

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

Board on Science Education
Division of Behavioral and Social Sciences and Education

**Identifying and Supporting Productive STEM
Programs in Out-of-School Settings**

Presenter Biographical Sketches

Bronwyn Bevan, PhD, is a Senior Research Scientist at the University of Washington's LIFE Center. Previously, she was Director of the Exploratorium Institute for Research and Learning, which houses the museum's programs for teacher development, youth development, and research on learning. Bevan's work focuses on mediating between research and practice to better understand how learning opportunities, across formal and informal settings, can be organized, structured, and brokered to advance equity in education. She served on the National Research Council's Committee on *Out-of-School Time STEM Learning* and is on the editorial board of *Science Education*.

James Brown is the Executive Director of the STEM Education Coalition, an alliance of more than 600 business, professional, and education organizations, that works to raise awareness in Congress, the Administration, and other organizations about the critical role that STEM education plays in enabling the U.S. to remain the economic and technological leader of the global marketplace of the 21st century. Prior to joining the coalition, he was Assistant Director for Advocacy at the American Chemical Society. A nuclear engineer by training, he previously worked as a Legislative Aide for Rep. Doc Hastings of Washington, was Director of Policy and Development at the Consumer Energy Council of America, and began his career as an engineer with Newport News Shipbuilding, working on aircraft carrier construction. He received a B.S. from the University of New Mexico and an M.S. from Penn State, both in nuclear engineering. He also holds an MBA from The George Washington University.

Margaret Honey, PhD, joined the New York Hall of Science (NYSCI) as President and CEO in November of 2008. Under her leadership, NYSCI has adopted Design-Make-Play as its signature strategy to promote STEM engagement and learning. The defining characteristics of this sensibility – deep involvement with content, experimentation, exploration, problem-solving, collaboration and curiosity – are the very ingredients that develop inspired and passionate STEM learners. A graduate of Hampshire College with a doctorate in developmental psychology from Columbia University, Margaret Honey has helped to shape the best thinking about learning and technology with special attention to traditionally underserved audiences. She has directed numerous research projects including efforts to identify teaching practices and assessments for 21st century skills, new approaches to teaching computational science in high schools, collaborations with PBS, CPB, and some of the nation's largest public television stations, investigations of data-driven decision-making tools and practices, and with colleagues at Bank Street College of Education, she created one of the first internet-based professional development programs in the country. From her early involvement in the award-winning and ground-basking public television series "The Voyage of the Mimi" to her decade long collaboration on the education reform team for the Union City (NJ) school district, Margaret Honey has led some of the country's most innovative and successful education efforts. Margaret has shared what she's

learned before Congress, state legislatures, and federal panels, and through numerous articles, chapters, and books. She currently serves as a board member of The National Academies of Sciences Board on Science Education and on behalf of the National Research Council has chaired the consensus study, *Toward Integrated STEM Education: Developing A Research Agenda*, the workshop report on *IT Fluency and High School Graduation Outcomes*, and co-authored a report on *Learning Science: Computer Games, Simulations, and Education*. Dr. Honey also serves as a member of the National Science Foundation's Education and Human Resources Advisory Committee and is on the educational advisory board at NASA.

Eric Jolly, PhD, joined Minnesota Philanthropy Partners in 2015 after 10 years as president of the Science Museum of Minnesota. Before that, Jolly served as vice president and senior scientist at the Education Development Center in Massachusetts. His career began with successive academic roles in several colleges and universities, including professor, dean, assistant chancellor, and director for Affirmative Action and Diversity. Jolly serves on a number of local and national boards, including the Bush Foundation and the Institute of Museum and Library Services. Widely recognized for his work with communities and policy makers, he has published articles and books and has lectured around the world about the importance of STEM (Science, Technology, Engineering, and Math) education. Jolly has a doctorate in psychology and a master's degree in psychometrics from the University of Oklahoma.

Anita Krishnamurthi, PhD, is the Vice President of STEM Policy at the Afterschool Alliance. Anita joined the Afterschool Alliance in June 2010 as Director of STEM Policy after serving as the John Bahcall Public Policy Fellow for the American Astronomical Society. As Vice President of STEM Policy, Anita is responsible for creating and advancing federal, state, and local opportunities and policies to expand resources and activities that provide students with access to a rich STEM curriculum in their afterschool programs. Anita brings nearly a decade of experience in science education and outreach to a wide variety of audiences to this role. Prior to her fellowship, she worked at the National Aeronautics and Space Administration (NASA) for six years, firstly as an Education and Public Outreach (EPO) Program Planning Specialist at NASA-HQ, and then as Lead for EPO in the Astrophysics Science Division at NASA's Goddard Space Flight Center. Before joining NASA, Anita was a Program Officer at the National Academy of Sciences in Washington, D.C. in the Office on Public Understanding of Science. Anita's formal training is an astrophysicist, receiving her Ph.D. from The Ohio State University. She conducted her postdoctoral work at the University of Colorado at Boulder.

Ellen Lettvin, PhD, is a Robert Noyce Fellow in Informal STEM Learning at the U.S. Department of Education (ED) in the Office of Innovation and Improvement. In this role she leads interagency coordination linked to STEM engagement and learning during out-of-school time. She is spearheading efforts that integrate STEM content and activities from several Federal agencies into program offerings for the nation's largest out-of-school program, the 21st Century Community Learning Centers. She also serves as liaison with the STEM Funders Network to connect ED programs and grantees with STEM Learning Ecosystems nationwide. Prior to beginning the fellowship in March, 2014, she served as Vice President for Science and Education at the Pacific Science Center in Seattle, WA for five years, where she led the institution's largest division that encompassed a diverse portfolio of education programs, including serving as inaugural Director of the Seattle Science Festival. Prior to joining the Science Center, Ellen

served as Assistant Director of the Applied Physics Laboratory at the University of Washington, where she led 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.

Christopher Reich is the Senior Advisor in the Office of Museum Services of the Institute of Museum and Library Services. In this capacity, he serves as the senior policy and technical expert, analyst and advisor to the Deputy Director for Museums on a broad range of organizational, managerial, and technical issues related to grants management and agency operations, in addition to managing several cooperative agreements with other organizations. He began work at IMLS in 2006 as a senior program officer, primarily responsible for two competitive grant programs: 21st Century Museum Professionals and Museum Grants for African American History and Culture. Mr. Reich has worked in the museum field for over 40 years, including positions as Director of both the Putnam Museum of History and Natural Science in Davenport, Iowa, and the Anniston Museum of Natural History in Anniston, Alabama. He began his museum career as Curator of Natural Sciences at The Bruce Museum in Greenwich, Connecticut. He has been active in a number of museum associations and community organizations and holds a BS in Zoology and a Master's degree in Business Administration.

Dennis Schatz is Senior Advisor at Pacific Science Center in Seattle, Washington. At Pacific Science Center he has held a broad range of positions from Director of the Planetarium in his early years to VP for Exhibits and VP for Education to Senior VP in more recent years. In the last five years, he was a Visiting Scholar at the University of Queensland, Brisbane, Australia, followed by four years as a Program Director at the National Science Foundation (NSF). He has provided leadership to several of Pacific Science Center's major initiatives, including Washington State LASER and Portal to the Public. He is an instructor in the University of Washington's Museology Department and is currently the PI of a NSF grant, working in conjunction with the Museology Department, which will develop a Professional Learning Framework for informal science education practitioners. Dennis is on the board of the National Science Teachers Association (NSTA), and is Field Editor of the new journal, *Connected Science Learning*. He has received numerous honors, including the 1996 Distinguished Informal Science Educator Award from the NSTA, NSTA's 2005 lifetime achievement award (Distinguished Service to Science Education) and ASTC made him an ASTC Fellow for his lifetime achievement in service to the field and furthering the public's understanding of science in 2006.

Tony Small currently serves as the 1st Regional Artistic and STEAM Director the Boys & Girls Clubs of Greater Washington serving over 12,000 youth where he founded the Teen Arts Program (TAP); he is also a national Boys & Girls Club of America STEM advisory committee member. Tony is a Partner at Artistré Edutainment & Publishing and guest choral instructor at Baltimore School of the Arts Twigs Program. In addition to creating nationally recognized interdisciplinary arts and STEM programs in found major cities including Chicago, Indianapolis, Baltimore, and Washington DC, Tony has won national awards for his compositions in Jazz, Classical, Musical Theatre and Gospel genres, has been selected as one of the White House Millennium Committee's top Community Artists, and has composed the Smithsonian's first-ever commissioned Operetta

for the Sultanate of Oman. Over the past 30 years, Tony has served as Lecturer of Fine Arts at Chicago Loyola University, Training Director for Loyola's Center for Urban Research's AAAS's national pilot SLIC (Science Linkages In the Community) and Founding Director for the Urban Leagues Camp SMART in Waukegan/North Chicago Illinois. The Indianapolis Star quoted that the "*Stage becomes classroom for kids*" at the historic Madame Walker Theatre and national landmark where Tony served as Artistic Director. He has been featured as a Resident Artist and performer worldwide from the Caribbean Islands to Africa. As a versatile artist, Tony has been featured as actor with cameo appearances on BET and HBO's WIRE television series -- that featured his Baltimore inner-city boys' choir. His musicals and compositions have debuted at the nation's most prestigious stages ranging from the Kennedy Center to the Smithsonian and cultural arts center stages nationwide.

Martin Storksdieck, PhD, is the director of Oregon State University's Center for Research on Lifelong STEM Learning and a professor in the College of Education and the School of Public Policy. Prior to joining OSU, Martin directed the Board on Science Education and the Climate Change Education Roundtable at the National Academy of Sciences. There he oversaw studies that addressed a wide range of issues related to science education and science learning in formal and informal environments, and provided evidence-based advice to decision-makers in policy, academia, and educational practice. His own research focuses on what and how we learn when we do so voluntarily. This includes connections between school-based and out-of-school learning. Martin's research also focused on the role of science-based professionals and science hobbyists in communicating their passions to a broader public. He has previously worked for education research and environmental policy non-profits in Germany and the United States, and served as environmental science educator and producer at a planetarium. He holds Master's degrees in biology and policy and a Ph.D. in education.

Debbie Zipes leads the Indiana Afterschool Network with a vision that Indiana is a place where all K-12 youth have access to high quality learning opportunities beyond the school day that prepare them for success in education, careers, and life. Debbie and her team engage cross-sector partners at the national, state, and local levels to increase funding and resources, influence public policy, and strengthen the quality of programs statewide. Debbie kicked off the Indiana Afterschool STEM Initiative in 2010. This has now grown to include 200 education, business, government, youth development, and museum partners working together to expand STEM beyond the school day statewide. Debbie has more than twenty years of non-profit education leadership experience. She began her career working with youth and families in inner city schools in New York City, led school-based afterschool programs in partnership with the New York Department of labor, and led Bridges to Success, a city-wide community-school initiative with the United Way of Central Indiana and Indianapolis Public Schools that leveraged millions of dollars in resources for IPS students in 43 schools. Debbie holds Master's Degrees in Psychology (New York University) and Social Work (Fordham University), along with a Bachelor's Degree from Tufts University in Boston.