



Outreach Specialists working with science consortia funded by GoMRI met in February 2017. They include (front, left to right) Murt Conover, Teresa Greely, Angela Lodge, Elizabeth Thornton, Lalitha Asirvadam, Jessie Kastler, Tina Miller-Way; (back, left to right) Rachel McDonald, Laura Bracken, Katie Fillingham, Sara Beresford, Sara Heimlich, David Mellinger, Emily Davenport, Dan DiNicola, and Ben Prueitt. Courtesy of Katie Fillingham

GOMRI-FUNDED CONSORTIUM DESCRIPTIONS

The Gulf of Mexico Research Initiative (GoMRI) has funded both research consortia and individual investigators through multiple rounds of Requests for Proposals. Each of the 17 GoMRI-funded consortia has its own education and outreach program, which has produced a variety of resources that may be useful to educators. A brief description of each consortium follows, with a link to its website; throughout this issue, they will be referred to by their acronyms. GoMRI has also partnered with the Gulf of Mexico Sea Grant Oil Spill Science Outreach Program, the Smithsonian Ocean Portal, and Screenscope Films. These partnerships have leveraged the outreach efforts of the consortia and produced a variety of unique education and outreach products. Their websites are also provided.

GOMRI-FUNDED CONSORTIA

The Alabama Center for Ecological Resilience (**ACER**) studies the role biological diversity (genetic, taxonomic, and functional) plays in determining the resilience of northern Gulf of Mexico ecosystems to impacts of oiling and dispersants. ACER investigates resilience across many groups of organisms and at several organizational scales to help predict the impacts of different forms of disturbance on critical coastal ecosystems. <http://acer.disl.org/>

The Aggregation and Degradation of Dispersants and Oil by Microbial Exopolymers consortium (**ADDOMEx**) investigates the impacts of spilled oil and dispersants on microbes that produce extracellular polymeric substances (EPS). When EPS and oil combine, they ultimately sink back to the seafloor. As dispersants can enhance or impede microbial activity depending on environmental conditions, ADDOMEx research may inform clean-up efforts after future oil spills. <http://www.tamug.edu/addomex/>

The Consortium for Advanced Research on Marine Mammal Health Assessment (**CARMMHA**) investigates the effects of oil exposure on Gulf of Mexico marine mammals, including dolphins. This is a new consortium funded by GoMRI started in 2018. <https://www.carmmha.org/>

The Consortium for Advanced Research on Transport of Hydrocarbon in the Environment (**CARTHE**) focuses on the physical distribution, dispersion, and dilution of petroleum and associated contaminants subject to currents, air-sea interactions, and tropical storms. CARTHE's main goal is to predict the fate of oil released into the environment to guide response and minimize damage to human health, the economy, and the environment. <http://carthe.org/>

The Center for the Integrated Modeling and Analysis of the Gulf Ecosystem (**C-IMAGE**) explores the impacts of oil spills on the Gulf of Mexico by comparing two Gulf oil spills, the Ixtoc and the Deepwater Horizon, to advance understanding of the processes, mechanisms, and environmental consequences of marine oil blowouts. <http://www.marine.usf.edu/c-image/>

The Consortium for the Molecular Engineering of Dispersant Systems (**C-MEDS**) studies dispersants, an essential aspect in the response to large oil releases in deep ocean environments. <http://dispersant.tulane.edu/>

The Consortium for Oil Spill Exposure Pathways in Coastal River-Dominated Ecosystems (**CONCORDE**) improves prediction of future oil spill impacts in shallow waters where freshwater flow and irregular coastlines complicate currents and associated plankton movements. <http://www.con-corde.org/>

The Consortium for Resilient Gulf Communities (**CRGC**) focuses on helping the Gulf of Mexico region understand and overcome stress brought on by events such as the Deepwater Horizon oil spill. CRGC's goal is to increase community resilience by strategic planning and risk communication with local stakeholder groups, and provide guidance to policymakers for future disasters. <http://www.resilientgulf.org/>

The Consortium for Simulation of Oil-Microbial Interactions in the Ocean (**CSOMIO**) synthesizes model developments and results to advance understanding of how microbial biodegradation influences accumulation of oil in the water column, in marine sediments of the deep ocean, and on the shelf. CSOMIO also investigates the impacts of potential future oil spills under different conditions to understand how they will influence biodegradation. This is a new consortium funded by GoMRI that started in 2018. <https://csomio.org/>

The Coastal Waters Consortium (**CWC**) assesses how oil and dispersant change, break down, and impact Gulf of Mexico coastal ecosystems. Specifically, CWC studies food web structure, shifts in populations, individual and ecosystem function during recovery, and the interaction of oil with other stresses on the ecosystem. <http://cwc.lumcon.edu/>

The Deep Sea to Coast Connectivity in the Eastern Gulf of Mexico consortium (**Deep-C**) studies deep sea to coast connectivity in the northeastern Gulf of Mexico and investigates the environmental consequences of the release of oil and dispersants on living marine resources and ecosystem health in the deep Gulf. <http://deep-c.org/>

The Deep Pelagic Nekton Dynamics of the Gulf of Mexico consortium (**DEEPEND**) investigates deepwater communities on short-term and long-term timescales to assess their recovery following the Deepwater Horizon oil spill using an integrated net system to collect animals from the surface to 1500 meters deep. <http://www.deependconsortium.org/>

The Dispersion Research on Oil: Physics and Plankton Studies consortium (**DROPPS**) investigates the breakup of oil patches into droplets in various physical conditions (e.g. breaking waves) when dispersant and bacteria are present. DROPPS also explores oil movement and its interaction with oil-degrading bacteria, phytoplankton, and zooplankton. <https://sites.cns.utexas.edu/utmsi.droppps>

The Ecosystem Impacts of Oil and Gas Inputs to the Gulf consortium (**ECOGIG**) investigates the ecological impacts of natural and human-caused oil and gas inputs on deepwater ecosystems in the Gulf of Mexico. ECOGIG quantifies the impacts, fates, and dynamics of hydrocarbons in the Gulf and evaluates specific biological responses and adaptations to hydrocarbon exposure, both natural and human-caused. <http://ecogig.org/>

The Gulf of Mexico Integrated Spill Response consortium (**GISR**) conducts field and laboratory experiments to improve understanding of the physical, chemical, and biological behavior of petroleum fluids as they transit the Gulf from a deep oil spill to the beaches, marshes, estuaries, or atmosphere. <http://gulfresearchinitiative.org/tag/gisr/>

The Littoral Acoustic Demonstration Center - Gulf Ecological Monitoring and Modeling consortium (**LADC-GEMM**) conducts acoustic surveys to assess regional cetacean populations (sperm whales, beaked whales, and dolphins) and provide recommendations for actions to improve stock recovery for these species. <http://www.ladcgemm.org/>

The Relationships of Effects of Cardiac Outcomes in Fish for Validation of Ecological Risk consortium (**RECOVER**) examines the effects of oil on two ecologically and economically important species of fish in the Gulf of Mexico: Mahi-Mahi and Red Drum. <http://recoverconsortium.org>

PARTNERS

Gulf of Mexico Sea Grant Oil Spill Science Outreach Program: <https://gulfseagrant.org/oilspilloutreach>

The Smithsonian Ocean Portal: <https://ocean.si.edu/conservation/gulf-oil-spill>

Screenscope Films' *Dispatches from the Gulf* Documentary Series: <http://dispatchesfromthegulf.com/>

ADDITIONAL INFORMATION AND RESOURCES

For more information about GoMRI's education and outreach products and resources, including those produced by the GoMRI-funded consortia, please visit: <http://education.gulfresearchinitiative.org>.

For more information about GoMRI-funded research programs and individual investigators, please visit: <http://research.gulfresearchinitiative.org/>.