COMPANY ROLE

Senior Research Scientist

PROJECT ROLE / FOCUS AREAS

Structured Decision-Making

Coastal restoration decision support

Coastal morphology and sediment transport

Waves and nearshore hydrodynamics

EDUCATION

PhD Mechanical Engineering (Thermal Science and Fluid Dynamics), University of Florida, 2008

MS Mechanical Engineering, University of Florida, 2006

MS Geological Oceanography, Oregon State University, 2001

BS Physics Mathematics, Eckerd College, 1999

PROFESSIONAL MEMBERSHIP

American Geophysical Union

American Society of Limnology and Oceanography

Florida Association of Environmental Professionals

Association of Women Geoscientists

P. SOUPY DALYANDER, PH.D.

Senior Research Scientist

Dr. Patricia “Soupy” Dalyander, structured decision-making (SDM) facilitator and oceanographer, has over 20 years of experience in research and decision-support.

Dalyander received her bachelor’s degree in physics and mathematics from Eckerd College in St. Petersburg, Florida, a master’s degree in geological oceanography from Oregon State University, and another master’s degree from University of Florida in mechanical engineering. Dalyander received her Ph.D. from University of Florida in mechanical engineering with a focus in thermal science and fluid dynamics.

Dalyander’s professional experience includes working with the Coastal and Marine Hazards and Resources Program of the U.S. Geological Survey. In addition, she worked on decision-support projects, sediment management, and water quality as a research scientist for the Engineering

Dalyander specializes in SDM application and has been certified through the USFWS National Conservation Training Center (NCTC). She also studies sediment transport and morphodynamic change, beach and barrier island evolution, and developing ways to predict coastal restoration project success. At the Water Institute, she was the PI for the Louisiana Barrier Island System Management (BISM) project, led a team assisting the U.S. Army Corps of Engineers (USACE) Southwestern Division in the development of a Civil Works Strategic Plan, co-led team to develop a Research & Development Strategy for USACE, and created a new barrier island evolution numerical model for the Louisiana Coastal Protection and Restoration Authority (CPRA). Her activities at USGS included developing a new empirical dune growth (EDGR) model and contributing to model frameworks to predict the decadal scale evolution of Dauphin Island, Alabama, and Breton Island, Louisiana, as well as collaborating to develop new ways to incorporate data and models into decision-support for the restoration of Ship Island, Mississippi.

PROFESSIONAL EXPERIENCE

2019-Present: Senior Research Scientist, The Water Institute

2010-2019: Research Oceanographer, U.S. Geological Survey

2008-2010: Research Physical Scientist, U.S. Army Corps of Engineers

2001-2008: Oceanographer, Integrated Statistics and ECO

SELECTED PROJECTS

Louisiana Barrier Island System Management (BISM) Project. *Louisiana Coastal Protection and Restoration Authority (CPRA). (2019-2021; 2023-present). PI and SDM Facilitator.* Developing a framework for regional sediment management (RSM) in barrier island restoration, including inventorying available data for model development and identifying potential stakeholder concerns.

Southwestern Division Civil Works Strategic Plan. *U.S. Army Corps of Engineers (USACE). (2021). PI.* Led a cross-cutting team that coordinated the development of a Civil Works Strategic Plan for the USACE Southwestern Division, including the development of future scenarios of outcomes for the Civil Works program.

USACE Research & Development Strategy. *U.S. Army Corps of Engineers (USACE). (2021). Co-PI. Co*--led an interdisciplinary team that facilitated the development of a strategy for elevating and coordinating programmatic research and development across the entirety of the USACE R&D portfolio.

Louisiana Climate Initiatives Task Force. *Louisiana Governor's Office of Coastal Activities. (2022). SDM Facilitator.* The Institute advised the Governor's Office through a one-year planning process to support the Climate Initiatives Task Force in developing a roadmap and specific actions to meet the state's ambitious goal of net zero greenhouse gas emissions by 2050. This effort engaged more than 140 multidisciplinary experts across the Task Force, four Advisory Groups, and six Sector Committees, as well as the public, throughout a transparent and collaborative planning process grounded in SDM framework.

Lower Mississippi River Management Program. *Louisiana Coastal Protection and Restoration Authority (CPRA). (2020-present). Task Lead.* Leading the scenario development task, which focuses on the identification of future scenarios of sediment and water management that provides holistic value across coastal protection, navigation, and ecosystem restoration. Also developing a framework for evaluating the costs and benefits of those scenarios.

Coastal Resource Evaluation for Management Application (CREMA) Project. *USGS Coastal and Marine Hazards and Resources Program and USGS Wetlands and Aquatic Research Center. (2018-2019). PI.* Worked to improve understanding of coastal systems under current and future scenarios of storms and sea level rise, including feedback between morphodynamic and habitat evolutions.

Alabama Barrier Island Restoration Assessment (Dauphin Island). *National Fish and Wildlife Foundation (NFWF) Gulf Environment Benefit Fund. (2015-2019). PI.* Developed a model framework to identify the probable physical evolution of Dauphin Island over decadal time scales under potential restoration scenarios. Collaborated with structural response, habitat modeling, and decision support teams to integrate morphodynamic model results into a system for informing restoration decisions.

SELECTED PUBLICATIONS

1. **Dalyander, P.S.**, Mickey, R.C., Passeri, D.L., Plant, N.G. (2020) Development and Application of an Empirical Dune Growth Model for Evaluating Barrier Island Recovery from Storms. J. Mar. Sci. Eng., 8, 977.
2. Passeri, D.L., **Dalyander, P.S**, Long, J.W., Mickey, R.C, Jenkins, R.L., Thompson, D.M., Plant, N.G., Godsey, E.S., Gonzalez, V.M., 2020, The roles of storminess and sea level rise in decadal barrier island evolution, Geo. Research Letters 47(18), 2020GLO89370.
3. **Dalyander, P.S.**, Meyers, M., Mattsson, B., Steyer, G., Godsey, E., McDonald, J., Byrnes, M., and M. Ford (2016). Use of structured decision-making to explicitly incorporate environmental process understanding in management of coastal restoration projects: case study on barrier islands of the northern Gulf of Mexico. J. Env. Mngt. 183(3), 497-509.
4. **Dalyander, P.S.**, Mickey, R.C., Long, J.W., and J. Flocks (2015). Effects of proposed borrow pits on the near-shore wave climate and longshore sediment transport rate along Breton Island, Louisiana. USGS Open File Report OFR 2015-1055.