Ocean Acoustics Education and Expertise

Committee

Jennifer Miksis-Olds

Chair

Dr. Jennifer L. Miksis-Olds is currently the Director of the Center for Acoustics Research & Education and a Research Professor at the University of New Hampshire. She is a member of the Scientific Committee of the International Quiet Ocean Experiment Program and serves as a Scientific Advisor to the Sound and Marine Life Joint Industry Programme. She is also a Fellow of the Acoustical Society of America. Her primary research interests are patterns and trends in ocean soundscapes, animal behavior and communication, and the impact of environmental change on marine life. Previously, Dr. Miksis-Olds was the Vice-Chair of the Board of Trustees for the Consortium for Ocean Leadership from 2020-2021. In 2011 and 2013, she was the recipient of an Office of Naval Research Young Investigator Program award and the Presidential Early Career Award in Science and Engineering, respectively. She received an A.B. cum laude in Biology from Harvard University, an M.S. in Biology from the University of Massachusetts Dartmouth, and a Ph.D. in Oceanography from the University of Rhode Island. From 2012-2013, she served as a member of the National Academies' Committee on the Evaluation of the Drakes Bay Oyster Company Special Use Permit DEIS.

Andrea P. Argüelles

Member

Dr. Andrea P. Argüelles is an Assistant Professor in the Department of Engineering Science and Mechanics at the Pennsylvania State University, where she also serves as the Associate Department Head for Diversity and Inclusion. She is an affiliate faculty in the Graduate Program in Acoustics. Dr. Argüelles' research focuses on the development of quantitative ultrasonic tools for materials characterization, with applications in advanced manufacturing processes and cold sintering of ceramics. She has received numerous awards for her work, including the NSF CAREER Award, the ASNT Young NDT Professional Recognition, and the Ferdinand P. Beer & E. Russel Johnston Jr. Outstanding New Mechanics Educator Award from ASEE. As an advocate for diversity and inclusion in engineering, Dr. Argüelles actively participates in mentoring and outreach activities. She is the faculty advisor for the Society of Hispanic Professional Engineers and chairs her department's Diversity, Equity, and Inclusion Committee. Dr. Argüelles has also chaired the Committee to Improve Racial Diversity and Inclusivity of the Acoustical Society of America since May 2023. Her dedication to teaching and student welfare has been recognized with the Lawrence J. Perez Memorial Student Advocate Award and multiple Schreyer Excellence in Teaching Awards from Penn State University. She holds a Ph.D. in Mechanical Engineering and Applied Mechanics from the University of Nebraska-Lincoln (2016), and B.S. and M.S. degrees in Mechanical Engineering from the University of Texas – Rio Grande Valley (2011 and 2012).

Arthur B. Baggeroer

Member

Dr. Arthur Baggeroer is a Ford Professor of Engineering at the Massachusetts Institute of Technology (emeritus) and a Naval Research Scholar at the Woods Hole Oceanographic Institution. His main expertise lies in signal and array processing, ocean acoustics, and sonar systems. More so, he has engaged with several programs and international colleagues for the use of acoustics for undersea telemetry and acoustic thermometry. He has supervised about 150 graduate-level students who are now leaders (and competitors) in acoustics and related fields. He was awarded the Purdue University Department of EE Distinguished Alumni Award and the National Defense Industry Award ADM Bushnell-ADM Martell for Undersea Submarine Warfare. Dr. Baggeroer is a fellow of the Acoustical Society of America, the American Association for the Advancement of Science, and the Institute of Electrical and Electronics Engineers. He is also a member of the National Academy of Engineering and served as a member on relevant National Academies' committees/panels, including Technical Review: Shallow Water Acoustics and Non-Acoustic R&D Program, and Panel for a Review of ONR Research Opportunities in Underwater Acoustics. He was also a member of the National Academies’ Naval Studies Board and Ocean Studies Board. Dr. Baggeroer received a Doctor of Science in Electrical Engineering from the Massachusetts Institute of Technology.

Liesl A. Hotaling

Member

Liesl Hotaling is President of Eidos Education; Director of Program Development for the Marine Technology Society; a Marine Research Associate with the University of Rhode Island; and a Senior Research Engineer with the College of Marine Science, University of South Florida. She serves as the lead for the Marine Technology Society's Microcredentials effort, seeking to grow the number of marine technicians and improving knowledge of marine technologies and their applications. She also serves as the Project Manager of the Student Enabled Network of Sensors for the Environment using Innovative Technology (SENSE IT) and specializes in real time data education projects and hands-on STEM educational projects supporting environmental observing networks. She is the co-editor and contributor to the 2021 publication Preparing a Workforce for the New Blue Economy: People, Products and Policies. She holds a B.S. in Marine Science, a M.A.T. in Science Teaching, and a M.S. in Maritime Systems.?

Wu-Jung Lee

Member

Dr. Wu-Jung Lee is a Principal Oceanographer at the Applied Physics Laboratory, University of Washington in Seattle, WA, USA. Prior to joining APL-UW, she was a F.V. Hunt Postdoctoral Fellow of the Acoustical Society of America studying animal echolocation at Johns Hopkins University. Dr. Lee enjoys working on problems that bridge across disciplinary boundaries and with people with different backgrounds. Her research spans two primary areas: acoustical oceanography and animal echolocation. In acoustical oceanography, she develops physics-based and data-driven methods to extract biological information from active ocean acoustic observations. In animal echolocation, she combines experimental and computational approaches to study the sonar of bats and dolphins as biological models for engineering insights. Dr. Lee actively contributes to open-source scientific software and is an advocate for a more inclusive and supportive research community. She leads the development of Echostack, an open-source Python toolbox for scalable and interoperable ocean sonar data processing and co-founded and continues to co-lead the organization of OceanHackWeek, a workshop dedicated to data science in oceanography, since 2018. She received her double-major B.S. degrees in Electrical Engineering and Life Science from National Taiwan University, and her Ph.D. from the Massachusetts Institute of Technology-Woods Hole Oceanographic Institution Joint Program in Oceanography.

Carolyn D. Ruppel

Member

Dr. Carolyn Ruppel is a Research Geophysicist at the U.S. Geological Survey and the lead scientist for the Gas Hydrates Project, which focuses on climate, energy resource, and hazards issues associated with natural gas hydrates in permafrost and marine settings. Dr. Ruppel's research targets contemporary climate change and the breakdown of gas hydrates; multidisciplinary studies of seafloor methane emissions and fate of methane in the water column; the distribution of marine gas hydrates and U.S. Arctic subsea permafrost; and the use and impact of high-resolution geophysical acoustic sources to image the water column and seafloor for research objectives. For many years, she has informally managed environmental compliance activities for deployment of marine acoustics by scientists in the USGS Coastal and Marine Hazards and Resources Program. Dr. Ruppel served as a program officer in Division of Ocean Sciences at the National Science Foundation from 2003-2006 and was a geophysics professor at the Georgia Institute of Technology from 1994-2006 and a Woods Hole Oceanographic Institution Postdoctoral Scholar in 1992-93. She is a Fellow of Geological Society of America. Dr. Ruppel obtained all her degrees at the Massachusetts Institute of Technology.

Gail A. Scowcroft

Member

Gail Scowcroft, an ocean scientist and education professional, is the Associate Director of the Inner Space Center at the University of Rhode Island Graduate School of Oceanography, a national facility for ocean science research and education. She served as the Executive Director of the Consortium for Ocean Science Exploration and Engagement (COSEE), an independent global network of over 300 ocean science research and education institutions. For the first 18 years of her career, Gail conducted ocean science research focused on climate reconstruction and global climate change. For the last 20 years, she has also directed ocean and climate science education programs, including the Discovery of Sound in the Sea project. Gail also served as the Director of the Alliance Office for the National Science Foundation's Climate Change Education Partnership, a network of U.S. climate change education programs. She is the co-founder of the Global Ocean Science Education Workshops that bring together ocean scientists, education professionals, business leaders, and policymakers. In addition to service on several U.S. and E.U. advisory committees, Gail served a four-year term on the U.S. Ocean Research Advisory Panel under President Obama. The University of Rhode Island has considered her to hold the equivalent of a Ph.D. in Marine Geology since 1982.

Preston S. Wilson

Member

Dr. Preston S. Wilson is the Paul D. and Betty Robertson Meek Centennial Professor of Engineering at the University of Texas at Austin. His research areas are broadly focused on physical acoustics, underwater acoustics, engineering acoustics, and bioacoustics, with specific areas of interest in sound propagation in shallow water, water-saturated sediments, bubbly liquid, and multiphase material. His work has been reported in over 400 peer-reviewed papers, conference proceedings, technical reports, and published presentation abstracts. He holds six US patents and is a co-founder of AdBm Technologies, operating in the underwater noise mitigation arena. He is a fellow of the Acoustical Society of America (ASA), a past Chair of the Committee for Education in Acoustics of the ASA, a past member of the Executive Council of the ASA, and an Associate Editor for the Journal of the ASA. Wilson was awarded the A.B.Wood Medal from the Institute of Acoustics in the UK in 2007 (an early career award) and the Rossing Prize from the ASA in 2018, for contributions to acoustics education. Wilson’s degrees are in Mechanical Engineering. He received the BS (1990) and MS (1994) degrees from the University of Texas at Austin and the Ph.D. (2002) degree Boston University.