Great Lakes Engineering with Nature Playbook Workshop Presenters

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US Army Corps of Engineers®

Engineering With Nature®

James Selegean, Ph.D., P.E., P.H.
Hydraulic Engineer
U.S. Army Corps of Engineers
Detroit District

Dr. Selegean has been a hydraulic engineer with the Corps in Detroit for over 30 years. His expertise is in field data collection and modeling in both the coastal and fluvial settings. Jim runs the Sediment and Hydraulics Lab in Detroit where they characterize sediment to better solve engineering problems. He also holds faculty appointments at Wayne State University in the Civil and Environmental Engineering department and the Geology Department and sits on national committees representing the Corps and the Great Lakes.

Burton C. Suedel, Ph.D.
Research Biologist
U.S. Army Engineer Research and
Development Center

Dr. Suedel is a research biologist at the U.S. Army Corps of Engineers (USACE) Engineer Research and Development Center, Environmental Laboratory in Vicksburg, Mississippi. He obtained his bachelor's degree in biology and master's degree in biology from the University of North Texas, and his Ph.D. in biological sciences from the University of Mississippi. His research interests include investigating ways in which sustainable environmental, social, and economic benefits can be incorporated into waterborne transport infrastructure planning. He has received international awards and recognition for applying EWN principles in practice at multiple USACE freshwater and marine coastal projects. He is the Principal U.S. representative to the PIANC (The World Association for Waterborne Transport Infrastructure) Environmental Commission and is the U.S. representative to PIANC Inland Navigation Commission Working Group 203 on Sustainable Inland Navigation and is mentoring the Environmental Commission Working Group 214 on Sediment Beneficial Use.

Brian Majka
Ecologist
GEI Consultants

Brian Majka is a senior restoration ecologist with GEI Consultants, working out of their Allendale, Michigan office. He graduated from Purdue University and has over 20 years of experience in the design and construction of ecological restoration projects throughout the Great Lakes, including wetland restoration, stream restoration, and bioengineering. Brian helped create and teach the Certified Natural Shoreline Professional Program in Michigan and the Natural and Nature-Based Features Certification Program in Ohio, and is currently developing nature-based shoreline Decision Support Tools for the states of Michigan and New York.

Adam Bechle, Ph.D.
Environmental Engineer
Wisconsin Sea Grant

Adam Bechle is a coastal engineering specialist with Wisconsin Sea Grant. In this role Adam helps Great Lakes communities build resilience to coastal hazards by communicating the latest hazard research and data, developing education and outreach products on best management practices, and providing local governments guidance to identify opportunities to better plan and prepare for coastal hazards. Adam holds a PhD in Civil and Environmental Engineering from the University of Wisconsin Madison.

Craig Taylor
Environmental Restoration
LimnoTech

Craig Taylor is a restoration specialist at LimnoTech. Craig and the LimnoTech team have been working with the Coastal States Organization, Great Lakes Cities Initiative, and NOAA over the past few years to identify and design habitat restoration projects around the Great Lakes. Craig also co-teaches an environmental restoration class at the University of Virginia. Above all, though, he is just a guy who loves water.

Enda Murphy
Research Engineer
National Research Council of Canada

Enda Murphy is a senior research engineer with the National Research Council of Canada's Ocean, Coastal and River Engineering (NRC-OCRE) research centre in Ottawa, and a member of the board of the Coastal Zone Canada Association. Enda's primary research focus is towards an improved understanding and more sustainable management of coastal hazard risk through nature-based solutions.

Scott Baker
Research Engineer
National Research Council of Canada

Scott Baker is a senior research engineer, also at NRC-OCRE, with more than 15 years of experience in civil engineering hydraulics. He is a specialist in the application of physical and numerical modelling to develop solutions for a wide variety of problems in rivers, estuaries, oceans, and coastal regions. Scott has led numerous physical modelling studies to guide the design and implementation of nature-based solutions on the Great Lakes, Canada's marine coasts, and internationally.

Sean Burkholder, Ph.D.
Landscape Architect
University of Pennsylvania

Sean Burkholder is the Andrew Gordon Assistant Professor of Landscape Architecture at the University of Pennsylvania's Weitzman School of Design. He also is a member of the Dredge Research Collaborative, a founding partner of the research and design practice Proof Projects, and with Brian Davis, is the co-PI on the Healthy Port Futures Initiative, funded by the Great Lakes Protection Fund. His research focuses on the coastal landscapes and processes of lake environments in general, and on the Great Lakes of North America in particular. His recent book, Five Bay Landscapes, published by the University of Pittsburgh Press, studies a series of bays around the Great Lakes Basin, and his current book project, Lakemaker, looks at the processes of making and living with lakes around the world. Sean is a dog person.

Samantha Belcik
Biologist
U.S. Army Corps of Engineers
Chicago District
Biologist and Planner with the Chicago District, Sam started right before the pandemic. She's an aquatic ecologist and has been conducting post-construction monitoring of and working on a number of ecosystem restoration projects. Her specialty has been focused on the Great Lakes and in particular the monitoring of and design of reef habitats.

Rebecca Nicodemus, Ph.D.
Environmental Scientist
National Oceanic and Atmospheric Administration
Becky Nicodemus is an Environmental Scientist with NOAA's Office for Coastal Management (OCM), located in Chicago, where she supports nature-based solutions and coastal resilience. Before joining NOAA OCM, Becky worked in the Office for Global Climate Change at the United States Agency for International Development, where she supported climate risk management and resilience in developing countries. Becky earned her Ph.D. from the Massachusetts Institute of Technology, where she studied the structure and dynamics of water, and her B.S. from Purdue University. At Purdue, Becky studied the formyl radical, a precursor to photochemical smog.

Deborah Beck
Coastal Engineering
Ohio Department of Natural Resources
Ms. Beck is the Assistant Chief of the Ohio Department of Natural Resources' Office of Coastal Management. She oversees the administration of ODNR coastal regulatory programs and serves as the technical expert related to coastal erosion processes and shore erosion mitigation for Ohio's Coastal Management Program. Ms. Beck is a registered civil engineer with a Master of Science degree in Geology from the University of North Dakota and a Graduate Certificate in Coastal Engineering from Old Dominion University. She enjoys hiking, camping, and attending her children's soccer games.

Jeffrey K. King, Ph.D., PE
Deputy National Lead and Program Manager,
Engineering With Nature® Program
US Army Engineer Research and
Development Center

Jeff King serves as Deputy National Lead and Program Manager for the US Army Corps of Engineers' (USACE) Engineering With Nature® (EWN®) Program. Jeff is responsible for the execution of approximately $20M per year that covers a broad array of EWN activities and projects. In addition to leading and managing a broad array of EWN activities and collaborative efforts, Jeff is also advancing R&D projects within the EWN portfolio. Current projects and research interest include incorporation of EWN techniques/designs into traditional infrastructure; design and application of natural infrastructure; promoting landscape architecture concepts/practices in pursuit of nature-based solutions; and fostering collaborative partnerships to achieve innovative outcomes that are aligned with elements of the EWN Initiative.

Ram Mohan, PE, PhD, F.ASCE
Anchor QEA

Ram is a senior partner at Anchor QEA, LLC, where he leads the firm's coastal and flood resiliency practice. A former member of the National Academy of Sciences' (NAS) Marine Board, and Ocean Studies Board, he currently collaborates with the USACE ERDC on the EWN National Proving Ground, Engineering Guidance, and EWN Applied Research Areas. An Adjunct Professor and Director of the Coastal & Dredging Laboratory at Texas A&M University, Dr. Mohan guides students and does applied research on coastal resiliency, nature based solutions and ecosystem restoration. Ram is the former Board Chairman of the World Organization of Dredging Associations (WODA), as well as former Board Director of the American Shore & Beach Preservation Association
(ASBPA) and Association of Coastal Engineers (ACE). Author of over 250 publications, he currently advises on over two dozen restoration projects around the U.S.

Scudder D. Mackey, Ph.D.
Chief, Office of Coastal Management
Ohio Department of Natural Resources

Dr. Mackey is the Chief of the Office of Coastal Management for the Ohio Department of Natural resources with offices located at the Old Woman Creek NERR in Huron, Ohio. The Office of Coastal Management has regulatory and resource management responsibilities along the Ohio Lake Erie shoreline. The Office is focused on maintaining and improving coastal and ecological resiliency by promoting innovative nature-based shoreline and in-water wetland habitat restoration projects. The Office also provides technical assistance and guidance to shoreline property owners, local municipalities, industry, and other agencies related to shoreline management issues.

Joshua Unghire
Planner
U.S. Army Corps of Engineers
Buffalo District

Joshua Unghire is a regional technical specialist for ecosystem restoration and plan formulator for the Army Corps of Engineers, Buffalo District. He has over 15 years of professional experience in the environmental field with positions held in the academic, private, non-profit, and federal sectors. In his 12 years with the Corps, he has acted as a technical lead for ecological restoration projects addressing coastal, riparian, fluvial, wetland, and littoral systems. Joshua is currently working on developing measures that improve resiliency and ecological function of coastal systems, and beneficially using dredged material to create coastal wetland and aquatic habitat.