



January 24, 2023

## **Weather Program Office Review**

Introduction and Overview

Dr. Dorothy Koch, Director



### WHAT DOES WPO DO?

## WE FUND RESEARCH TO IMPROVE FORECASTS

The Weather Program Office is within the Office of Oceanic and Atmospheric Research (OAR, also known as NOAA Research).

Our aim is to integrate world class weather research into operational forecasts for the public, support new weather applications across the Weather Enterprise, and continually improve our understanding of weather phenomena.

### **WPO PROGRAMS**

- Air Quality & Fire Weather
- ✓ Testbeds
- ✓ Observations
- ✓ Social Science (SSP)
- ✓ Joint Technology Transfer Initiative (JTTI)
- ✓ Subseasonal to Seasonal Research (S2S)
- ✓ Earth Prediction Innovation Center (EPIC)
- ✓ Supplemental Appropriations











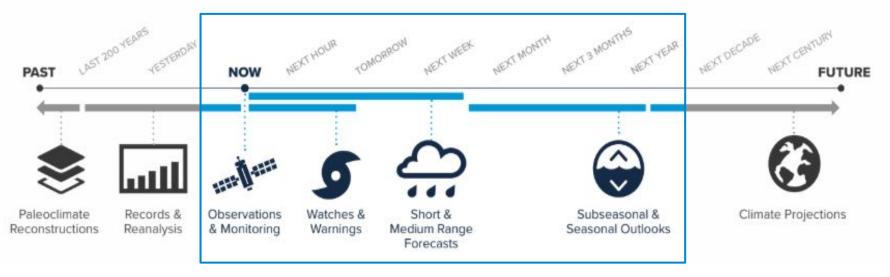




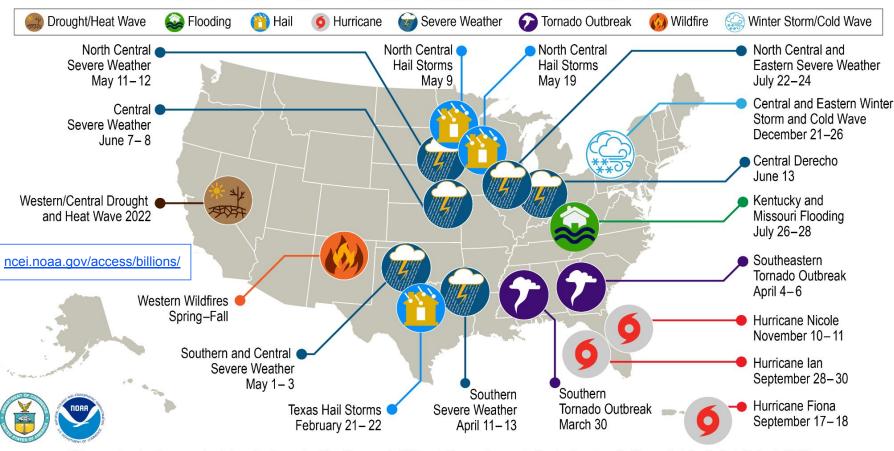
### **FORECAST FOCUS**

NOAA provides a suite of weather and climate products from near-term forecasts to long-term projections. These are tailored to stakeholder needs to help create jobs, boost economies, and build resilience to extreme events.

**Working with NWS, the Weather Program Office supports the research** underpinning forecast improvements.



### U.S. 2022 Billion-Dollar Weather and Climate Disasters



This map denotes the approximate location for each of the 18 separate billion-dollar weather and climate disasters that impacted the United States in 2022.

The number of billion-dollar weather disasters has doubled relative to past 30 years!

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## WPO AND THE WEATHER ENTERPRISE

WPO selects and funds research that supports and champions partnerships between NOAA's research program offices and laboratories, and the *Weather Enterprise\**.

At the intersection of the Weather Enterprise, WPO works to facilitate a strong and growing weather research network throughout NOAA, while fostering collaborations with other Federal and non-Federal agencies, institutions, academia, and the private sector.

















### **Weather Research:**

- **NOAA Authorization Act of 1992** (P.L. 102-567)
- **Weather Research and Forecasting Innovation Act of 2017** (15 U.S.C. § 8501)
- **National Integrated Drought Information System Reauthorization Act of 2018** (P.L. 115-423)

**LEGISLATIVE DRIVERS** 

### **Supplemental Funding:**

- **Bipartisan Budget Act of 2018** (P.L. 115-123)
- **Disaster-Related Appropriations Supplemental** of 2019 (P.L. 116-20)
- **Disaster-Relief Supplemental Act of 2022** (P.L. 117-43)
- **Bipartisan Infrastructure Law** (P.L. 117-58)
- **Inflation Reduction Act** (P.L. 117-169)

















### **STRATEGIC DRIVERS**

### **Transitioning Research**

- Improving forecasts and service delivery considering operational needs
- Commercialization opportunities
- Public releases
- Capacity to translate knowledge and recommendations

## Supporting diversity, equity, inclusion and accessibility initiatives:

- In demographics, perspectives, and experience
- Broadening opportunities for the future science and research workforce
- Student and fellowship opportunities



### **PARTNERSHIPS**





























United States Global Change Research Program



















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### **BASIC vs. APPLIED RESEARCH**



#### **National Science Foundation**

Independent agency, reports directly to the National Science Board (NSB)

NSF promotes the progress of science by investing in research to expand knowledge in science, engineering and education. NSF also invests in actions that increase the capacity of the U.S. to conduct and exploit such research.

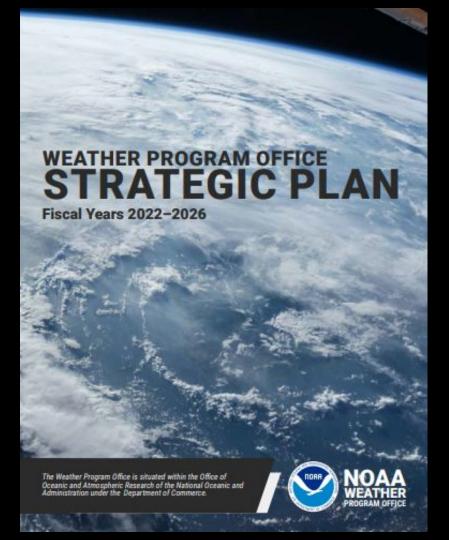


### **National Oceanic and Atmospheric Administration**

Within the Department of Commerce (DOC)

### NOAA's mission is **Science**, **Service and Stewardship**

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

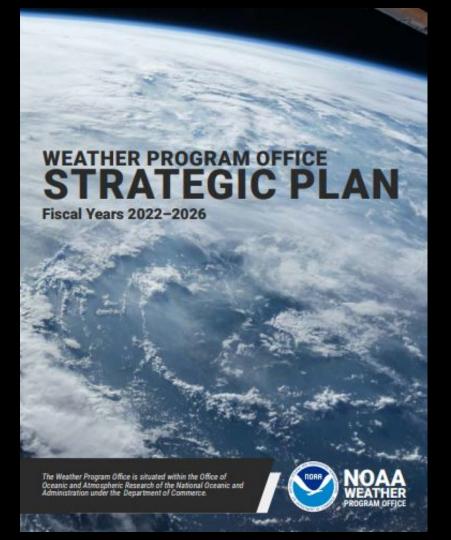


### Vision

Innovative Science Powering A WEATHER-READY NATION

### Mission

Cultivating, funding, and transitioning collaborative weather research that results in accurate and actionable weather information for all.



















Weather, Water, and Climate Strategy





























### DOC, NOAA, (WPO) STRATEGIC PLAN ALIGNMENT

- DOC Goal 1: Drive U.S. <u>Innovation</u> and Global Competitiveness
- DOC Goal 2: Foster Inclusive Capitalism and Equitable Economic Growth
  - O Build sustainable, employer-driven <u>career pathways to meet employers' need for talent</u>
- DOC Goal 3: Address the Climate Crisis Through Mitigation, Adaptation, and Resilience Efforts
  - ... enhanced service delivery and improved weather, water, and climate forecasts
  - NOAA Goal 1: **Build a Climate Ready Nation**
- DOC Goal 4: Expand Opportunity and Discovery Through Data
  - O Improve Commerce data usability and advance ethical, responsible, and equitable data practices
- DOC Goal 5: Provide 21st Century Service with 21st Century Capabilities
  - Optimize workforce and diversity, equity, and inclusion practices
  - Equitably deliver exceptional customer experience
    - NOAA Goal 2: Make Equity Central to NOAA's Mission AND Operational Excellence and Mission Success





















# OCEANIC AND ATMOSPHERIC RESEARCH (OAR) STRATEGY

### Explore the Marine Environment

Increase knowledge of the oceans, coastal areas, and Great Lakes to support resource management and public awareness.

### Detect Changes in the Ocean and Atmosphere

Produce, analyze, and interpret observation records to understand the Earth system and inform the public.

### Make Forecasts Better

Improve accuracy, precision, and efficiency of forecasts and predictions to save lives and property and support a vibrant economy.

### Drive Innovative

Cultivate and deliver mission-relevant research to lead the environmental science community.



















# NOAA'S SCIENCE ADVISORY BOARD (SAB) PRIORITIES for WEATHER RESEARCH (PWR)

Several PWR Report Recommendations <u>align</u> with WPO priorities:

- Accelerate Earth system modeling approach
- Increase investments in social and human behavioral data collection and sciences
- Fill gaps in existing Earth system observing networks with existing, proven or augmenting technologies;
- Prioritize immediate investments in fundamental research on data assimilation
- Support Reanalysis and Reforecasting vital to Earth system model evaluation and improvements;
- Target the understanding and prediction of high-impact weather
- Target water cycle extremes and their cascading impacts
- Develop improved and increasingly objective methods to balance investments across the weather information value chain



### **CROSS-NOAA STRATEGIES**

WPO works within NOAA to advance environmental prediction, for example:

- Earth Systems Integration Board (ESIB; previously Weather, Water, Climate Board)
  - Weather Team
  - Modeling Team
  - Water Team
- Precipitation Prediction Grand Challenge
- Hurricane Forecast Improvement Program















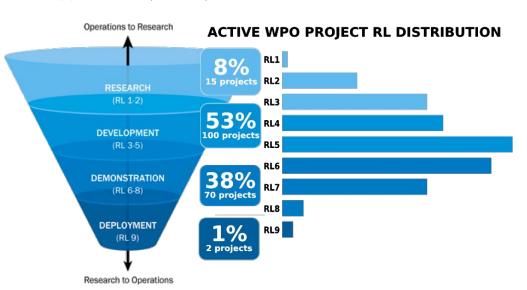




### **BALANCING FUNDING STRATEGY**

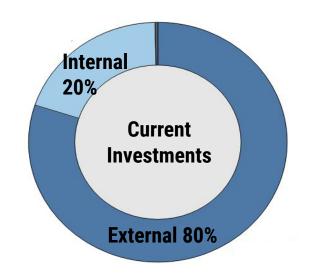
### **Research to Operations/Applications**

Balance the immediate needs of NOAA operational stakeholders (high RL) with investments in innovative high-risk approaches (low RL).



#### Internal/External

Coordinate NOAA Labs/Centers with external community, through careful balance of internal and external investments.















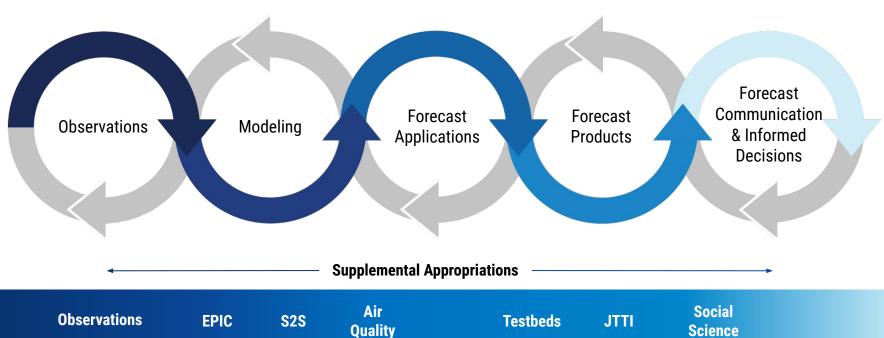




### **BALANCING FUNDING STRATEGY**

#### Value chain

WPO research spans the forecast value chain.



### **ACTIVITY AREAS FOR THE REVIEW**

















## Activity Area 1: Organizational Excellence



# WPO seeks recommendations for our office management, oversight, and budget execution. This activity area includes, but is not limited to:

- Managing, overseeing, and executing the office's budget through the annual appropriations process including interpreting pertinent legislation and policies.
- Coordinating the Notice of Funding Opportunity, which is an external funding competition that is run once a year.
- Prioritizing diversity, equity, inclusion, and accessibility (DEIA) initiatives in both our strategic goals and office activities.
- Developing student and fellowship opportunities to cultivate the next-generation workforce.





















# WPO seeks recommendations and evaluations of our critical role in weather observation coordination, advancing data assimilation, and model development. This activity area includes, but is not limited to:

- Advancing observation systems that are mission-effective, integrated, adaptable, and affordable.
- Supporting projects that play an essential role in research and modeling development that fulfill the growing needs of the public at the subseasonal to seasonal timescales.
- Developing and further advancing weather models, such as the widely-used Unified Forecast System (UFS) through community modeling and the Earth Prediction Innovation Center (EPIC).



















# Activity Area 3: Advancement and Transition of Weather Research



# WPO seeks recommendations regarding our mechanisms to find, fund, and transition research for use by operational stakeholders both within the National Weather Service and the broader Weather Enterprise. This activity area includes, but is not limited to:

- Testing and demonstrating new, cutting-edge forecast capabilities to improve NOAA's air quality and fire weather services.
- Ensuring the continuous, cost effective development and transition of the latest technological advancements to operations through the Joint Technology Transfer Initiative (JTTI).
- Funding projects in NOAA's weather testbeds to accelerate the transition of research to operations.
- Coordinating and managing research transitions to operational use, scientific advancements, and/or other applications.

















# Activity Area 4: Effective Communication & Coordination of Weather Research



# WPO seeks recommendations regarding the office's Social Science Program, as well as its coordination and collaboration efforts. This activity area includes, but is not limited to:

- Coordinating the planning, budget execution, monitoring, reporting, and communication of projects funded by supplemental appropriations aimed at improving severe weather forecasting and observational data assimilation.
- Funding social, behavioral, and economic sciences projects that play a critical role in connecting the improvements of NOAA's weather forecast information to the public's growing forecast needs.
- Developing WPO's role at the nexus of weather policy and R&D, through purposeful collaborations and partnerships, while helping to bridge gaps across the Weather Enterprise.















### **AGENDA FOR THIS REVIEW**



### **Activity Area 1:**

**Organizational Excellence** 

Policy and Budget Overview

Notice of Funding **Opportunity Overview** 

**Diversity Equity, Inclusion** and Accessibility

> Intern and Fellow **Opportunities**

### **Wednesday**

### **Activity Area 2:**

**Weather Research Models, Observations, & Forecast Tools** 

Observations and Phased Array Radar

Subseasonal to Seasonal and Climate Testbed

> Earth Prediction **Innovation Center**

### **Thursday**

### **Activity Area 3:**

Advancement and Transition of **Weather Research** 

Research to Applications (R2X) and Transitions

Joint Technology Transfer Initiative

Air Quality

Weather Testbeds

### **Friday**

### **Activity Area 4:**

**Effective Communication & Coordination of Weather** Research

> Social Science Program

Supplemental **Appropriations** 

Policy and **Partnerships** 









# Organizational Excellence Past, Present, Future

Dr. John Ten Hoeve, Deputy Director



### **ORGANIZATIONAL EXCELLENCE - ABOUT US**



### **WPO's History**

The evolution of WPO provides one window into understanding broader changes in the structures and research interests of the weather community.



### **Team WPO**

WPO has a dedicated, talented, and diverse workforce of federal employees, contractors, and students who are each passionate about NOAA's mission.

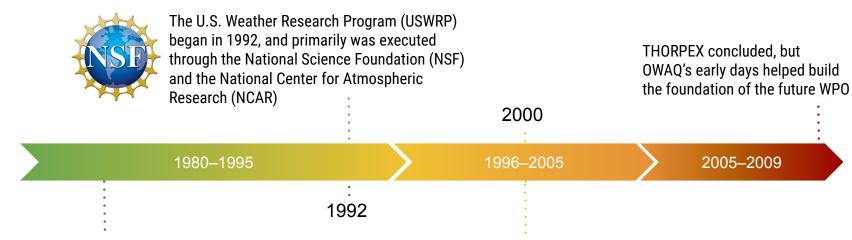


### **WPO Into the Future**

WPO has developed new strategic goals, identified its unique strengths, and aims to undergo organizational restructuring to improve goal alignment.

## **WPO's HISTORY**

### **EARLY HISTORY AND CONTEXT FOR WPO**



In the 1980s and 1990s, OAR funded extramural research through the Sea Grant and Extramural Programs Office, but most research funded was at NOAA Labs



In 2000, OAR formed the Office of Weather and Air Quality (OWAQ), to fund extramural research.

OWAQ primarily funded The Observing System

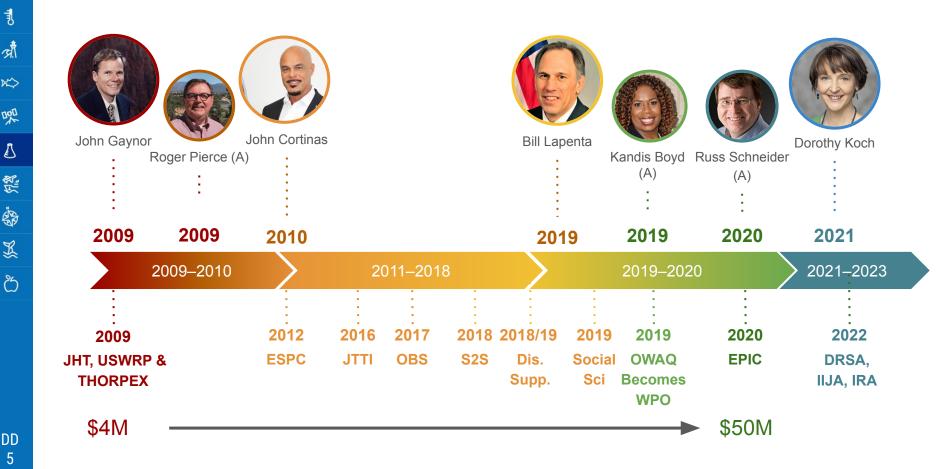
Research and Predictability Experiment

(THORPEX), Hurricane Testbed, and air quality projects

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### **WPO TIMELINE: 2009-2023**



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### **FY19-21 STRATEGIC PLAN**

### **Strategic Goals**

- 1 Improve effective communication of weather information to strengthen decision-making and forecasting abilities
- **2** Advance models and forecast tools to produce the best weather forecasts and warnings to build a Weather-Ready Nation
- **3** Effectively and efficiently manage the advancement and transition of weather research into societal applications
- 4 Develop and support a diverse and inclusive work environment that promotes equal access to the opportunities OWAQ offers.

# Strategic OFFICE OF WEATHER AND AIR QUALITY National Oceanic and Atmospheric Administration Plan

FY 2019-2021>>>

**Vision:** A weather-ready nation informed by world-class weather research.

Mission: Finding, funding, and fostering collaborative weather and air quality research to discover, develop, and transition products, tools, and services for timely and accurate weather and air quality forecasts













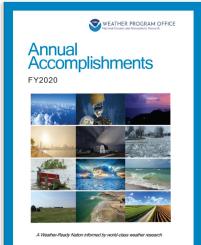




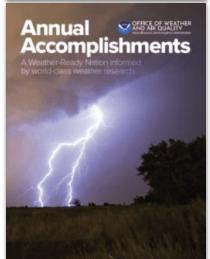
### **KEY ACCOMPLISHMENTS**

- Increased the number of active awards managed by WPO from 40 in 2017 to 173 in 2022 (most are extramural awards).
- Created new programs to fill key research gaps including Observations, Social Science, JTTI
- Helped transition many key products and services to operations and applications
- Increased coordination of WPO programs through a single annual WPO notice of funding opportunity (NOFO).
- Office received the OAR diversity and inclusion award in 2019
- Established research support/project management function for NOAA FY18/19/22 disaster supplemental appropriations









### **STRATEGIC PLAN FY19–21 OUTCOMES**

Significant Progress

Y	Significant Frogr
<b>/</b>	Partial Progress

Partial Progress		
Outcome	Status	
1.1 Integrated social, behavioral, and economic sciences (SBES) into existing OWAQ funding programs		
1.2 Strengthened understanding of weather enterprise needs to help inform OWAQ's research and development activities	<b></b>	
1.3 Enhanced communication, understanding, and use of forecasts by decision makers		
1.4 Established SBES-specific funding programs within OWAQ.	<b></b>	
2.1 Advanced U.S. leadership in numerical weather prediction and forecasting	<b>—</b>	
2.2 Advanced understanding of Subseasonal-to-Seasonal forecast capabilities for atmospheric events and impacts	<b>-</b>	
2.3 Enhanced extreme weather forecasting capabilities	<b>-</b>	
<b>3.1</b> A robust pipeline of research projects across the readiness-level continuum to ensure ongoing availability of projects for transition to operations	1	
3.2 Codified transition policies and procedures in formats that are routinely utilized by staff across OWAQ	<b>—</b>	
3.3 An effective office that ensures continuous business practices during staff absences and transitions.		
3.4 Timely and effective responses to Congressional mandates for advancements in weather research.		
4.1 Implemented recruitment strategies to increase diversity of candidate pools	<b>—</b>	
<b>4.2</b> Implemented procedures to ensure equal access to the opportunities OWAQ offers, including employment, professional development, and funding	<u> </u>	
4.3 Expanded and enhanced professional development opportunities for underrepresented stakeholders/groups		

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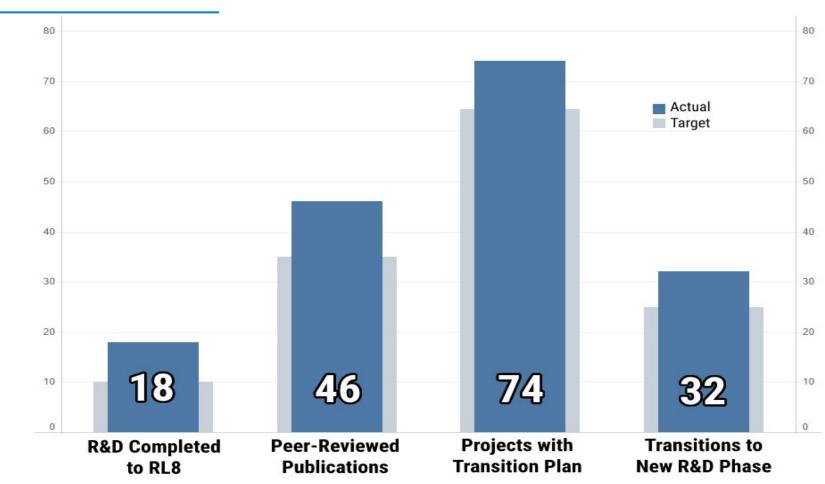
### **OUR KEY METRICS - FY22**

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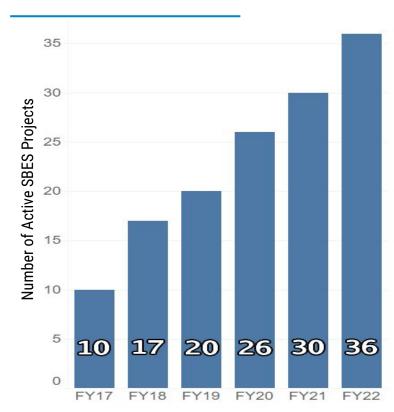
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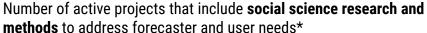
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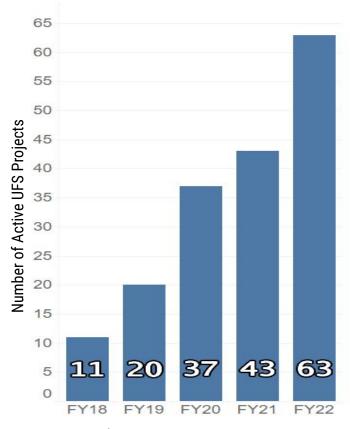


### **PRIORITIZING NEW AREAS**









Number of active projects that work toward a new or improved numerical weather model component that contributes to the **Unified Forecast System (UFS)** 

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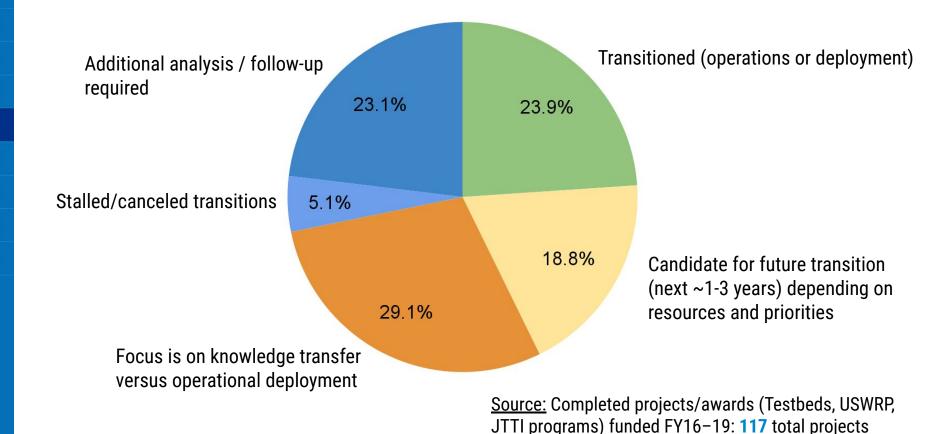
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#### **HISTORICAL R20 SUCCESSES & CHALLENGES**



#### IMPROVED ACCURACY AND ACTIONABILITY OF WEATHER

#### **FORECASTS**



Hurricane and Ocean Testbed (HOT) located in Miami, FL in action during Hurricane Ian in 2022



Integration of the Probability of Subfreezing Road Temperatures (ProbSR) into WSSI in 2022



CSU Machine Learning Algorithm improved the skill and efficiency of the Excessive Rainfall Outlook and improved hurricane track and intensity forecast by 10% in 2021



Global Forecast System (GFS) Localized Aviation MOS Program (LAMP) improvements to Alaska domain transitioned to operations in 2021

## **TEAM WPO**

















HARISH VASUDEVAN **Budget and Financial Analyst** 



DOROTHY KOCH, PHD Director



JOHN TEN HOEVE, PHD **Deputy Director** 





































Social Scientist





JORDAN DALE

Testbeds & Air Quality & Fire









Laura DeHaan

Research to Transitions



LEAH DUBOTS

EPIC Management and Program



LEVI MATTHEWS

**Budget Analyst** 

Project Manager, Phased Array

Radar Acquisition



MACYLHUANG PHD

EPIC Program Manager



S2S Deputy Program Manager





JENNIFER VOGT JESSIE CARMAN, PHD EPIC Coordinator Subseasonal to Seasonal Program







Analyst



EPIC Program Coordinator & Senior

Program Scientist

Administrative Officer







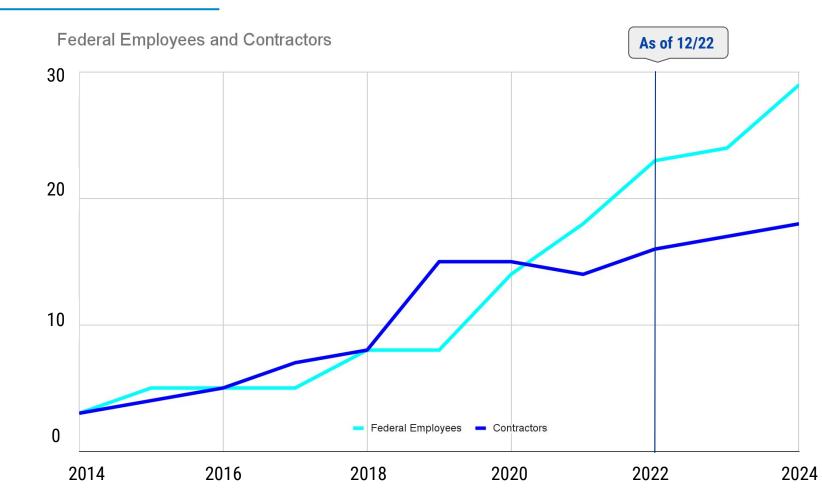




VALBONA KUNKEL, PHD NOAA Atmospheric Scientist R20 Coordinator

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#### **STAFFING TRENDS**































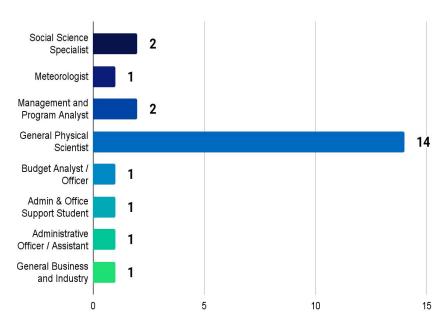




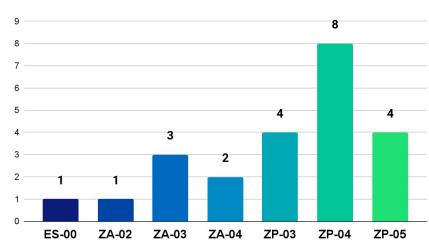


# WPO BY THE NUMBERS (Data as of 1/05/23)

#### Occupational Series (Federal Employees Only)



#### **Grade/Band (Federal Employees Only)**



#### **Supporting WPO Employees**

Building a Strong
Culture

Awards and Recognition

Professional
Development &
Training

Hiring and Student Programs



#### Weather Program Office - Workplace Well-Being Survey

The purpose of this survey is to discover how WPO staff members view their job, and their reactions to their work. Limitations in google forms means your responses will not be anonymous (so we can make sure a copy is sent to you). However, the only person who will be able to view your individual responses will be the administrator of the survey (Castle) and that is





















## **WPO INTO THE FUTURE**













# WPO's NEW STRATEGIC PLAN 2022-2026

#### **Strategic Goals**

- **1** Foster a collaborative weather research and development network with academic, governmental, and industry partners.
- 2 Improve high-impact weather forecasts, products, and services and their delivery, use, and value to the public.
- **3** Contribute to the best possible Unified Forecast System through a community-based, Earth system modeling approach.
- **4** Strengthen the mission-enabling, foundational infrastructure for next-generation weather research and transitions.

4 Strategic Goals

Distinct Objectives

Core Values 50+

Stakeholders Interviewed



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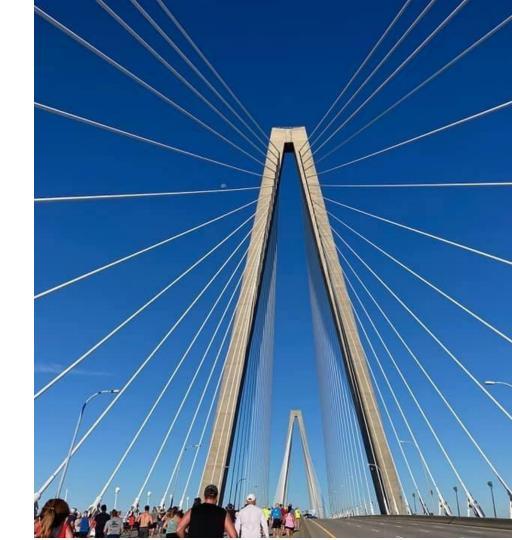
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## **WPO's UNIQUE STRENGTHS**

- 1. Honest Broker, Coordinator, Facilitator
- 2. Weather Enterprise Partner
- 3. Innovation Leader
- 4. Social Science Hub
- 5. Center for Open Science & Development in Earth System Modeling
- 6. Experience with Research Transitions





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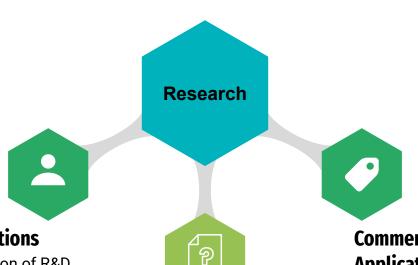








#### WPO'S VALUE PROPOSITION: RESEARCH TRANSITIONS



#### **Operations**

Transition of R&D outputs to operational use through adoption in NOAA or elsewhere

#### Knowledge

Transition of scientific advancements through publications, reports, recommendations

# Commercialization & Applications

Transition of R&D output, data, technologies, procedu etc, to commercial entities or the public

#### FY22 NOAA/OAR Weather Program Office

Project Title

Principal Investigator Name(s)

PI Institution(s)

#### Research to Operations Transition Plan



and
National Weather Service

Date Submitted











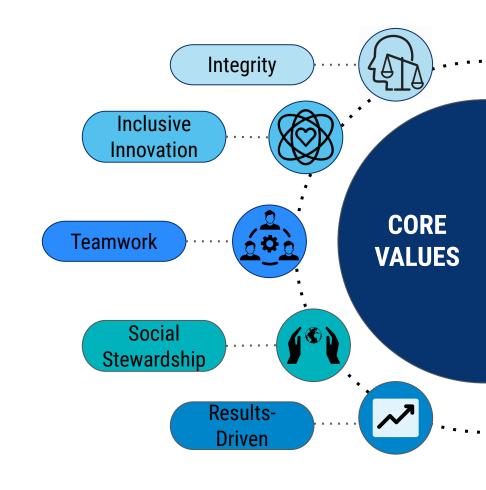






#### **WPO's NEW CORE VALUES**

- Integrity: We adhere to the highest scientific, personal, and professional standards.
- 2. **Inclusive Innovation:** We welcome a wide diversity of experiences, knowledge, and ideas to drive open-science solutions.
- 3. **Teamwork:** We value collaborative approaches and transparent communications across WPO and with our partners.
- 4. **Social Stewardship:** Everything we do is geared towards benefiting society.
- Results-Driven: We achieve measurable, high-quality research outcomes to advance the NOAA mission.



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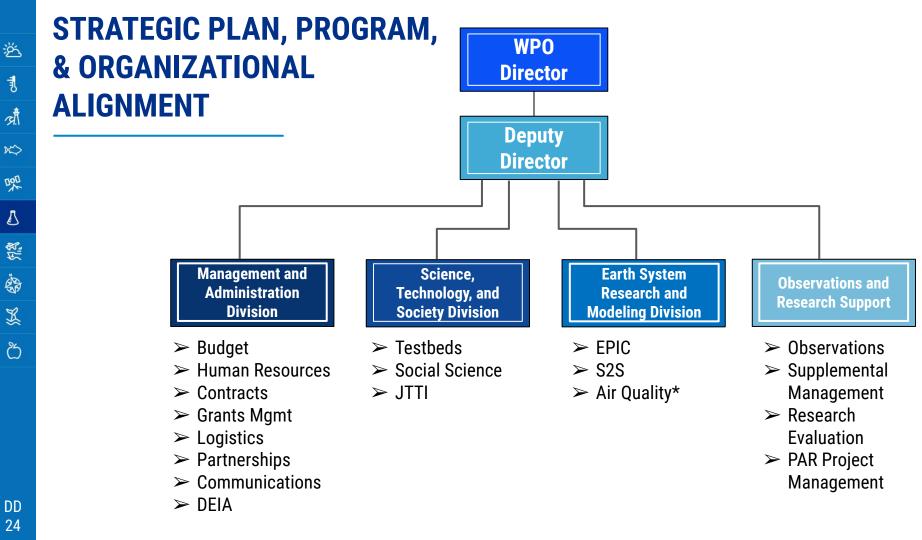




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#### **ALIGNING THE NEW STRATEGIC PLAN TO PROGRAMS & ACTIVITIES**

Current WPO Programs & Activities	Goal 1	Goal 2	Goal 3	Goal 4
Subseasonal to Seasonal Research				
Earth Prediction Innovation Center				
Atmospheric Composition/Fire Weather				
Joint Technology Transfer Initiative				
Social Science				
Testbeds				
Observations				
Project Management (Disaster Supplemental Management, PAR, etc.)				
R20 Policy and Research Evaluation				
Policy, Partnerships, and Communications				
Diversity, Equity, Inclusion, Justice, Accessibility & Workforce Development				
Administration, Logistics, Budget Management				





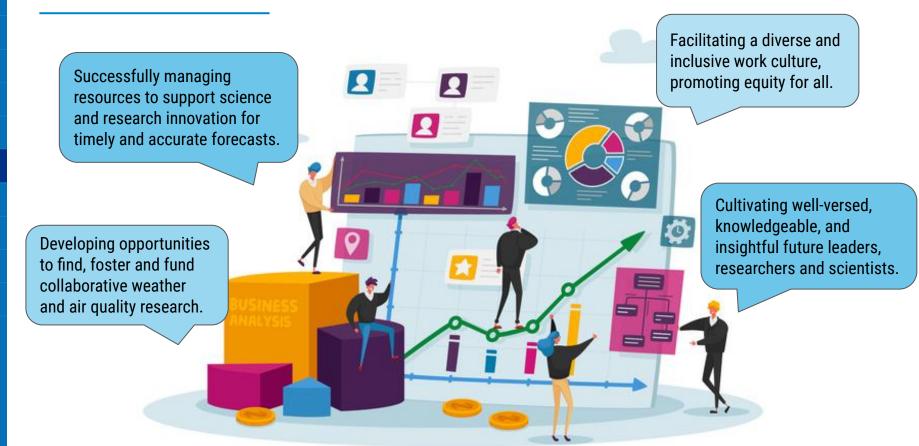
January 24, 2023

# **Activity Area #1: Organizational Excellence**

Dr. John Ten Hoeve, Deputy Director



#### **CORNERSTONE OF ORGANIZATIONAL EXCELLENCE**

































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#### **ACTIVITY AREA 1: ORGANIZATIONAL EXCELLENCE**

The Weather Program Office seeks recommendations regarding our office management, including strategic plans and direction, budget execution, hiring practices, office restructure, diversity, equity, inclusion, and accessibility (DEIA) initiatives, and opportunities to develop the future workforce.

The WPO activities included in this area are:



# Policy & Budget Overview

WPO achieves its mission through budget management and execution, overseeing contracts, and logistics. Policy & legislation also serve as foundational to WPO's strategy.



#### Notice of Funding Opportunity Overview

Across all WPO programs, WPO works together to coordinate its annual funding opportunity.



#### Diversity, Equity, Inclusion, & Accessibility

WPO prioritizes diversity, equity, inclusion, and accessibility (DEIA), as part of its strategic plan goals.



# Intern & Fellow Opportunities

WPO's growth necessitated thoughtful hiring practices to nurture a collaborative culture—this includes providing students with opportunities.



#### **UPCOMING PRESENTATIONS**

Activity Area 1: Organizational Excellence



















Diversity, **Equity**, Inclusion, and **Accessibility** Segayle Thompson

Intern and **Fellow Opportunities** Leah Dubots

Q&A Session



Pratt-Zossoungbo





Christine Bassett

20 Minutes



20 Minutes



**20 Minutes** 



3:00-4:00pm

























## **UPCOMING PRESENTATIONS BEGINNING AT 1:30 PM ET**

#### Activity Area 1: Organizational Excellence

#### **Policy & Budget Overview**

Tamara Battle & Melissa Pratt-Zossoungbo



20 Minutes

#### Notice of **Funding Opportunity Overview**

Christine Bassett



20 Minutes





20 Minutes

Intern and Fellow **Opportunities** Leah Dubots

Q&A Session



**20 Minutes** 



3:00-4:00pm



# Policy and Budget: Authorizations and Appropriations

Melissa Pratt-Zossoungbo, Administrative Officer Tamara L. Battle, Policy & Partnerships Lead

January 24, 2023



















MANAGEMENT AND ADMINISTRATION DIVISION



Carmen Davila M&A Division Chief Joined WPO 2023



#### **Policy and Partnerships**



**Tamara Battle** Policy & Partnerships Lead Joined WPO 2017

#### **Logistics**



**Catherine Gardiner Logistics Coordinator Fedwriters** Joined WPO 2022

#### **Communications**



Vacant **Communications Specialist** Groundswell Expected 2023

#### **Contracts and Acquisitions**



Claudia Womble Management and Program Analyst Joined WPO 2020



**Shannon Simmons Acquisition Management Specialist** Joined WPO 2022



**Administration** 

**Budget Execution** 

Harish Vasudevan Financial Analyst Groundswell Joined WPO 2020

Melissa Pratt-Zossoungbo

Administrative Officer

Joined WPO 2019

Levi Matthews

**Budget Analyst** 

Joined WPO 2020





# **Legislation and Policy**



















#### **AUTHORIZATION VS. APPROPRIATION**



#### **Authorization**

- Gives NOAA authority or mandates for specific activities
- Can authorize funding for an activity
- For NOAA, these include:
  - Senate Commerce Committee
  - House Science Committee
  - House Natural Resources Committee



#### **Appropriation**

- Funds Federal agencies
- Can give very specific directives for the use of funds appropriated
- For NOAA, these include:
  - House and Senate Appropriations
     Subcommittees on Commerce, Justice,
     Science and Related Agencies















#### **AUTHORIZING LEGISLATION**

#### **Enacted**

- NOAA Authorization Act of 1992
- Weather Research and Forecasting Innovation Act of 2017
- NIDIS Reauthorization Act of 2018
- LEGEND Act of 2021
- FLOODS Act of 2022
- PRECIP Act of 2022

#### **Introduced**

 TORNADO Act (2022) - to improve the forecasting and understanding of tornadoes and other hazardous weather, and for other purposes





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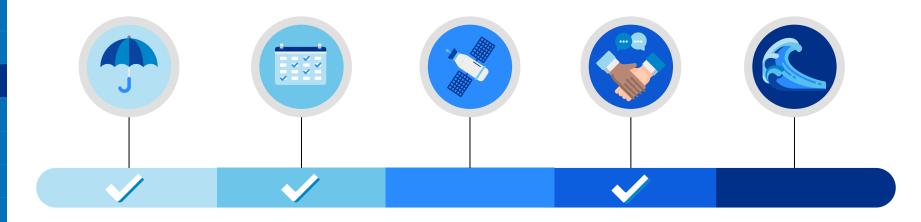






### THE WEATHER ACT (2017)

Sets forth goals on improving and advancing fundamental research and forecasting of high-impact severe weather, community modeling, and agency-wide social science integration.



Title 1 -

U.S. Weather Research and Forecasting Improvement

Title 2 -

Subseasonal and Seasonal Forecasting Innovation

Title 3 -

Weather Satellite and Data Innovation

Title 4 -

Federal Weather Coordination

Title 5 -

Tsunami Warning, Education, and Research Act of 2017



# **Appropriations**

**Planning** 

NOAA/DOC/OMB

**Appropriations** 

**Execution** 



















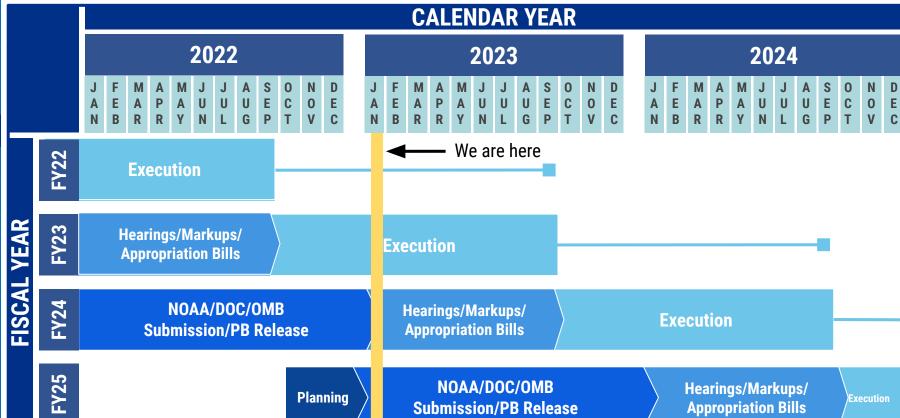
#### **AUTHORIZATION VS. APPROPRIATION**



#### **Appropriation**

- Funds Federal agencies
- Can give very specific directives for the use of funds appropriated
- For NOAA, these include:
  - House and Senate Appropriations
    Subcommittees on Commerce, Justice,
    Science and Related Agencies

# FEDERAL APPROPRIATIONS TIMELINE



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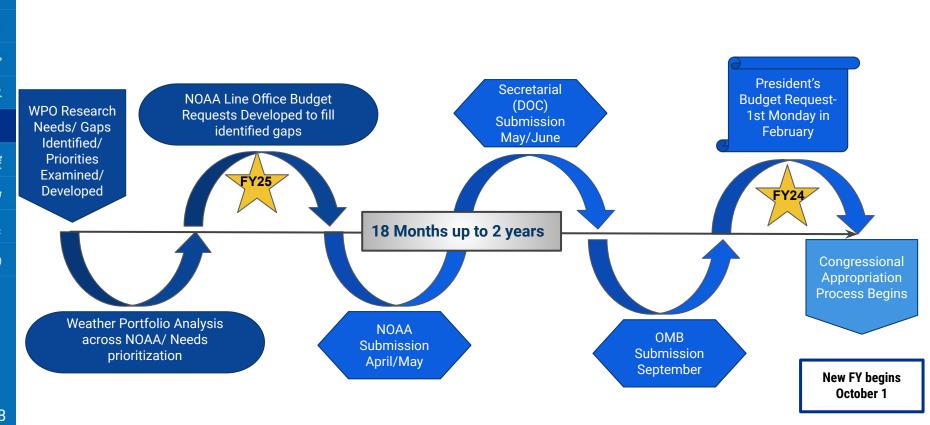
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#### **WPO APPROPRIATION TIMELINE**

































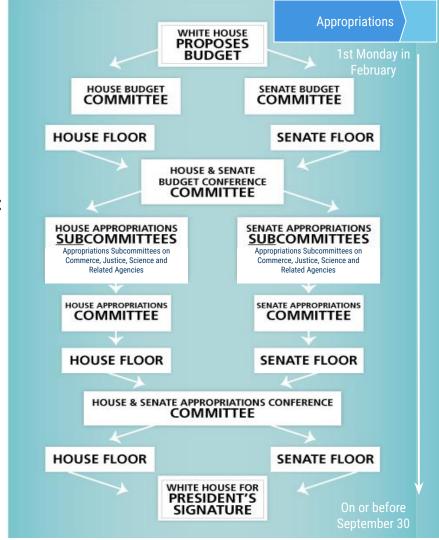
#### **WPO APPROPRIATIONS**

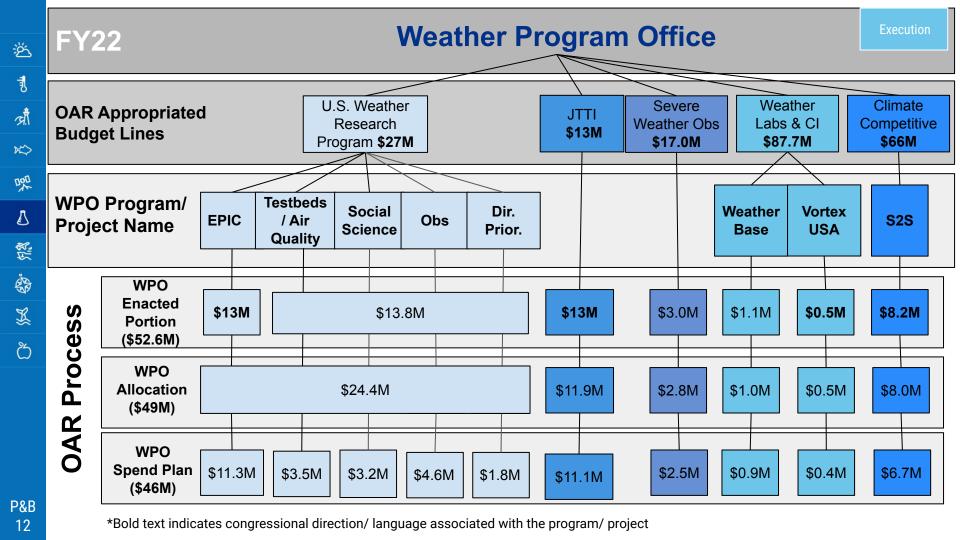
#### **DIVISION B -COMMERCE, JUSTICE,** SCIENCE, AND RELATED AGENCIES APPROPRIATIONS ACT

#### **WPO receives funding from five appropriated budget lines:**

- Climate Competitive Research
- Weather Laboratories and Cooperative Institutes
- U.S. Weather Research Program
- Tornado Severe Storm Research/ Phased Array Radar
- Joint Technology Transfer Initiative



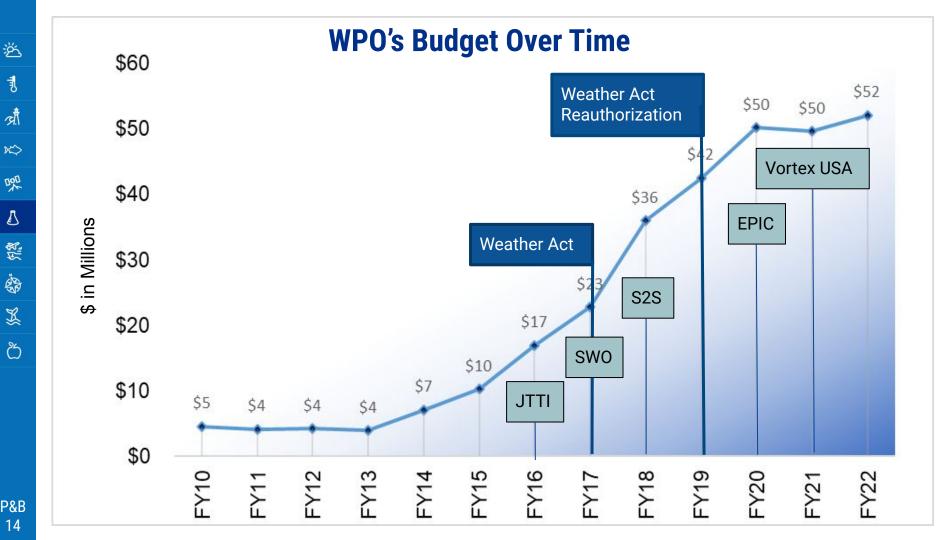






# **Budget History and Spending**





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## WHAT WE SPEND OUR MONEY ON

#### **Federal Labor**

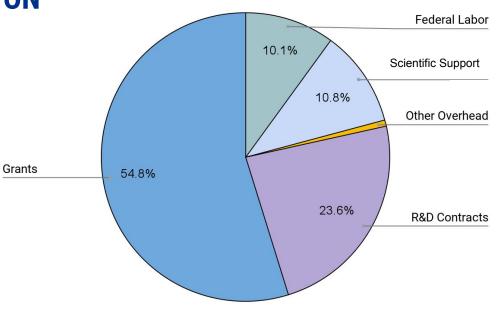
- 29 Positions
  - 23 on-board staff
  - 6 vacancies

#### **Overhead**

- SETSS Contract (scientific support)
- Facilities (rent, supplies, IT, etc)

## **Research and Development**

- Congressional Directed Projects/Programs
- Competitive Research Projects
- Non-Competitive Support



## **HOW WE EXECUTE OUR R&D FUNDING**

- **Competitive Grants** annual notice of funding opportunity (NOFO)
- **R&D Contracts** EPIC, UCAR, etc.
- Internal NOAA Collaborations OAR Laboratories, NWS, NESDIS, etc.



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## P&B 16

## **ACCOMPLISHMENTS**

## Growth



## Budget Increased 10-fold since Inception

\$5M to \$52M

## Administrative Team Established

Increased from 1 to 9 staff members

## **Oversight**

**FY22** 



\$253M over 5 years

30 Contract Actions

\$30M over 5 years

## \$20M Grants awarded

\$96M over 5 years

4 Supplemental Appropriations

\$30.5M over 5 years

## **Process**



## **Internal Controls**

Automation and organization using Smartsheet

## Responsibility

Adopted functions in-house including contracts, property, purchase card, etc



# **Thank You**









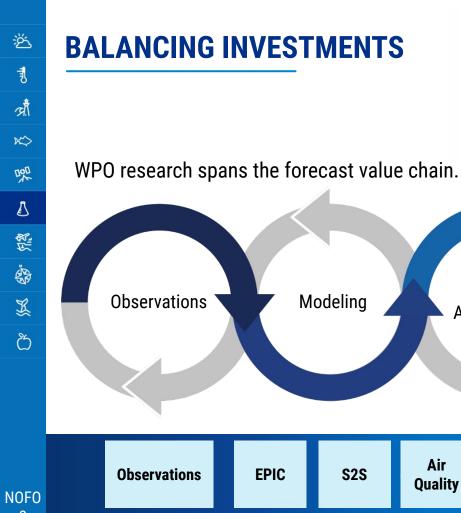


# WPO Notice of Funding Opportunity (NOFO)

Christine Bassett, S2S Program Coordinator

Activity Area 1: Organizational Excellence



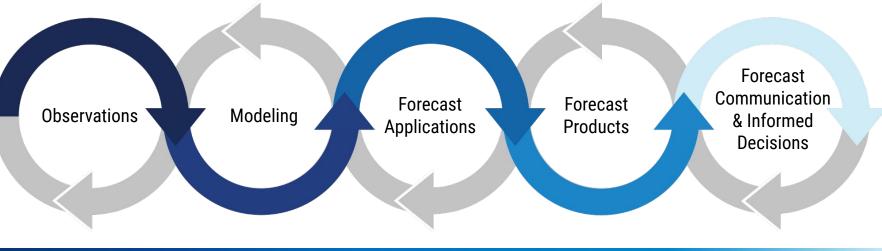




JTTI

Social

**Science** 



**Testbeds** 

Air

Quality

S2S

















## 1) Competitive Funding

### **NOFO (External Competition run once a year)**

**BALANCING INVESTMENTS** 

Climate Test Bed (CTB)

Fire Weather and Atmospheric Composition (FWAC)

Joint Technology Transfer Initiative (JTTI)

Social, Behavioral, and Economic Sciences (SBES)

Subseasonal to Seasonal Research (S2S)

Weather Testbeds (HWT, HMT, HOT)

**VORTEX-USA** 

## **Other Competitions**

JTTI Internal NOAA competition National Oceanographic Partnership Program

## 2) Non-Competitive Actions

NOAA/NASA Reanalysis Project NSF IAA with Natural Hazards Center FY22 DSRA Supplemental Projects Service Level Agreements (SLAs)

## 3) Cooperative Institutes





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WPO NOFOs 2017-2022

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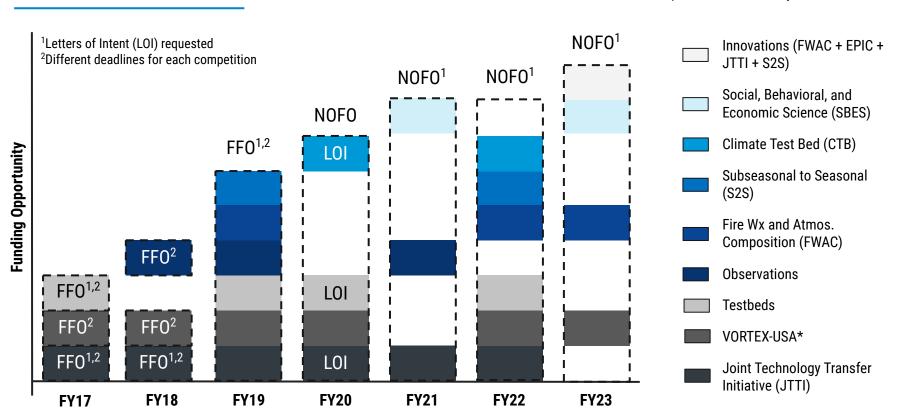


## NOFO 4

## funded projects.

\*VORTEX-USA is a National Severe Storm Laboratory funded competition coordinated by WPO.

Note: Size of boxes do not correspond to number of



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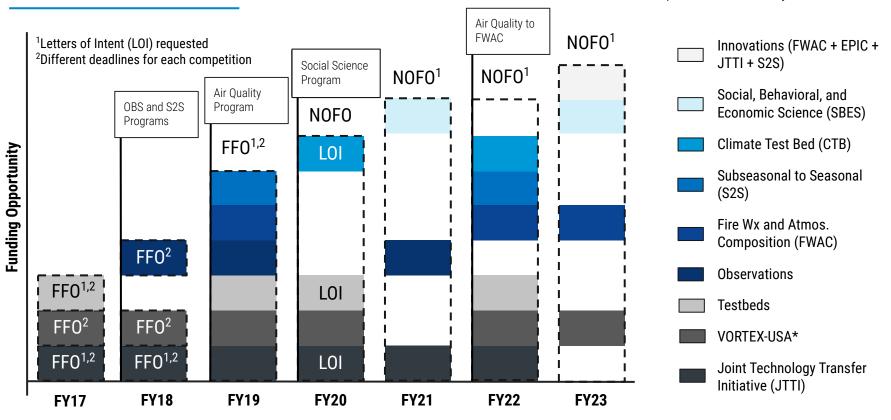




Note: Size of boxes do not correspond to number of funded projects.

\*VORTEX-USA is a National Severe Storm Laboratory funded competition coordinated by WPO.

## WPO NOFOs 2017-2022



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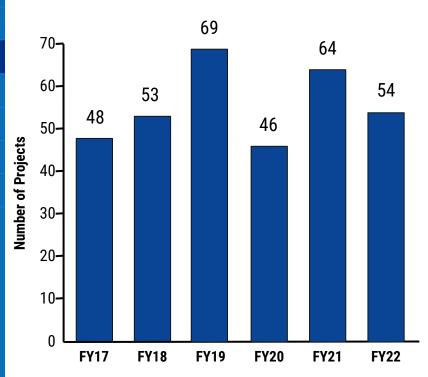
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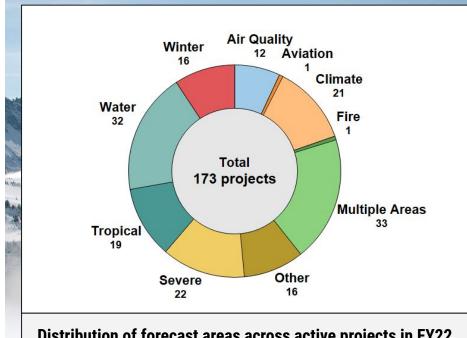
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## **NOFO**

## WPO NOFOs 2017-2022

## **New Projects Funded by Fiscal Year**





Distribution of forecast areas across active projects in FY22













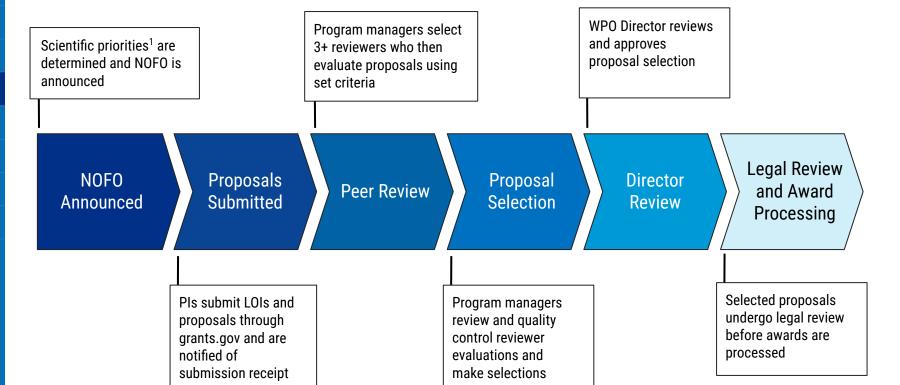






<sup>1</sup>WPO program managers work with policy team, partners and stakeholders, and scientific community to develop scientific priorities for each competition within a NOFO.

## **NOFO PROCESS SUMMARY**























## **NOFO SCIENTIFIC PRIORITIES**

#### Availability of Funding

Selection of scientific priorities is dependent upon available funds and congressional appropriations.

### Alignment with Official Policy & Strategy

- ✓ Weather Research and Forecasting Innovation Act (2017) and Reauthorization (2019)
- ✓ NOAA, OAR, & NWS Strategic Plans
- ✓ WPO Strategic Plan
- ✓ Priorities for Weather Research (PWR)

### **Community Input**

WPO solicits input from key partners, stakeholders, and scientific community and includes NWS operational centers, emergency managers, public officials, industry and academia.



















## **APPLICATION CONTENT**

- ✓ Title Page; Plain-Language Abstract
- ✓ Compelling Research Plan
- ✓ Relevance to Competition Focus Area(s)
- ✓ Project Outcomes and Applications (i.e., R2X) and RLs
- Data Management Plan
- ✓ High-Performance Computing (HPC) requirements
- ✓ Project Budget
- ✓ PI and Co-PI Info (contact info, CVs, current and pending support, etc.)
- Outreach and Communication Plan; Statement of Diversity and Inclusion





## **FEDERAL COLLABORATORS**

High RL projects targeting federal operations are strongly encouraged to work with federal collaborators in order to increase the likelihood of operational transition.

## Do's and Don'ts of Fed. Collaborator Use of Funds



- Critical, project-dependent travel
- Project-critical equipment
- Infrastructure/testbed-related costs
- Overhead/indirect costs for affiliate institutions



- Submit proposal for work
- Conference/workshop travel
- Any other direct funding
- Federal employee or federal contractor salaries



















## **NOFO PEER REVIEW**

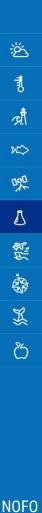
Each application meeting minimum requirements is reviewed against all other proposals submitted to the competition.

Reviews are conducted by a panel of at least three peers, whose scores are averaged. Reviews will be quality controlled for equity and impartiality.



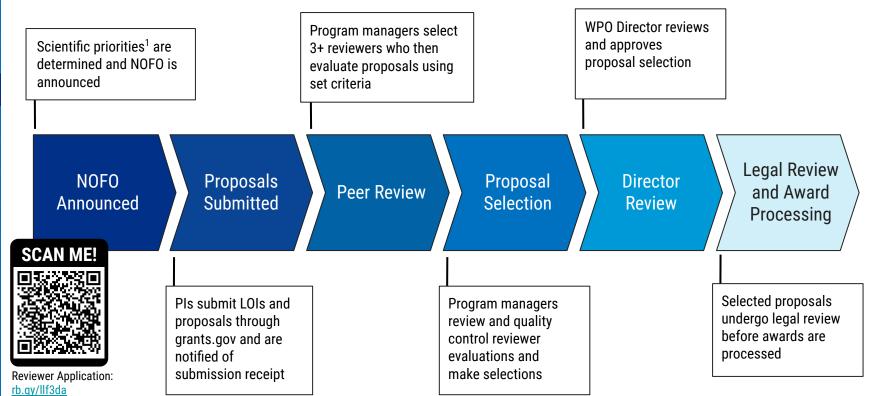
Note: Proposals may be selected out of rank order depending on funding availability and program priorities.

- 1 Relevance to Program Goals (33%)
- 2 Scientific & Technical Merit (33%)
- **3** Qualifications of Applicants (14%)
- 4 Project Cost (10%)
- 5 Education & Outreach (5%)
- 6 Diversity & Inclusion (5%)



## **NOFO PROCESS SUMMARY**

<sup>1</sup>WPO program managers work with policy team, partners and stakeholders, and scientific community to develop scientific priorities for each competition within a NOFO.





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## **LOOKING FORWARD: INNOVATE**

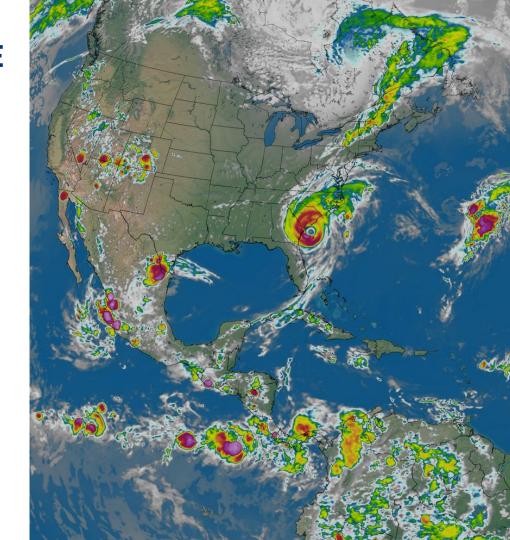
Full proposals for our FY23 competition were due November 17, 2022.

**VORTEX-USA** 

**Observations** 

**Social & Behavioral Sciences** 

**Innovations for Community Modeling** 



















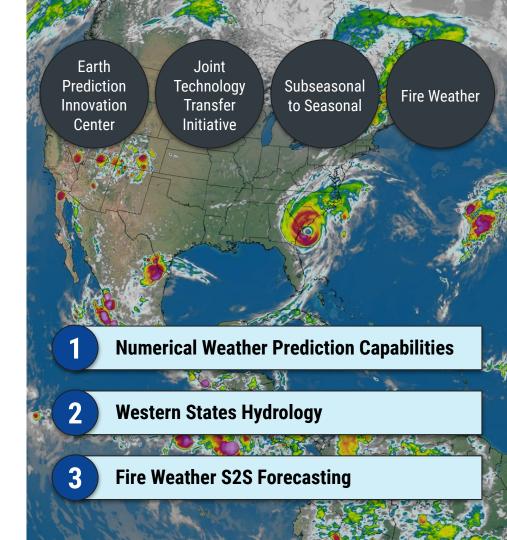
## **LOOKING FORWARD: INNOVATE**

The Innovations competition focuses on advancing the Unified Forecast System (UFS) through cutting-edge community modeling initiatives:

- Modernize modeling infrastructure
- Provide community support
- Accelerate community innovations

GOAL: Support high risk, high reward innovative research proposals

**Innovations for Community Modeling** 

















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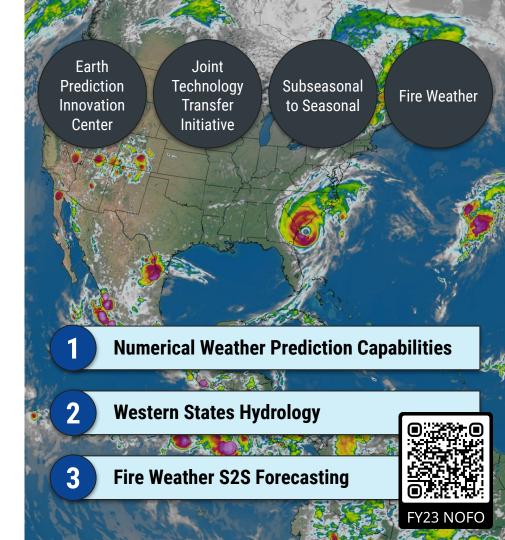
## **LOOKING FORWARD: INNOVATE**

## To qualify as innovative, proposals must:

- Focus on substantially new approaches and not incremental changes,
- Focus on development of UFS systems that are expected to be implemented into operations in 5 years or later, or
- Make a compelling case for why and how introducing new systems into the UFS will advance forecast skill and efficiency.

\*Applicants are highly encouraged to work with the Earth Prediction Innovation Center (EPIC).

**Innovations for Community Modeling** 





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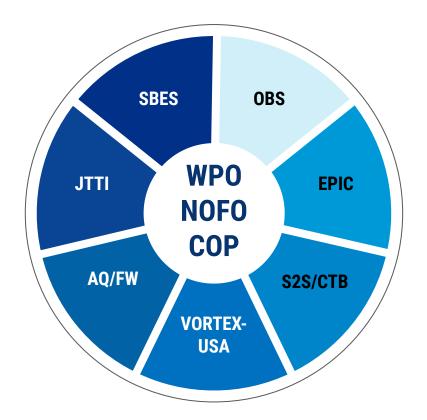








## **LOOKING FORWARD: SUPPORT**



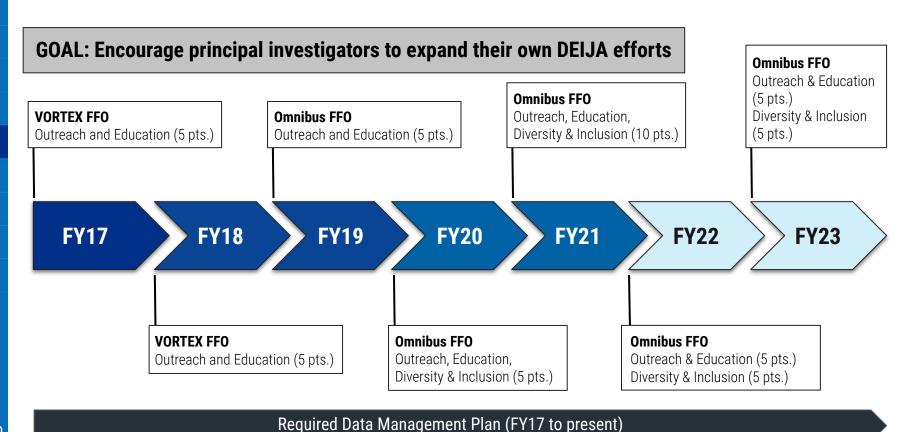
## **Building a NOFO Community of Practice (COP)**

- Competition program managers work together each year to streamline processes across programs
- We are working to build process guides for new and current WPO staff alike

GOAL: Improve ability for advanced planning throughout the grants process



## **LOOKING FORWARD: DEIJA**



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## **LOOKING FORWARD: DEIJA**

WPO held its first ever NOFO informational webinar (September 2022)

Open to the public Hosted on WPO's website 200+

**GOAL:** Provide a general overview of the NOFO, as well as tips and mistakes to avoid, for new and returning applicants alike























## **LOOKING FORWARD: DEIJA**

# **Applicant Customer Experience & Satisfaction (ACES) Survey**

- Approved by OMB (Control Number 0690-0030)
- Length: 5 to 10 minutes
- Sent to all principal investigators who applied to any of the FY23 competitions.

**GOAL:** Develop a short survey to gather anonymous applicant feedback, on a yearly basis, about WPO's proposal submission and application processes

## **Collects the following information from applicants:**

- ✓ Grant History & Transition Knowledge
- Experience Using WPO Resources to Complete Application Package
- Ease of Finding, Reading & Understanding the Notice of Funding Opportunity Document
- Experience Preparing and Submitting a Letter of Intent
- Experience Preparing and Submitting a Full Proposal

Complete Responses

41%
Response
Rate









# Diversity, Equity, Inclusion, and Accessibility (DEIA)

Dr. Segayle Thompson, PAR Acquisition Project Manager

January 24, 2023





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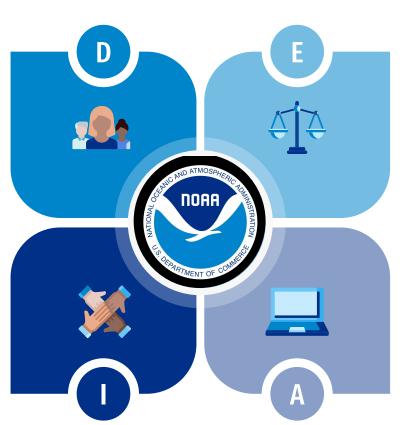
## **DEIA: WHAT DO THEY MEAN?**

## **Diversity**

The unique mixture of attributes shaping an individual's identity that they bring into the workplace. Diversity refers to demographics (e.g., race, gender, sexual orientation), experiences(e.g., affinities, hobbies, and abilities), and cognition (e.g., sensory processing and problem solving).

## **Inclusion**

A culture that values the unique attributes of all team members, and fosters an environment which is respectful, collaborative, supportive, and allows for equitable access. Inclusion requires active and intentional engagement, and provides a feeling of belonging.



## **Equity**

The consistent and systematic fair, just, and impartial treatment of all individuals including underserved communities. Equity recognizes that each person has different circumstances and allocates the exact resources and opportunities needed to reach an equal outcome.

## **Accessibility**

The design, construction, development, and maintenance of facilities, information and communication technology, programs, and services, so that all people can fully and independently use them.















## **NOAA RESEARCH AND DEIA**

#### OAR DEIA FY22-25 Goals:

- 1. Workforce Diversity
  - Recruit and attract a diverse, highly-capable workforce.
- 2. Workplace Inclusion
  - Build a work environment that promotes inclusion.
- 3. Sustainability
  - Build a sustained and adaptive leadership commitment to a diverse, equitable, and inclusive NOAA Research organization through accountability, data, and education.

## WPO (formerly OWAQ) DEIA FY19-21 Goals:

GOAL 4. Develop and support a diverse and inclusive work environment that promotes equal access to the opportunities OWAQ offers.

- a. Recruit and maintain a diverse and highly qualified workforce.
- p. Promote and enhance the inclusion of OWAQ's diverse workforce.
- Integrate and promote diversity and inclusion as a core consideration throughout OWAQ's funding mechanisms.





















## WPO REPRESENTATION

# **OAR Diversity and Inclusion Advisory Committee (ODIAC)**

The ODIAC is focused on Diversity, Equity, Inclusion, and Accessibility initiatives as a whole as they pertain to the OAR workforce.

**WPO Members: Mark Olsen, Jordan Dale** (top)

# <u>Equal Employment Opportunity Advisory Committee</u> (EEOAC)

The EEOAC is focused on the EEO laws, policies, and notices as it pertains to the federal workforce, and assists OAR employees with discrimination and employment issues.

**WPO Members: Claudia Womble, Chandra Kondragunta** (bottom)

















## **WPO-DEIA CHARTER**

**Vision:** Improve and advance a diverse and inclusive culture for NOAA's Weather Program Office.

**Mission:** Create, nurture and support an inclusive office culture for employees, that elevates performance, enhances collaboration, expands engagement, and effects change.

- To foster an environment that encourages and promotes diversity of thought, opinions, ideas, perspectives and experiences, for the betterment of WPO.
- To develop a meaningful and intentional strategy that authentically embraces equity, inclusion, and allyship in all forms.
- To align our core values with initiatives and actions that promote justice and accessibility for WPO, OAR, and NOAA.



Claudia Womble (Lead), Leah Dubots, John Ten Hoeve, Jen Vogt, and Henrique Alves



## **DEIA IN WPO**

Workforce

**Diversity** 

Creating a dynamic

organization with

diverse individuals



















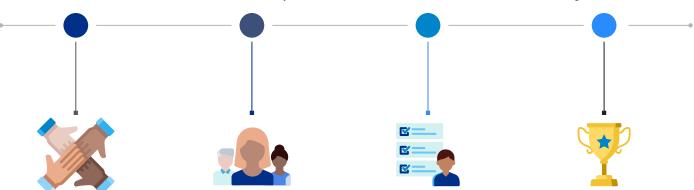
Sharing knowledge and expertise across the Weather Enterprise

## DEIA Trailblazers

Stimulating creative thinking and nurturing innovative ideas

# Awards and Recognition

Celebrating accomplishments and valuing contributions



"Strength lies in differences, not similarities" - Stephen R. Covey



# Workforce Diversity



Creating a dynamic organization with diverse individuals





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# BUILDING A DIVERSE, EQUITABLE, AND INCLUSIVE OFFICE

WPO (formerly OWAQ) has undergone tremendous growth over the past 5-6 years, expanding from 10 individuals at the beginning of 2018, to 38 staff members as of January 2023.

Much of OWAQ/WPO's growth can be attributed to its rapidly developing portfolio of programs and initiatives. To meet this demand, WPO has welcomed individuals with diverse talents, skills and backgrounds, in an effort to best achieve the office's mission, vision and goals.











DOROTHY KOCH, PHD Director



JOHN TEN HOEVE, PHD **Deputy Director** 























CARMEN DAVILA

Supervisor, Management &





ALISON AGATHER, PHD







CASTLE WILLIAMSBERG, PHD



CHANDRA KONDRAGUNTA, PHD

JTTI Program Manager

JORDAN DALE Testbeds & Air Quality & Fire



CHRISTINE BASSETT

JOSE-HENRIQUE ALVES, PHD EPIC & JTTI Research Physical



MFLISSA PRATT-ZOSSOUNGBO Administrative Officer







Testbeds & Air Quality & Fire



**January 2023** 

Social Science and FACETs Program



Contracting Officer Representative





HARISH VASUDEVAN JENNIFER VOGT EPIC Coordinator Rudget and Financial Analyst



JESSIE CARMAN, PHD Subseasonal to Seasonal Program



JONATHON MOTE, PHD Social Science Program Coordinator





MARK VINCENT, PHD MATTHEW MAHALIK Observations Program Manager Research to Operations Transition Analyst



CHRISTOPHER SPELLS, PHD

EPIC Program Coordinator & Senior



RENEE RICHARDSON

Observations Coordinator



LEAH DUBOTS

EPIC Management and Program

SANDRA I ACORTE Observations Coordinator



LEVI MATTHEWS **Budget Analyst** 

SEGAYLE THOMPSON, PHD

Project Manager, Phased Array

Radar Acquisition



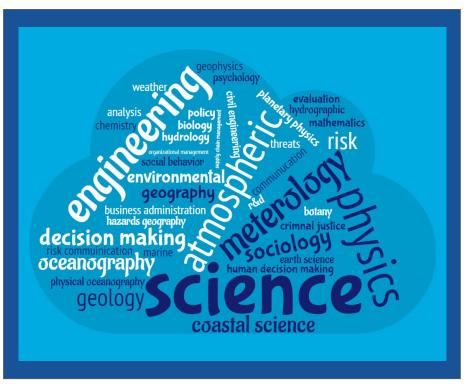


TAMADA BATTI E Policy & Partnerships Manager



VALBONA KUNKEL, PHD NOAA Atmospheric Scientist R20 Coordinator

## **WPO BY THE NUMBERS**

















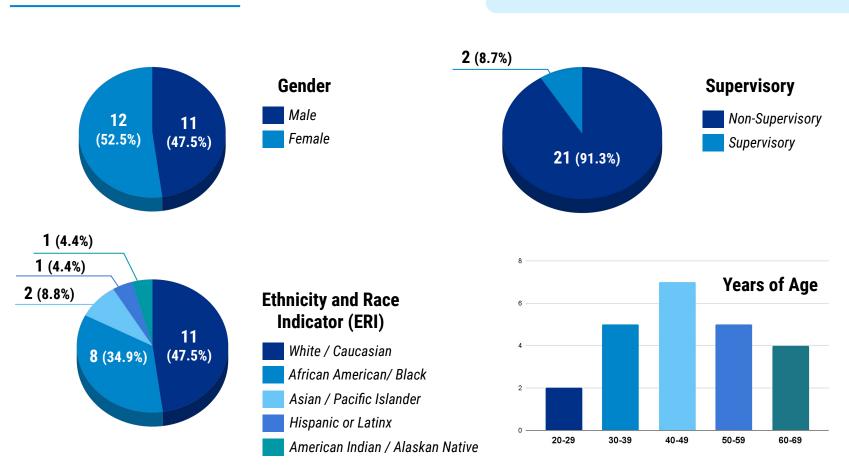






## **DIVERSITY: FEDERAL DEMOGRAPHICS**

WPO Summary Federal Workforce Demographics (MARS); Last Updated 01/05/2023









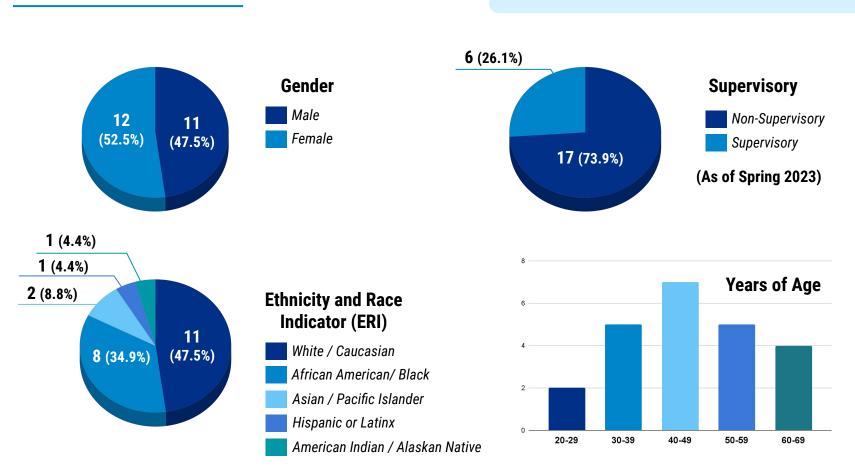






### **DIVERSITY: FEDERAL DEMOGRAPHICS**

WPO Summary Federal Workforce Demographics (MARS); Last Updated 01/05/2023























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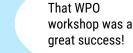






## **DIVERSITY: YEARS IN OWAQ/WPO\***

< 1 YEARS			9			
1-2 YEARS					16	
3-4 YEARS			10			
5-6 YEARS	2					
7+ YEARS	2					





# **Community Engagement**



Sharing knowledge and expertise across the Weather Enterprise



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**DIVERSITY IN LEADERSHIP** 

OWAQ's former Director, John Cortinas, has led the charge for the employee group, Latinos@NOAA, and has significantly contributed to the Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) over the past 10 years. Additionally, he has worked to develop stronger relationships with minority serving institutions, making better use of the NOAA Education Partnership Program, and served as the keynote for the **2019 NOAA Hispanic Heritage Month observance**.

John Cortinas, former OWAO Director, presenting at NOAA's 2019 National Heritage Month observance, September 2019

Dorothy Koch is WPO's first female full-time Director. She is one of a small, but growing, group of female leaders in the Senior Executive Service (SES) in OAR. In addition to leading WPO, she serves as OAR's Weather Portfolio Steward, chairs the NOAA Modeling Team and Co-chairs the NOAA Weather Team. She is a recipient of the **NOAA** Administrator Award (2020) for upgrades to the National Air Quality Forecasting Capability (NAQFC) she helped to develop and was also named a **Thomson Reuters' Highly Cited Researcher** (2014–17).



Dorothy Koch, WPO Director (third from left) with SES colleagues, at the Senior Research Council Quarterly Meeting, September 2022



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#### **ENGAGING DIVERSE COMMUNITIES**

Segayle Thompson volunteers annually at the **Alfred Street Baptist Church HBCU Festival**, the nation's largest HBCU festival.

Tamara Battle, Gina Eosco, DaNa Carlis, and Cassandra Shivers-Williams participate as panelists during the **Annual NOAA**Cooperative Science Center for Atmospheric Sciences and Meteorology Professional Development Workshops, hosted by Howard University.



Several WPO staff members organize, facilitate, and participate in the **Colour of Weather Networking Event**, during the American Meteorological Society annual meeting.





















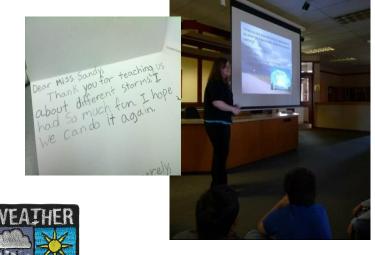
#### **ENGAGING DIVERSE COMMUNITIES**

Ben Woods recently provided School Weather Talks for Pierpoint Elementary School in Ventura, CA, and has been elected President of the AMS local central VA Chapter.

Sandy LaCorte gave four (4) virtual weather presentations to the entire 5th grade class at the **Community School of Davidson** in Davidson, NC.

Laura DeHaan volunteers as a **co-lead for Girl Scouts** of Greater Mississippi. As a lifetime Girl Scout Member, she educates girls to be future leaders.

Castle Williamsberg, Gina Eosco, Jordan Dale, Maoyi Huang and Ben Woods attended the **2022 Hurricane Forecast Improvement Program Annual Meeting**, engaging with colleagues across NOAA to improve hurricane forecasting, overcome challenges, and maintain improvements for impacted communities.





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#### **ENGAGING THE WEATHER ENTERPRISE: COMMUNITY WORKSHOPS**

The Earth Prediction Innovation Center (EPIC), in conjunction with the Unified Forecast System (UFS) and the UFS Research to Operations community, delivered a five-day **Unifying Innovations** in Forecasting Capabilities **Workshop**, in July 2022.





In August 2019, over 180 people attended the **EPIC Community Workshop**. To increase engagement and feedback, a Twitter hashtag (#EPICworkshop2019) was launched, and real-time responses were collected using Google forms.

Approximately 100 participants attended the Social, Behavioral, and Economic Sciences Research to Operations Workshop, in August 2019.



# **DEIA Trailblazers**

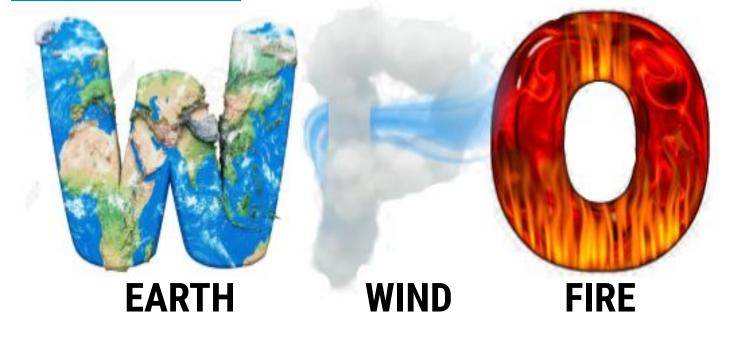


Stimulating creative thinking and nurturing innovative ideas





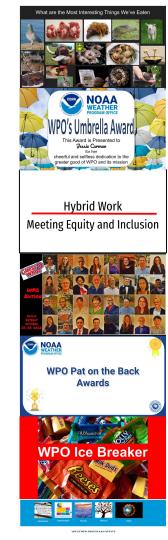
### **INTRA-OFFICE CONNECTIONS**



Empowering,
Advising, Realizing,
Teaching, and Helping
connections

WPO's
Information &
Networking
Directory

File and Information **RE**pository



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## **WOMEN OF NOAA**



Women of WPO (formerly OWAQ) celebrating #WomenofNOAA



Previous OWAQ Acting Director, Kandis Boyd (second from Left)

Kandis Boyd received the 2019 NOAA Administrator's Award for her work on the initiative, #WomenofNOAA, recognizing her vision behind the hashtag created during Women's History Month, in March 2019. The hashtag highlighted the accomplishments of women throughout NOAA.















#### **EXPERT REPRESENTATION**

The 2019 American Meteorological Society Meeting was held during an unprecedented government shutdown. WPO contractors were able to attend the conference, and seamlessly stepped in to volunteer as panel chairs, present information on the office's programs and funding opportunities, and meeting with students, PIs, and early career scientists - directly engaging with the AMS community as subject matter experts.











## **OFFICE INITIATIVES**

Weekly Weather

Briefings



















Monthly Diversity Forum

Quarterly Team Building



#### **OFFICE INITIATIVES**









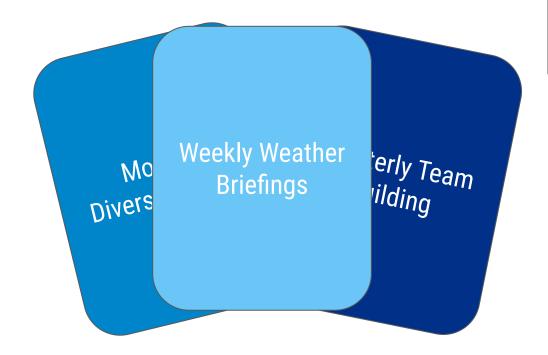








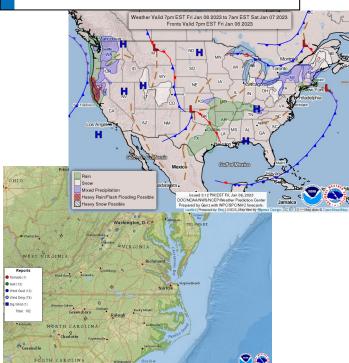




#### **Weekly WPO Weather Brief**

December 15, 2022

- 1. AM Ice North & West of D.C.
- 2. Sunny and Cold this Weekend
- 3. White Christmas this Year?





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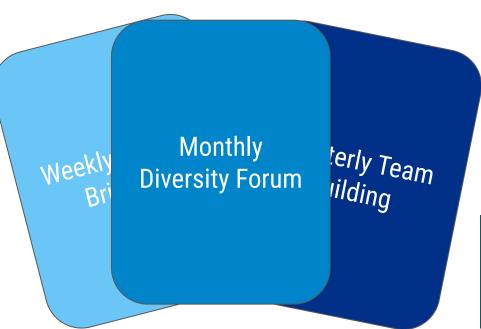








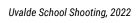
#### **OFFICE INITIATIVES**



National protests in response to the murder of George Floyd, 2020



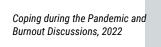
Flooding in NYC from Hurricane Ida, 2021





The Importance of Pronouns and Gendered Language, NOAA Pride Month, 2022

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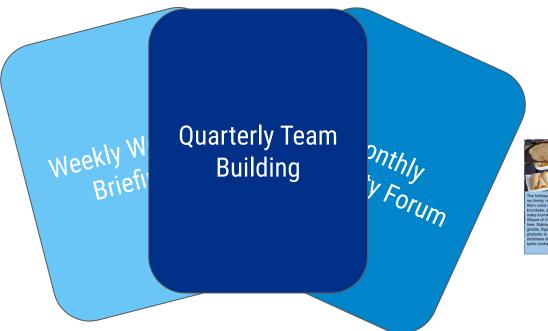






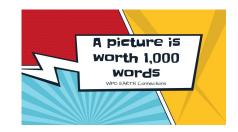














# Awards & Recognition



Celebrating accomplishments and valuing contributions



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## **SERVICE TO COMMUNITY, SOCIETY, AND DISCIPLINE**



Gina Eosco was honored with an AMS Early-Career **Professional Achievement Award (2019)**. She was also awarded the SRA-Risk Communication Specialty Group inaugural Award for *Excellence in Risk* Communication Research and Practice (2019) and the Daniel L. Albritton Outstanding Science Communicator Award (2020).

**Segayle Thompson** received the **OAR Employee of** the Year Award for Community Service (2021), for enhancing OAR laboratory and program reviews and going above and beyond to support the Acting Deputy Assistant Administrator.





WPO Contract Staff, AMS Annual Meeting, January 2019



**Castle Williamsberg** received the **AMS Editor Award for** Weather, Climate, and Society (2021), for outstanding service to the journals, the Glossary of Meteorology, and the Meteorological Monographs.



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## SERVICE TO COMMUNITY, SOCIETY, AND DISCIPLINE



Mark Vincent, Bronze Medal for Leadership (2022), for the development of new project management methodologies applied to the provision of authoritative and actionable national water resources information



**Leah Dubots, Bronze Medal for Leadership (2022) -** for advancing our nation's modeling prediction capabilities through the establishment of the Earth Prediction Innovation Center (EPIC)



John Ten Hoeve, Bronze Medal for Organizational Development (2022) - for designing and implementing a comprehensive organizational health and culture program



Claudia Womble, 2022 LCDP Graduate - earning the 2021 Administrators Award for exceptional leadership as Northeast Fisheries Science Center D&I Officer



**Jessie Carman, NOAA Employee of the Month (June 2019) -** for leading research efforts in S2S atmospheric phenomena, supporting and coordinating numerous research projects leading to significant model development and advancements



**Rich Fulton, NOAA Employee of the Month (November 2018) -** for executing peer review and funding award processes for 10+ grant programs, and managing 80+ project grants

#### **2019 EEO/DIVERSITY PROGRAM OF THE YEAR**

EEO/Diversity Awards are presented for accomplishments within OAR to achieve EEO goals and create a diverse workforce. OWAQ was recognized for leading and supporting NOAA EEO and OAR D&I Initiatives























# **THANK YOU**











January 24, 2023

# **Intern and Fellow Opportunities**

Leah Dubots, Management and Program Analyst

Activity Area 1: Organizational Excellence

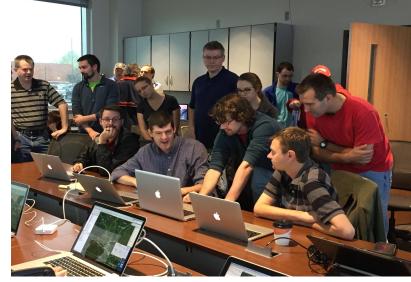


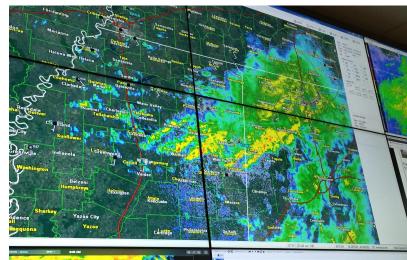
# WE PRIORITIZE DEVELOPING THE NEXT GENERATION WORKFORCE

The Weather Program Office (WPO) hosts students through internships and fellowships allowing them to gain valuable experience about NOAA, OAR and our role within the agency.

Through a variety of projects spanning a diverse range of weather-related topics, hosting interns:

- Provides assistance with accelerating projects;
- Promotes and supports NOAA's DE&I efforts;
- Prepares students to enter NOAA and the broader Weather Enterprise.























#### INTERN AND FELLOW OPPORTUNITIES

Since 2019, we have hosted students from a variety of programs, including:

#### **NOAA Pathways Program**

Federal employment opportunities for students and recent graduates through: (1) Intern Employment Program, (2) Recent Graduates Program, and (3) Presidential Management Fellows (PMF) Program.

#### William M. Lapenta Student Internship Program

Summer internships for undergraduate and graduate students, providing robust research and/or operational experience.

#### John A. Knauss Marine Policy Fellowship

Provides unique educational and professional experiences to graduate students interested in ocean, coastal and Great Lakes resources, and the national policy decisions affecting those resources.

#### **AAAS Science & Technology Policy Fellowships**

Opportunities for outstanding scientists and engineers to learn first-hand about federal policymaking, while using their knowledge and skills to address today's most pressing societal challenges.













#### WHY IS THIS IMPORTANT?

#### **Cross-Program Collaboration**

Programs work collaboratively to achieve specific goals and ensure progress towards WPO's mission and objectives, while providing students with unique opportunities and experiences.

#### **New Knowledge and Expertise**

A meteorological foundation is not required. In fact, we've hosted individuals with backgrounds in sociology, geography, communications, environmental policy, disaster sciences, advertising, and transportation science.

#### **Continuous Learning**

Interns and fellows often introduce new perspectives, methodologies, resources and tools.



Michael Michaud (right), 2021 Lapenta Intern, with mentor Gina Fosco.

#### **CHALLENGES**

Expectations of "hands-on" experience that more closely resembles fieldwork.

 Approach: Embrace WPO's unique identity and position as a program office (i.e., policy, strategy, funding and research transitions)

Shortage of available federal positions - difficult to hire and/or retain individuals ready to enter the workforce.

 Opportunities: Direct Hire Authority, Contract positions, Cooperative Institutes, and partners (UCAR/NCAR, AMS, academia)



2019 NOAA Pathways Interns Leah Dubots (left) and Ayesha (Wilkinson) Davis, with former OWAQ Director Bill Lapenta.

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#### **CHALLENGES**

Shift in onsite vs. virtual internship/fellowship opportunities

 Response: Non-traditional intern experiences (focus on policy, social science, modeling, data assimilation, etc.) that can be performed offsite.

Time constraints for large projects, requiring incoming interdisciplinary knowledge and skills.

 Options: Broadly-scoped and flexible project plans



Ashley Stagnari (2022 Lapenta Intern) and Neil Jacobs (former NOAA Administrator), at the AMS Summer Community Meeting, Boulder, CO









# BY THE NUMBERS = SUCCESS!

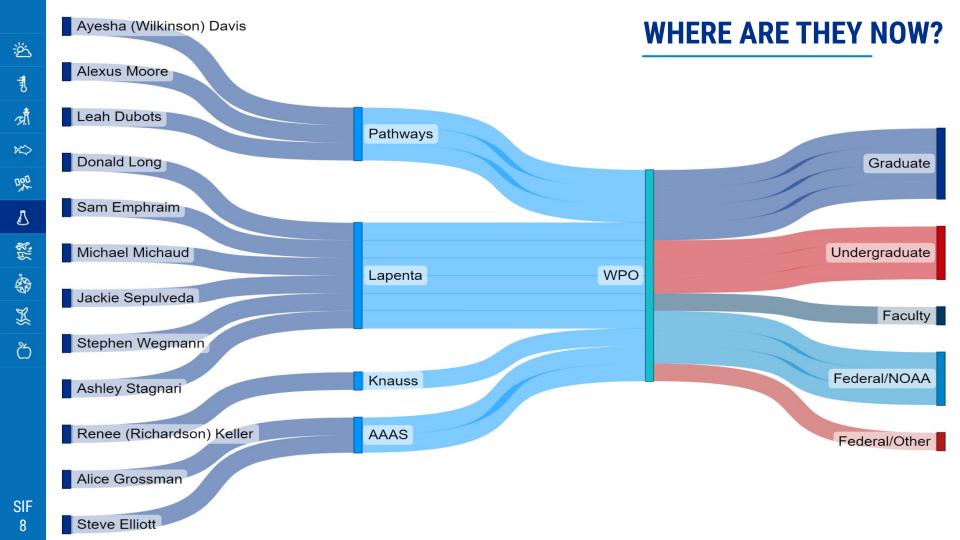
## Since 2019, WPO has hosted:

6 William M. Lapenta Interns



Ashley Stagnari (second from left), 2022 Lapenta Intern with EPIC team mentors

- 3 Pathways Interns, with 2 transitioning to Federal employment
- 1 John A. Knauss Marine Policy Fellow, hired in WPO
- 2 AAAS Science & Technology Policy Fellows who have worked to **implement the** "Social Data Science Strategy" for NOAA Research
- 3 Students hosted by other offices in OAR or NWS, and co-mentored by WPO



### **HIGHLIGHTS**





Knauss









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#### **WPO HIGHLIGHTS**



AYESHA (WILKINSON) DAVIS, Meteorologist, NWS Forecast Office, Boulder, CO M.S. Student, Atmospheric Sciences, Colorado State University B.Sc., Environmental Science, Florida State University

Program: 2019 NOAA Pathways Intern
Project: Developing the FACETs Framework

- Created a plain text document to inform about FACETs, probabilistic hazard information (PHI), and applying the framework to include social science.
- Currently provides weather forecasts/warnings and local expertise to emergency managers, public stakeholders and community-at-large

STEVE ELLIOTT, Research Specialist, Department of State
Post-Doc, Sociology of Science, Arizona State University (2017–2021)
Ph.D., Biology, Arizona State University (2017)

Program: 2021–2022 AAAS Science & Technology Policy Fellow Project: Social Data Science Project, partnered between WPO; Office of Science Support; and Performance, Risk, and Social Science Office.

- Data governance for social sciences
- Building IT capacity for computational analyses of NOAA and NOAA activities, including AI/ML for analysis of textual data
- History of WPO



#### **WPO HIGHLIGHTS**



JACKIE SEPULVEDA, Undergraduate Student at Valparaiso University B.Sc., Meteorology with a minor in Mathematics

Program: 2022 Lapenta Intern

Project: UFS and JEDI Graduate Student Tests development, testing, and documentation.

- Completed case studies to evaluate the usability of a community-based data assimilation system called the Joint Effort for Data assimilation Integration (JEDI)
- Created documentation about her experience including challenges
- Communicated those challenges back to the development team

















#### **LOOKING TO THE FUTURE**

- Continue to provide opportunities through the AAAS and Knauss Fellowships, Lapenta Internship, and Pathways Program
- Support more internship opportunities (e.g., NERTO, EPP/MSI, Hollings)
- Ensure opportunities are widely communicated, shared, and available to underserved communities and institutions by forging new and creative partnerships.
- Invest in a variety of opportunities developed within WPO























#### **WPO IS GROWING "WINGS"!**

- Two-year fellowships for Ph.D. candidates beginning to write their dissertation.
- 2023 is a pilot focused on Earth Prediction Innovation Center (EPIC)-related outcomes.
- Fellows will receive funding for 0.5 FTE for 9 months and 1.0 FTE for 3 months, including benefits. WINGS fellows will also receive an annual travel allowance of \$5,000.\*

\*If the student utilizes the maximum number of hours in the fellowship, the total salary will amount to at least \$33,660/yr.





Ph.D. Dissertation Fellowship













Additional information on our Interns and Fellows

#### **LEAH DUBOTS**



**2019 Pathways Intern EPIC PROGRAM** 

**Project: Establishing EPIC for** advancing our nation's modeling prediction capabilities through the establishment of the Earth Prediction Innovation Center (EPIC)

- June 2019 June 2020: Pathways Intern
- June 2020 Current: Management & Program Analyst -Federal Employee

Master of Public Policy-University of Maryland Bachelor of Science in Environmental Science and Studies, Minor in **Economics-Towson University** Associate of Science in Environmental Science-Harford Community College

















#### **DONALD LONG**



2020 Pathways & Lapenta Intern SOCIAL SCIENCE PROGRAM & EPIC PROGRAM

# Project: Standing up the Earth Prediction Innovation Center (EPIC) Program.

Comparative Case Studies of Unified Forecast System (UFS)
 Medium-Range Weather (MRW) Application on HPC
 on-premise and AWS Cloud Architecture

Graduate Student, Atmospheric Sciences, Howard University

#### **ALICE GROSSMAN**



2020 AAAS Science and **Technology Policy Fellow** SOCIAL SCIENCE PROGRAM

#### Launching Social Data Science Strategic Planning at NOAA

- Social Data Science = textual data + social science methods + ΑI
- Cross line office project team with Weather Program Office (WPO), The Office of Science Support (OSS), and the Chief **Economist's Office**
- Focus on textual data assets: What are they? Where are they? How can they be used to comply with legislation?

PhD in Civil Engineering - Transportation Systems Experience with transportation and travel behavior data management, governance, and analysis

### RENEE (RICHARDSON) KELLER



2021 John A. Knauss Marine Policy Fellow WEATHER OBSERVATIONS RESEARCH PROGRAM

#### What do I do in NOAA Weather Program Office (WPO)?

I am a team member of the Weather Observations Research Program and the Hurricane Supplemental Program.

- Program coordination, promotion, and expansion
- Heavy involvement in the latest weather observations and Disaster Related Appropriations Supplemental (DRAS) funded projects

B.Sc. Marine Science, Coastal Carolina University (2015)
Ph.D. Meteorology, Florida State University (in progress, Spring 2023)
Scientific Interests: tropical cyclones, air-sea interaction, atmospheric observations (high wind), ocean observations

#### **SAM EPHRAIM**



2021 Lapenta Intern EPIC PROGRAM

#### **Project: Porting UFS Graduate Student Tests to the Cloud**

- Creating documentation to run containerized versions of the UFS Short Range Weather App and the UFS Medium Range Weather App in the cloud
- Coding plotting script in Python to display model output for the Medium Range Weather App
- Organizing workshop for the 2022 AMS Student Conference

University of Michigan B.SE., Climate and Meteorology, B.SE., Computer Science

#### **MICHAEL MICHAUD**



2021 Lapenta Intern EPIC PROGRAM

#### **Questions:**

- What is community modeling?
- How do you build community between the Public, Academic and Private sectors?

#### **Activities:**

- Reviewing theory and definitions of Community
- Conceptualizing the role of EPIC within an existing community of modelers
- Qualitative interviews with EPIC and Unified Forecast System (UFS) founders and members of the community

### **ALEXUS MOORE**



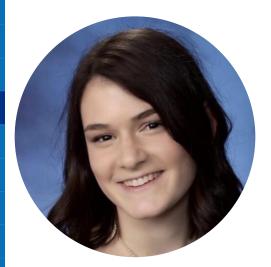
2021 Pathways Intern SOCIAL SCIENCE PROGRAM

# Project: Serves within the Weather Program Office (WPO), Social Science & FACETS program(s).

- Currently working to develop an internal Google site that will effectively communicate social science resources, findings, etc.
- Preparing to conduct interviews and write several value stories for website content.

PhD student at the University of Wisconsin, Madison

#### **ASHLEY STAGNARI**



2022 Lapenta Intern EPIC PROGRAM

#### **Project: Community Engagement & Input for EPIC.**

- Researching and developing a social science framework for understanding community engagement best practices and stakeholder feedback from the weather enterprise under the Unified Forecast System (UFS)
- Lead writer of the Community Workshop Report for the Unifying Innovations in Forecasting Capabilities Workshop 2022, which will focus on providing EPIC with community input and recommendations from social science research

Junior at Cornell University majoring in Environment and Sustainability, concentrating in Environmental Policy and Governance

#### **STEPHEN WEGMANN**



**2022 Lapenta Intern SOCIAL SCIENCE PROGRAM & DISASTER SUPPLEMENTAL** 

#### **Project: ArcGIS StoryMap for SBES & Supplemental.**

Working with WPO to create an ArcGIS StoryMap to present the process and findings of the Social, Behavioral, and Economic Science (SBES) and Hurricane Supplemental teams on 4 major ongoing projects.

> Georgia State University, Geosciences program: 2nd year Master's student, Geography