

**NOAA**  
**SCIENCE**  
**ADVISORY**  
**BOARD**

# Revised Report of the External Review for the Cooperative Institute for Ocean Exploration (OECE)

11 Sept 2023

Ruth Perry (SAB), Jyotika Virmani, Brendan Roark, Matthew Borbash,  
Beth Orcutt, John Horne (*Ex-officio*)

# Background



- NOAA CIAO standard scientific review (4<sup>th</sup> year of 5-year program)
- Ocean Exploration Cooperative Institute (OEI) award covers the period of July 1, 2019, through June 30, 2024
- Review conducted under previous CIAO guidelines (revised guidelines released June 30, 2023; DE&I not include in review)
- Review was held at University of Rhode Island – Graduate School of Oceanography on April 3 and 4, 2023
- SAB Meeting held on July 27, 2023. SAB did not vote (but agreed with the recommendation and asked Review Panel to add more justification for funding the CI for another 5-years.



# Justification for Re-funding



The Review Panel felt strongly that the OECI should be re-funded

The 'Satisfactory' finding highlighted areas for improvement

The OECI had to manage unprecedented challenges

The interconnection of NOAA OER is unique

## Challenges

COVID-19 Pandemic

Turnover in NOAA OER leadership

Turnover in OEC leadership

## Justification for Continuing the Cooperative Institute Funding

OECI is resilient and has succeeded despite unique challenges out of the CI's control

Outstanding & unprecedented performance in partnerships, outreach, & education

Leading the exploration community in public outreach & exposure to ocean mapping

NOAA OER needs contingency planning to account for benefits that the OECI provides

Topics ranked 'satisfactory' and 'unsatisfactory' can and should be corrected

**Not continuing creates significant gaps for NOAA OER and the oceanographic community**

# Review Panel Findings



- Overall rating: **Satisfactory**
- Recommend NOAA to fund for 2<sup>nd</sup> 5-year cycle\*
- Review Panel assessed & rated individual CI components (DE&I out of scope)

<b>OEI Structure</b>	Funding
	Governance & Function
	Reporting Metrics
	Support for Students & Staff
<b>Partnerships</b>	Across OEI
	New Partners/Institutions
	NOAA OER

<b>Mission</b>	Exploration
	Research
<b>Technology</b>	Vehicles
	Sensors
	Development & Testing
	Operations-to-Science
	Tech Transfer & IP

<b>Outreach</b>	Workforce
	Programs
<b>Education &amp; Engagement</b>	Communities
	OE & Scientific Communities
	Education
<b>Data</b>	Accessibility
	Management

# Revised Review Panel Findings

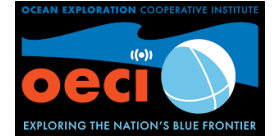


Outstanding
Reporting Metrics (OECI Structure)
Partnerships Across OECI
Programs (Outreach)
Education
Relationship with NOAA OER

Satisfactory
Funding (OECI Structure)
Governance & Function (OECI Structure)
New Partners or Institutions
Exploration (Mission)
Research (Mission)
Vehicles (Mission – Technology)
Development & Testing (Mission – Technology)
Operations-to-Science (Mission – Technology)
Workforce (Outreach)
Communities (Engagement)
Data Accessibility

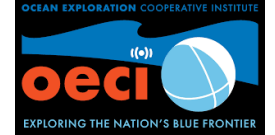
Unsatisfactory
Support for Students & Staff (OECI Structure)
Sensors (Mission – Technology)
Technology Transfer & Intellectual Property (Mission – Technology)
OE & Scientific Communities (Engagement)
Data Management

# Review Panel Recommendations



- **Workforce Opportunities:** NOAA should recognize the OEI as a capacity-building resource to aid in future talent recruitment; NOAA to institute necessary formal processes to embed the talent pipeline created from the institute (scientists, technologists, engineers, program managers, students)
- **Student Engagement & Awareness:** Create Working Group for students, consider increasing cross-institute student engagement, and build an alumni network to strengthen cohort of students across institutions involved in OEI (directly & indirectly)
- **Program Management:** Create the space for OEI leadership to conduct necessary performance oversight of projects, mentoring, and functioning of the CI
- **Outreach:** With lifting of COVID restrictions, increase presence at international and industry conferences (to aid in taking necessary risks to lead in ocean exploration technology)
- **Technology (Strategy):** NOAA OER and the OEI co-create a clear vision for what should be achieved with technology development within the CI; NOAA OER provides sufficient Task funds to execute
- **Technology (Vehicles):** In next cycle, NOAA OER and the OEI work towards making the fleet more agnostic to increase usefulness across OE and scientific communities
- **Research Ideation:** Ensure two-way communication, engagement and follow-thru on input solicit by the OEI from the OE and scientific communities
- **Publications:** OEI and NOAA OER should consider a review publication at the end of the first (and second) cycle

# Review Panel Recommendations



- A. Redefine OEI's mission to be a cooperative vision, that includes NOAA OER vision and input, and provides OEI with a unique identity that is measurable
- B. Consider streamlining of the OEI governance process
- C. Create opportunities in the OEI program and governance process for contributions from early career scientists
- D. Strengthen guidance and mentoring for graduate students and young career staff
- E. Establish technology transfer plan and a unified intellectual property management plan that utilizes the strengths of the partner institutions
- F. Work with NOAA OER to promote projects that take more exploration and technology risks – “Safe-to-Fail” Approach (requiring NOAA OER to fund beyond a 1-year cycle)
- G. Strengthen connectivity and broader activities in the water column characterization efforts (requiring NOAA OER to determine if water column is an exploration priority)
- H. Separate engagement and education with a renewed focus towards innovating community engagement methods and distributing educational models generated by the OEI
- I. Consider strengthening data management plans to provide longevity beyond the NOAA CI-funding cycles
- J. Initiate planning and execution of a Diversity, Equity, and Inclusion Strategic Plan that stems off of NOAA's DEI Strategic Plan and builds off the strengths brought by the partner institutions

# Back-up Slides



# Participants



Review Panel	OECI Attendees	NOAA Attendees
<b>Dr. Ruth Perry (SAB)</b> Head of Regulatory Affairs, Shell	<b>Dr. Adam Soule</b> Executive Director University of Rhode Island	<b>Jeremy Weirich</b> Director OER
<b>Dr. Beth Orcutt</b> Sr. Research Scientist Bigelow Laboratory for Ocean Science	<b>Dr. Jason Fahy</b> Deputy Director University of Rhode Island	<b>Dr. Aurora Elmore</b> CI Manager OER
<b>Capt. (Ret.) Matt Borbash</b> Deputy Hydrographer U.S. Navy	<b>Deborah Smith</b> Data Governance Manager University of Rhode Island	<b>Kristen Crossett</b> Outreach and Education Chief OER
<b>Dr. Brendan Roark</b> Director, Environmental Programs Texas A&M University	<b>Allison Fundis</b> Chief Operations Officer Ocean Exploration Trust	<b>Dr. Mashkoor Malik</b> Science and Technology Chief OER
<b>Dr. Jyotika Virmani</b> Executive Director Schmidt Ocean Institute	<b>Dr. Daniel Wagner</b> Chief Scientist Ocean Exploration Trust	<b>Shannon Louie</b> Director CIAO
<b>Dr. John Horne</b> Director, CI for CICOES University of Washington	<b>Dr. Larry Mayer</b> University of New Hampshire	<b>Jim Herzog</b> Specialist CIAO
	<b>Dr. Leila Hamden</b> University of Southern Mississippi	<b>Sandy Byers</b> Specialist CIAO
	<b>Andy Bowen</b> Woods Hole Oceanographic Institute	



# OECI Overview



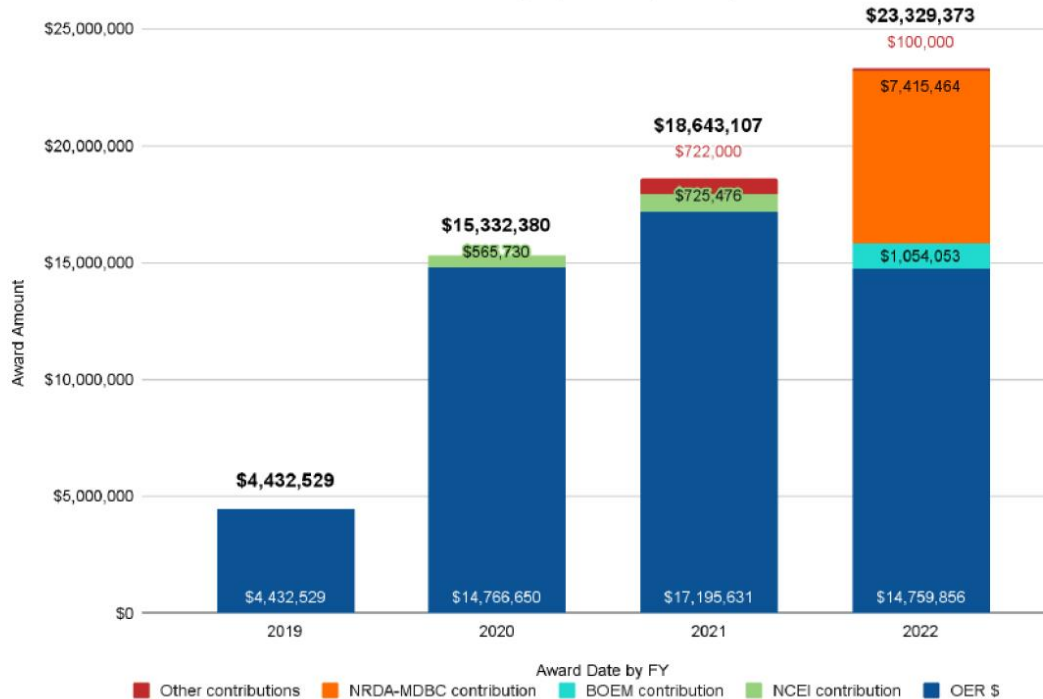
## Lead Institution

THE UNIVERSITY OF RHODE ISLAND

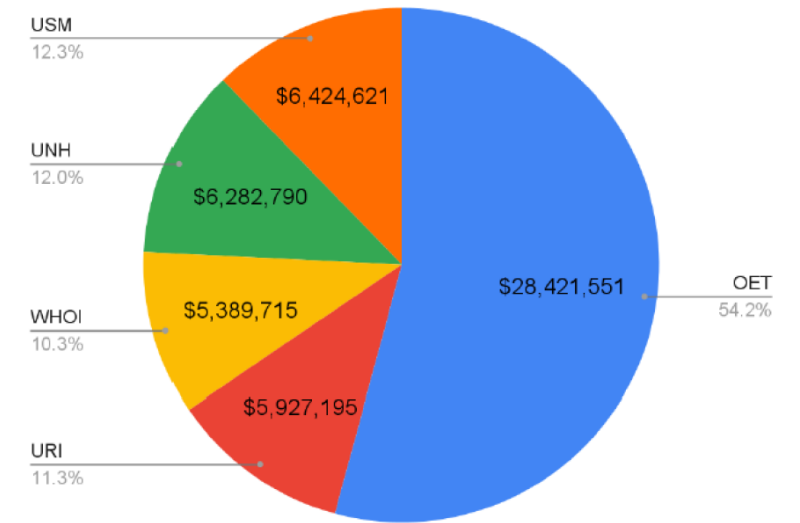
## Affiliate Institutions



OECI Awards by Sponsor (Y1-Y4)



Total OECI Awards by Partner Y1-Y4 (excluding NRDA & Sairdrone)



- Total funding support is \$96M (\$19M/yr)
- Funds for Y1 – Y4 total \$63.6M
- 83% of funds from NOAA OER (\$53.0M)
- Distribution across partners is approximately equal, with exception of OET (vessel operations)

# Special Thanks To:

- The Review Panel for their time and effort
- The NOAA OER staff for their planning, input, and organization, especially Aurora Elmore
- The OECl leadership for their planning and execution of the review – incredible effort! And for sharing their candid views.
- The SAB staff who supported in the background, notably Cynthia Decker (her institutional knowledge is unmatched)

