understand connected STEM learning of underserved youth within an educational ecosystem of a Portland neighborhood. Dr. Falk was the founder and director of the Institute for Learning Innovation which conducted research and evaluation to

promote and enhance the field of free-choice learning, and previously served in educational leadership roles at the Smithsonian Institutions. He has also taught at both the K-12 and university levels. He has and continues to serve on many science education boards, including the editorial boards of Science Education and Curator, Governor's Committee on Environmental Education (Oregon), National Education Committee of the U.S. National Park Service, and the Education Committee of the Oregon Museum of Science & Industry. He received his BA, MA, and joint PhD in ecology and science education from the University of California, Berkeley.

MAYA GARCIA is the STEM specialist for the Office of the State Superintendent of Education for the District of Columbia, and was most recently instrumental in the adoption process of the Next Generation Science Standards. She has served nationally on the Committee for Multicultural Equity for the National Science Teachers Association, and has recently completed her tenure as the president of the DC Science Teachers Association. She has worked as a mentor teacher for The Center for Inspired Teaching and the Carnegie Academy of Science Education and has served on the teacher advisory board for several local museums. She was the featured STEM educator in the STEM careers publication for the USA Science and Engineering Festival in 2013. Ms. Garcia is also a member of American Association of University Women. She is the recipient of numerous awards and fellowships, including a Fulbright Distinguished Teaching Award, in which she studied how South African educators use hands-on, field based learning opportunities to teach STEM, and how schools can leverage local resources to support embedded STEM curricula. She secured numerous grants for her school and worked collaboratively with community partners to develop STEM enrichment opportunities for students in marine science, rocketry, environmental science, and engineering. Ms. Garcia received a B.A. in neuroscience and behavior from Mount Holyoke College, MA, and her M.A. degree from American University, in Washington, DC.

LESLIE GOODYEAR brings nearly 20 years of experience evaluating educational projects and programs at local, regional, national, and international levels. She has conducted evaluations and evaluation capacity building in formal and informal educational settings, afterschool, youth civic engagement, HIV prevention, youth development, and human services programs, with a recent focus on STEM education programs in informal settings. Dr. Goodyear is responsible for coordinating evaluation initiatives and leveraging evaluation capacity across the Learning and Teaching Division. She is the PI for the Program Evaluation of the NSF Broadening Participation in Computing Alliances program; leads the landscape study and evaluation elements of a consensus study of the National Academies of Science's Board on Science Education; led the program evaluation of Adobe Youth Voices, funded by Adobe, Inc.; and has provided evaluation technical assistance and research agenda development for NSF's Innovative Technology Experiences for Students and Teachers (ITEST) Learning Resource Center, among other projects. From 2009 to 2011, she took a leave from EDC to serve as a Program Officer at the National Science Foundation, Division of Research on Learning, where she administered grants in the ITEST, Informal Science Education, Promoting Research and Innovation in Methodologies for Evaluation, and CAREER programs. While at NSF, she also supervised evaluation and research contracts and developed directorate and division level evaluation policy.Dr. Goodyear is the Associate Editor for the American Journal of Evaluation, past section editor for the Ethical Challenges section of the American Journal of Evaluation, lead editor for the book Qualitative Inquiry in the Practice of Evaluation (forthcoming, 2014), author of the

chapter "Building a Community of Evaluation Practice Within a Multisite Program," and editor of a special issue on ethics in evaluation in Evaluation and Program Planning, among other publications. From 2007 to 2009, Goodyear was a member of the Board of Directors of the American Evaluation Association, and from 2004 to 2006 she was member and chair of the AEA Ethics Committee. Dr. Goodyear received a BS from Macalester College and MS and PhD degrees from Cornell University.

LYNN S. LIBEN is Distinguished Professor of psychology at The Pennsylvania State University where she also holds faculty appointments in the College of Health & Human Development and in the College of Education. She is a member of the NRC Board on Science Education and was a member of the Committee on Support for Thinking Spatially: The Incorporation of Geographic Information Science Across the K-12 Curriculum. Her research focuses on spatial cognition, its development, and on how individual differences in spatial cognition are relevant for science education. Illustrative is research examining children's and adults' success in identifying locations and directions on maps, and adults' success in mapping geological data. She has used her research to help design educational programs for television, museums, and classrooms. A second focus of Dr. Liben's research is on gender development, gender stereotypes, and how these influence educational and occupational goals. At the intersection of her interests in spatial and gender development are current projects examining the impact of spatial-skills training on middle-school students' STEM achievement and interests, and the reasons that boys consistently achieve greater success than girls on the National Geographic Bee. Dr. Liben is currently president of the Society for Research in Child Development, former president of the Piaget Society and of the Developmental Psychology Division of the American Psychological Association (APA), and past editor of *Child Development* and the *Journal of Experimental Child Psychology*. She is a fellow of the APA, the Eastern Psychological Association, the Association for Psychological Science, and the American Educational Research Association. Dr. Liben earned her B.A. at Cornell University and her Ph.D. at the University of Michigan, both in psychology

MILBREY MCLAUGHLIN is the David Jacks Professor of Education and Public Policy, Emerita, at Stanford University and the founding director of the John W. Gardner Center for Youth and Communities. She also is co-director of the Center for Research on the Context of Teaching, an interdisciplinary research center engaged in analyses of how teaching and learning are shaped by teachers' organizational, institutional, and social cultural contexts. She was a member of the National Research Council committee on Successful STEM in Schools. McLaughlin has focused throughout her career on the various institutional contexts and policies that shape youth outcomes, particularly through schools and community-based institutions. The Gardner Center embodies McLaughlin's interest in identifying and understanding the cross-institutional issues that shape settings within and through which youth move, and in advancing a youth sector stance to inform policy and practice. She is the author or co-author of many books, articles, and chapters on education policy issues, contexts for teaching and learning, productive environments for youth, and community based organizations. Dr. McLaughlin holds a B.A. in philosophy from Connecticut College and an Ed.M. and Ed.D. in education policy from the Harvard Graduate School of Education.

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VERA MICHALCHIK is director of research on informal learning environments in SRI International's Center for Technology in Learning. Trained in educational psychology and anthropology, for 20 years she has been researching the relationships and differences between learning in and out of school, focusing on the social and cultural aspects of learning.
At SRI, Michalchik conducts multi-method studies of new educational programs in the United States and abroad. She leads the evaluation of NSF's Informal Science Education program, researches worldwide education programs funded by the Intel Foundation, and studies interest-driven learning as a member of the MacArthur-funded Connected Learning Research Network and in other youth-centered digital media and making/tinkering programs. Dr. Michalchik also does research on new approaches to teacher professional development, the relationship of research and practice, and communication of cutting-edge science. She was a co-PI on an NSF-funded chemistry visualization research and development project, ChemSense, and has studied other math and science development projects, including SimCalc. From 2006-2009, she served on the NSF-sponsored Committee on Learning Science in Informal Environments at the National Research Council. Michalchik received her B.A. in film studies from the University of California, Berkeley, her Ed.M. in human development from Harvard University, and a Ph.D. in educational psychology from Stanford University.

NANCY PETER is the founder and Director of the Out-of-School Time Resource Center (OSTRC). Starting her career in the field of environmental education, Nancy Peter worked as the school programs coordinator for Amherst's Hitchcock Center for the Environment, as director of education at Philadelphia's Academy of Natural Sciences, and as curriculum manager for the Fairmount Park Commission. Her interest in underserved youth and experience with multiple afterschool programs led to her position as Senior Policy Specialist for Youth and Afterschool in Philadelphia's Office of Children's Policy. Prior to working at the OSTRC, Dr. Peter worked in Philadelphia's Best Practices Institute as their afterschool project manager. She is also a certified elementary teacher, secondary science teacher, and instructor in the Pennsylvania Quality Assurance System. Dr. Peter received her B.A. and her Master of Education from the University of Massachusetts and her Ed.D. from the University of Pennsylvania.

CARY SNEIDER is associate research professor at Portland State University in Portland, Oregon, where he teaches courses in research methodology for teachers in a Master of Science Teaching (MST) degree program. Dr. Sneider also serves as a Consultant on STEM Education for the Noyce Foundation, the Stephen D. Bechtel Jr. Foundation, and the Lemelson Foundation, and on several advisory boards. Dr. Sneider has served on multiple NRC committees, including a working group for the *National Science Education Standards* and the technology and as engineering lead for the *Conceptual Framework for K–12 Science Education*. He has worked on national and state-wide science efforts including the Writing Team for the *Next Generation Science Standards*, the Planning Committee for the *Science Framework for the 2009 National Assessment of Educational Progress*, and as Co-Chair of the Planning Committee for the *Technology and Engineering Literacy Framework for the 2014 National Assessment of Educational Progress (NAEP).* He is currently a member of the National Assessment Governing Board, which sets policy for NAEP in all subject areas. From 1997 to 2007 Dr. Sneider was Vice President for Educator Programs at the Museum of Science in Boston. Prior to that he served as Director of Astronomy and Physics Education at the Lawrence Hall of Science at the University of California.

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JILL WALAHOSKI is an extension educator at the University of Nebraska.
Dr. Walahoski provides state and national leadership to strategic planning and evaluation for extension and youth development programs through her work with the University of Nebraska-Lincoln. Additionally, she works with a diverse clientele of organizations to improve their outreach through intentional program planning, Logic Model development, and effective and efficient assessment strategies. Dr. Walahoski has broad experience with training and leadership strategies for organizations that employ young adults/college students. She also facilitates workshops on team-building, effective communication, and interpersonal development. Dr. Walahoski earned her Ph.D. from University of Nebraska at Lincoln.

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Speaker Bios

SUE ALLEN is Director of Research at the Maine Mathematics and Science Alliance, where she is currently Co-PI on an NSF-funded project to build state-wide ISE infrastructure using community-embedded human STEM Guides. She is also Director of Allen & Associates, an evaluation consulting firm based in Newcastle, Maine. She serves as the external evaluator for the Center for Engineering Education and Outreach at Tufts University on a project to integrate engineering and literacy in elementary classrooms. From 2008-2011 she held positions at the National Science Foundation, including Program Director, Cluster Coordinator of the Lifelong Learning Cluster, and Acting Division Director of the Division for Research on Learning. Prior to that she was Director of Visitor Research and Evaluation at the Exploratorium in San Francisco, where she led a team about a dozen researchers and evaluators in studying learning on the public floor of the museum. She contributed to the Framework for Evaluating Impacts of Informal Science Education Projects, and served on the NRC consensus committee on Learning Science in Informal Environments. Her Ph.D. is from the interdisciplinary Search for Excellence in Science and Mathematics Education (SESAME) program at U.C. Berkeley.

PHILIP BELL is a Professor of Education at the University of Washington Seattle and holds the Shauna C. Larson Chair in Learning Sciences. He pursues a cognitive and cultural program of research about how people learn about science and technology in ways that are personally consequential to them both in and out of school. His current work involves design-based research on novel learning experiences and resources that promote educational equity as well as broad-scale design-based implementation research conducted through collaborative partnerships of researchers and practitioners. He serves as the Executive Director of the UW Institute for Science and Math Education that conducts equity-focused R&D projects in STEM education. He recently served on the National Research Council (NRC) committee that authored the Framework for K-12 Science Education that guided development of the Next Generation Science Standards. Prior to that, he co-edited an NRC consensus report on Learning Science in Informal Environments. Bell has a background in human cognition and development, science education, computer science, and electrical engineering.

RICK BONNEY is director of program development and evaluation at the Cornell Lab of Ornithology, where he has worked for 30 years. He is co-founder of the Lab's citizen science program and has received more than 20 awards from the National Science Foundation to develop projects in which the public actively engages in scientific investigation. He is founder and director of the website www.citizenscience.org, which is devoted to building and supporting the growing field of citizen science; he advises numerous citizen science projects around North America; and he is co-editor of a book, Citizen Science, published by Cornell University Press in 2012. Rick also seeks to understand the social and learning outcomes of various models of public participation in science. He was lead of the CAISE inquiry group on citizen science in 2009 and editor of the PI Guide to Managing Evaluation in Informal STEM Education Projects published by CAISE in association with the Visitor Studies Association in 2012. His team at the Lab of Ornithology is currently developing customizable tools for evaluating the impacts of participating in a range of citizen science project models and is employing these tools in the evaluation of several citizen science projects around North America.

MINDA BORUN is the Director of Research and Evaluation at The Franklin Institute Science Museum in Philadelphia, Pennsylvania. In addition, as principal of Museum Solutions, she serves as a consultant on exhibit and program evaluation, planning, and staff training for numerous museums, informal learning institutions, organizations, and federal agencies. Ms. Borun served three terms as chair of the Committee on Research and Evaluation of the American Association of Museums. She was a founding member and served ten years on the board of The Visitor Studies Association.
Borun has published numerous articles and six monographs on studies of visitor learning in the museum setting. Her most recent publication "In Their Own Voices: Museums and Communities Changing Lives" is being distributed by the Association of Science Technology Centers. Borun did her graduate work in the Department of Anthropology at Columbia University and conducted field research in a village community in southern India.

GAIL BRESLOW has led the dissemination of the Intel Computer Clubhouse at the Museum of Science, Boston – an after-school program for under-served youth to explore their own interests and ideas through the use of technology -- to community-based organizations both nationally and internationally since 1995. Under her

leadership the Clubhouse program has grown from a single location in Boston to 100 Computer Clubhouses in 20 countries around the world. In addition, she has spearheaded the development of initiatives such as Hear Our Voices (a Clubhouse program for girls and young women, with start-up funding from the National Science Foundation); and Clubhouse-to-College/Clubhouse-to-Career, a program to help young people plan for the future and realize their potential, leveraging the technology skills and experience they get at the Clubhouse. Ms. Breslow joined the Computer Clubhouse after 12 years with Gemini Consulting, an international management consulting firm, where her work focused primarily on strategy implementation and organization management for Fortune 500 companies. Her professional career has its "roots" in the non-profit sector; in the late 1970s she served as Program Director at the American Association for the Advancement of Science in Washington, D.C. Ms. Breslow holds an undergraduate degree from Oberlin College in Ohio and an MBA from Stanford University.

MARIA F. CABRERA came to Boston from Cuba just before her fourth birthday. She grew up in a working class family where "fitting in" while keeping your cultural identity was forever present, however this was the foundation that shaped Maria's future commitment to being inclusive of all. She graduated from Graham Jr. College and then went on to study Business Management and Community Building and Advocacy at the College of Public and Community Service within the University of Massachusetts, Boston. Since 1975 Maria has been advocating for underrepresented communities to be included in the life of cultural institutions, by understanding each other's goals and sharing resources.
Over the past 19 years Ms. Cabrera has served as a supervisor with the community relations department at Museum of Science in Boston, and has led a team dedicated to reaching out to and including diverse individuals from various ethnicities, ages and disabilities, to participate in a broad range of STEM opportunities and resources available at the Museum. She is additionally co-founder and board member of Cultural Access New England a network that works to have access for visitors with disabilities in cultural institutions. Other current board and committee membership includes the New England Museum Association and the Governance Council for Boston Family Engagement Network. Ms. Cabrera is also a startup team member to Families Creating Together, which creates a family engagement program for children with disabilities, especially those in new immigrant communities, through creative arts and STEM activities.

BERNADETTE CHI has extensive experience in research and evaluation of K-12 educational and community-based programs. She currently serves as the Interim Director of the Coalition for science After School. She has led multi-year evaluations of National Science Foundation-funded initiatives as well as other studies related to science professional development, curriculum development and participant impact for out-of-school-time settings. She is interested in the intersection of science and civic education programs, practices and learning. Prior to joining the Lawrence Hall of Science, she worked in youth and education program administration, grants management, and program evaluation at the local, state, and national levels. Bernadette received her bachelor's degree in public policy from Stanford University and her master's degree and doctorate in Educational Policy, Organization, Measurement, and Evaluation from University of California, Berkeley.

KEVIN CROWLEY is a professor of Learning Sciences and Policy at the University of Pittsburgh, where he also directs the University of Pittsburgh Center for Learning in Out-of-School Environments (UPCLOSE). He works in partnership with museums, community organizations, and other informal educators to develop innovative learning environments. Crowley's group conducts basic learning sciences research in informal settings and develops new theories of how people learn about science, technology, engineering, and art. Current projects include the Center for the Advancement of Informal Science Education (CAISE), the Learning Activation Lab, and the Climate and Urban Systems Partnership, as well as ongoing partnerships with the Children's Museum of Pittsburgh and the Carnegie Museum of Natural History. Crowley has a Ph.D. in Cognitive Psychology from Carnegie Mellon University and a BA in psychology from Swarthmore College.

KIRSTEN ELLENBOGEN focuses her learning research on measuring community impact of science centers, understanding the role of museums in family life and the broader learning ecology, and facilitating digital environments to support STEM learning and scientific argumentation. She is co-principal investigator of the Center for Advancement of Informal Science Education that works in collaboration with the National Science Foundation to strengthen and advance the field of informal STEM education. Her leadership activities at Great Lakes Science Center have included the launch of a new strategic initiative, Cleveland Creates, developed in collaboration with industry to change the community's manufacturing narrative through STEM education opportunities for diverse

middle-school youth and families. Dr. Ellenbogen has been appointed to the National Academy of Sciences' committee that produced the volume, Learning Science in Informal Environments, the Cleveland Mayor's Lakefront Advisory Committee, and the Planning and Urban Design Committee of the Group Plan Commission. She serves on the board of trustees for the Rock and Roll Hall of Fame and Museum, the Cleveland Water Alliance, and the Association of Science-Technology Centers. She holds a Ph.D. in Science Education from Vanderbilt University and a B.A. from University of Chicago.

MICHAEL FUNK, Director of the After School Division for the California Department of Education, was appointed to this leadership role in early 2012 by State Superintendent of Public Instruction, Tom Torlakson. Under Michael's direction, the After School Division, in collaboration with a highly diverse group of educators, practitioners and providers, developed "A Vision for Expanded Learning in California, Strategic Plan: 2014 – 2016", published in January 2014, which laid out a strong roadmap to guide the work of the After School Division and colleagues statewide.

Prior to this role, Michael founded the Sunset Neighborhood Beacon Center (www.snbc.org) in San Francisco in 1996, providing engaging programs to approximately 1,500 youth and 300 adults annually. While serving at SNBC, Michael also founded Experience Corps Bay Area and represented Community Based Organizations on the California Utilities Commission, Teleconnect Fund Administrative Committee, as well as being appointed by the California Senate to the California Before and After School Advisory Committee, serving in that role from 2006 until his appointment by Superintendent Torlakson. Michael also co-led the Learning In Afterschool and Summer (LIAS) initiative, a partnership with Temescal Associates (www.learninginafterschool.org).

ELLEN S. GANNETT is Director of the National Institute on Out-of-School Time (NIOST) at the Wellesley Centers for Women at Wellesley College. A national action/research project, NIOST has provided research, evaluation, technical assistance, consultation, and specialized training on afterschool programs throughout the United States for more than 30 years. Ms. Gannett ensures that research bridges the fields of child care, education, and youth development in order to promote programming that addresses the development of the whole child.

Ms. Gannett's work ranges from system building for afterschool and youth development to professional development to creating evaluation systems. Celebrating her 32nd year with NIOST, she directs a national team of Education and Training Associates who facilitate seminars for public school administrators and community leaders on afterschool and youth development. Currently she serves as one of the Technical Assistance Providers for the Wallace Foundation's Next Generation Afterschool System Building Initiative.

Ms. Gannett serves as the Principal Investigator for the Robert Bowne Foundation Afterschool Matters Initiative and is project director for the Massachusetts Department of Elementary and Secondary Education technical assistance and training initiative for 21st Century Community Learning Center grant recipients. She is also a senior project advisor on NIOST's Afterschool Program Assessment System which includes a linked system of program evaluation and child and youth outcomes tools. Ms. Gannett is a founding member of the HOST (Healthy Out-of-School Time) Coalition which co-developed the Healthy Eating and Physical Activity Standards for Out-of-School Time Programs and which has been adopted by the National Afterschool Association.

JAMES E. "JIM" GERINGER served two terms as Wyoming governor between 1995 and 2003. His holds a B.S. in Mechanical Engineering from Kansas State University. His military service includes the US Air Force as a project officer for unmanned space programs for both the U.S. Air Force and NASA and other space related programs. Later, while involved in full time agriculture production, he served in the Wyoming Legislature from 1983 to 1994, including six years each in the House and the Senate.

In his terms as Wyoming Governor, Geringer focused on improving education through standards, accountability and technology, modernizing Wyoming's economic base to extensively include technology, changing how natural resource agencies among state, federal and local governments worked together, established community-based health and family services programs and implemented strategic planning and information technology systems. He has focused on education policy and leadership through the National Commission on Mathematics and Science Teaching for the 21st Century, Chair of the Education Commission of the States, and various studies for the National Research Council at the National Academies of Science.

He currently serves as chair of the Association of Governing Boards, promoting higher education governance; vice-Chair of DigiLearn, digital learning for K-12; board chair of Western Governors University; and, chair of Complete College America, fostering college readiness and completion. Other involvement includes the Position, Navigation and Timing Advisory Board under NASA, and participation in conservation organizations and private sector energy

boards. Geringer joined Environmental Systems Research Institute (ESRI) in 2003 as Director of Policy and Public Sector Strategies to work with senior elected and corporate officials to use geospatial technology for place-based decisions in business and government. Governor Geringer and his wife Sherri have five children, eleven grandchildren, one great-granddaughter. They reside near Cheyenne, Wyoming.

EMILYN GREEN is the Executive Director of the Community Science Workshop (CSW) Network, a non-profit organization that serves as an advocate and resource for Community Science Workshops, providing opportunities for youth to tinker, make, and explore their world through science in underserved communities across California. Emilyn is the founding Director of the CSW Network, and in the past three years has developed the organization's funding, governance, and operational structure to the point where the Network can provide crucial services to member CSW sites, such as technical assistance in accounting and budgeting, grant writing, strategic planning, and staff professional development. Prior to establishing the CSW Network, Emilyn designed, coordinated, and delivered educational programs at the Watsonville Environmental Science Workshop (WESW). Beginning at the WESW in 2008, Emilyn taught in the afterschool science program, developed a new mobile workshop program reaching students living in former migrant labor camps, served as Interim Site Director, and helped the organization to transition to the first post-founder Director. Prior to joining the Community Science Workshops, Emilyn was an informal STEM educator for eight years in a variety of programs including LifeLab in Santa Cruz and Making Waves in Richmond, CA, and graduated with a degree in Mathematics from University of California, Santa Cruz.

DAVID HAMMER has studied the learning and teaching of science (mostly physics) from elementary school through university, with particular emphases on students' intuitive epistemologies, how instructors interpret and respond to student thinking, and resource-based models of knowledge and reasoning. From 1998-2010 he was a professor of Physics and Curriculum & Instruction at the University of Maryland, College Park. In 2010 he moved to Tufts University, where he is a professor of Education and Physics, co-director of the Center for Engineering Education and Outreach, and currently chair of Education.

LINDA KEKELIS is Chief Executive Officer and Executive Director of Techbridge, a nonprofit that inspires girls in science, technology, and engineering. She has a doctorate in Special Education from the University of California, Berkeley. Linda has over 20 years of experience leading girls' programs, and participates on advisory boards, collaborates with girl-serving organizations, and works with professional groups and corporate partners to promote females' participation in science, technology, and engineering. She is passionate about translating research into practical applications for educators, professionals, and parents.

NAT KENDALL-TAYLOR is Vice President for Research at the Institute. In this role, he employs social science theory and research methods from anthropology to improve the ability of researchers, advocates and practitioners to improve social outcomes. This involves applying cognitive theory in understanding how people interpret information and make meaning of their social worlds and how frames can be used to create new ways of understanding social and scientific issues. At FrameWorks, Nat leads a multi-disciplinary team of social scientists in studying public understanding and exploring ways to reframe such pressing issues as criminal justice reform, immigration, taxation, early childhood development, addiction, environmental health, education, public health and climate change. He presents findings and recommendations from this work through workshops, formal presentations, working papers and in peer reviewed journals including Science Communication, Human Organization, Child Abuse and Neglect, and the Annals of Anthropological Practice. His past research has focused on child and family health and in understanding the social and cultural factors that create health disparities and affect decision-making. As a medical anthropologist, Nat has conducted fieldwork on the coast of Kenya studying pediatric epilepsy and the impacts of chronic illness on family well-being. He has also applied social science methods in research on child marriage in Azerbaijan and higher education in Kazakhstan and has conducted ethnographic research on theories of motivation in "extreme" athletes. Nat has a B.A. from Emory University and master's and doctoral degrees from the University of California, Los Angeles.

ANITA KRISHNAMURTHI is the Vice President for STEM Policy at the Afterschool Alliance where she leads efforts to advance policies, research and partnerships so children and youth can have rich STEM education experiences in their afterschool programs. An astronomer by training, Anita received her PhD from The Ohio State University, conducting her postdoctoral work at the University of Colorado at Boulder. Over the past decade, she has been deeply involved in science education and outreach through a range of roles at the National Academy of

Sciences, NASA and the American Astronomical Society. Anita strongly believes that afterschool programs play a critical role in STEM education reform and must be treated as strategic partners.

JASON D. LEE, after a diverse engineering career at Ford Motor Company, accepted the position as the Executive Director of the Detroit Area Pre-College Engineering Program (DAPCEP) in 2004. Under his leadership, DAPCEP continues its 38-year history of STEM educational programming by serving over 4,000 students annually. Students are provided critical exposure, preparation and motivation to succeed in post-secondary education and/or STEM careers. In addition to DAPCEP's nationally recognized Saturday, In-school and Summer programs, Mr. Lee secured the necessary resources for single gender high school programs and an early childhood education program. DAPCEP now provides educational programming for young people from Pre-K to 12th Grade. Jason has received numerous awards & recognitions including: Lawrence Technological University's Leaders & Innovators Award and Oakland County's Elite 40 under 40. Mr. Lee is a graduate of the University of Maryland Baltimore County and the University of Michigan Ann Arbor. He has successfully completed the National Urban Fellows: America's Leaders of Change and Harvard Business School's Strategic Perspectives Non-Profit Management program. Jason resides in Southfield, MI with his wife (Nicole) and 2 children.

ELLEN LETTVIN began a two year appointment in March 2014 as the inaugural Robert Noyce Fellow in Informal STEM Learning at the U.S. Department of Education. Her efforts focus on developing and implementing initiatives that will provide more students with access to high-quality, informal STEM learning opportunities across a variety of settings. She is coordinating with several groups across the Department to leverage proposed and existing programs, as well as with multiple federal agencies. From 2008 – 2014, Dr. Lettvin served as Vice President for Science and Education at Pacific Science Center in Seattle, where she led the institution's largest division. She successfully developed and grew a diverse portfolio of education programs including on-site interpretation, youth development, statewide outreach, camps, and environmental field and laboratory programs. In 2013-14, she served as co-Director of Washington LASER (Leadership and Assistance for Science Education Reform); in 2011-13 she launched and served as inaugural Director of the Seattle Science Festival. From 1998-2008, Dr. Lettvin pursued a successful research program in remote sensing and served as Assistant Director of the Applied Physics Laboratory at the University of Washington, where she spearheaded several initiatives to help researchers engage with public audiences. Ellen has a Ph.D. in Electrical Engineering and Atmospheric, Oceanic and Space Sciences from the University of Michigan.

MARY LORD, vice president and At-Large member of the District of Columbia State Board of Education, is an award-winning journalist who has served on the board since its inception in 2007. She also is president-elect of the National Association of State Boards of Education, the country's pre-eminent provider of professional development for effective lay governance of public education. Ms. Lord's articles have appeared in a variety of local and national publications, including U.S. News & World Report, where she covered K-12 and higher education. She currently focuses on engineering and science education as deputy editor of the American Society for Engineering Education's Prism magazine and producer of its lesson-packed blog and e-newsletter for 26,000 science teachers.
On the DC State Board of Education, Ms. Lord has worked with colleagues on a host of game-changing initiatives. These include approving the District of Columbia's first-ever standards for health and physical education – recruiting schools in our city's fight against childhood obesity and HIV/AIDS – and joining 45 other states in adopting a "common core" set of rigorous new literacy and math standards. She also led the board's effort to consider the Next Generation Science Standards, which were approved unanimously in December. Current initiatives include developing a protocol for regular review of policy implementation, from academic standards to attendance rules to the state-level accountability plan.
Ms. Lord, a Harvard honors graduate, earned her bachelor's degree in East Asian Studies.

DALE MCCREEDY, Ph.D. is Director of Gender, Adult Learning and Community Engagement at The Franklin Institute. She has forged national and regional collaborations with the goal of cultivating girls and women's science exploration, enhancing the capacity of facilitators in science teaching and learning, building bridges between home and school, and developing programs and resources to promote family and parent engagement in children's science learning. Current programmatic efforts include advancing science and literacy through library, museum and afterschool partnerships, and building community engagement in science through home/afterschool/community collaborations. Research interests focus on the impact of informal science learning on identities and life trajectories of women and girls, and the nature of effective community partnerships in science and literacy learning. Most

recently, she co-authored CASCADING INFLUENCES: Long-Term Impacts of Informal STEM Experiences for Girls. Dale is the recipient of a lifetime membership from Girl Scouts (1996) and the Maria Mitchell Women in Science Award (2002). She served on the NRC's Committee on Learning Science in Informal Environments (2006-8), is on the board of the Visitor Studies Association (2009-2015, President 2011-2013), and was a Noyce Leadership Fellow (2012-2013). Dale holds a BS in Biology from Lafayette College, and a MS and PH.D. in Education from the University of Pennsylvania.

RON OTTINGER, the Executive Director of the Noyce Foundation, oversees all program areas and operations of the Foundation. The Foundation focuses on a few key areas: expanding opportunities for students to experience hands-on science in out-of-school settings; supporting human capital efforts to develop effective teachers and principal leaders; and investing in models and policy for improving the teaching of math and science. For the past seven years, Ron has led the foundation's strategies and initiatives in informal and out-of-school-time science, focusing on field-building efforts that are marrying afterschool and science. Ron also spearheads the foundation's human capital management and math initiatives. Prior to joining Noyce, Ron served for fourteen years as National Associate Director of the non-profit AVID Center, which disseminates AVID (Advancement Via Individual Determination), the nationally acclaimed college preparation program for low-income students. He was elected to three terms on the San Diego City Schools' Board of Education from 1992-2004, during a period of major reform of the school system, and was the longest running board president.

TOM PAYZANT became a professor of practice at the Harvard Graduate School of Education after retiring as superintendent of Boston Public Schools in June of 2006. During his eleven years in Boston, Payzant increased the focus on basic subjects such as literacy and math while investing heavily in teacher training. For most of the 1980's, Payzant was superintendent of the San Diego public schools, then became Assistant Secretary for Elementary and Secondary Education during the Clinton administration. Payzant is the recipient of numerous honorary degrees and was selected for the 2004 Richard R. Green Award for Excellence in Urban Education by the Council of Great City Schools, as well as being chosen the 2005 Public Official of the Year by Governing Magazine. Payzant received his master's in teaching and his doctorate in education from Harvard University

KAREN PITTMAN has made a career of starting organizations and initiatives that promote youth development – including the Forum for Youth Investment, which she co-founded with Merita Irby in 1998. A sociologist and recognized leader in youth development, Karen started her career at the Urban Institute, conducting studies on social services for children and families. She later moved to the Children's Defense Fund, launching its adolescent pregnancy prevention initiatives and helping to create its adolescent policy agenda. In 1990 she became a vice president at the Academy for Educational Development, where she founded and directed the Center for Youth Development and Policy Research and its spin-off, the National Training Institute for Community Youth Work. In 1995 Karen joined the Clinton administration as director of the President's Crime Prevention Council, where she worked with 13 cabinet secretaries to create a coordinated prevention agenda. From there she moved to the executive team of the International Youth Foundation (IYF), charged with helping the organization strengthen its program content and develop an evaluation strategy. In 1998 she and Rick Little, head of the foundation, took a leave of absence to work with ret. Gen. Colin Powell to create America's Promise. Upon her return, she and Irby launched the Forum, which later became an entity separate from IYF.
Karen has written three books and dozens of articles on youth issues, including as a regular columnist in the youth development newspaper, Youth Today. She is also a respected public speaker and has served on numerous boards and panels, including those of the Kauffman Foundation, the Educational Testing Service, the National Commission on the Senior Year of High School, the National Center for Children in Poverty, JCPenney Afterschool Fund, National Collaboration for Youth, and the High/Scope Educational Research Foundation Board. She currently sits on the America's Promise Board of Trustees and YouthBuild USA.

CHAD RIPBERGER is the Program Director for STEM at National 4-H Council and a faculty member of 4-H Youth Development at Rutgers University. Chad collaborates with youth development professionals from 4-H National Headquarters within USDA, a network of 109 land-grant universities, and over 3,000 county Cooperative Extension offices to develop programs and partnerships that support the over 5 million 4-H youth engaged in STEM through school enrichment, community based clubs, afterschool programs, and summer camps. Chad led the development of the 4-H Science in Urban Communities Promising Practices Guide, a collection of promising practices, case studies, and suggested resources with a focus on expanding the quality and quantity of out-of-school

science programming, especially for underrepresented and underserved youth. Chad also plays a key role in 4-H National Youth Science Day – the premier national rallying event for year-round 4-H STEM programming. In his local youth development work in New Jersey with Rutgers Cooperative Extension, Chad leads several afterschool, Saturday, and summer STEM initiatives as well as an extensive OST STEM professional development initiative in partnership with EDC through the National Partnerships for After School Science project (NPASS). Chad has a B.S. in Education and a M.S. in Educational Administration from Purdue University and nearly 20 years of experience in formal and informal STEM education.

NATALIE RUSK, a learning researcher at the MIT Media Lab, develops technology-based initiatives that engage youth in creating projects based on their interests. She is a lead developer and co-investigator of Scratch, a programming language and online community that has engaged more than 3 million youth in learning to code interactive stories, games, and animations. She co-founded the Computer Clubhouse after-school program and established the Learning Technologies Center at the Science Museum of Minnesota. She collaborates on the Pathways study of youth development in community-based programs, based at the University of Illinois at Urbana-Champaign. She earned an Ed.M. at Harvard Graduate School of Education and a Ph.D. in Child Development at Tufts University.

DENNIS SCHATZ is Senior Advisor at Pacific Science Center in Seattle, Washington, and a part-time Program Director at the National Science Foundation. He is the author of 24 science books for children that have sold almost 2 million copies worldwide and have been translated into 23 languages. He is also co-author/editor of several curriculum resources for teachers. At NSF he is leading the effort to develop an international informal STEM education partnership (Science Learning+) with the Wellcome Trust and the Economic and Social Research Council (ESRC) in the UK. At the Science Center, he has provided leadership to several of the Science Center's major initiatives. He co-directed Washington State LASER (Leadership and Assistance for Science Education Reform), a program to implement a quality K-12 science program in all 295 school districts in Washington State. He was Principal Investigator for Portal to the Public, an initiative to develop programs – both onsite and off -- that engage scientist in working with public audiences to enhance the public's understanding of the current science research being conducted across the state.

JIM SHORT is the Director of the Gottesman Center for Science Teaching and Learning in the Education Department at the American Museum of Natural History in New York City. The focus of the Gottesman Center is to improve student performance and teacher capacity in the critical area of science education through curriculum support, professional development, and partnerships with schools. The Urban Advantage program, a middle school science education partnership program in NYC, includes eight NYC informal science education institutions and the NYC Department of Education and currently serves over 170 middle schools and 500 science teachers, reaching over 50,000 students. Prior to joining the AMNH in 2007, Dr. Short's experience included science coordinator for Denver Public Schools, project director at the Biological Sciences Curriculum Study (BSCS) and ten years of classroom teaching at the middle and high school levels.

SHIRIN VOSSOUGHI is a post-doctoral researcher at Stanford University and the San Francisco Exploratorium, where she studies learning in the context of STEM-rich after-school tinkering programs. This research is part of an ongoing collaborative project with Meg Escudé, Director of Community Youth Programs at the Exploratorium. More broadly, Shirin's work centers on the ethnography of learning, equity and social change. She currently teaches a course at Stanford on culture, learning and poverty and has been involved in a range of projects focused on the creative development of educational settings for youth from migrant, immigrant and diasporic backgrounds. Shirin will be an Assistant Professor in the Learning Sciences Program at Northwestern University starting in the Fall.

DEBBIE ZIPES became the President of the Indiana Afterschool Network in January 2010, bringing with her more than twenty years of community and nonprofit leadership experience. Debbie holds Masters Degrees in Psychology (New York University) and Social Work (Fordham University), and a Bachelor's Degree from Tufts University. Debbie has extensive experience working in inner city schools, leading career-focused youth programming and city-wide community-school initiatives. Debbie's current work focuses on building statewide systems to increase youth access to high quality, affordable out-of-school time programs that prepare them for success in school, work, college and life. Debbie engages cross-sector partners at the national, state and local levels to increase funding and resources, influence public policy, and strengthen the quality out-of-school time programs statewide.

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