SSI 2021 PRESENTERS and PANELISTS



Sherryl Broverman is a professor at Duke University in the Biology Department and Global Health Institute where she is a nationally recognized science educator, civic leader, and entrepreneur. She teaches a course on HIV/AIDS that has been nationally recognized as a model for how to teach about science and civic issues. Sherryl is a long-time SENCER Leadership Fellow and recipient of William E. Bennett Award for Extraordinary Contributions to Civic Engagement from the National Center for Science and Civic Engagement

In 2002 Sherryl was funded by AAAS to partner with African Women in Science and Engineering to develop the first non-majors HIV/AIDS course at a university in Kenya. She has since worked with universities in Uganda and South Africa on developing culturally anchored courses on AIDS. Sherryl's research is on the interplay of gender, health and economic development in East Africa. In 2007 she co-founded WISER Girls in Kenya (www.wisergirls.org) to create environments that produce exceptional young women who will drive change in their communities. WISER provides education, community health interventions, and leadership opportunities to underprivileged girls in rural Kenya and has exceptional success reducing child marriages, teen pregnancies and HIV risk, and has placed 90% of its alumni in college or university. Despite working in one of the poorest school districts in Kenya WISER has received national ranking for its outcomes. In the US Sherryl leads the 501c3 WISER Intl, where she is driving growth to double the number of girls served in Kenya and expand the WISER program to new populations.

Sherryl's excellence and commitment to science and civic engagement has been recognized with the David and Janet von Brooks Award for Distinguished Teaching in the Sciences at Duke University; the Dean's Diversity award for inclusive education; the Outstanding Faculty Award from Kappa Alpha Theta; the; and the Algernon Sydney Sullivan Award for excellence of character and service to humanity.



Kathleen M. Browne is Associate Professor and chair of Geological and Marine Sciences at Rider University and Co-Director of the SENCER Center of Innovation-Mid Atlantic. Kathy's research interests focus on the interaction of sedimentological, biological, and chemical processes producing cyanobacterial mats in subtropical, carbonate environments in the Bahamas and Australia. This research has been supported by grants from the National Geographic Society and the Kanagawa Museum of Natural History, Tokyo. She also has been working on science education projects, including the use of digital media to enhance learning, developing connection-making skills, improve education student learning by using the NGSS, and the use of civic engagement in the learning process.. From 2003 until 2013, Kathy served as the University's Assistant Provost, Academic Director of the Bristol-Myers Squibb Center for Science Teaching and Learning, and the Director of the Rider Science Education and Literacy Center (SELECT).



Monica Devanas is Director of Faculty Development and Assessment Programs at Rutgers University and the creator of the first SENCER model "Biomedical Issues of HIV-AIDS." She was Co-PI on the original NSF SENCER grant, and is Co-Director of the SENCER Center for Innovation-Mid Atlantic and was awarded NCSCE's Wm. E. Bennett award for her contributions to civically engaged science education. At the Center For Teaching Advancement and Assessment Research she leads workshops on teaching portfolios, curriculum design, learning styles, active and cooperative learning, and instructional technology as well as offering workshops for faculty and administrators on assessment and accreditation reviews. She consults with Peter Seldin on his "Teaching Portfolio Workshops," and has contributed chapters to books on teaching portfolios, administrative portfolios, and strategies to improve teaching.



Bryan Dewsbury is an Associate Professor of Biology at the University of Rhode Island. He is the Principal Investigator of the Science Education and Society (SEAS) research program where they blend research on the social context of teaching and learning, faculty development of inclusive practices and programming in the cultivation of equity in education. He is also a Fellow with the John N. Gardner Institute where he assists institutions of higher education cultivate best practices in inclusive education. He was born and raised in Trinidad and Tobago. He immigrated in 1999 and attended Morehouse College for his Bachelors of Science in Biology after which he attended Florida International University for a Masters and PhD in Biology.

From there he transitioned to URI where his research focuses on inclusion and equity. Among his many publications is his 2019 piece "Deep Teaching in the STEM classroom" (CSSE) that recentralizes dialogue as the basis for good teaching. He has conducted faculty development and given plenary addresses on diversity and inclusion to over 50 institutions of higher education, corporations and K12 institutions across North America.



Andrea Drews is Assistant Professor in Rider University's Department of Graduate Education, Leadership, and Counseling. Andrea first became involved with climate change education research when she was a graduate student at the University of Delaware, where she earned a doctorate in learning sciences and wrote her dissertation on climate change teaching experiences. For her recent book, *Teaching Climate Change in the United States*, she says, "Our goal was to explore how climate

change education looks in very disparate parts of our country due to factors such as differences in our state-based educational systems, the standards that are taught, teachers' instructional goals and the political context of climate change." She has served as coordinator of teacher professional development with the Wildlife Conservation Society in New York, the organization that manages the Bronx Zoo and is a participant in a National Science Foundation grant program called MADE CLEAR (Maryland and Delaware Climate Change Education, Assessment, and Research), through which she helped to design and implement climate change professional development for teachers to assist them with integrating this scientifically and socially complex topic into their science curriculum. She currently teaches climate change courses in Rider's <u>post-baccalaureate teaching program</u> and in the <u>Endeavor STEM program</u>, part of Rider's master's in teacher leadership program.



Matt Fisher is an associate professor of chemistry at Saint Vincent College and a senior fellow with the National Center for Science and Civic Engagement, where he coordinates NCSCE's efforts in the scholarship of teaching and learning and serves as co-editor of Science Education and Civic Engagement: An International Journal. In addition to his responsibilities as a faculty member, Matt was department chair for seven years and the director of Saint Vincent College's Teaching Enhancement and Mentoring Program for a similar length of time. He has developed two SENCER model courses: Chemistry of Daily Life: Diabetes and Malnutrition (2005) and Undergraduate Biochemistry Through Public Health Issues (2009), and is the recipient of the 2019 Wm. E. Bennett Award from NCSCE for his contributions. Matt has been active in the American Chemical Society's (ACS) Division of Chemical Education, serving on the Division Program Committee and as meeting program co-chair for the Division's program at the August 2008 ACS National Meeting in Philadelphia. He was a member of the ACS Committee on Environmental Improvement (CEI) for over a decade, helped lead CEI's efforts in education during that time, and chaired the committee in 2013. He now serves as a member of the ACS Committee on Science where he chairs the Public Policy Subcommittee. Matt is a 2005 Carnegie Scholar and spent the 2005-2006 academic year working on a project to connect topics in undergraduate biochemistry to public policy, public health, and institutional/personal values in support of integrative learning. He has published several book chapters on his work in SENCER, and is co-author (with Jacqueline Dewar and Curtis Bennett) of The Scholarship of Teaching and Learning: A Guide for Scientists, Engineers, and Mathematicians. Matt has been recognized as an ACS Fellow and received the ACS-CEI Award for Incorporating Sustainability into Chemistry Education in 2015.



Juan Carlos Garibay is an Assistant Professor in the Higher Education program at the University of Virginia. His research uses a variety of statistical methods to examine issues of diversity, equity, social justice, and sustainability/environmental justice in higher education. Garibay's scholarship has been published or is currently in press with various peer-reviewed education journals including the

Review of Higher Education, Research in Higher Education, American Educational Research Journal, Journal of Research in Science Teaching, Environmental Education Research, and Journal of Student Affairs Research and Practice, among other academic outlets.

While at UCLA, he served as a research analyst for the Higher Education Research Institute where he worked on a national longitudinal study funded by the National Institutes of Health and National Science Foundation examining the experiences of underrepresented Students of Color in the STEM fields. He also collaborated with the UCLA Center for the Study of Inequality examining four decades of national data to understand the various factors that explain income inequality among U.S. citizen and immigrant workers. As a research analyst for the UCLA Office of Faculty Diversity and Development he examined faculty diversity issues from the recently administered UC-wide Campus Climate survey to help support institutional decisions and planning as well as developed resources for faculty to help promote a climate of inclusiveness.



Ulla Hasager is the Director of Civic Engagement for the College of Social Sciences at University of Hawaii-Manoa and the Co-Director of the SENCER Center of Innovation-West. She teaches Ethnic Studies and general Social Sciences courses and is specialized in environmental and global anthropology, sustainability, the Pacific, ethnicity and indigeneity, civic/community engagement, and trans-disciplinary education. She is responsible organizing professional development for faculty, graduate students, and community partners and creates and leads innovative community-engagement and service-learning programs such as the Mālama I Nā Ahupua'a (trans-institutional/disciplinary cultural-environmental program, recognized as a high-impact educational model in sustainability education). Ulla was a director of NCSCE's the "Transcending Barriers for Success: Connecting Indigenous and Western Knowledge" project



Yao Zhang Hill is an Assessment Specialist for the UHM Assessment Office, which collaborates with faculty, staff, students, and administrators to establish meaningful, manageable, and sustainable assessment for its programs. Dr. Hill has presented and published widely, offering numerous engaging workshops on various assessment topics. She is involved in the evaluation aspects of the model projects the NFLRC is constructing and she serves as guest lecturer in the NFLRC intensive summer institutes. Currently, she is the evaluator for NCSCE's "Transcending Barriers to Success: Connecting Indigenous and Western Knowledge in STEM," and has special expertise in assessment strategies for integrative curriculum that connects STEM learning and civic engagement. Yao has been working with Davida Smyth and member of a QUBES Faculty Mentoring Network to develop rubrics for assessing student learning in science and civic engagement.



Margaret (Missy) Holtzer, Ph.D. is a high school science teacher with over 30 years of experience teaching middle school through higher education audiences. Her field research includes data collection in places such as Svalbard, Nicaragua, Kenya, Ecuador, Jamaica, Costa Rica, off the coasts of Oregon, South Carolina, Cape Cod, and Chile. Back in the classroom she uses her field experiences to develop units of study that will inspire students to get out and explore their natural world. She served as president of National Earth Science Teachers Association from 2012 to 2014 and is currently on the Executive Committee as secretary. She has served on many state and national committees, and presents at local, regional, and national conferences. She has a master's degree in science education, a master's degree in geography, and a PhD in science education. She was on the writing team for the 2009 NJ Core Content Curriculum Standards for Science, the NJ State Leadership Review Team for the NGSS, model curriculum writer for NJ, and is on the national Peer Review Panel for Achieve and NGSS and is a NASA SOFIA Ambassador. Missy was a member of the NJ team receiving NCSCE's William E. Bennett award in 2019 for their efforts to bring civic engagement to K-12 science.



Since retiring as Sr. Advisor for Education and Communication at the National Academies of Sciences, Engineering, and Medicine in November 2018, **Jay Labov** has been professionally active in the improvement of STEM education at the K-12 and undergraduate levels.

He worked as a member of the staff of the National Academies for 23 years, serving as Senior Advisor for Education & Communication. He directed or contributed to more than 30 National Academies reports on undergraduate education, teacher education, advanced study for high school students, K-8 education, and international education. He served as Director of the Academies' Teacher Advisory Council and oversaw efforts to confront challenges to teaching evolution in the nation's public schools. He coordinated efforts to work with professional societies on education issues and oversaw education work in the life sciences.

He is an organismal biologist by training and spent 18 years on the faculty at Colby College until 1997. He is a Kellogg National Fellow, Fellow in Education of the American Association for the Advancement of Science (AAAS), and Council of Independent Colleges Visiting Fellow He has as chair-elect, chair, and past chair of AAAS's Education Section. He was named a Lifetime Honorary Member by the National Association of Biology Teachers and received the Distinguished Service to Science Education Award from the National Science Teachers Association. He received an Academies Staff Award for Lifetime Achievement and is currently the Chair of the education committee for the International Society for Evolution, Medicine, and Public Health, a Fulbright Specialist for the U.S. Department of State, and a member of the Board of Trustees of TERC, in Cambridge, MA.



Christine Marizzi, Ph.D, Chief Community Scientist, BioBus graduated from the University of Vienna, Austria, with a Ph.D. degree in Genetics for investigating a unique stem-cell mutant of the plant model Arabidopsis thaliana. She joined the BioBus team in 2019. With 12+ years in national and international science education, she dedicates her time, energy and intellect to build frameworks that help students realize their greatest potential in STEM fields and provide traditionally underrepresented minorities with multiple entry points to academic and professional careers in STEM disciplines. Her deep interest in biological systems and data visualization also led to several critically acclaimed projects at the intersection between technology, art, and science with a wide range of collaborators.



Pat Marsteller directed the Emory College Center for Science Education from 1997-2016. Her academic work includes promoting access, interest and participation in science careers. At Emory, she developed programs that focus on attracting and retaining underrepresented students, women and minorities in careers in science and was the chair of the Emory President's Commission on the Status of Minorities. She was one of the cofounders of the Neuroscience and Behavioral Biology major and one of the leads on the NSF Center for Behavioral Neuroscience.

She is currently Chair Emeritus of the AAAS section on education and one of the members of Committee on Science & Technology Engagement with the Public (CoSTEP) which aims to support such AAAS strategic goals as enhancing communication among scientists, engineers and the public; providing a voice for science on societal issues; and increasing public engagement with science and technology. She is co-chair of the Diversity Inclusion Equity and Social justice working group of the Accelerating Systemic Change Network (ASCN). Pat continues her commitment to equitable STEM education through her work with BioQUEST-QUBES, AAAS and ASCN, leading efforts to change policies and practices at the institutional, faculty and student levels.



Cathy Middlecamp's work lies at the intersection of science, people, and the planet. She is professor emerita at the University of Wisconsin-Madison, where she served as director for Sustainability Education and Research and professor in the Nelson Institute for Environmental Studies. Although her career has been in academia, she has worn many hats other than that of a faculty

member, most notably as director of the Chemistry Learning Center. A long-time participant in SENCER, she was co-PI of the third NSF funded iteration of the project. Middlecamp served as editor-in-chief of Chemistry in Context, a project of the American Chemical Society, and was the lead author on topics of air quality, stratospheric ozone depletion, acid rain, plastics, nuclear energy, and sustainability. In 2019, she was as a Fulbright Specialist in chemistry education at the Academic Arab College in Israel. Middlecamp is a Fellow of the American Chemical Society (ACS), inaugural class, and holds multiple national ACS awards: The 2019 Pimentel Award in Chemical Education, the 2015 Award for Encouraging Women in Careers in the Chemical Sciences, and the 2006 Award for Encouraging Disadvantaged Students in Careers in the Chemical Sciences. She is a Fellow of the Association for the Advancement of Science and of the Association for Women in Science.



Jessica Monaghan, Ed.D. is the Assistant Director of STEM at Princeton University where she advises and supervises mathematics and science students in the program. She also serves as an instructor in the TPP 403 and TPP 404 courses. Starting her career as a middle school science teacher, Jessica has experience in curriculum writing, assessment design, and developing and leading professional development to help meet the vision of the Next Generation Science Standards. A special focus of her work has engaging families in STEM, integrating social emotional learning into the classroom, equitable learning experiences for students, and bringing meaningful partnerships to her classroom and district. Jessica and a team from New Jersey developed one of the model K-12 units for SENCER through collaboration and partnership with informal educators, to expand outreach and resources to K-12 practitioners. For their work the team received the William E. Bennett award in 2019 for their efforts to bring civic engagement to K-12 science.



Elaine Savory is a postcolonial literary critic and environmental humanities scholar, as well as a poet. She has published widely, books and essays, on Caribbean and African literatures, especially women's writing, poetry, theater and drama, and literary history. Her recent work includes ecocritical readings of Jean Rhys, Chinua Achebe, Derek Walcott, Kamau Brathwaite, Ngugi wa Thiong'o, as well as an essay on the environmental humanities course she devised at The New School, along with colleagues, including Bhawani Venkataraman, with whom she will be presenting at SENCER's Summer Institute. She has several ecocritical essays in the press or preparation including a history of the breadfruit in the Caribbean, essays on Rachel Carson, Pauline Melville and Elizabeth Nunez, and she is working on an environmental humanities monograph on Caribbean literature.



David Ucko has devoted his career to creating ground-breaking educational experiences and attractions. He has managed their development from vision to execution—concept and planning through implementation and operation—on small to large scale. Through exhibits, media, shows, publications and entire museums, Ucko has engaged diverse audiences with content from science, technology and health to history and social impact. Since 2016 Dave Ucko has been a Senior Advisor to SENCER-ISE, NCSCE's suite of initiatives connecting STEM educators from higher education and informal learning institutions.

His prior roles include Deputy Director and (acting) Director of NSF's Division of Research on Learning in Informal and Formal Settings, Executive Director for the National Academy of Sciences museum, founding President of Science City at Union Station, in Kansas City, Vice President for Chicago's Museum of Science and Industry and Deputy Director for the California Museum of Science and Industry (now California Science Center).



Educated as a physical chemist, **Bhawani Venkataraman's** research is in the field of chemical education and focuses on understanding how to engage students in understanding chemistry and the relevance of understanding phenomena at the molecular scale. Currently she is investigating two approaches in improving the learning of chemistry: 1) the use of computer software visualization tools to assist students in "seeing" molecules and molecular interactions and in understanding how these microscopic constructs influence their macroscopic world; and 2) the use of contexts as a motivator and learning tool. Her focus is in developing curricular materials that connect fundamental chemical principles and concepts to an understanding of environmental issues such as water and air pollution, stratospheric ozone depletion, and climate change. Another key area of her research is in understanding what constitutes effective communication of basic scientific research to non-scientists on issues such as water quality, air pollution and climate change and she has published articles that investigate the challenges in ensuring access to safe drinking water and raise awareness of the delicate balance of earth's atmosphere that allows life to be sustained on earth.