

**How do we get there?**

**Advocacy**

# **Advocacy Activities**

- **Consortium of Ocean Leadership**
- **UCAR/Center for Ocean Leadership**
- **Grassroots movement**

# Current participants

Bigelow Laboratory for Ocean Sciences

Monmouth University

Monterey Aquarium Research Institute

Oregon State University

University of California – Scripps Institute of Oceanography

University of New Hampshire

University of Rhode Island

University of Southern Mississippi

University of Washington

Virginia Institute of Marine Science

Woods Hole Oceanographic Institution

# Needs of the Ocean Science Community: The US is Falling Behind

## Urgency

- The United States is losing its leadership internationally in the ocean sciences.
- The US Academic Research Fleet has gone from 34 to 17 ships in the last 50 years.
- China has 64 research ships; more than half built in the last 10 years
- The lack of US polar ships is being outpaced by other competing nations.
- Ocean drill ship JOIDES Resolution retiring without replacement.

## Needs

- US ocean science needs at least 3X current budget to meet the demands of Congressional Authorizations.

# The Nation need:

## 1. Infrastructure:

### a. Ships, hardware, and uncrewed systems

- The US fleet is being outpaced by other nations
- Replacement ships are of a lesser capacity and capability though ocean science needs are expanding rapidly
- Autonomous craft are not a replacement but a supplement to traditional ships

### b. Global Ocean Observing Systems

- Present systems were designed decades ago and are not fully deployed
- The present network is insufficient to measure carbon sequestration, or to serve as a basis for a carbon market
- There is no Arctic observing system
- Need cheaper sensors and platforms to expand coverage.

## **2. Ocean-Climate Nexus**

- The ocean impacts climate and climate impacts the ocean
- More than half of the oxygen comes from the ocean
- Ocean ecosystems that feed people are migrating faster than they can be measured or studied
- This risks environmental, economic, and food security
- Ocean based climate solutions need research to be modeled, tested and proven
- Current funding does not keep pace with the effects or volume of warming gasses.
- Coastal Resilience and adaptation/mitigation are necessary investments

### **3. Research: ocean processes, observations, modeling, forecasting and synthesis**

- The Ocean Climate Action Plan specifically calls for this
- How fast is the ocean heat conveyor belt is slowing?
- Will oxygen producing microbes be vulnerable to climate change or ocean fertilization?
- How bad will coastal flooding from sea level rise be and by when?
- The US EEZ remains largely unmapped and the inventory of ecosystems is incomplete. Without this knowledge it cannot be managed well.

**4. Next Generation training**, education, and opportunity (with principles of equity and inclusion) warrant STEM investment to close the competitive gap internationally

# Discussion questions:

1. Are these the right priorities?
2. How to get more people involved in telling the story in Washington?