



# RESEARCH

NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION

## Overview of NOAA Research and Context for GML Review

John Cortinas, OAR Deputy Assistant Administrator for Science  
October 21-23, 2024





# NOAA Mission



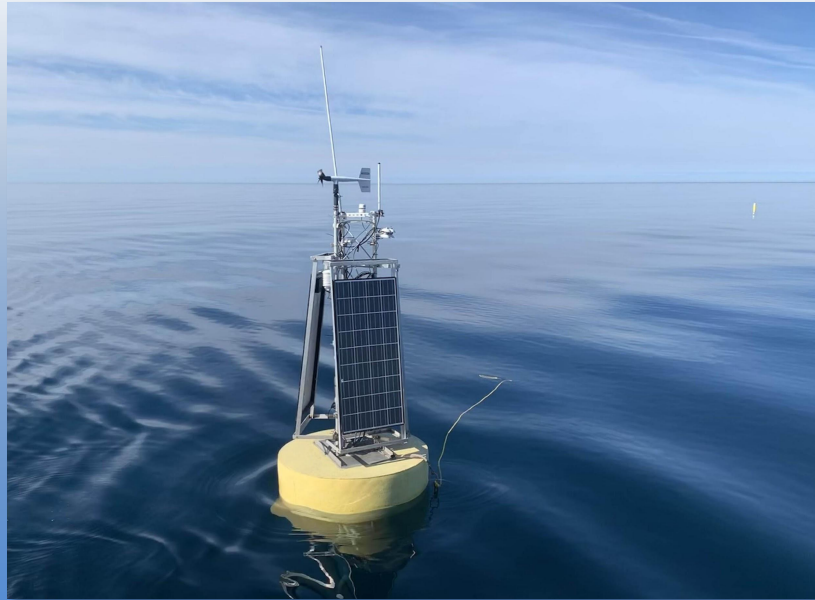
## NOAA's Mission: Science, Service and Stewardship:

1. To understand and predict changes in climate, weather, oceans and coasts;
2. To share that knowledge and information with others; and
3. To conserve and manage coastal and marine ecosystems and resources.





# NOAA's Office of Oceanic and Atmospheric Research (OAR)



Our Vision is to Deliver NOAA's  
Future  
**VISION**



Our Mission is to conduct research to  
understand and predict the Earth  
system; develop technology to improve  
NOAA science, service, and  
stewardship; and transition the results  
so they help us meet the challenges  
faced by society.  
**MISSION**



# OAR Strategic Goals

1



Explore the Marine Environment

2



Detect Changes in the Ocean and Atmosphere

3



Make Forecasts Better

4



Drive Innovative Science



# Societal Challenges

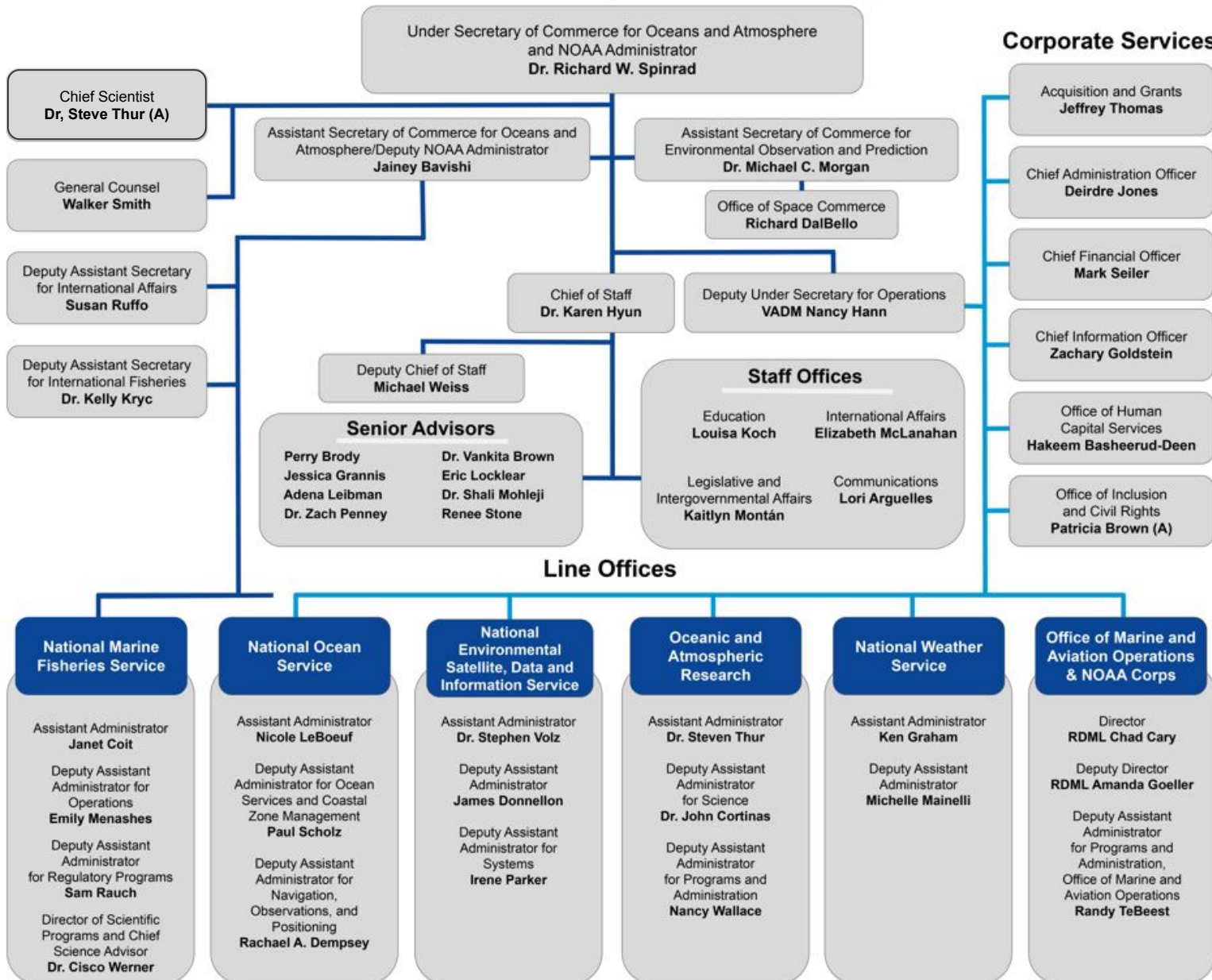
- Confront the challenges from our changing climate that is impacting almost every aspect of our lives.
- Protect against extreme weather events and environmental hazards to save lives, livelihoods, property and support healthy ecosystems.
- Manage too much and too little water ensuring both access and safety with Earth's greatest resource.
- Sustain a healthy environment and economy together, helping people understand how their choices will impact their communities.



(A) = Acting

# NOAA Headquarters Organization

## Office of the Under Secretary for Oceans and Atmosphere



<https://www.noaa.gov/about/organization/noaa-organization-chart>

# Who We Are



Assistant Administrator  
Oceanic & Atmospheric Research  
& Performing the Duties of the Chief Scientist  
**Dr. Steven Thur**

Deputy Assistant Administrator  
Programs & Administration  
**Nancy Wallace**

Deputy Assistant Administrator  
Science  
**Dr. John Cortinas**

## HQ STAFF OFFICES

Chief Financial Officer  
& Chief Administrative  
Officer  
**David Holst**

EEO/Diversity  
**Nicole Mason**

International Activities  
**Staci Rijal**

Communications  
**Michael Murphy**

## PROGRAMS

Climate Program Office  
**Dr. Roger Pulwarty  
(A)**

Global Ocean Monitoring  
& Observing Program  
**Dr. David Legler**

National Sea Grant  
College Program  
**Dr. Jonathan  
Pennock**

Ocean Acidification  
Program  
**Dr. Sarah Cooley**

Weather Program  
Office  
**Dr. John Ten  
Hoeve**

Office of Ocean  
Exploration & Research  
**Jeremy Weirich**

## LABORATORIES

Air Resources Laboratory  
**Dr. Ariel Stein**

Atlantic Oceanographic &  
Meteorological  
Laboratory  
**Dr. Molly Baringer  
(A)**

Chemical Sciences  
Laboratory  
**Dr. David Fahey**

Global Monitoring  
Laboratory  
**Dr. Vanda Grubišić**

### OAR Boulder Laboratories

Global Systems  
Laboratory  
**Jennifer Mahoney**

Physical Sciences  
Laboratory  
**Dr. Robert Webb**

Great Lakes  
Environmental Research  
Laboratory  
**Deborah Lee**

Geophysical Fluid  
Dynamics Laboratory  
**Dr. Venkatachalam  
Ramaswamy**

National Severe Storms  
Laboratory  
**Dr. DaNa Carlis**

Pacific Marine &  
Environmental Laboratory  
**Dr. Michelle  
McClure**

## HQ OFFICES

Office of Science Support  
**Dr. Terence Lynch**

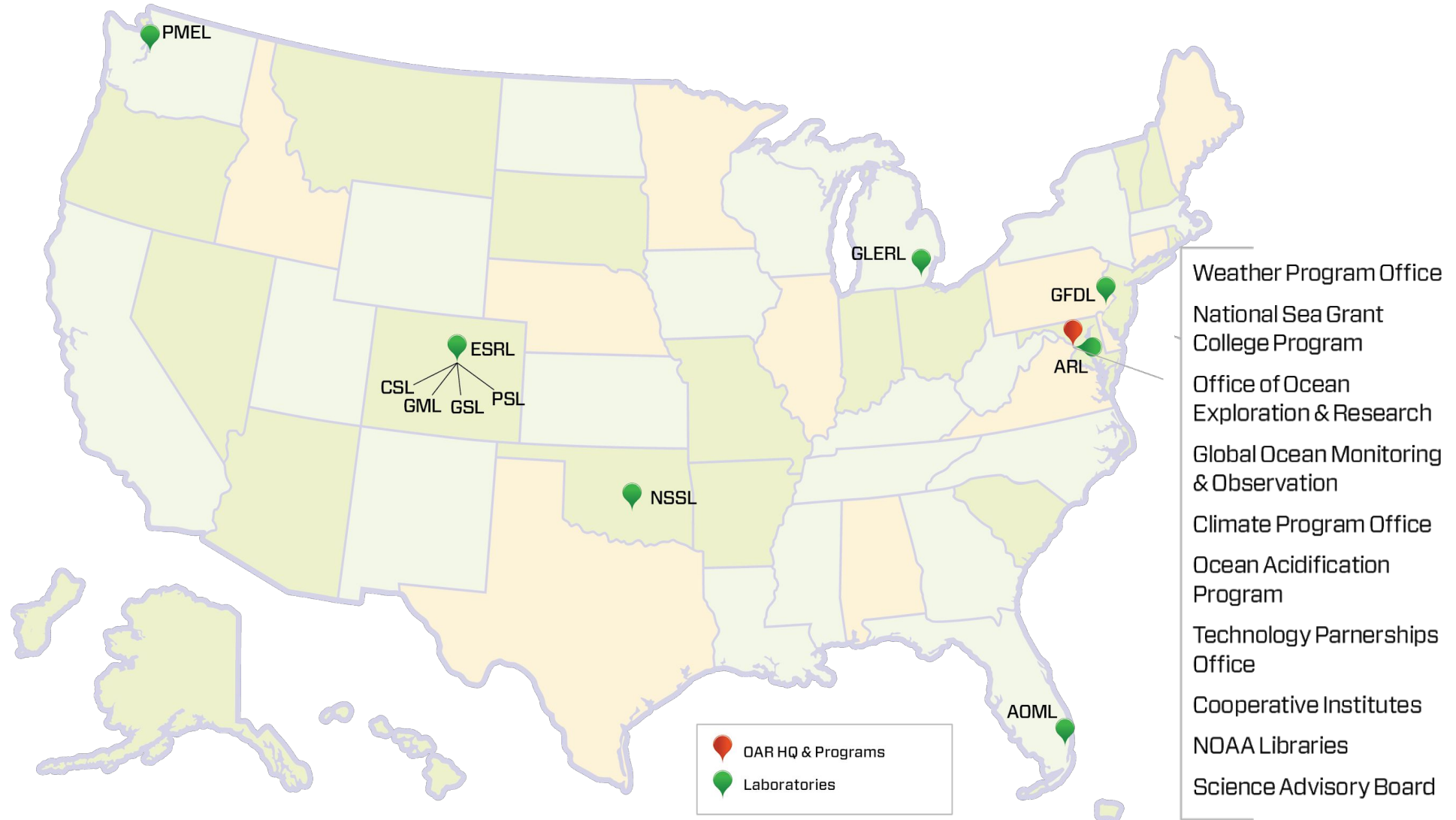
Office of Research, Transition, &  
Application  
**Dr. Fiona Horsfall**

IT Management Office/Assistant  
CIO for Research  
**Jeremy Warren**





# OAR Labs and Programs





# Global Monitoring Laboratory

Conducts research that addresses three major challenges: 1) Greenhouse gases and carbon cycle feedback mechanisms, 2) changes in clouds, aerosols, and surface radiation, and 3) recovery of stratospheric ozone.

GML expertise and operations support research and innovation in different areas:

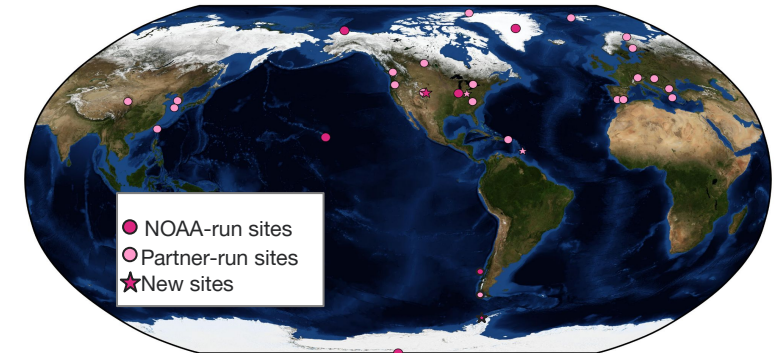
- Atmospheric measurements, calibration, testing, and algorithm development
- Measurement intercomparisons
- Process studies and trend analyses
- Top-down GHG emission quantification
- Satellite and model data evaluation
- Renewable (solar and wind) energy production forecasting



# Global Monitoring Laboratory in OAR's Lab Portfolio



- GML directly supports two of OAR's Strategy (2020-2026) Goals: 1) Detect Changes in the Oceans and the Atmosphere, and 2) Drive Innovative Science.
- Monitoring and tracking of GHGs, ozone and ozone depleting substances, water vapor, and aerosols and radiation is an integral part of OAR's mission.
- GML closely collaborates with other OAR laboratories:
  - ARL and CSL on atmospheric composition studies, including GHGs,
  - ARL, GSL, and PSL on boundary-layer studies and use of clouds, aerosol, and radiation measurements for model improvements,
  - AOML and PMEL on ocean CO<sub>2</sub> measurements and reducing the uncertainties of the ocean CO<sub>2</sub> sink,
  - GFDL on Earth System modeling and process studies.
- As part of the OAR Climate Portfolio, GML partners also with programs across OAR, including CPO, GOMO, and OAP to *Confront the Challenges from our Changing Climate*, one of OAR's four Societal Challenges.



NOAA Federated Aerosol Network (NFAN)





# Global Monitoring Laboratory Leadership



## Dr. Vanda Grubišić, GML Director

Dr. Grubišić has led GML since March 2023. Prior to that, she served as director of the National Center for Atmospheric Research's (NCAR) Earth Observing Laboratory, where she was responsible for its scientific strategy, administrative processes and procedures and budgetary planning for more than 10 years. Dr. Grubišić earned her B.Sci. degree from the University of Zagreb, and her M.Phil. and Ph.D. from Yale University.



## Dr. Gary Morris, GML Deputy Director

Dr. Morris joined NOAA's Global Monitoring Laboratory in December 2021 after a 25-year career in academia as a professor of physics and environmental science, including four years as Associate Dean of Arts & Sciences at Valparaiso University in Valparaiso, IN and six years as Dean of Natural Sciences at St. Edward's University in Austin, TX. Gary holds an A.B. in Mathematics, Physics from Washington University, and a MS and PhD from Rice University in Space Physics and Astronomy.



# NOAA Science Reviews

- NOAA Administrative Order (NAO) 216-115B requires that NOAA research and development activities be evaluated every five years by independent peer review.
- OAR Circular 216-3 implements the NOAA requirements within OAR.
- OAR conducts these science reviews at the laboratory and program level.



# Scope of Review

- Quality, relevance, and performance of research and activities sponsored or conducted by NOAA's GML over the last 6 years (2018).
- Recommendations for improvements moving forward.
- Progress on implementing strategic plans and insights for future planning.





# How Does OAR Define Success?

## Three Evaluation Criteria:

1. **Quality** is a measure of the novelty, soundness, accuracy, and reproducibility of a specific body of research. Indicators include publications, technology development, data contributions, and awards.
2. **Relevance** is a measure of how well a specific body of research supports NOAA's mission and the needs of users and the broader society.
3. **Performance** is a measure of effectiveness and efficiency. It includes an assessment of the organization's leadership, management, operations, workforce, organizational culture, strategic planning, progress towards performance targets and milestones, efficiency in resource utilization, and transition of research to operations.





# How OAR Uses Reviews

- Inform performance improvements and portfolio management
- Encourage innovative and collaborative approaches to meet goals and objectives
- Maintain consistency with NOAA strategic planning, budgeting, and execution
- Highlight directions for future strategic plans
- Identify common themes and priorities so that OAR can determine mechanisms, policies, or actions to address corporately





**Thank You!**

