

**OCEAN**  
EXPLORATION

# Ocean Exploration: An Overview

# Forces of Change on Ocean Exploration

## — Ocean Exploration Community —

- › Expanding Community of Practice
- › Revolution of Uncrewed Technology
- › Increased Awareness of the Blue Economy
- › Unprecedented Telepresence Capabilities
- › Multi-Disciplinary Approaches



## — Federal Research & Development —

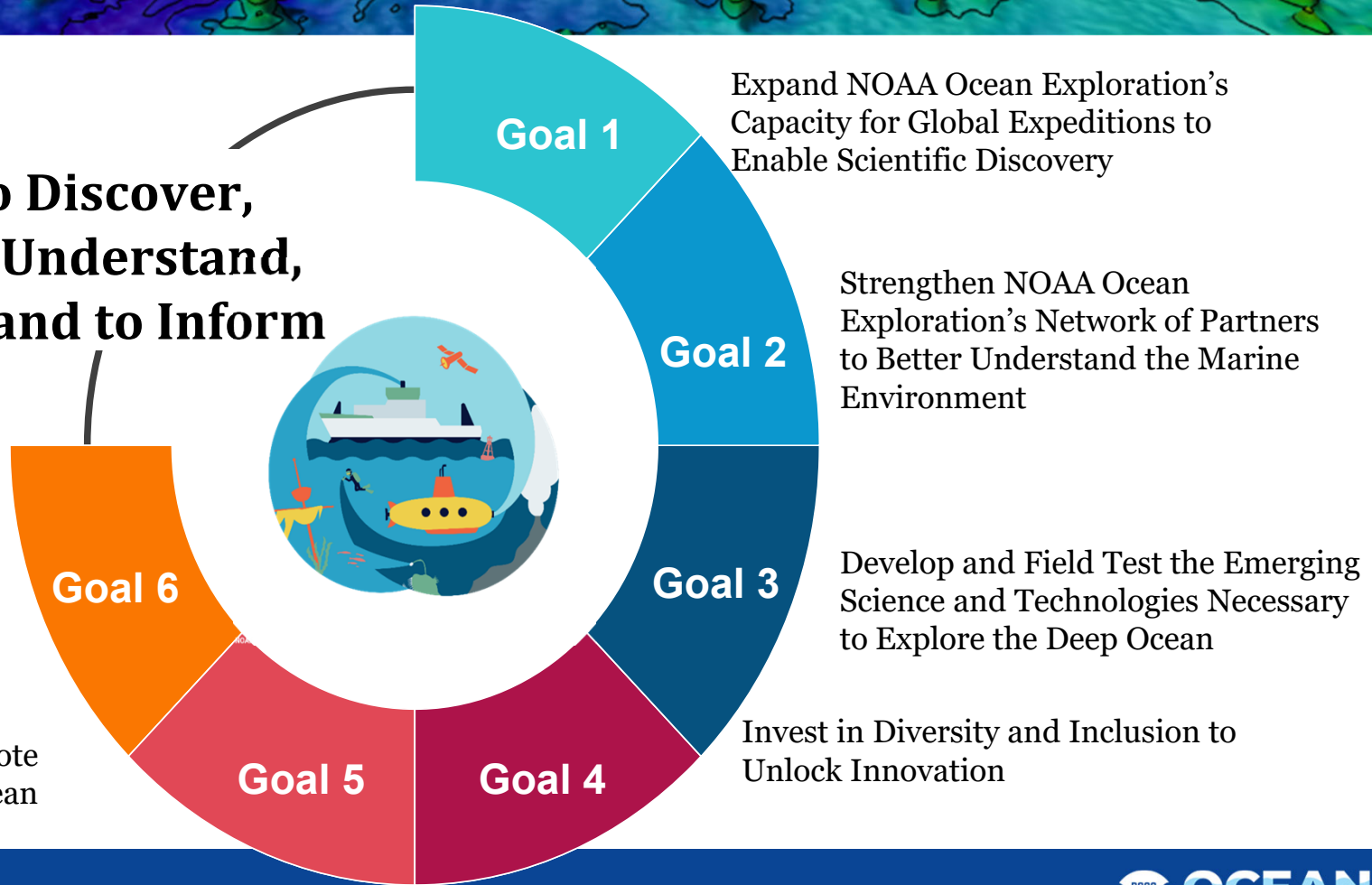
- › Shift in Funding Landscape
- › Knowledge Economy
- › Lower Barriers to Entry for Private Sector
- › Societal Perceptions of Government Action
- › “On Demand” Data Culture (SAS)
- › Increased Competition for STEM Talent
- › Societal Perceptions of the Environment

# FY22\_ FY27 Strategic Goals

**Explore to Discover,  
Discover to Understand,  
and Understand to Inform**

Embrace the Volume,  
Velocity, and Variety of  
Ocean Exploration Data to  
Drive Discoveries

Educate, Inspire, and Promote  
the Value of the Ocean





# Explore to Discover

- Collect **high-resolution bathymetry** in areas with no (or low-quality) data
- Identify, map, and explore the **diversity and distribution** of benthic habitats and resources
- Investigate deep ocean biogeographic **patterns and connectivity**
- Collect data to better understand the characteristics of the **water column** and the fauna that live there
- Acquire data to support priority **science and management needs**



# Explore to Discover, Discover to Understand, and Understand to Inform



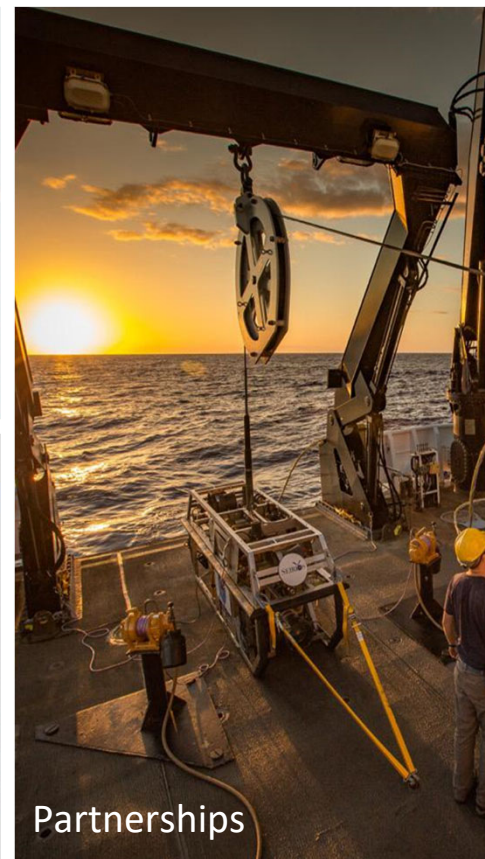
NOAA Ship *Okeanos Explorer*



Novel Technologies



Competitive Grants



Partnerships



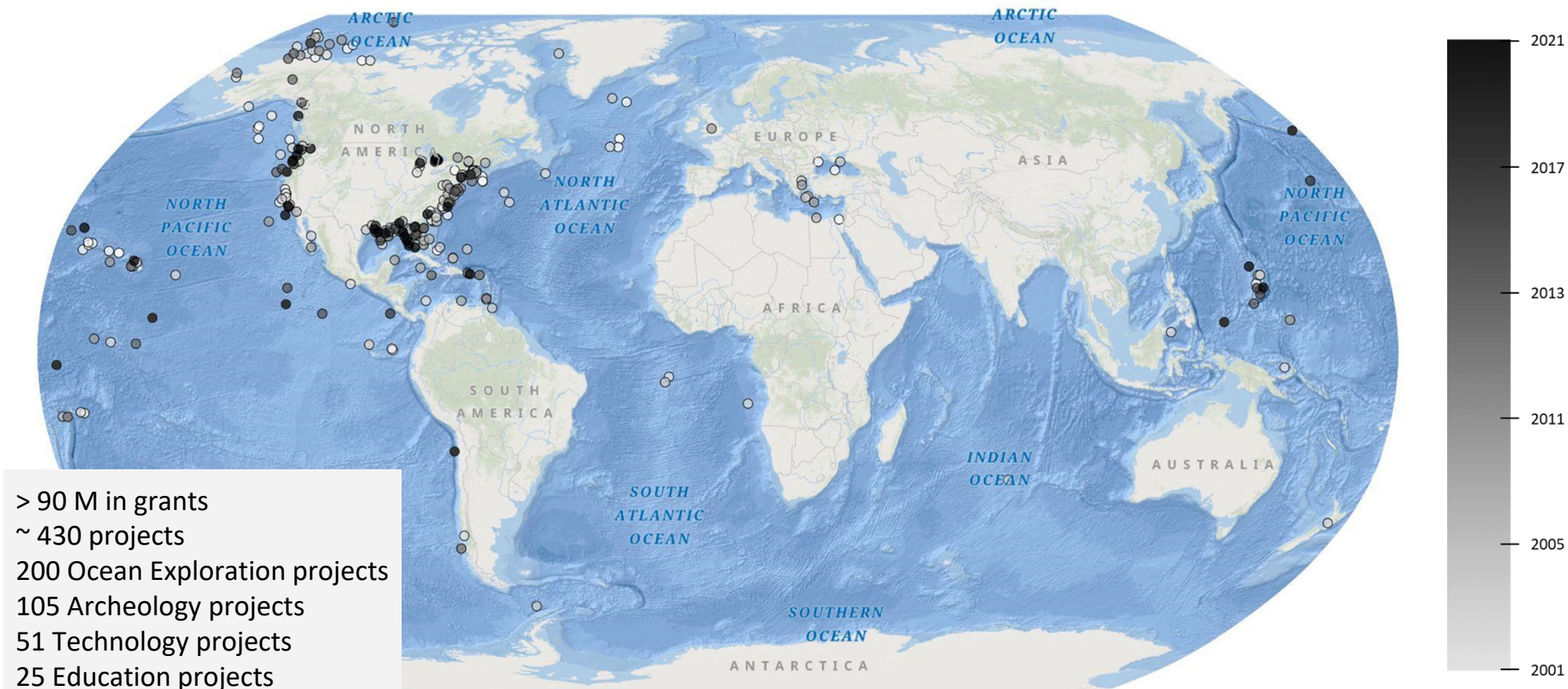
Education



Outreach



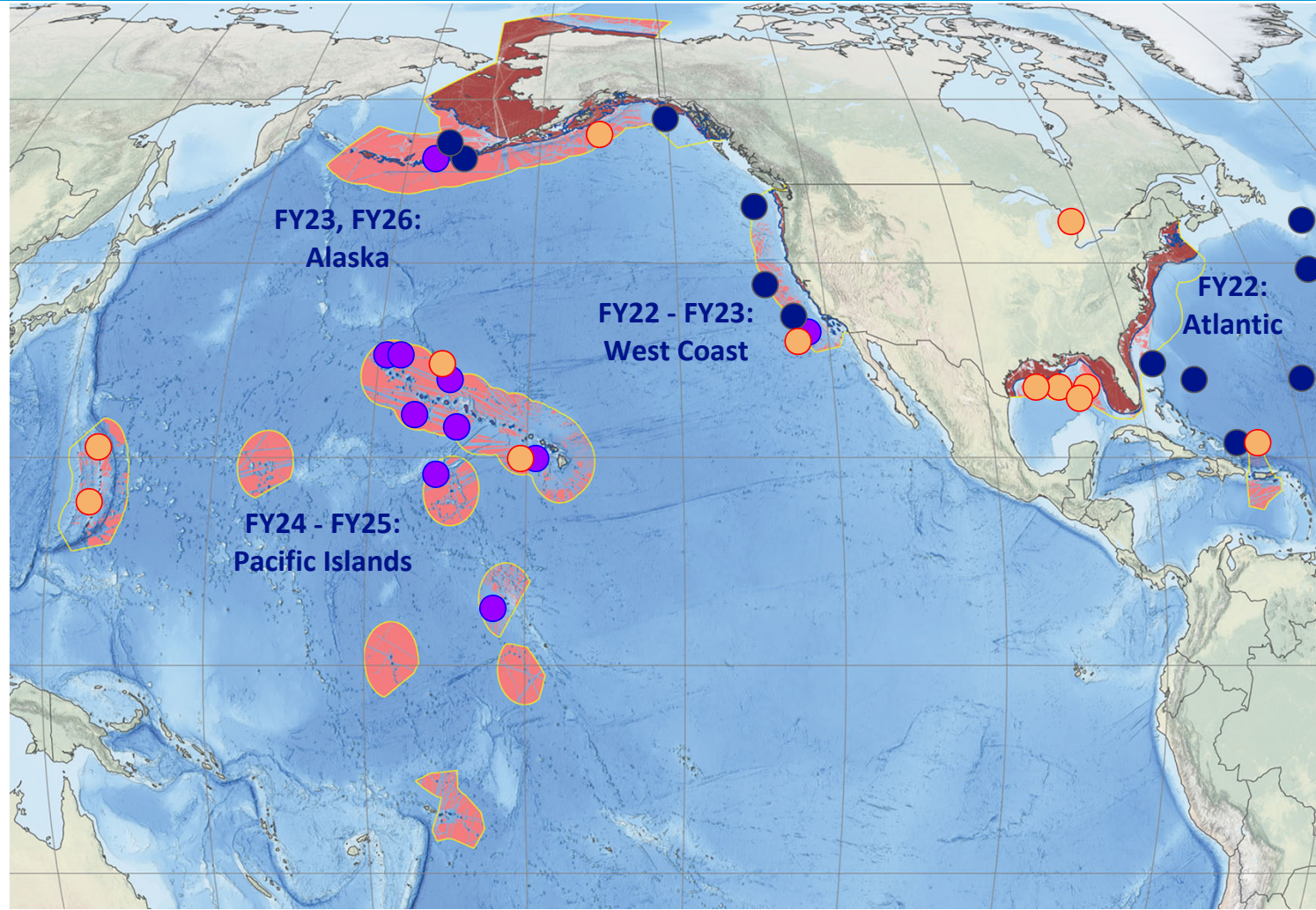
# Grant funded projects (2001 - present)





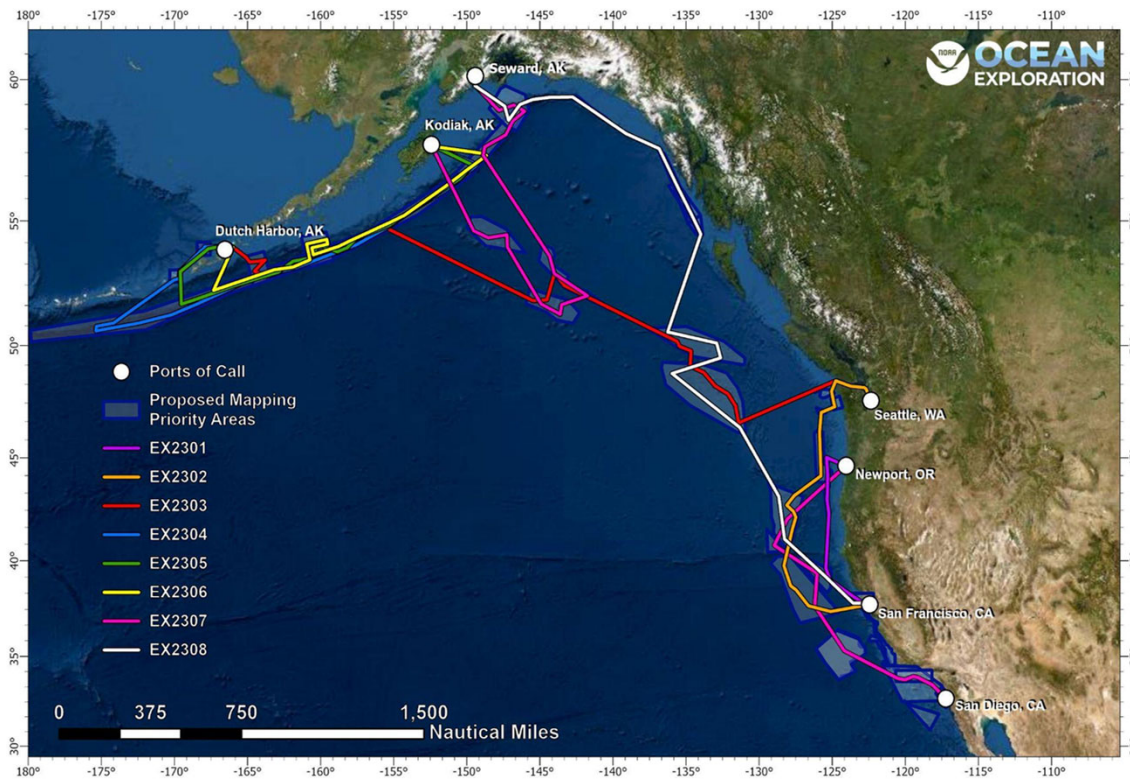
# NOAA Ocean Exploration Funded Expeditions

- OER anticipated Expeditions FY22/23 (*Okeanos Explorer*)
- OER funded OEI/NOPP Expeditions FY22/23
- OER funded NOFO Expeditions FY22/23
- Generalized plans for OER funded *Okeanos Explorer* Expeditions FY22-26
- Unmapped >200m US EEZ
- Unmapped <200m US EEZ
- US EEZ Boundary



Updated 10/21

# *Okeanos Explorer* 2023 Schedule



- FY23 schedule: 180 days at sea (~89% within U.S. EEZ /~11% international waters)
- Completing fall mapping expedition in support of EXPRESS campaign
- Winter dockside repair period in Newport, OR followed by drydock stern thruster replacement (TBD location)
- Shakedown period and west coast ROV work after drydock (March-April)
- Seascope Alaska: Aleutians Exploration – 3 mapping expeditions; 1 ROV expedition (May - August)
- Seascope Alaska: Gulf of AK Exploration – 1 ROV expedition (August - September)
- Transit to San Francisco for FY24 West Coast work (September - October)



# Ocean Exploration Cooperative Institute



THE  
UNIVERSITY  
OF RHODE ISLAND

Dr. Paula Bontempi

Dr. Adam Soule - OEI Exec. Director

Jason Fahy - OEI Deputy Director

Dwight Coleman - ISC Director

Holly Morin - ISC Education

Brenda Moyer - OEI Admin



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TRUST

Dr. Bob Ballard - President

Allison Fundis - COO

Dr. Dan Wagner - Chief Scientist

Megan Cook - Education/Comms



University of  
New Hampshire

Dr. Larry Mayer - CCOM Director

Dr. Brian Calder



WOODS HOLE  
OCEANOGRAPHIC  
INSTITUTION

Dr. Rick Murray - VP Dir. of Research

Andy Bowen

Dr. Dana Yoerger

Dr. Mike Jakuba

Dr. Annette Govindarajan

Dr. Tim Shank / Dr. Casey Machado

Dr. Anna Michel



THE UNIVERSITY OF  
SOUTHERN  
MISSISSIPPI

Dr. Leila Hamdan - VP for Research

Dr. Leo Macelloni

Dr. Chris Hayes

Dr. Jessica Kastler



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Executive Board / Council of Fellows / Some project leads

# Outreach & Education

## Communication

- Increase awareness, understanding, appreciation of, and support for ocean exploration

## Education

- Build capacity of educators
- Partnerships to advance OE education and ocean literacy efforts
- Foster early career development

## Encouraging the Next Generation of Ocean Explorers

- Diversifying the Education Alliance Partnership
- Student and Early Career Opportunities
- Ocean Exploration Education Mini-Grants

## Training the next generation of seafloor mappers: the Explorer-in-Training Program

- Equipping students with skills to meet the current and future demands of the ocean exploration workforce

## WHERE ARE THEY NOW?



### TREY GILLESPIE

Trey was an Explorer-in-Training in 208, 2019, and 2021. Since then, he has continued on as a Mapping Lead on the Okeanos Explorer, sailed with OceanX's Young Explores Program, and piloted remote cloud mapping technology.

### SHANNON HOY

Shannon Hoy sailed as an Explorer-in-Training in 2010 while earning her undergraduate degree. Now, Shannon leads the NOAA Ocean Exploration Expedition Coordinator team and trains EiTs on the Okeanos Explorer.



### ALISA DAPLE

2019 Explorer-in-Training Alisa Dalpe is now a Research Engineer in the Deep Submergence Laboratory at the Woods Hole Oceanographic Institution, working to develop systems for remote, unmanned exploration

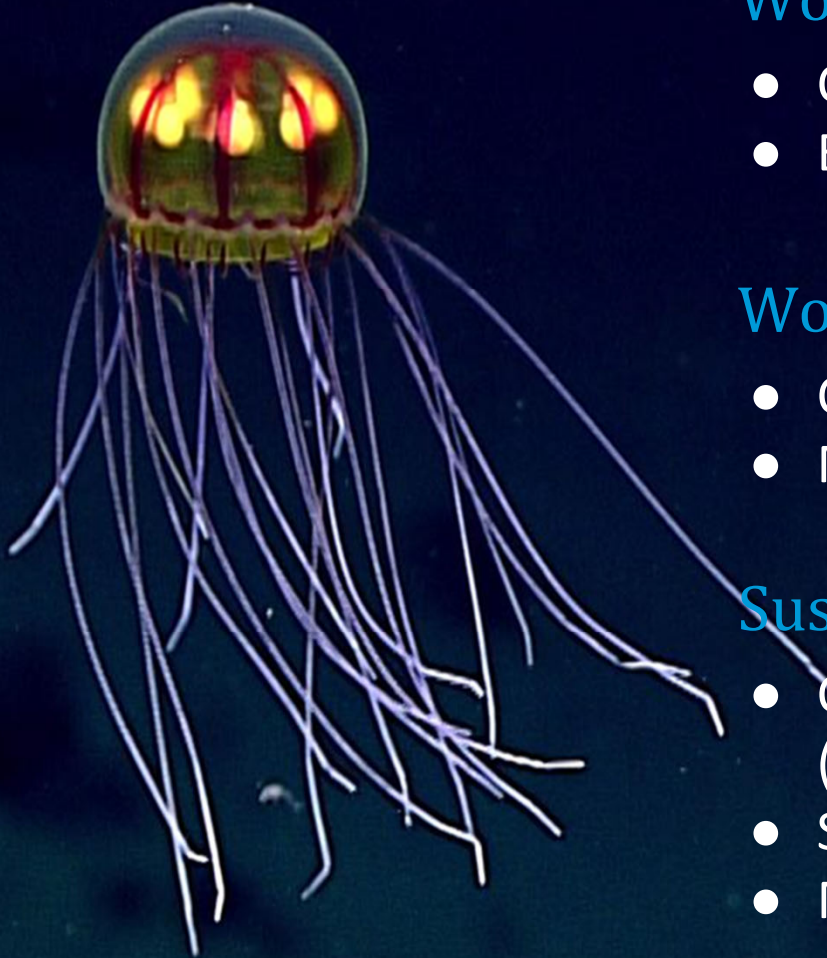




# Partnership Focus



# Diversity, Equity, Inclusion, and Accessibility



## Workforce Diversity

- Commitment to diversity in staffing plans
- Education initiatives; OER & OECI internships

## Workplace Inclusion

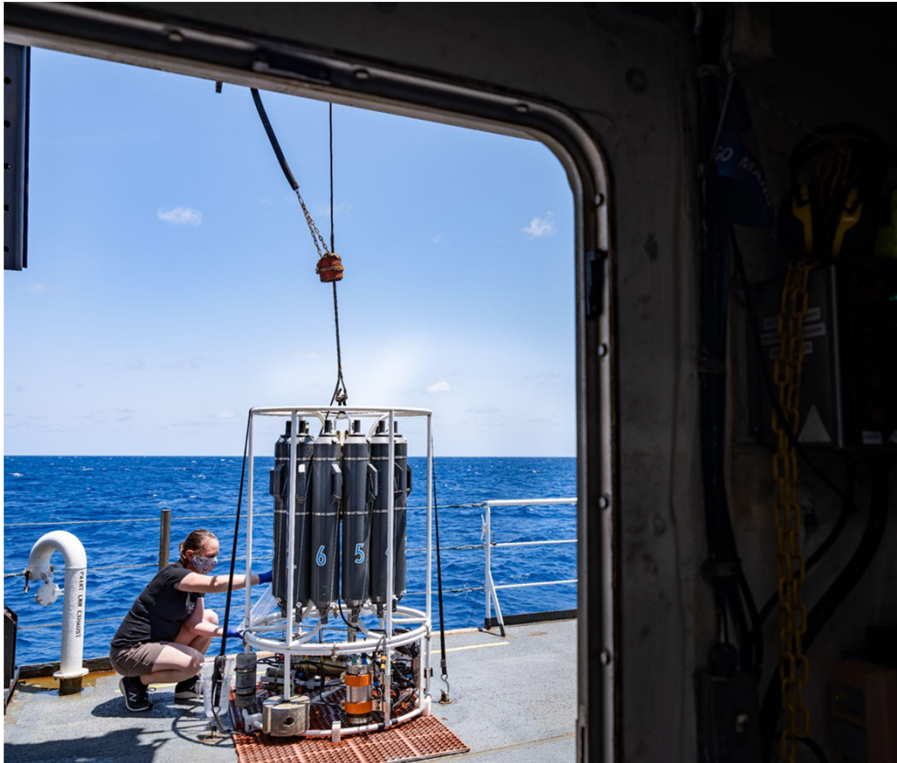
- Creating an inclusive office culture
- Making opportunities more accessible

## Sustainability

- Creating a safe and inclusive environment at sea (SASH)
- Supporting marginalized group members at sea
- Making DEIA an important element of grants



# Omics Leader for OAR and within the NOAA Collaboration



- The NOAA 'Omics Working Group was established by the NOAA Science Council in February of 2021 to implement the NOAA 'Omics Strategic Plan.
- NOAA Ocean Exploration leads the OAR 'Omics Steering Committee
- OAR established the FY22-24 'omics work plans for AOML, GLERL, and PMEL PIs
- OAR put together an annual operating plan (AOP) focused on 'omics on FY22-24 as requested by the OAR ELT

# Our Principles of Exploration meet the National Imperative



Explore to meet community needs



Always collect useful and quality data



Systematically expand exploration footprint



Share discoveries to engage the public



Produce open access data with necessary metadata



Release data in a timely manner

NATIONAL STRATEGY FOR MAPPING, EXPLORING, AND CHARACTERIZING THE UNITED STATES EXCLUSIVE ECONOMIC ZONE



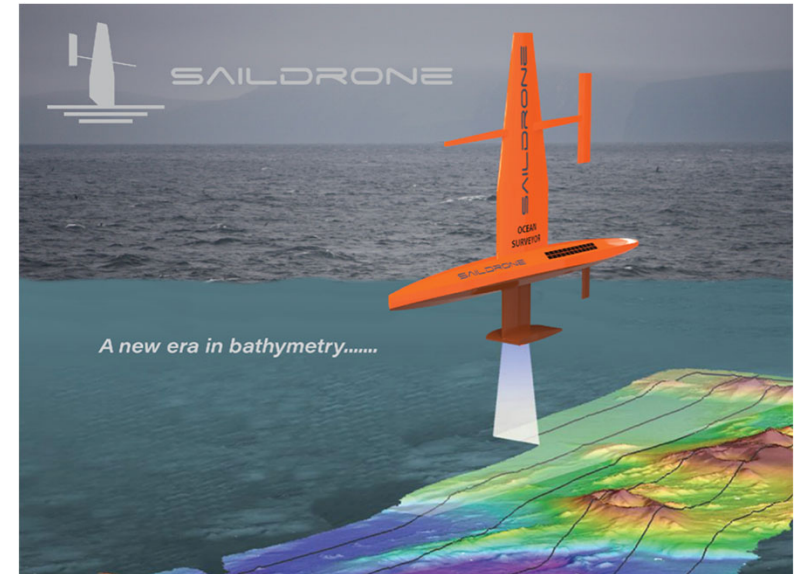
NATIONAL STRATEGY FOR MAPPING, EXPLORING, AND  
CHARACTERIZING THE UNITED STATES EXCLUSIVE  
ECONOMIC ZONE

***Ocean Exploration is a NOMECS co-lead with many team members supporting the interagency council***

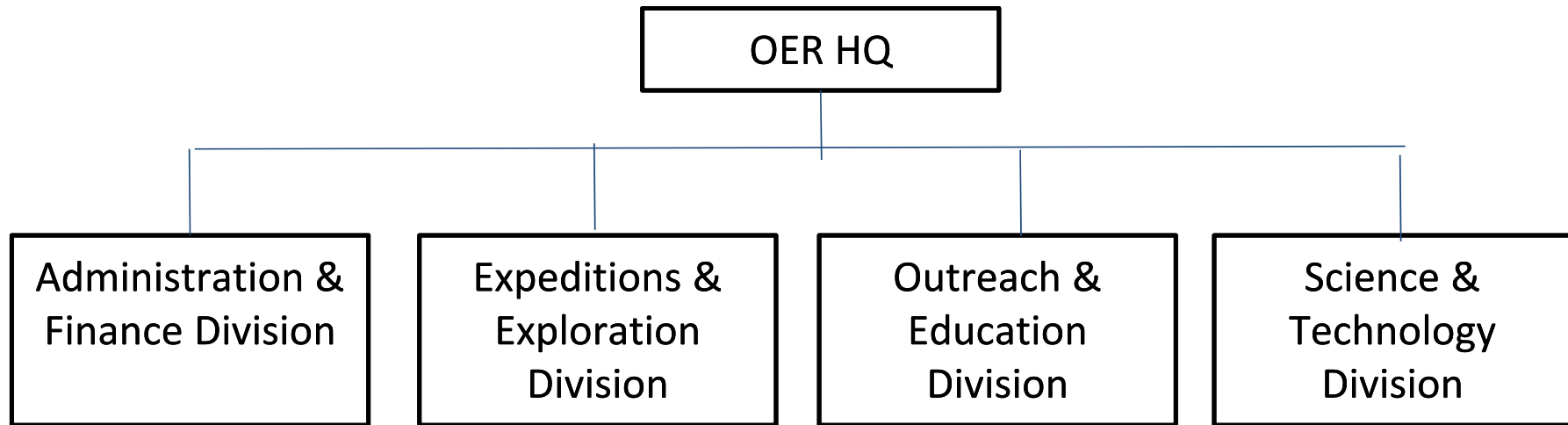


# NOPP Leader for NOAA and within the Federal Partnership

- IWG-NOPP co-Chair and NOAA's NOPP lead
- Projects involve:
  - multiple federal agencies;
  - at least two sectors of public, private, and academia; and
  - agency review
- NOPP based on collaboration and cooperation with federal funding opportunities providing a catalyst when necessary
- “NOPP 2.0” vision for expanded partnerships with private industry and philanthropy

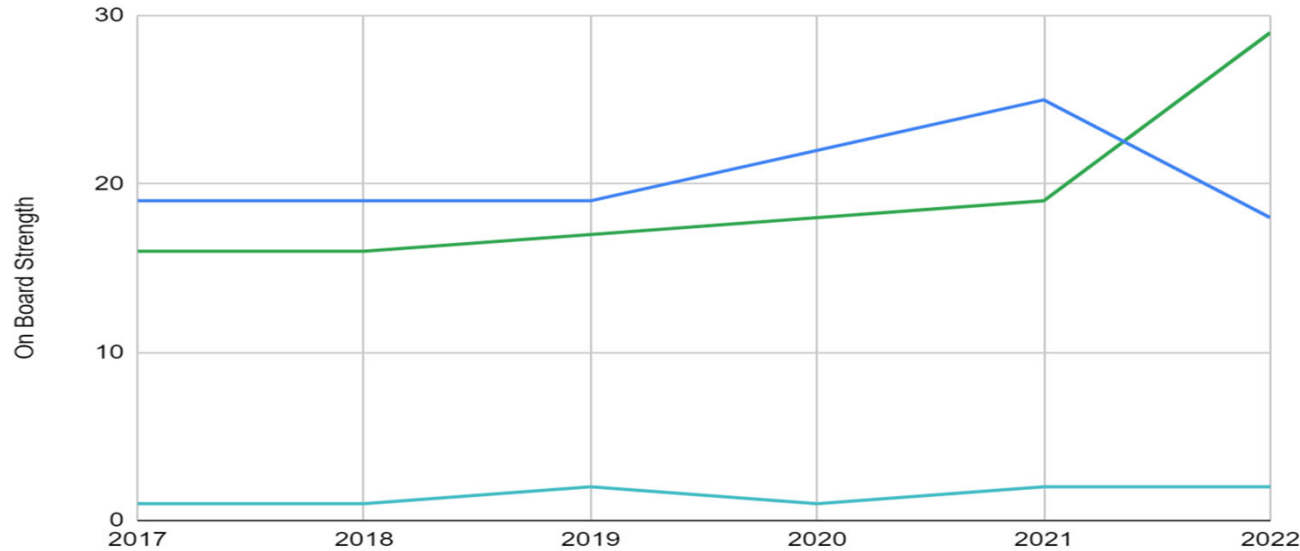


# NOAA Ocean Exploration Structure





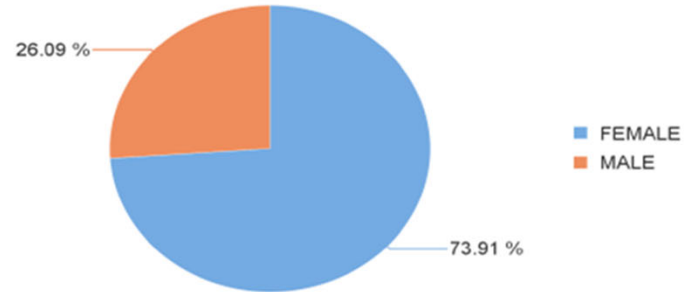
# NOAA Ocean Exploration FY22 Staffing Trend



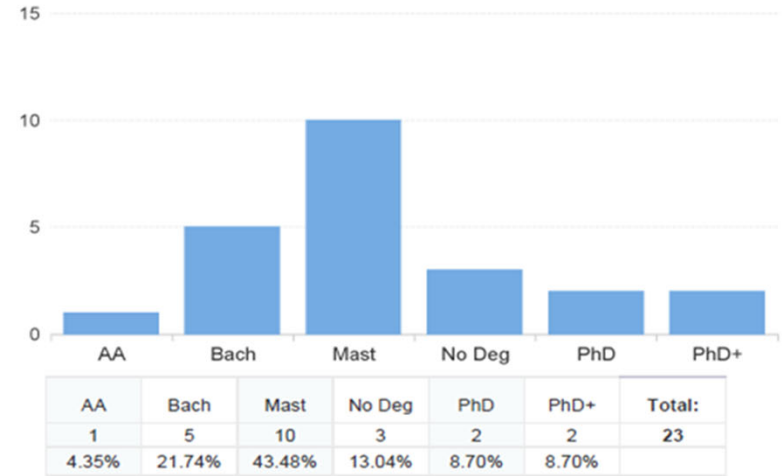
|                        | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|------------------------|------|------|------|------|------|------|
| Federal                | 16   | 16   | 17   | 18   | 19   | 29   |
| Contractors/Affiliates | 19   | 19   | 19   | 22   | 25   | 18   |
| IPA                    | 1    | 1    | 2    | 1    | 2    | 2    |

## OER Summary Federal Workforce Demographics (MARS), Last Updated 5/23/22

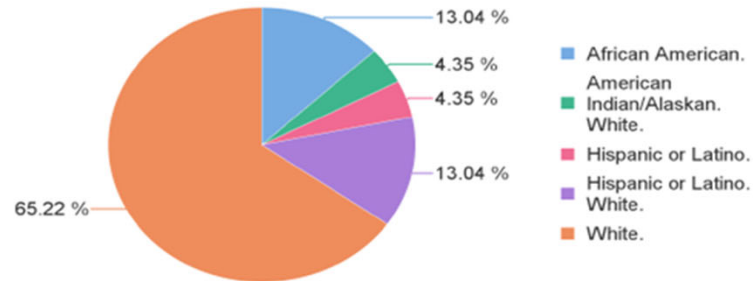
### Gender



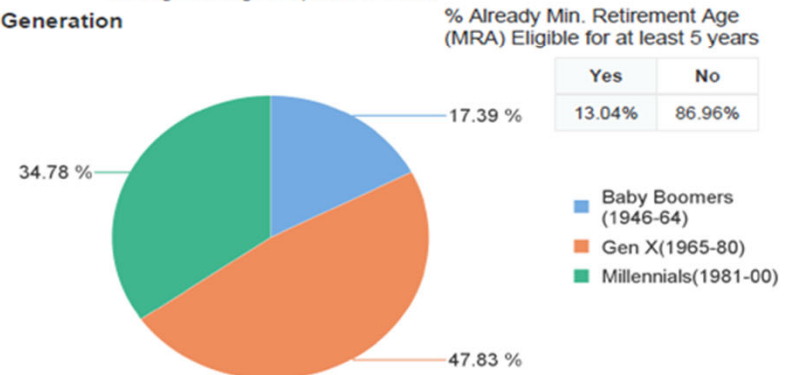
### Education



### Ethnicity and Race Indicator (ERI)



### Generation

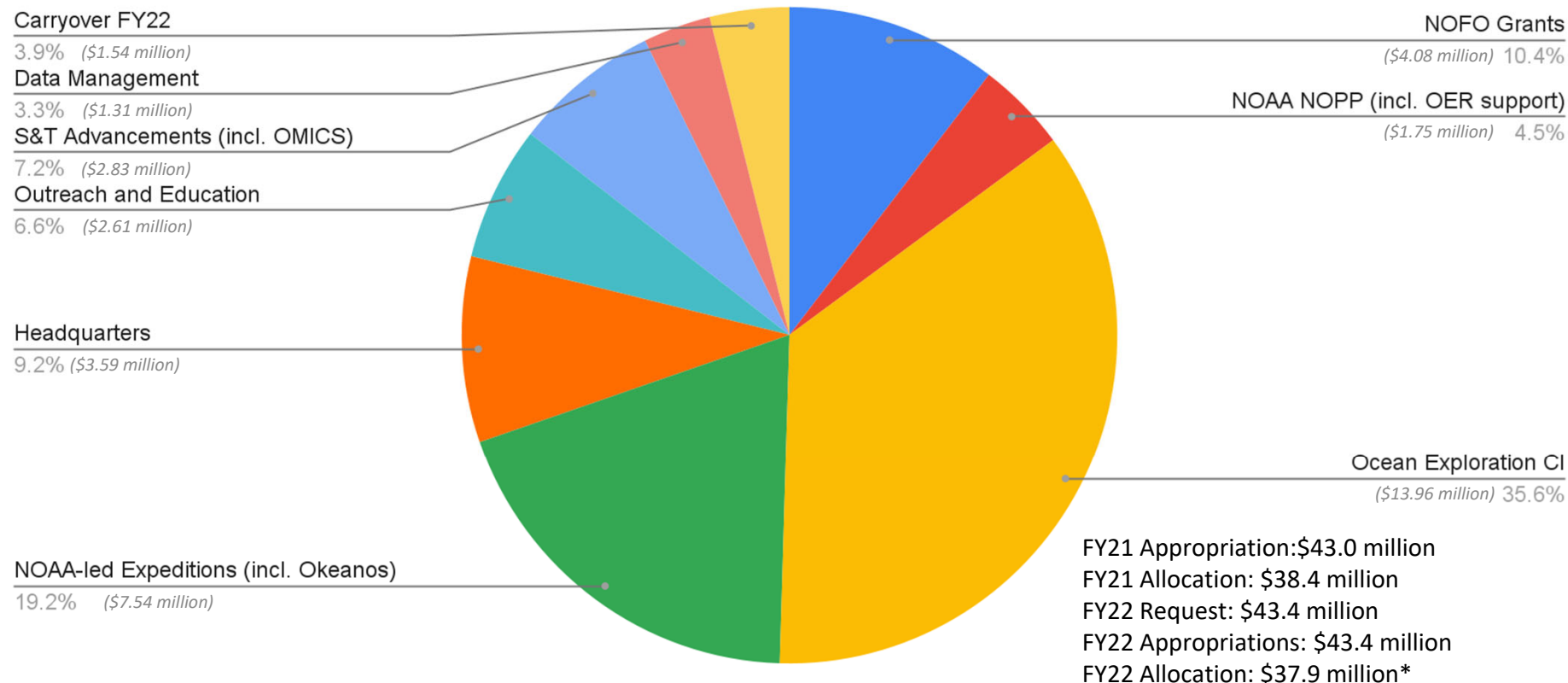


% Already Min. Retirement Age (MRA) Eligible for at least 5 years

| Yes    | No     |
|--------|--------|
| 13.04% | 86.96% |



# NOAA Ocean Exploration FY22 Budget



\* Despite a \$400K increase in approps, OER received a \$500K spending cut

# Questions?



[oceanexplorer.noaa.gov](https://oceanexplorer.noaa.gov)



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