

Service-Learning in Undergraduate Geosciences: A Workshop

Committee

Cathy A. Manduca

Chair

Cathryn Manduca is director of the Science Education Resource Center at Carleton College, where she is involved in a variety of projects that support improvements in undergraduate education and geoscience education. Her work includes organizing workshops and other activities for faculty and educators of all types. Topics of focus include bringing research results on teaching and learning into broader use in the geosciences, understanding geoscience expertise, and building strong geoscience departments. She is the executive director of the National Association of Geoscience Teachers and serves on the American Geophysical Union outreach committee, education committee of the American Institute of Physics, National Numeracy Network board of directors, and advisory board for gifted and talented education programs in her local school district. She is also the executive director of the National Association of Geoscience Teachers. She holds a B.A. in geology from Williams College and an M.A. and Ph.D. in geology from the California Institute of Technology.

Anthony Berthelote

Member

Antony Berthelote is the head of the Department of Hydrology at Salish Kootenai College. He was the lead groundwater researcher for the Environmental Protection Agency on the Milltown Dam Removal CERCLA (Superfund) Project. His specific research interests focus on fluid dynamics, computer modeling, groundwater-surface water interactions, protecting groundwater supplies, river/floodplain restoration, and shallow subsurface geophysics. He is the lead instructor in hydrology at Salish Kootenai College. As the college's American Indian Science and Engineering Society chapter advisor, he often mentors student community support activities and oversees student interns. He currently serves as cochair of the Geoscience Alliance and has served as an education and outreach committee member for the Consortium of Universities for the Advancement of Hydrological Sciences, Inc. since 2010. He holds a B.S. in geology from the University of Montana, an M.S. in geophysics from the University of Alaska, Fairbanks, and a Ph.D. in geosciences from the University of Montana.

Sue Ebanks

Member

Sue Ebanks is assistant professor of marine and environmental sciences at Savannah State University. Her overall area of scientific research is the study of aquatic physiology and toxicology with particular focus on macroinvertebrates. She studies the effects of physically weathered and chemically dispersed crude oil on development and physiological processes in brine shrimp and marsh shrimp species. She is active in engaging students and underrepresented community youth in the exploration and monitoring of the Lower Ogeechee River Estuary. She actively advises the Savannah State Environmental Science Club and serves on the public policy committee of the National Association of Marine Laboratories. She has a B.S. and an M.S. from Savannah State University and a Ph.D. from the University of Miami.

Sarah Fortner

Member

Sarah Fortner is assistant professor of geology and environmental science at Wittenberg University. Her teaching interests include inquiry-based teaching, climate literacy, and community engagement. Her goal is to improve student and research understanding of critical biogeochemical interactions at the Earth's surface. Students in her classes are involved in K-12 outreach at COSI (science museum) and work on community environmental issues. Presently, she is creating an agricultural sustainability curriculum through a national-level grant (National Science Foundation InTeGrate) that will be widely disseminated to other earth and environmental scientists. Additionally, she is investigating agricultural soil-water sustainability with the Agroecosystem Critical Zone Research Cluster at Ohio State University. She has a B.S. in geology from the University of Wisconsin-Madison and an M.S. and Ph.D. in geological and earth sciences from Ohio State University.

Arthur Goldstein

Member

Arthur Goldstein is the founding dean of the College of Science and Mathematics at Bridgewater State University. Prior to joining Bridgewater State University, he held appointments as a dean at the University of New England and the director of the Division of Earth Sciences at the National Science Foundation (NSF). While at NSF, he was involved in developing GeoTeach, a program aimed at improving the development of preservice and inservice secondary school teachers. Prior to his appointment at NSF, he was a professor of geology at Colgate University and served as department chair for 5 years. He was the chair of the National Research Council (NRC) Committee on Trends and Opportunities in Federal Earth Science Education and Workforce Development and the cochair of an NRC study on scientific ocean drilling. He received a B.S. in geology from Kent State University and an M.S. and Ph.D. from the University of Massachusetts, Amherst.

Edward Laine

Member

Edward Laine is professor emeritus at Bowdoin College, interested in marine geology and oceanography. In Maine waters, his research topics include submarine groundwater discharge, hypoxia, and the record of Lake Wisconsin sea-level change. In the deep ocean, topics include the record of glacial erosion, radioactive waste disposal, terrigenous sedimentation, contourite drifts, and bottom current processes. Through the 2000 Problem-Based Service-Learning Institute sponsored by Maine Campus Compact, he saw a way to consistently and effectively form and nurture links between the campus and the community. He holds an A.B. from Wesleyan University and a Ph.D. from the Woods Hole Oceanographic Institute Joint Program in Oceanography at the Massachusetts Institute of Technology.

John Saltmarsh

Member

John Saltmarsh is the director of the New England Resource Center for Higher Education (NERCHE) at the University of Massachusetts, Boston, as well as a faculty member in the Higher Education Doctoral Program in the Department of Leadership in Education in

the College of Education and Human Development. He leads the project in which NERCHE serves as the administrative partner with the Carnegie Foundation for the Advancement of Teaching for Carnegie's elective Community Engagement Classification. He is an associate editor for the Michigan Journal of Community Service-Learning and serves on several editorial boards. He serves on the national advisory board of Imagining America and is a member of the board of the International Association for Research on Service-Learning and Community Engagement, National Review Board for the Scholarship of Engagement, and advisory committee for the Carnegie Foundation's Community Engagement Classification. In 2015, he was inducted into the Academy of Community Engagement Scholarship. From 1998 through 2005, he directed the national Project on Integrating Service with Academic Study at Campus Compact. He holds a Ph.D. in American history from Boston University.

Susan Sullivan

Member

Susan Sullivan is director of the education and outreach program of the Cooperative Institute for Research in Environmental

Sciences (CIRES) at the University of Colorado Boulder, which includes nearly 800 researchers and support people, including nearly 200 graduate and undergraduate students. She has helped develop programs to educate students of all ages and backgrounds about the geosciences and global and local environmental issues, including K-12 students, college undergraduates, students from underrepresented groups, and community college students. She has had ongoing engagement with the National Association of Geoscience Teachers through publications, presentations, and position statements. Her current projects include professional development workshops for science teachers, provision of education related to research projects, and oversight of numerous other education projects within the CIRES outreach group. Before beginning her work in K-12 education, she conducted research in atmospheric chemistry analytical methods with CIRES and the NOAA Aeronomy Laboratory. She holds a B.S. in chemistry from California Polytechnic State University, San Luis Obispo, and a Ph.D. in analytical chemistry from the University of Colorado Boulder.