

## MANAGING COASTAL RISK: ENHANCING COMMUNITY RESILIENCE IN A CHANGING CLIMATE

THURSDAY, DECEMBER 10, 2015

CAPE COD RESORT AND CONFERENCE CENTER

### SPEAKER BIOGRAPHIES

**KEYNOTE SPEAKER: RADLEY HORTON , PH.D.** is an Associate Research Scientist at the Center for Climate Systems Research at Columbia University, affiliated with NASA's Goddard Institute for Space Studies. His research interests include sea level rise, extreme climate events, Arctic sea ice, and adaptation to climate change. Radley was a Convening Lead Author for the Third National Climate Assessment, Northeast Chapter. He is the Lead Principal Investigator for the NOAA-Regional Integrated Sciences and Assessments-funded Consortium for Climate Risk in the Urban Northeast. Radley is also the Columbia University lead for the Department of Interior-funded Northeast Climate Science Center, and an NSF funded Climate Change Education Partnership Project. He has also served as Deputy Lead for NASA's Climate Adaptation Science Investigator Working Group, charged with linking NASA's science to its institutional stewardship. Radley has also been a Co-leader in the development of a global research agenda in support of the United Nations Environmental Program's Programme on Vulnerability, Impacts, and Adaptation (PROVIA) initiative. Radley serves on numerous national and international task forces and committees, including the Climate Scenarios Task Force in support of the 2018 National Climate Assessment. Radley teaches in Columbia University's Sustainable Development department.

**GREG BERMAN, PG, GISP,** is a coastal processes specialist for Woods Hole Sea Grant (WHSG) and the Cape Cod Cooperative Extension (CCCE), where he provides technical assistance on coastal geology topics: shoreline change, erosion control alternatives, and potential effects of various human activities on coastal landforms, coastal flood plains, coastal hazards, hazard mitigation analyses, and dune restoration techniques. He joined WHSG and CCCE after five years with Science Applications International Corporation (SAIC) where he worked on a variety of government projects focusing on environmental assessments and shoreline stabilization. Prior to that he spent six years with United States Geological Survey (USGS) offices in Florida and Hawaii, where he performed analysis of coastal geology, habitat, and hydrology. He has more than 15 years of diverse experience with surveying, interpreting, and reporting on coastal geology. He has also regularly provided assistance on local coastal restoration projects organized by environmental non-profit organizations and worked with a wide spectrum of volunteers.

**MARK BORELLI, PH.D.,** is an Associate Scientist at the Center for Coastal Studies. He joined the Center in 2009 and is currently the chair of the Marine Geology Department. Mark is a coastal geologist interested in coastal processes, sediment transport in particular, and understanding how coastal areas respond to storms, sea level rise, and natural and anthropogenic alterations.

**PATRICIA BOWIE** joined the Massachusetts Office of Coastal Zone Management in August 2014 as a Coastal Resiliency Specialist. In this position, Patricia coordinates CZM's Coastal Community Resilience and Green Infrastructure for Coastal Resilience Grant Programs and provides technical support to communities on vulnerability assessments, hazard mitigation, and climate change adaptation planning. Patricia previously worked with the New York State Department of State where she served as a NOAA Coastal Management Fellow and a regional planner on the development of coastal resilience planning and risk assessment guidelines to assist community rebuilding efforts following Hurricane Sandy. Patricia holds a BS in Earth and Environmental Science from Furman University and a Masters in Environmental Management from Duke University.

**NINA COLEMAN** has been the Sandy Neck Park Manager since 2003. As the Park Manager, Nina spends her professional time balancing the ecological needs of a dynamic and sensitive beach system with the demands of human recreational activities. This is best illustrated in the busy summer season by the clash between endangered species protection and off road vehicle beach use. When the crowds recede, Nina can be found rescuing sea turtles, educating schoolchildren about the natural wonders of Cape Cod and restoring wetlands on the 4,500 acres of Sandy Neck Beach Park. Nina has a Masters in Science (Natural Resource Conservation) UMass Amherst, and a Bachelors in Science (Environmental Biology) UMass Amherst and an Associate Degree from Cape Cod Community College, which she credits for igniting her passion in ecology. Nina and her family live in Marstons Mills. She enjoys all things outdoors especially mountain biking.

**JENNIFER COOPER** is a Ph.D. Candidate at the University of Rhode Island working in the laboratory of soil ecology and microbiology under the direction of Dr. Jose Amador. Jennifer received her undergraduate degree in 2005 from the University of California, Los Angeles in chemistry. Her dissertation research has involved investigating the impacts of climate change on septic systems, as well as studying nitrogen removal mechanisms within soil drainfields and innovative septic system technologies. Jennifer's goal is to create more sustainable and effective decentralized wastewater treatment for applications in both the developing and developed world.

**LARRY DAPSI**, Entomologist since age five...Larry received his B.S. in Environmental Science & Biology from Fitchburg State University and an M.S. in Entomology from the University of Massachusetts – Amherst. He has thirty-four years of professional pest management experience including Vegetables, Cranberries and Household Insects. Larry joined Cape Cod Cooperative Extension in 2011 as Deer Tick Project Coordinator and Entomologist and is a member of the Barnstable County Task Force on Lyme and other Tick-Borne Diseases.

**ED DEWITT** is Executive Director of the Association to Preserve Cape Cod (APCC). APCC is a non-profit environmental organization (501 (c) (3)) whose mission is to promote actions, policies and programs that foster the preservation of the natural resources of Cape Cod. APCC focuses its efforts on the conservation of the Cape's natural heritage, protection of water resources, promotion of managed growth and achievement of an environmental ethic. In pursuing these goals over the past 47 years, APCC has emerged as the Cape's environmental leader, earning a reputation as the stalwart defender of Cape Cod's precious natural resources. Ed is a retired Coast Guard aviator. Prior to joining APCC in 2011, Ed practiced law on Cape Cod as an attorney specializing in municipal, maritime and aviation law. He has a number of reported cases in the areas of land use, zoning and wetlands protection.

**CALLY J. HARPER, PH.D.**, received her undergraduate degree in Psychology from Connecticut College, her Masters of Science degree in Biology from the University of North Carolina Wilmington, and her PhD in Biology from Brown University. She spent nearly ten years as a research scientist, grant writer and teacher before leaving academics to work as a Planner at the Cape Cod Commission. At the Commission, Cally dedicates her time to building coastal resiliency on Cape Cod.

**SHANNON JARBEAU** is the Community Rating System and Floodplain Coordinator for Barnstable County through the Cape Cod Cooperative Extension. In this capacity, Shannon helps Barnstable County towns apply to and maintain participation in the National Flood Insurance Program's Community Rating System to earn residents discounts on flood insurance and help make Cape Cod safer from flooding. Shannon is a Certified Floodplain Manager (CFM®) with a master's degree in coastal policy and floodplain management. Prior to coming to Cape Cod, Shannon worked for a small non-profit called Wetlands Watch in Norfolk, Virginia, on issues related to sea level rise, floodplain management, and the Community Rating System.

**RICK KARNEY** is a Shellfish Biologist and Director of the Martha's Vineyard Shellfish Group, Inc., a non-profit organization comprised of shellfish departments of the six Island towns.

**HEATHER M<sup>C</sup>ELROY** has served as the Cape Cod Commission's Natural Resources Specialist for the last 15 years, developing natural resource and land use policy for Cape Cod, and applying those policies to the Commission's planning and regulatory work. Her work includes natural resources management policy, green infrastructure planning, and coastal resiliency and ocean planning. Heather has supported the development of the Section 208 Water Quality Plan for Cape Cod, including facilitating the science advisory panel convened to examine alternative nitrogen management technologies, and overseeing the maintenance of the Technologies Matrix. She is part of the team of hydrogeologists, planners, and GIS analysts assisting towns with incorporating green infrastructure approaches into the plans for managing water quality in nutrient-impacted watersheds for the 208 plan.

Heather participated in the Massachusetts Ocean Management planning process since that project started in 2008, and serves as the Cape Cod Commission's representative to the Massachusetts Ocean Advisory Commission. She managed Barnstable County's 18 month regional ocean planning project, the Cape Cod Ocean Management Planning District of Critical Planning Concern (DCPC), coordinating staff, and technical and policy advisory committees. The DCPC resulted in the Cape Cod Commission's adoption of the Cape Cod Ocean Management Plan:

<http://www.capecodcommission.org/index.php?id=349&maincatid=76>

Education: Bachelor of Fine Arts, 1989, Cornell University, College of Architecture, Art, and Planning, Master of Arts, 1996, Tufts University, Department of Urban and Environmental Planning & Policy

**CHRIS MILLER** is Director of the Brewster Department of Natural Resources and Conservation, a position he has held for eight years. He has worked on a number of successful coastal restoration, adaptation and resiliency projects in Brewster. In 2011, he was given a Coastal America Partnership award for the Stony Brook Salt Marsh Restoration Project and NOAA's Excellence in Restoration Award. In 2013 the Brewster Conservation Trust selected the Brewster Department of Natural Resources as its Conservationists of the Year.

**CHRISTINE PLAYER** joined CLE Engineering, Inc. in 2010 as a Senior Project Manager/Engineer and brings over 21 years of experience as a waterfront, geotechnical, and environmental engineer. She is a graduate of the University of Massachusetts-Lowell where she received a B.S. in Civil Engineering and M.S. in Civil Engineering-Environmental and Geotechnical Option. Ms. Player's career includes service in both the public and private sectors where she has served as an engineer, project manager and principal. Her experience is quite comprehensive and includes performing/managing hydrographic and topographic survey, feasibility studies, engineering, dredge sediment analysis, environmental permitting, cost estimating and bid and construction phase services for small to very large and complex private and public waterfront projects. Ms. Player has participated in a multitude of projects which have involved the planning, engineering and permitting of recreational and commercial piers and marinas, coastal infrastructure and shoreline protection, dredging and dredge sediment management and disposal. She has also provided her technical expertise in developing comprehensive shoreline management plans for several Massachusetts coastal communities.

**MAHESH RAMACHANDRAN, PH.D.** joined the staff of the Cape Cod Commission as its first environmental economist in December 2013. Environmental economists combine available socio-economic information, geospatial data and policy information to design mathematical models and scientific surveys that tease out how complex ecological processes affect and are affected by human behavior. The relationship between the environment and the economy has always been a part of the Commission's mission. Quantifying that relationship in real terms to drive better policy at the regional and local levels is among the reasons the Commission sought to add an environmental economist to the staff. Mahesh holds a Masters and Ph. D in Economics from Clark University. Prior to joining the Commission he worked for Yale University on a NASA project that sought to answer questions on the intersection of urbanization and global environmental changes.

**JAMES RASSMAN** is the Stewardship Coordinator at the Waquoit Bay National Estuarine Research Reserve located in Falmouth and Mashpee MA. Mr. Rassman works on long term monitoring and research in and around Waquoit Bay, coastal, riparian, and upland restoration, and land management and acquisition projects. He holds a Masters in Natural Resource Management and a BS in Forestry. Before coming to the Reserve, he had previously worked for the EPA on riparian stream bank stabilization and restoration, the US Forest Service, Colorado State University, and several State agencies on the development and implementation and monitoring of best management practices to protect water quality. He has a particular interest in the management and ecology of coastal pine barrens and grasslands and lives on the Cape.

**ANNE REYNOLDS** is the Geographic Information Systems Director for the Cape Cod Commission, specializing in strategic information, innovation and design. She has worked at the Commission since 2005, serving as GIS Analyst and GIS Manager prior to being named director in 2013. Ms. Reynolds' previous experience includes three years at the Waquoit Bay National Estuarine Research Reserve as the Information and Technology Coordinator. She has a B.A. in Geography from Humboldt State University, CA.

**MARGARET ROUND** is Chief of Air Toxics in the Massachusetts Department of Public Health/Bureau of Environmental Health's (MDPH/BEH) Environmental Toxicology Program (ETP). The ETP evaluates acute and chronic health impacts associated with chemical contaminants that may be present in a variety of environmental media including air, water, soil, fish, and some consumer products. The program also takes the Bureau's lead on evaluating health effects associated with climate change and conducting Health Impact Assessments (HIAs). Ms. Round has over 25 years of experience in working on health impacts and related regulatory issues associated with exposure to air pollutants, including air toxics. She is currently working with Massachusetts Department of Transportation on the integration of the health impact assessment framework into transportation planning studies. She is also co-Principal Investigator for a cooperative agreement to support local efforts to address adaptation to climate change. Ms. Round has a Bachelor of Science degree in Toxicology from Northeastern University (1984).

**DANYA RUMORE, PH.D.**, is the Associate Director of the Environmental Dispute Resolution Program and a Research Assistant Professor in the Wallace Stegner Center at the S.J. Quinney College of Law and a Visiting Assistant Professor in the Department of City and Metropolitan Planning at the University of Utah. She teaches courses in negotiation and dispute resolution and is a research affiliate of the University of Utah Ecological Planning Center and Global Change and Sustainability Center. Danya completed her doctorate in Environmental Policy and Planning at the Massachusetts Institute of Technology, where she was the Assistant Director of the MIT Science Impact Collaborative and the Project Manager for the New England Climate Adaptation Project. Danya's work and research focus on supporting more collaborative decision-making and stakeholder engagement in the context of science-intensive environmental issues, with a particular focus on climate-related risk management, water resource management, and mixed land-use planning. She holds a Master of Science in Environmental Management and Geography from the University of Auckland, New Zealand, and a Bachelor of Science in Environmental Science and Natural Resource Economics from Oregon State University. She has worked with a range of organizations, including the Consensus Building Institute, the Program on Negotiation at Harvard Law School, the New Zealand Centre for Sustainable Cities, and the Manomet Center for Conservation Sciences. She is a co-author of the book Managing Climate Risks in Coastal Communities: Strategies for Engagement, Readiness, and Adaptation.

**SHUBAYAU SAHA, PH.D.** is a Health Scientist with the Climate and Health Program at the Centers for Disease Control and Prevention with a multi-disciplinary research and program development portfolio. His research involves linking environmental exposures (like heat, precipitation, pollen) with health outcomes to assess epidemiologic risk associated with those exposures. He also conducts cost-effectiveness of community-level health intervention strategies. He holds a PH.D. in Environmental Economics from North Carolina State University. He currently participates in the United States Global Change Research Program (USGCRP) coordinating research and tool development relevant to climate and health.

**GABRIELLE SAKOLSKY** was born and raised in western Pennsylvania where she developed a strong interest in agricultural sciences. This led her to employment through her high school years as an evening milker at a local dairy. It was there where she developed an interest in biting flies. In 1990, she received a B.S. in Biology from Edinboro University (Pa.). She attended the University of Massachusetts to pursue her Master's Degree in Entomology. During her tenure at the University, she conducted her research on biting flies of northeastern saltmarshes (Tabanidae). She also studied flight energetics of *Phormia regina*. During her second year of research on Cape Cod, she interned with the renowned CDC/WHO entomologist Dr. Richard Hayes, who had been working as the project entomologist for Cape Cod Mosquito Control Project. Upon completing her M.S. degree in 1993 she was hired as the fulltime project entomologist at Cape Cod Mosquito Control Project where she serves as Staff Entomologist and Assistant Superintendent. As the Entomologist, she has conducted and directed the mosquito arbovirus surveillance program for Barnstable County (MA) over the past 22 years. She has developed or improved new trapping methods for Greenhead flies, designed a new trap to study mosquito populations that is currently being tested in several Atlantic states, and has worked on several international studies in Canada and Africa. She lives in Yarmouth, MA with her husband, 2 kids and 2 dumb, but lovable, dogs.

**ROB THIELER, PH.D.** is a Research Geologist with the U.S. Geological Survey in Woods Hole, Massachusetts. Rob conducts marine geologic research on the geologic framework and evolution of the coastal zone. This includes understanding relationships between geology, sediment transport, sea-level change, and coastal erosion. Rob has conducted assessments of sea-level rise vulnerability for the U.S. and locations worldwide. He recently served as a Lead Author of a U.S. Global Change Research Program report on potential impacts of sea-level rise. He works with many federal and state agencies to develop science and policy plans for addressing climate change impacts. Rob also developed a widely-used GIS software package for measuring coastal erosion and accretion and has recently gotten into smartphone applications for coastal science. He serves on the editorial board of the Journal of Coastal Research. Rob received his B.A. in political science from Dickinson College, and his M.S. degree in environmental science and Ph.D. in geology from Duke University.

**ROBERT THOMPSON** is the Meteorologist-in-Charge of the Southern New England National Weather Service Forecast Office in Taunton, MA. He is also an adjunct professor at Anna Maria College. Bob grew up in Cohasset, Massachusetts. He received a Bachelor of Science in Meteorology from Florida State University and a Masters Degree in Atmospheric Science from the University of Washington (in Seattle). Bob's career with the National Weather Service started as a summer student trainee at the Boston office during the early 1970s. Subsequent National Weather Service assignments have taken him and his family to Albany, NY, Anchorage, AK, Silver Spring, MD, and Reno, NV before returning to the Boston area in November 1989.

**SETH TULER** is an Associate Teaching Professor in the International and Global Studies Division, Worcester Polytechnic Institute and Research Fellow at the Social and Environmental Research Institute. His research interests more generally are concerned with public participation and developing tools to inform planning about social impacts and vulnerabilities to risk events. He is interested in applying insights emerging from research to practical applications in a wide range of policy arenas, including climate change adaptation planning and marine fisheries management.

**DAVID VALLEE** is the Hydrologist-in-Charge of the National Weather Service's Northeast River Forecast Center. The center provides detailed water resource and life-saving flood forecasting services to National Weather Service Forecast Offices and the hundreds of federal, state and local water resource entities throughout the Northeast and New York. David has worked for the National Weather Service for 25 years, serving in a variety of positions including Senior Service Hydrologist at the Taunton Weather Forecast Office from 1993-2000 and as Science and Operations Officer from 2001-2006. David has extensive experience leading hydrometeorological forecast and warning operations and directing weather research and training programs. David's research activities span a variety of topics including flooding, severe weather forecasting and orographically enhanced heavy rainfall in southern New England. David has served as the NWS lead investigator with the State University of New York, at Albany, on a multi-year project addressing Land Falling Tropical Cyclones in the Northeastern United States. This has improved the forecasting of heavy precipitation associated with these land falling tropical cyclones as well as developing a better understanding the mechanisms which lead to the recurvature and rapid acceleration of tropical cyclones as they approach the Northeast. David has been leading an effort at the Northeast River Forecast Center to examine changes in precipitation and temperature patterns across New England and its impact on flood behavior. Most recently, David led the NOAA National Service Assessment on the devastating floods of September 9-16, 2013.

David is most known locally for his outreach and education work on the behavior of New England Hurricanes, including many appearances on local radio and T.V. networks as well as the Weather Channel, the History Channel and the Discovery Channel. David has been the recipient of numerous regional and national awards including the prestigious National Isaac Cline Award for Leadership. David is a graduate of Lyndon State College. He is a life-long resident of the Rhode Island, living in the northeast part of Cumberland, with his wife and two sets of now teenage twins! He considers it a tremendous privilege to be serving the people of the very region he calls home.

**RICHARD WALDO** was born and raised in Massachusetts before receiving his Engineering Degree from Concordia University in Montréal, Quebec, Canada. Upon his return to Massachusetts he worked locally in Provincetown for an engineering firm before leaving to start his own practice. In June 2012, Richard joined Provincetown's Department of Public Works as Assistant Director before taking on the role of Director in November 2013.