

Roundtable on Systemic Change in Undergraduate STEM Education

Committee

Mark Mitsui

Co-Chair

MARK MITSUI is the President Emeritus of Portland Community College in Portland, Oregon. Before joining PCC, he served as president of North Seattle College in Washington State, Vice President of Student Services at South Seattle College, and Deputy Assistant Secretary for Community Colleges within the Office of Career, Technical, and Adult Education for the U.S. Department of Education. In Washington D.C., he worked to advance President Obama's community college agenda through partnerships with numerous federal agencies and national stakeholders. Mitsui also served on the US Interagency Working Group on Undergraduate STEM, co-chaired by the NSF and DOE, participated in a 2016 NASEM Panel on Online Education, and engaged in undergraduate metabolic research in exercise physiology and cardiac rehabilitation. He holds a Bachelor's degree in Physical Education from Western Washington University and a Master's of Education in Educational Leadership and Policy Studies from the University of Washington.

Leanne M. Avery

Member

LEANNE M. AVERY is Professor and Chair in education at SUNY Oneonta. Her research focuses on documenting local rural intergenerational STEM knowledge, preserving rural communities' cultural/ecological heritage, and exploring impacts of place-based teacher development on classroom practice. Dr. Avery was Co-Editor for Community Development and Cultural Studies of Science Education (CSSE) Special Issue on Rural Science Education. She publishes widely, serves national and community organizations, and co-teaches in clinically-rich partnerships with rural schools. Selective awards include: Distinguished Scholar (SUNY Oneonta) and Paper of the Year (CSSE), research assistantships/grants from the NSF, and a Challenger scholarship. Dr. Avery is a first-generation college student who received an A.A. in Biology from Ulster County Community College, then completed a B.S. in Natural Resources, M.S. in Educational Administration, and a Ph.D. in Curriculum & Instruction all from Cornell University. She also obtained a M.S. in Biology Education from SUNY Albany.

Marielena DeSanctis

Member

MARIELENA DeSANCTIS is the President of the Community College of Denver. She has served as Provost & Senior VP of Academic Affairs and Student Services, Central Campus President, Vice-President of Student Affairs, and as an adjunct instructor at Broward College. At Broward County Public Schools District, Dr. DeSanctis has served as a teacher, High School Assistant Principal & Principal, and Assistant Superintendent of Curriculum & Instruction. She also brings with her almost six years of experience as an engineer in private industry. Dr. DeSanctis currently serves as a member of the National Academies of Sciences, Engineering and Medicine Board on Higher Education and the Workforce; a member of Jobs for the Future Policy Trust Council; on the Economic Development Committee of Downtown Denver Partnership; and as a Board Member of the Colorado Education Initiative. She is a graduate of the Aspen Presidential Fellowship for Community College Excellence, and Leadership Florida. She received the 2016 Hispanic Woman of Distinction among other honors. Dr. DeSanctis earned a bachelor's degree in Mechanical Engineering from Georgia Institute of Technology; a master's degree in Math Education from Nova Southeastern University; and an Ed.S. and Ph.D. in Educational Leadership from Florida Atlantic University.

Andrea Follmer-Greenhoot

Member

ANDREA FOLLMER GREENHOOT is Professor of Psychology, Director of the Center for Teaching Excellence and Gault Teaching Scholar at the University of Kansas. She also directs the Bay View Alliance (BVA), a consortium of research universities that are studying strategies to promote widespread adoption of evidence-based pedagogy in higher education. Her research focuses on memory and cognitive development and on strategies for advancing transformed teaching and learning, informed by cognitive and developmental science. She is principle investigator of TRESTLE, an NSF-supported BVA collaboration exploring department-embedded expertise and community building as mechanisms for transforming STEM teaching and learning. She also co-leads TEval, another NSF-funded collaboration that aims to transform the evaluation of teaching in higher education. Dr. Follmer Greenhoot was on the executive committee of the Developmental Psychology division of the American Psychological Association for six years, and has consulted on legal cases involving children's memory and testimony. She received a bachelor's degree in psychology from Dartmouth College and a doctorate in psychology from the University of North Carolina at Chapel Hill. She was on the planning committee for the September 2019 NASEM Workshop on Recognizing and Evaluating Teaching and the January 2020 National Dialogue on Transforming STEM Teaching Evaluation.

Archie Holmes

Member

ARCHIE HOLMES currently serves as Executive Vice Chancellor for Academic Affairs at the University of Texas System. Prior to joining the University of Texas System in 2020, Archie was a Professor in the Charles Brown Department of Electrical and Computer Engineering at the University of Virginia and also served as the Vice Provost for Academic Affairs. During his career, Archie has had an active research program focused on the development of novel optoelectronics devices and discipline-based education research where he investigated instructional interventions which assist students in their transition from novice to expert problem solvers. Over his career, Archie has co-authored over 120 referred technical articles and 80 conference presentations and received numerous awards for his teaching and advising activities. As Executive Vice Chancellor for Academic Affairs, Archie provides oversight and guidance for the eight UT System academic institutions, who enroll more than 220,000 students, produced nearly 59,000 graduates, and have an aggregate annual operating budget of more than \$6.7 billion. He received his B.S. (highest honors) from the University of Texas at Austin and his M.S. and Ph.D. degrees from the University of California at Santa Barbara.

Tasha R. Inniss

Member

TASHA R. INNISS currently serves as the Associate Provost for Research at Spelman College, a liberal arts, Historically Black College for women of African descent. In this role, she serves as the Chief Advocate for Research at the College and leads the Office of Research, Innovation, and Collaboration (ORIC). Dr. Inniss has a passion for teaching mathematics and encouraging undergraduate students to pursue degrees in STEM disciplines. When she was a junior faculty member at Spelman College, Inniss received a Presidential Award for Excellence in Teaching because of her innovative teaching techniques and dedication to helping students to see how mathematics is applied in the real-world. Dr. Inniss is a member of the National Academies of Sciences, Engineering and Medicine's Board on Higher Education and Workforce. She also led the planning committee for the NASEM Workshop Series entitled "The Impacts on STEM Undergraduate and Graduate Student Experiences of Higher Education's Response to COVID-19: Resilience and Innovation". Dr. Inniss graduated summa cum laude from Xavier University of Louisiana with a Bachelor of Science degree in Mathematics. She earned a Master of Science degree in Applied Mathematics from the Georgia Institute of Technology and a Ph.D. in Applied Mathematics from the University of Maryland, College Park.

Chandra Myrick

Member

CHANDRA MYRICK serves as Assistant Vice Chancellor for Student Life and Executive Director of University Housing at the University of Tennessee, Knoxville. She previously worked in housing and residence life at Florida State University, Georgia State University, and the University of Georgia. Her research areas of interest are housing and residence life, women in leadership, and Black women in higher education. Chandra has been recognized by the Association of College and University Housing Officers – International as the 2017 recipient of the James Hurd Award and the 2021 recipient of the Dissertation of the Year Award. She earned a bachelor's degree from Troy State University, and a master's and doctoral degree from Florida State University.

Harriet B. Nembhard

Member

HARRIET B. NEMBHARD is dean of the College of Engineering at the University of Iowa and holds the Roy J. Carver Professorship in Engineering. As dean, Nembhard is the college's chief academic officer, providing strategic vision and oversight for undergraduate programs, research initiatives, staff support, and the college's six research centers. Prior to this appointment, she has held academic leadership positions at Oregon State University and Penn State University. Her scholarship in healthcare systems engineering has led to several advances including a patent for manufacturing compliant medical devices and a sensor-based system to conduct early screening for Parkinson's disease. Her work has been recognized by election as a Fellow of the Institute of Industrial and Systems Engineers and as a Fellow of the American Society for Quality. Throughout her career, she has advanced a community of inclusive excellence where diversity, equity, and equal opportunity create a welcoming environment that enables success for everyone. She received her PhD and MS in industrial and operations engineering from the University of Michigan. She received her undergraduate degree in management from Claremont McKenna College, where she currently serves as an alumna-trustee.

Courtney Ngai

Member

COURTNEY NGAI is the Associate Director of the Office of Undergraduate Research and Artistry (OURA) at Colorado State University. In this role, she manages a lab program that provides research experience for underrepresented students in STEMM, and supports other activities that increase student involvement in research. She has a background in chemistry education research and studied students' chemical thinking for her doctoral work at the University of Massachusetts Boston. For this research, she worked with local public school teachers and students to investigate student thinking and design scaffolded learning activities with chemistry contexts. Currently, she facilitates and researches organizational change in higher education. She has worked on the Departmental Action Team (DAT) project for five years and facilitated seven DATs that made improvements to their undergraduate programs. Courtney is currently investigating the long-term impacts of DATs in STEM departments and provides support for other departments and institutions looking to use facilitated teams to catalyze change. Dr. Ngai earned her Ph.D. in Chemistry from the University of Massachusetts, Boston, and her B.S. in Biochemistry from the University of Delaware.

Linda W. Powell

Member

LINDA POWELL is Professor and Department Head of Biology at the Community College of Philadelphia (CCP). She has served as Department Head of Biology for over 20 years guiding instruction. She was the CCP 2006 recipient of the Christian R. and Mary F. Lindback Foundation Award for Distinguished Teaching. She is the CCP Co-Principal Investigator for the Greater Philadelphia Region Louis Stokes Alliance for Minority Participation (LSAMP) Grant, funded by the National Science Foundation. She has worked on this initiative for 27 years. CCP works with eight tri-state Colleges and Universities to increase the number of African American, Latino and Native -American students receiving baccalaureate degrees in the areas of Science, Technology Engineering and Mathematics (STEM). Dr. Powell received a Citation from the Philadelphia City Council in June 2015 for her years of STEM student support on the LSAMP grant and the RISE/Minority Science and Engineer Improvement Program (MSEIP) grant funded by the US Department of Education. She was PI on the CCP RISE/MSEIP grant from 2013-2018. Dr. Powell graduated with a B.S. in Science from Pennsylvania State University. She received an M.D. from the American University of the Caribbean in 1987.

Lauren Quigley

Member

LAUREN THOMAS QUIGLEY is a Research Scientist at IBM Research in the Responsible & Inclusive Technologies group and Affiliate Assistant Professor at the University of Washington, Department of Human Centered Design & Engineering. Lauren leads social impact research projects at the intersection of technology, data, and social justice with a second research area in identity and critical theory use in engineering education. Lauren earned a Bachelor of Science degree in Physics from Spelman College, a Master of Science degree in Optical Engineering, and a Ph.D. in Engineering Education from Virginia Tech.

Kimberly Riegel

Member

KIMBERLY RIEGEL is an assistant professor in the physics department at Queensborough Community College. She primarily studies sonic boom propagation and urban noise and its impact on communities. Before coming to Queensborough Community College she worked as an acoustical engineer in Houston, TX and New York City, working to ensure quiet communities and protecting the hearing of workers. After she completed her Ph.D. at Penn state in acoustics working on the sonic boom propagation, she was a Consortium for Faculty Diversity Postdoctoral Fellow at Vassar College in the physics department studying the acoustical properties of fractal surfaces. She is a member of the Acoustical society of America, the American Association of Physics Teachers, a member and a former board member of the Institute of Noise Control Engineering and a former board member of the Council for the Accreditation of Occupational Hearing Conservationists.

Harry (Dale) Winkler

Member

DALE WINKLER was named vice president of school improvement at the Southern Regional Education Board (SREB) in April 2018. He joined SREB in 2015 as special assistant to the senior vice president of the organization's school improvement team, where he brings more than 19 years of experience working on issues related to leadership and policy in college and career readiness. At SREB he oversees the implementation of school improvement frameworks and facilitates work related to education and workforce alignment. Prior to SREB, he was a high school teacher, principal, and associate commissioner of the Kentucky Department of Education. Dale holds a bachelor's in accounting and master's in secondary education from Cumberland College. He also holds a doctorate in education leadership from the University of Kentucky.

Christina W. Yao

Member

CHRISTINA W. YAO is an Associate Professor of Higher Education and Program Coordinator of the Higher Education and Student Affairs Master's program at the University of South Carolina. She is a qualitative researcher who has published extensively on undergraduate and graduate student engagement and learning in higher education. She operationalizes her research focus through three connected topical areas: international student mobility, scholar-practitioner preparation, and transnational education. Dr. Yao is involved in several professional organizations, including Vice Chair for the Council for International Higher Education (CIHE) for the Association for the Study of Higher Education (ASHE) and prior involvement with the Comparative and International Education Society (CIES). She also serves on the editorial board for several journals, including the Journal of Diversity in Higher Education, Journal of Student Affairs Research and Practice, and Journal of International Students. She is the recipient of several awards, including the 2022 NASPA Mid-Career Faculty Award, 2021 Excellence in International Research Award from College Student Educators International (ACPA), 2020 Best Article Award from the CIES Study Abroad & International Students SIG, and the Loyola University Chicago School of Education 2018 Distinguished Alumni Award.

Lynette M. Yarger

Member

LYNETTE YARGER is the Assistant Dean for Equity and Inclusion at the Schreyer Honors College and Associate Professor of Information Sciences and Technology at the Pennsylvania State University. Her research focuses on racial inequality and technology, with an emphasis on the lived experiences of Black undergraduate students in computing majors and their transition to the technology workforce. Her research has been published in numerous peer-reviewed journal articles, book chapters, and conference proceedings. Yarger worked as an Administrative Fellow in Penn State's Office of the Vice President for Information Technology and CIO, and served as a Public Scholarship Fellow in the Laboratory for Public Scholarship and Democracy at Penn State. She is a recipient of the National Science Foundation Faculty Early Career Development (CAREER) Award, the College of Information Sciences and Technology's George J. McMurtry Teaching and Learning Award, and the Penn State Teaching Fellow Award. Prior to joining the faculty at Penn State, Dr. Yarger worked as a software engineer at AT&T, a member of technical staff at Lucent Technologies, and a product life cycle manager at Avaya Communications. Yarger earned her BS in computer and information systems from Mercy College, and her MS and Ph.D. in computer information systems from Georgia State University.

Howard Gobstein

Ex Officio Member

HOWARD GOBSTEIN is the Sr. VP for STEM Education and Research Policy with the Association of Public and Land-grant universities (APLU). He has spent his entire career engaged in university/government issues while serving at Michigan State University, the University of Michigan, AAU, White House Office of Science and Technology Policy and the U.S. Government Accountability Office (GAO). Over his 16 years at APLU he has led many STEM education projects supported by NSF and other foundations. He presently directs the NSF INCLUDES Aspire Alliance, a major national effort to enhance the diversity and inclusion of STEM faculty. Gobstein is a fellow of AAAS and a distinguished alum of the School of Interdisciplinary Engineering of Purdue University. He earned an MA in Science, Technology and Public Policy from George Washington University and a BS in Interdisciplinary Engineering from Purdue. Gobstein has served on the Roundtable for Systemic Change in Undergraduate STEM Education and chaired a NASEM workshop on Increasing Student Success in Developmental Mathematics.

Kelly M. Mack

Ex Officio Member

KELLY MACK is the Vice President for Undergraduate STEM Education and Executive Director of Project Kaleidoscope at the American Association of Colleges and Universities (AAC&U), providing leadership for the organization's mission level commitments to equity and quality through a robust agenda for STEM faculty professional development. Prior to AAC&U, Dr. Mack was the Senior Program Director for the NSF ADVANCE Program while on loan from the University of Maryland Eastern Shore where, as a Professor of Biology, she taught courses in Physiology and Endocrinology for 17 years. Dr. Mack's holistic approach to STEM reform has led to: significant increases in the capacity of STEM faculty to implement culturally responsive pedagogies, as well as major shifts in the ways in which leadership development for STEM faculty is delivered. Recognized as a national thought leader in higher education, Dr. Mack's work has been highlighted in Diverse Magazine and U.S. News and World Report. Currently, she serves on the external advisory boards for numerous NSF-funded initiatives and as Co-Editor of the recent ADVANCE Journal Special Issue. Dr. Mack earned the doctoral degree in Physiology from Howard University in Washington, DC.

Emily Miller

Ex Officio Member

EMILY R. MILLER has served at the Association of American Universities (AAU) since November 2012. As the Deputy Vice President for Institutional Policy, she has primary responsibilities for collaborating with member campuses on institutional policy efforts related to undergraduate and graduate education. She directs the AAU Undergraduate STEM Education Initiative, the PhD 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 and AAUDE groups. Emily has published on the topics of evidence-informed innovations in undergraduate STEM and doctoral education; academic work and faculty reward structures; systemic organizational change at research universities; and multi-institutional strategies and approaches to advance equity and community in STEM disciplines. Previously, Emily 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. Emily earned her Ph.D. in Higher, Adult, and Lifelong Education from Michigan State University; MA in Education Policy and Management from Harvard Graduate School of Education; and BA in Political Science from Gettysburg College.

Johnny Poolaw

Ex Officio Member

JOHNNY POOLAW is a citizen of the Delaware Nation and is also a descendent of the Chiricahua Apache, Comanche, and Kiowa Nations. Dr. Poolaw currently serves as the Director of Student Success for the American Indian Science and Engineering Society (AISES). In this role, he leads the Student Success Division within the Programs Department in the development and implementation of student success programming, including developing and providing a holistic suite of college student services focused on supporting academic success, career exploration, and successful transition into the workforce, developing scholarship and internship policies and procedures, engaging in collaborations with partner organizations and coalitions, and collecting data to track outcomes and evaluate AISES' student support programs to explore the impact of AISES' college programs. Dr. Poolaw has a Bachelor of Science in Zoology from the University of Oklahoma, a Master of Arts in Teaching from Cameron University, and Master and Doctorate Degrees in Educational Leadership and Policy Studies from the University of Oklahoma.

Travis T. York

Ex Officio Member

TRAVIS T. YORK is the Director of Inclusive STEM Ecosystems for Equity & Diversity (ISEED) at the American Association for the Advancement of Science (AAAS). Dr. York's research and work focus on catalyzing and sustaining systemic change and transformation to achieve inclusive and equitable access and progress through STEM pathways into the STEM workforce. Within AAAS, Dr. York provides leadership to a talented team who collaborate to create change in over 20 grant-funded projects and initiatives spanning all STEMM fields and the entire educational pathway including AAAS's SEA Change Initiative, Science in the Classroom, S-STEM Initiative, L'Oreal USA Women in Science Fellowships, and HBCU Making & Innovation Showcase. Dr. York serves as PI of the AAAS Noyce/ARISE (Advancing Research and Innovation in the STEM Education of Preservice Teachers in High-Need School Districts), and AAAS Improving Undergraduate STEM Education initiatives, and Co-PI of the U.S. Department of Education IES Grant, "Affording Degree Completion: A Study of Completion Grants at Accessible Public Universities" in collaboration with the Coalition of Urban Serving Universities and Temple University's Hope Center for College, Community, & Justice. Dr. York has authored numerous peer-reviewed articles and book chapters, is active within several professional associations, and serves on the editorial review board of the Journal of Diversity in Higher Education.