National Dialogue on Transforming STEM Teaching in Higher Education
Speaker and Planning Group Bios
January 14, 2021

Ann E. Austin is University Distinguished Professor, Higher, Adult, and Lifelong Education; Associate Dean for Research, College of Education; and Assistant Provost for Faculty Development—Career Paths; Michigan State University. She served for two years as a program director in the Division of Undergraduate Education at the National Science Foundation in Washington, D.C. Her research concerns organizational change in higher education, faculty careers and professional development, teaching and learning in higher education, the academic workplace, doctoral education, and reform in science, engineering, and mathematics (STEM) education. She is a fellow of the American Educational Research Association (AERA), and she has been a council member for AERA. She is a past-president of the Association for the Study of Higher Education (ASHE), and she was a Fulbright Fellow in South Africa (1998). She has also served for more than a decade as the Co-PI and Co-Leader of the Center for the Integration of Research, Teaching, and Learning (CIRTL), funded by the U.S. National Science Foundation (NSF), and has been the principal investigator of an NSF-funded grant to study organizational change strategies used in NSF ADVANCE grants to create more inclusive academic environments and support the success of women scholars in STEM fields. Currently, she is the principal investigator of two NSF projects, one to study the use of organizational networks to foster change in STEM undergraduate education and one to study how new developments in teaching evaluation encourage change in the culture around teaching within universities. She earned a B.A in history from Bates College, an M.S. in higher/post-secondary education from Syracuse University, a M.A. in American culture from the University of Michigan, and a Ph.D. In higher education from the University of Michigan.

Christine Broussard is a professor of biology and the Natural Science Division Chair at the University of La Verne. She has two main research foci, STEM higher education reform and developmental immunotoxicology. The ultimate goal of her research and work in STEM higher education reform is not only to develop highly effective, dynamic teaching approaches that are relevant and exciting to learners and that broaden participation in science, but also to leverage policy and practice in the domain of meaningful assessment of inclusive and effective teaching to promote institutional transformation on a national and international scale. Her second research focus, developmental immunotoxicology, studies the impact of environmental toxicants, particularly the class of molecules termed endocrine-disruptors (EDCs), on the embryological development of the immune system. Working alongside undergraduates in these endeavors inspires her to continue innovating and reforming STEM education, and provides a means to learn from the students themselves how people learn, become engaged, and persist in STEM. She has received funding from the W.M. Keck Foundation, the Ahmanson Foundation, the National Science Foundation, and the National Institutes of Health. In addition to her own research efforts, she has served the broader STEM Education community in several capacities. For almost a decade she has served as the Chair of the Southern California Project Kaleidoscope (SoCal PKAL) Regional Network, an organization that provides support and professional development to STEM faculty in Southern California under the auspices and guidance of AAC&U's National Project Kaleidoscope (PKAL). She has also served as an Advisory Board member of National

PKAL for the last three years. In 2016, she joined the Accelerating Systemic Change Network (ASCN), an organization dedicated to accelerating the systemic transformation of STEM higher education, to co-lead the working group on Aligning Faculty Work with Systemic Change. Dr. Broussard earned a B.S. in microbiology and M.S. in immunology from Louisiana State University, and a Ph.D. in immunology at the University of Texas Southwestern Medical Center at Dallas.

Kadian M. Callahan is Assistant Dean for Faculty and Student Success in the College of Science and Mathematics and Associate Professor of Mathematics Education at Kennesaw State University in Georgia. She supports faculty in learning about and implementing evidence-based instructional practices and inclusive approaches in science and mathematics courses and mentors undergraduate learning assistants who foster student learning during class. Dr. Callahan also works with administrators across the university to facilitate institutional change related to student success goals. Her research examines strategies for improving teaching and learning in courses and programs and institutional change efforts to transform teaching, learning, and the student experience. Dr. Callahan is involved with several national efforts seeking to improve STEM education, including the *Association of Public and Land-grant Universities* (APLU) Mathematics Teacher Education Partnership (MTE-P) and Student Engagement in Mathematics through an Institutional Network for Active Learning (SEMINAL), the *Association of American Colleges & Universities* (AAC&U) Project Kaleidoscope, and the *Accelerating Systemic Change Network* (ASCN) working group on Aligning Faculty work with Systemic Change.

Bryan Dewsbury is an Associate Professor of Biology at the University of Rhode Island. His Science Education and Society research program focuses on questions relating to identity constructs, bias, relationships, and the effects of those variables on learning in students (K-PhD). Dewsbury is interested in how students (especially those in underrepresented groups) develop perceptions of the world and others, and how these perceptions might in turn affect their engagement with science content, career choices, and ultimately their academic performance. Central to the formation of these constructs are the presence of hidden biases, stereotype threat, and mindset. He uses a variety of qualitative and quantitative methods to deduce the effects of these forces, and partners with local schools and URI to implement interventions that have proven to be effective. He is interested in helping to re-frame the education discussion to better address questions of equity and community-building, with the belief that the solutions to these are equally important to student exposure to content. His work addresses pressing issues such as student retention in STEM fields (especially in higher ed), the under-representation of minority groups in certain STEM fields, and the role of affect domain in student learning gains. He is also a Fellow of the John N. Gardner Institute, where he develops curricula that are more inclusive of these new understandings of what makes students successful.

Susan Elrod began as the sixth chancellor of Indiana University South Bend in June 2019. As Chancellor, she leads IU South Bend, a regional campus of Indiana University, in fulfilling its mission as the only public comprehensive university serving the communities of Northcentral Indiana. Prior to this position, she has served as a provost, dean and in various academic leadership positions at public comprehensive universities in the California State University System and the University of Wisconsin system. She also worked for the Association of American Colleges &

Universities in Washington, DC as the Director of Project Kaleidoscope with a focus on STEM higher education initiatives. She has over 20 publications on topics ranging from undergraduate research and to systemic change and leadership, as well as several scientific publications and patents. She is a nationally recognized leader in STEM higher education on projects centered on leadership of institutional systemic change in higher education as a scholar, leader, project advisor, and consultant. She regularly publishes on topics at the intersection of her research interests and her experiences as an administrative leader in higher education. Her latest projects are centered on the development of resources for building leadership capacity for systemic institutional change and co-editing a book on *Shared Leadership in Higher Education: Responding to a Changing World*. Other recent engagements include co-leader of the Accelerating Systemic Change Network's Systemic Change Institute, advisor to the Mathematics Teacher Education Partnership project, founder of the inaugural Gordon Research Conference on Undergraduate Biology Education Research, founding member of the national Coalition for Reform in Undergraduate STEM Education (CRUSE) and member of a National Research Council committee report on *Indicators for Monitoring Undergraduate STEM Education*. She holds a Ph.D. in genetics from the University of California, Davis and an undergraduate degree in Biological Sciences from California State University, Chico. She was a postdoctoral fellow at Novozymes, Inc. In Davis, CA and was elected as a Fellow of the American Association for the Advancement of Science (AAAS) in January 2020.

Noah Finkelstein is a professor of physics at the University of Colorado Boulder and conducts research in physics education. He serves as a director of the Physics Education Research (PER) group at Colorado. Dr. Finkelstein is also a director of the national-scale Center for STEM Learning at CU-Boulder, which has become one of eight national demonstration sites for the Association of American Universities' STEM Education Initiative. He is in charge of a new initiative designed to create and study a national network of STEM education. Finkelstein's research focuses on studying the conditions that support students' interest and ability in physics – developing models of context. These research projects range from the specifics of student learning particular concepts, to the departmental and institutional scales of sustainable educational transformation. This research has resulted in over 100 publications. He is increasingly involved in education policy. In 2010, he testified before the U.S. Congress on the state of STEM education at the undergraduate and graduate levels. He serves on many national boards including chairing the American Physical Society's Committee on Education and PER Topical Group. He serves on the board of trustees for the Higher Learning Commission, and since 2011 is a technical advisor to the Association of American University's STEM Education Initiative. He is a fellow of the American Physical Society, and a Presidential Teaching Scholar for the University of Colorado system. Dr. Finkelstein received a B.S. in mathematics from Yale University and a Ph.D. In applied physics from Princeton University.

Andrea Follmer Greenhoot, is Professor of Psychology, Director of the Center for Teaching Excellence (CTE) and Gautt Teaching Scholar at the University of Kansas (KU). Her research in psychology focuses on memory and cognitive development. Her work with CTE envisions and explores strategies for advancing transformed teaching and learning, informed by cognitive and developmental science. Supported by grants from the Spencer Foundation, Teagle Foundation, National Science Foundation, and Association of American Universities, much of her work has examined strategies for improving learning and student development in diverse populations of

students, for assessing learning, and for using the evidence to improve education. She has led numerous university-wide educational improvement initiatives at KU. She also serves as Associate Director of the Bay View Alliance (BVA), a consortium of research universities that are studying strategies to scale widespread adoption of evidence-based and inclusive teaching practices. She is principle investigator of the BVA's TRESTLE project, promoting STEM course transformation and improved learning through department-embedded expertise and community building. She also leads the KU effort on TEval, another BVA collaboration that aims to transform the evaluation of teaching in higher education through the use of a multi-dimensional, multi-source framework. She completed her AB in Psychology at Dartmouth College, her doctorate in Developmental Psychology at the University of North Carolina at Chapel Hill and a postdoctoral fellowship at the University of Arizona, before joining the faculty at the University of Kansas in 1999.

Emily Miller has served at the Association of American Universities (AAU) since November 2012. As the Deputy Vice President for Policy, she has primary responsibilities for collaborating with member campuses on institutional policy efforts related to undergraduate and graduate education and the scientific enterprise. She directs the AAU Undergraduate STEM Education Initiative, the Ph.D. Education initiative, and other grant-funded projects. She also staffs AAU's STEM Network and Association of Graduate Schools constituent groups and serves as liaison to the AAU Arts & Science Deans group. Previously, she was a research and curriculum specialist for the Association for Community College Trustees, an assistant director of career services at Tufts University, worked in alumni relations at Harvard Business School, and collaborated with the Association of Governing Boards. Dr. Miller has published on the topics of post-secondary institutional leadership, specifically as it relates to governance and administration; organizational change in universities and colleges; and higher education policy. Dr. Miller earned her Ph.D. In higher, adult, and lifelong education from Michigan State University; M.A. in education policy and management from Harvard Graduate School of Education; and B.A. in political science from Gettysburg College.

Diane O'Dowd, Vice Provost, Academic Personnel; HHMI Professor, Department of Developmental & Cell Biology, University of California, Irvine (UCI). In her position as Vice Provost, Academic Personnel, Dr. O'Dowd reports to the Provost and oversees academic personnel processes for the main campus and medical school including merits, promotions, recruitment, and retention. In addition, she is in charge of a wide range of academic policies and programs including: family friendly policies, annual pay equity studies, professional development, grievances and discipline. Dr. O'Dowd has been a Professor at UC Irvine since 1989 and her research lab focuses on exploration of the cellular mechanisms underlying epilepsy disorders. She also conducts science education research with a focus on developing strategies that increase student learning in large introductory biology classes. Dr. O'Dowd received her B.S. in Biology at Stanford University (1979), her Ph.D. In Biology at the University of California, San Diego (1985) and completed a postdoctoral fellowship in Neuroscience at Stanford University (1986-89). She became a Howard Hughes Medical Institute (HHMI) Professor in 2006, a National Academies Education Mentor in the Life Sciences and an AAAS Fellow in 2008. Dr. O'Dowd has also received a number of awards including Bio Sci Golden Apple Award (2005), UC Irvine's Distinguished Faculty Teaching Award (2005-2006), Faculty Senate TA development award (2007), UCI Faculty Award, Extension Distance Learning (2009),

UCI Professor of the Year (2011), Student's Choice: Best Biology Professor Award (2012), UCI Postdoctoral Service Award (2014), Living our Values Award, UCI (2014).

Yves Salomon-Fernández is President of Greenfield Community College. She previously served as President of Cumberland County College in New Jersey and Interim President of massbay Community College. In her career in higher education, Yves has served at large and medium-sized selective private and public universities, as well as open access colleges in urban, suburban, and rural settings in the United States. Internationally, Yves has served with the United Nations in Mexico and as a consultant for the Bermuda Ministry of Education. Dr. Salomon-Fernández is a recognized thought leader, writing and speaking on issues related to reinventing higher education, rural innovation, equity, and women's leadership. In March 2018, Diverse Issues in Higher Education named Yves one of the Top 25 Women in Higher Education. She is a member of the American Association of Community College's Commission on Small and Rural Colleges and serves on Job for the Future's Policy Leadership Trust. A Corporator for Greenfield Cooperative Bank, Dr. Salomon-Fernández is also a member of the Federal Reserve Bank of Boston's Community Development Council. She advocates for a greater role of the liberal arts as a Board Member at Mass Humanities. Dr. Salomon-Fernández also has a keen interest in the effect of the opioids epidemic on rural communities. Dr. Salomon-Fernández emigrated with her family from Haiti and is a graduate of Boston Latin School. In addition to Haitian Creole, Dr. Salomon-Fernández is fluent in French and Spanish. She received her undergraduate degree from the University of Massachusetts Boston and holds a certificate from the University of Oxford. Her Master's degree is from the London School of Economics and her Ph.D. From Boston College.

Gabriela Weaver is Assistant Dean for Student Success Analytics and Professor of Chemistry at the University of Massachusetts, Amherst. She previously served as vice provost for Faculty Development, and director of the Institute for Teaching Excellence and Faculty Development. Prior to coming to UMass, she served on the faculty at Purdue University as professor of chemistry and science education and as the Jerry and Rosie Semler Director of the Discovery Learning Research Center. In 2012, she was elected as a fellow of the American Association for the Advancement of Science for distinguished contributions to transforming science education at the undergraduate and pre-college levels through the use of inquiry-based pedagogies and innovative technologies. In 2019, she was awarded a Fellowship with the American Council of Education, which she carried out at Boston University. She has been a co-author on two different first-year chemistry textbooks, the 2015 book *Transforming Institutions: Undergraduate STEM Education for the 21st Century* as well as numerous scholarly articles, book chapters, and reports of the National Academies of Science, Engineering and Medicine (NASEM). From 2004-2012, she served as director of the NSF-funded multi-institutional CASPiE project (Center for Authentic Science Practice in Education) dedicated to involving first- and second-year undergraduate students in real research experiences as part of their regular laboratory course curricula. Her research interests include the development, implementation and evaluation of instructional practices that engage students and improve their understanding of science, and the institutionalization of such practices through the transformation of cultures and processes in higher education. She earned a B.S. degree in chemistry from the California Institute of Technology and a Ph.D. in chemical physics from the University of Colorado at Boulder.