Panelist Bios

AMANDA BUICE is the Science Program Manager at the Georgia Department of Education. Prior to assuming this role, she managed the Title II B Math Science Partnership Grant for the State. She has taught in both Georgia and South Carolina. She also worked for the non-profit, Georgia Youth Science and Technology Centers (GYSTC) as a regional coordinator of the Gordon GYSTC and later as the Director of Programs and Curriculum for the State. In 1999, she received the Presidential Award for Excellence in Mathematics and Science Teaching for the state of Georgia.

ANDRES BUSTAMANTE is an Assistant Professor at the University of California Irvine's School of Education, and directs the Social, iTerative, Engaged, and Meaningful (STEM) Learning Lab. He designs and implements play-based early childhood STEM interventions in places and spaces that children and families spend time (e.g., parks, school yards, grocery stores etc.). He maintains an intentional focus on translating rigorous science from the lab, into meaningful research in the classroom, and the community. Bustamante is invested in research that has practical implications for school and life success for the children and families that need it the most. He is also committed to sharing and interpreting early childhood research with a broader audience through blog posts for the Brookings Institution, Huffington Post, BOLD Blog**,** and other media outlets.

LAUTARO CABRERA ("LC") is a doctoral candidate in Technology, Learning and Leadership at the University of Maryland, College Park and a recipient of the Wylie fellowship. His dissertation focuses on understanding how teachers learn about computational thinking through professional development and how they adopt the concept to integrate it into their elementary science teaching. His research interests center on computing education with a focus on teacher learning, games for programming instruction and cognitive perspectives of early computer science education. LC has served in two NSF-funded research grants around science and computing education and has a B.A. in Psychology from Ohio Wesleyan University.

MONICA E. CARDELLA is a Professor of Engineering Education at Purdue University, a Program Director in the Division of Research on Learning in Formal and Informal Settings at the National Science Foundation, and a Fellow of the American Society for Engineering Education. She has a BSc in mathematics from the University of Puget Sound, and an MS and Ph.D. in industrial engineering from the University of Washington. Prior to her faculty appointment at Purdue, she was a National Academy of Engineering Postdoctoral Engineering Education Researcher at Stanford University in the Center for Design Research. Her research and teaching interests focus on engineering design, mathematical thinking, and computational thinking across formal and informal settings. She has investigated this through studies of practicing professionals, undergraduate students and educators, middle school students, elementary school teachers and students, and children and families. This work was done in partnership, most recently with colleagues from Purdue, Imagination Station of Lafayette, the National Society of Black Engineers, TERC, University of Iowa, University of Notre Dame, University of Washington, Virginia Tech, and several elementary schools. Dr. Cardella received the National Science Foundation CAREER award in 2011 and the American Society for Engineering Education President's Award in 2019 for the Engineering Gift Guide. Dr. Cardella has co-

authored over 200 journal and conference publications, was a co-editor of the volume *Engineering in Pre-College Settings: Research, Policy and Practices* published in 2014, and served as the Editor of the *Journal of Pre-College Engineering Education Research* from 2016 - 2019. She has also served as Director of Purdue's INSPIRE Research Institute for Pre-College Engineering. More than anything, she is proud of the accomplishments of her current and former PhD students: Chanel Beebe, Brianna Brinkman, Donovan Colquitt, Tikyna Dandridge, Hoda Ehsan, Trina Fletcher, Ming-Chien Hsu, Jessica Rush Leeker, Tamecia Jones, John Mendoza-Garcia, Meagan Pollock, Huma Shoaib, and DeLean Tolbert.

MIRANDA S. FITZGERALD is an Assistant Professor and a teacher educator at the University of North Carolina at Charlotte. Fitzgerald's research interest is in instructional contexts that support literacy development and disciplinary knowledge building in the intermediate grades, particularly those that foster equitable opportunities to learn for diverse and historically underserved students. Using qualitative methods and sociocultural theories of learning, she investigates meaningful uses of multimodal literacy in intermediate-grade classrooms. Fitzgerald's current research focuses on the integration of language literacy and science instruction, especially in the context of project-based learning, and strategies to support pre- and in-service teachers to enact ambitious and equitable instructional practices in literacy. In 2017, she was awarded the International Literacy Association's Steven A. Stahl Research Grant and an AERA Division C Graduate Student Research grant to partially fund her dissertation research. She designed and conducted her dissertation study – *Texts and Tasks in Elementary Project-Based Science* – in the context of the Multiple Literacies in Project-based Learning project. For this research, she was the recipient of the 2019 AERA Research in Reading and Literacy SIG's Graduate Student Award for Literacy Excellence, the 2019 University of Michigan School of Education's Stanley E. and Ruth B. Dimond Best Dissertation Award, and was a finalist for the 2019 ILA Timothy & Cynthia Shanahan Outstanding Dissertation Award. Her work has been published in *American Journal of Education, International Journal of Educational Research, Reading & Writing Quarterly,* and *Review of Research in Education.* Fitzgerald completed her doctorate at the University of Michigan.

DIANE JASS KETELHUT is Professor of Science, Technology and Math Education at the University of Maryland. She is the Director of the Center for Science and Technology in Education. Her research centers on improving self-efficacy, learning and engagement in computational thinking and science for students and teachers, particularly through scientific inquiry experiences within virtual environments. She is currently the Principal Investigator on the NSF-funded *CTèPSTE* project to investigate the integration of computational thinking into elementary preservice, undergraduate science teacher education, and a senior collaborator on a project to design a game on cybersecurity aimed at underrepresented youth. She served as PI of the SAVE Science project, a game-based system for evaluating learning in science for middle school children, and project director/researcher for the three NSF-funded River City grants. Certified in secondary science, she was a science/math teacher for Grades 5–12 for 12 years. She conducted immunology basic research for 2 years. Diane received a B.S. in Bio-Medical Sciences from Brown University, an M.Ed. in Curriculum and Instruction from the University of Virginia, and her doctorate in Learning and Teaching from Harvard University.

ALISSA A. LANGE is an Associate Professor of Early Childhood Education at East Tennessee State University. Prior to joining ETSU, Dr. Lange was an Assistant Research Professor at the National Institute for Early Education Research (NIEER) at Rutgers University, a U.S. Fulbright Scholar in Bogotá, Colombia, and a U.S. Department of Education, Institute of Educational Sciences Postdoctoral Fellow with Doug Clements and Julie Sarama in early mathematics. Dr. Lange has over 10 years of experience leading or co-leading early STEM (science, technology, engineering, mathematics) teaching and learning initiatives, including a recent National Science Foundation-funded STEM professional development project for preschool teachers, and a library-based informal learning program, the Math and Science Story Time. She currently collaborates with elementary education faculty to improve the quality of pre-service teacher preparation in STEM at ETSU. She has disseminated the results of her work to audiences across the United States and internationally, including for members of Congress in 2015. She currently directs the EC STEM Lab and co-facilitates NAEYC's Early Math Interest Forum. Her book, "Teaching STEM in the Preschool Classroom: Exploring Big Ideas with 3- to 5-Year-Olds" was published in 2019 by Teachers College Press.

ANNE OTTENBREIT-LEFTWICH is the Barbara B. Jacobs Chair in Education and Technology at Indiana University. She is also an Associate Professor of Instructional Systems Technology within the School of Education and an Adjunct Professor of Computer Science at Indiana University – Bloomington. Dr. Leftwich's expertise lies in the areas of the design of curriculum resources, the use of technology to support pre-service teacher training, and development/implementation of professional development for teachers and teacher educators. Her research focuses on teachers' value beliefs related to technology and computer science, as well as how those beliefs influence teachers' adoption and implementation of CS and technology.

CLAUDIA WALKER, Singapore Math Coach, Murphey Traditional Academy in Greensboro, NC. Walker has been a teacher for twenty-eight years, in three different Title I schools in Greensboro, North Carolina, and in New Jersey. For the last sixteen years, she has been teaching at Murphey Traditional Academy in Greensboro, a K-5 school of about 300 students. Claudia received her add-on Math Licensure for the state of North Carolina in May 2011. Claudia received National Board Teacher Certification in 2003, and National Board renewal in 2013. She has been trained in Singapore Math, was the grant writer and recipient for the North Carolina Singapore Math Pilot Program in 2011, and is the Singapore Math Coach for her school. Claudia received a Career Award for Science and Mathematics Teachers from the Burroughs Wellcome Fund in 2010, and was selected by her peers as Teacher of the year for Murphey Traditional Academy in 2009 and 2015. She also received Outstanding Science Teaching Award from the North Carolina Science Teachers Association in 2014. She has implemented and received extensive training in Engineering is Elementary, a program from the Museum of Science in Boston through a partnership with the University of North Carolina Greensboro. She worked as an educator with the UBEATS: A BioMusic STEM Intervention for ESL Students in Guilford County. She received her BA degree from Rutgers University and her MA in Education, Curriculum and Technology from the University of Phoenix. In 2015, she traveled to Singapore as part of a group of STEM teachers for the Center for International Understanding - Go Global NC. She currently serves on the boards for the North Carolina Science, Mathematics, and

Technology Education Center and the North Carolina Board of Science, Technology & Innovation at the North Carolina Department of Commerce.

JESSICA WHITTAKER is a Research Associate Professor with the Center for Advanced Study of Teaching and Learning at the University of Virginia's School of Education and Human Development. Dr. Whittaker's primary research interests lie in examining the association between early teacher-child interactions and children's academic and social-emotional outcomes. Specifically, her work focuses on understanding the inter-connections among and supporting young children's executive function (EF), mathematics, and science skills, particularly for those from underserved and underrepresented groups. She is involved in several research efforts to develop and test the efficacy of interventions that include curricula, online coursework, and coaching, designed to improve the quality of early teacher-child interactions and instruction as a way to support children's EF, mathematics, and science skills. She is also engaged in efforts to develop valid and reliable measures of classroom processes that relate to children's development in these areas. Dr. Whittaker has extended the impact of this work by partnering with policy-makers and practitioners to develop scalable approaches that increase the positive effects of ECE, and sustain these effects into elementary school and beyond. She received a B.A. in Psychology from Duke University and a Ph.D. in Human Development from the University of Maryland.

KAREN WORTH is a consultant in science education at the early childhood and elementary grade levels. She was a faculty member at Wheelock College for over 40 years, where she taught early childhood and elementary education with a focus on science education, served as Chair of the Elementary Education Department and coordinated the graduate Integrated Elementary and Special Education program. Ms. Worth also worked as a senior research scientist at Education Development Center, Inc. for more than 25 years leading a range of programs focused on curriculum development, professional development, and systemic reform in science education in formal and informal education settings. Ms. Worth was the chair of the Working Group on Science Education Teaching Standards for the National Science Education Standards. As a consultant, Ms. Worth provides professional development and guidance on the implementation of inquiry-based early childhood and elementary science programs to a wide range of organizations across the United States and internationally. She has been a consultant and advisor to schools, early childhood settings, and a number of museums including the Boston Children's Museum and the Chicago Children's Museum. She has advised public television stations such as WGBH and PBH and community organizations across the country. She is a recipient of the Exploratorium's Outstanding Educator Award for her work in science education, the international purkwa prize for the scientific literacy of the children of the planet, and the NSTA Distinguished Service Award.