

Alabama Department of Conservation and Natural Resources
FY 2025 Annual Report for the Centers of Excellence Research Grants Program (COE)
Grant Number 1 RCEGR010006-01-00

EXECUTIVE SUMMARY

Brief Description of the selected COE

In 2015, the Alabama Gulf Coast Recovery Council (AGCRC) selected the Alabama Marine Environmental Sciences Consortium (MESC) at the Dauphin Island Sea Lab (DISL) to be the home of Alabama's Center of Excellence (ALCOE). The Alabama MESC is comprised of 22 public and private colleges and universities located throughout Alabama, from the mountains to the coast: Alabama A&M University, Alabama State University, Athens State University, Auburn University, Auburn University (College of Aquaculture), Auburn University at Montgomery, Huntingdon College, Jacksonville State University, , Samford University, Spring Hill College, Stillman College, Talladega College, Troy University, Tuskegee University, The University of Alabama, University of Alabama at Birmingham, University of Alabama at Huntsville, University of Mobile, University of Montevallo, University of North Alabama, University of South Alabama, and University of West Alabama. The MESC was founded to focus resources and reduce redundancy in marine sciences in higher education institutions, serving as a collaborative vehicle for coastal studies. The Dauphin Island Sea Lab was founded in 1972, a former Air Force Base. Please see <https://www.disl.edu/about/our-history> for a history of DISL's facilities, science, and personnel. The Dauphin Island Sea Lab's mission is to become a center for transformative U.S. oceanic and coastal research and education.

The AL Center of Excellence (ALCOE) aims to provide Alabama's citizens and officials with access to innovative research <https://www.disl.edu/research/data-management-center> findings and .
<https://arcos.disl.org/>

Overview of focus of the COE

The ALCOE is dedicated to the following RESTORE Act Priority Disciplines:

- (1) Coastal and deltaic sustainability, restoration, and protection, including solutions and technology that allow citizens to live in a safe and sustainable manner in a coastal delta in the Gulf Coast Region;
- (2) Coastal fisheries and wildlife ecosystem research and monitoring in the Gulf Coast Region;
- (4) Sustainable and resilient growth, economic and commercial development in the Gulf Coast Region;
- (5) Comprehensive observation, monitoring, and mapping of the Gulf of Mexico.

Summary of the annual performance of the COE

Work continued on the following components of the Center of Excellence:

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Wet lab: Wet lab is in use and running effectively.

ARCOS: Maintenance of the ARCOS network continued through the reporting period. The team has been troubleshooting connection problems with the water sensor profiling unit for the Middle Bay real-time hydrodynamic data. The ARCOS app was launched, and information was shared with the public during the week of July 14, 2025, to coincide with the Alabama Deep Sea Fishing Rodeo.

RFP1: All projects are progressing well; PIs have requested no-cost time extensions to projects and ADCNR has requested documentation that supports the request. Five presentations were given at the Bays & Bayous 2025 conference, involving three PIs and two students working on RFP1 projects.

No-cost extensions have been drafted for the RFP 1 projects. Those agreements will be executed during the next reporting period. Several projects are complete, but the no-cost extension will allow them to finalize closeout work. Center of Excellence staff are planning a "Lunch and Learn" webinar to present the research to the public during the next reporting period.

RFP2: Research projects have been selected, and subawards are being awarded. The selected projects are in the table below. Out of the eight subawards, six subaward agreements between DISL and subrecipients have been fully executed. The two remaining subaward agreements will be finalized in the next reporting period. Center of Excellence staff have met with all of the award recipients to discuss the COE process. Bi-monthly reporting calls for each project will begin in the next reporting period. The periods of performance for the RFP2 subawards will also be evaluated during the next reporting period to determine if no-cost extensions are required.

1	Lee Smee	Dauphin Island Sea Lab	Using Genomic Sequencing to Test for Local Adaptation of a Critical Predator and Pest of Oysters (<i>Crassostrea virginica</i>).
2	Charles Martin	University of South Alabama/ Dauphin Island Sea Lab	Eavesdropping on Soundscapes: Advancing Fisheries and Habitat Monitoring Using Emerging Technologies.
3	Ronald Baker	University of South Alabama/ Dauphin Island Sea Lab	Emerging Image Analysis Techniques to Improve Trophic Ecology Studies in the Northern Gulf of Mexico and Beyond: Development of an Online Otolith Identification Tool.
4	Gabriel de Oliveira	University of South Alabama	Quantifying Water and Carbon Fluxes Over Terrestrial Ecosystems in the Mobile-Tensaw Delta.

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5	Hongxing Liu	University of Alabama	Near Real-Time Monitoring and Assessment of Environmental and Aquatic Conditions for Alabama Coastal Fisheries and Aquaculture by Integrating Multi-Sensor Satellite Observations, Cloud-Based Computing, and Machine-Learning Models.
6	John Lehrter	University of South Alabama	Development and Application of High-Resolution Satellite Remote Sensing Products to Monitor Plumes in Mobile Bay, Alabama.
7	Thane Wibbels	University of Alabama at Birmingham	High Resolution Remote Sensing for Assessing the Status of Salt Marsh Ecosystems in the Northern Gulf of Mexico.
8	Charles Andrus	University of Alabama	Oxygen Isotope Sclerochronology of the Invasive Apple Snail (<i>Pomacea insularum</i>) in Coastal Alabama: Insights into Potential Range Expansion and Useful Vulnerabilities for Control.

Monitoring: Center of Excellence staff reevaluated monitoring sites and explored participation in a new Gulf-wide eDNA research network. They also continued collaboration with the MarineGeo Seagrass Working Group, attending virtual meetings when available. The reports generated from the intensive, ecosystem-based monitoring conducted in each of Alabama's coastal counties required an additional extension. During the spring of 2025, further sample processing was necessary to complete the dataset. These samples had been overlooked by interns due to previous mislabeling, an error that was not discovered until the data analysis stage.

A draft of the results was submitted to the ALCoE Science Administration team in spring 2025 without the above-mentioned data. It was later determined that these missing data were essential for standardizing faunal distribution patterns and productivity (i.e., density of seagrass and marsh habitats). DISL has been steadily progressing through the data analysis and draft report, but experienced delays related to invoicing issues discussed in April 2025. Focus also shifted toward producing the report from the eDNA analysis while the data gaps were being resolved.

A data scientist was engaged to process and interpret the eDNA and trawling datasets, as this represents a groundbreaking analytical approach requiring specialized methods. This report is now in its final stages and is expected to be completed before the end of the year.

Scientific Communication: Center of Excellence staff attended MarineGeo meeting in November 2024. The focus of the meeting was improving and simplifying protocols, planning for future questions that can be answered with data. PIs presented at Bays and Bayous 2025 conference. Center of Excellence staff are planning a "Lunch and Learn" webinar for RFP 1 recipients to present their research to the public.

Programmatic Elements

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Award Recipient

Treasury – ADCNR: Treasury issued an amendment to the federal award to ADCNR on June 3, 2025. The amendment extended the period of performance to June 30, 2026, and moved \$109,336.00 in funding from the Subrecipient to the Contractual line item. There is no change in the overall award value. ADCNR executed the sub-award amendment extending the period of performance with Dauphin Island Sea Lab on September 2, 2025, and conducted routine monitoring and reporting, and participated in routine meetings with the Center of Excellence. Additionally, ADCNR holds a monthly monitoring call with Treasury and DISL.

Award Sub-recipient/Consortium Lead

ADCNR – Marine Environmental Sciences Consortium:

During the reporting period, ADCNR and MESC conducted routine monitoring and reporting activities, including monthly reporting submittal and monthly status calls, and participated in routine meetings. ADCNR and the Dauphin Island Sea Lab are monitoring progress on RFP2 to ensure that the research can be completed during the period of performance.

During the next reporting period, MESC will fully execute the remaining 2 subawards with the recipients of RFP2.

Financial Elements

Award Recipient

Recipient: Alabama Department of Conservation and Natural Resources
Award Amount: \$8,464,464.00
Expenditures to Date: \$2,976,389.94
Funds Leveraged: \$0.00

Award Sub-recipient/Consortium Lead

Sub-recipient: Marine Environmental Sciences Consortium dba Dauphin Island Sea Lab
Sub-award Amount: \$8,259,018
Expenditures to Date: \$2,783,115.87
Funds Leveraged: \$0.00

Gulf Coast Ecosystem Restoration Council Elements

Relevant Synergies/Collaboration with other RESTORE funding streams

Alabama's Center of Excellence (ALCOE) participates in bimonthly calls with the Gulf Restoration and Science Programs Coordination Forum. This forum is led by the NOAA RESTORE Science Program and works to facilitate collaboration between the various RESTORE funding streams. ALCOE has joined one of the working groups examining the metrics used for program success and the transfer of research to various stakeholders including State resource managers.

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Relevant Synergies/Collaboration with other DWH funding mechanisms

Currently, ALCOE does not have any synergies/collaborations with other DWH funding mechanisms to report.

Opportunities

Currently, ALCOE does not see any need for modifications to existing laws or program rules to improve the COE grant program.