Alabama Department of Conservation and Natural Resources
FY 2024 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 researchhttps://www.disl.edu/research/data-management-center findings and information related to Mobile Bay and Alabama coastal waters. 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

Of the 15 milestones outlined in the amended Alabama Center of Excellence Federal Award issued in September 2022, two (2) were completed between October 1, 2023, and September 30, 2024: the

installation/upgrade of wet lab instrumentation and the completion of RFP #2 MASGC reviews, selection, and notification. During this period, the advertisement and selection process for the RFP #2 competitive grant program was conducted, resulting in the selection of eight (8) projects.

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

Wet lab: Work is complete, and supplies have been acquired. Wetlab is in use.

ARCOS: Maintenance of the ARCOS network continued throughout the reporting period.

RFP1: Monthly RFP1 project check-in calls continue to ensure steady progress and coordination among researchers. All projects are advancing smoothly, with no new issues or concerns reported. The regular check-ins have fostered valuable information sharing and collaboration among the RFP1 researchers, strengthening the overall impact of the program. This coordination has facilitated cross-disciplinary insights and ensured that the research remains aligned with the program's objectives while addressing regional priorities effectively.

RFP2: Research projects have been selected. The Dauphin Island Sea Lab is working with the subrecipients to develop subawards. The Department of the Treasury authorized the Dauphin Island Sea Lab to use the Fixed Amount Subaward method. Subawards will be reviewed by ADCNR for compliance with State and Treasury standards, and then subawards will be executed. The selected projects are as follows:

1	Lee Smee	Dauphin Island Sea Lab	Using Genomic Sequencing to Test for Local Adaptation of a Critical Predator and Pest of Oysters (*Crassostrea virginica*).
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.

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 (*Pomacea insularum*) in Coastal Alabama: Insights into Potential Range Expansion and Useful Vulnerabilities for Control.

Monitoring: Center of Excellence staff participated in the first meeting of the MarineGeo Seagrass Habitat Working Group on May 15, 2024. The Monitoring Program is underway, with all activities anticipated to be completed by April 2025, except for marsh habitat sampling, which may continue beyond this date if ADCNR wishes to have more data. As part of the ecosystem-based monitoring studies, SAV and marsh habitat monitoring are following MarineGeo protocols, with activities from 2024 continuing as planned. The MRD and eDNA study was stalled following the departure of the post-doctoral researcher. A report will be provided as a deliverable at the end of the grant. Monthly sampling for Secondary Productivity and Secondary Production is complete and is currently in the data analysis and manuscript/report preparation stage.

Programmatic Elements

Award Recipient

Treasury – ADCNR: Treasury issued an amendment to the federal award to ADCNR on September 14, 2022. The amendment extended the period of performance to September 30, 2025. ADCNR executed the sub-award amendment extending the period of performance with MESC on November 7, 2022, 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 MESC. ADCNR is preparing to submit a grant amendment or a new grant for continued Center of Excellence activity.

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 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:	$2,081,049.60
Funds Leveraged:	$0.00

Award Sub-recipient/Consortium Lead

Sub-recipient:	Marine Environmental Sciences Consortium
Sub-award Amount:	$8,368,353.00
Expenditures to Date:	$2,010,931.72
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.

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.