NOAA WEATHER PROGRAM OFFICE

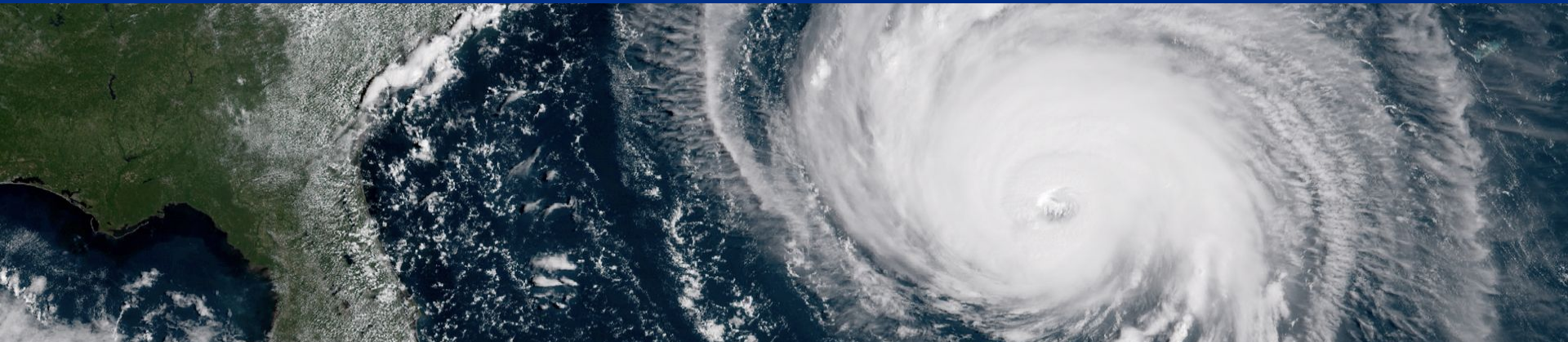
NOAA WEATHER PROGRAM OFFICE

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.

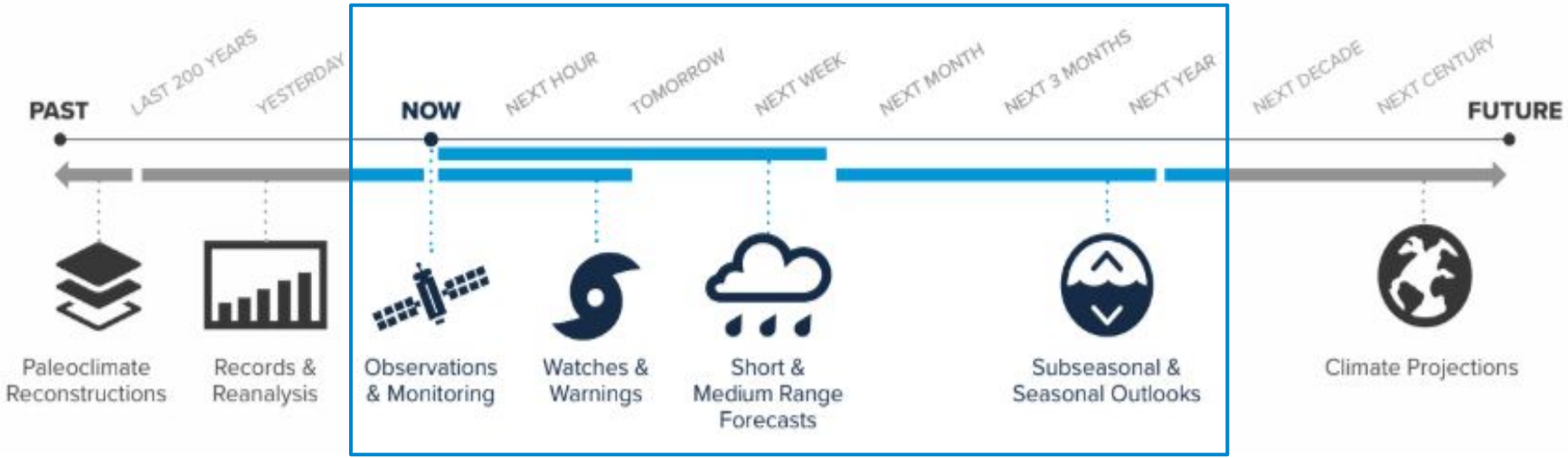
WPO PROGRAMS

- ✓ 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

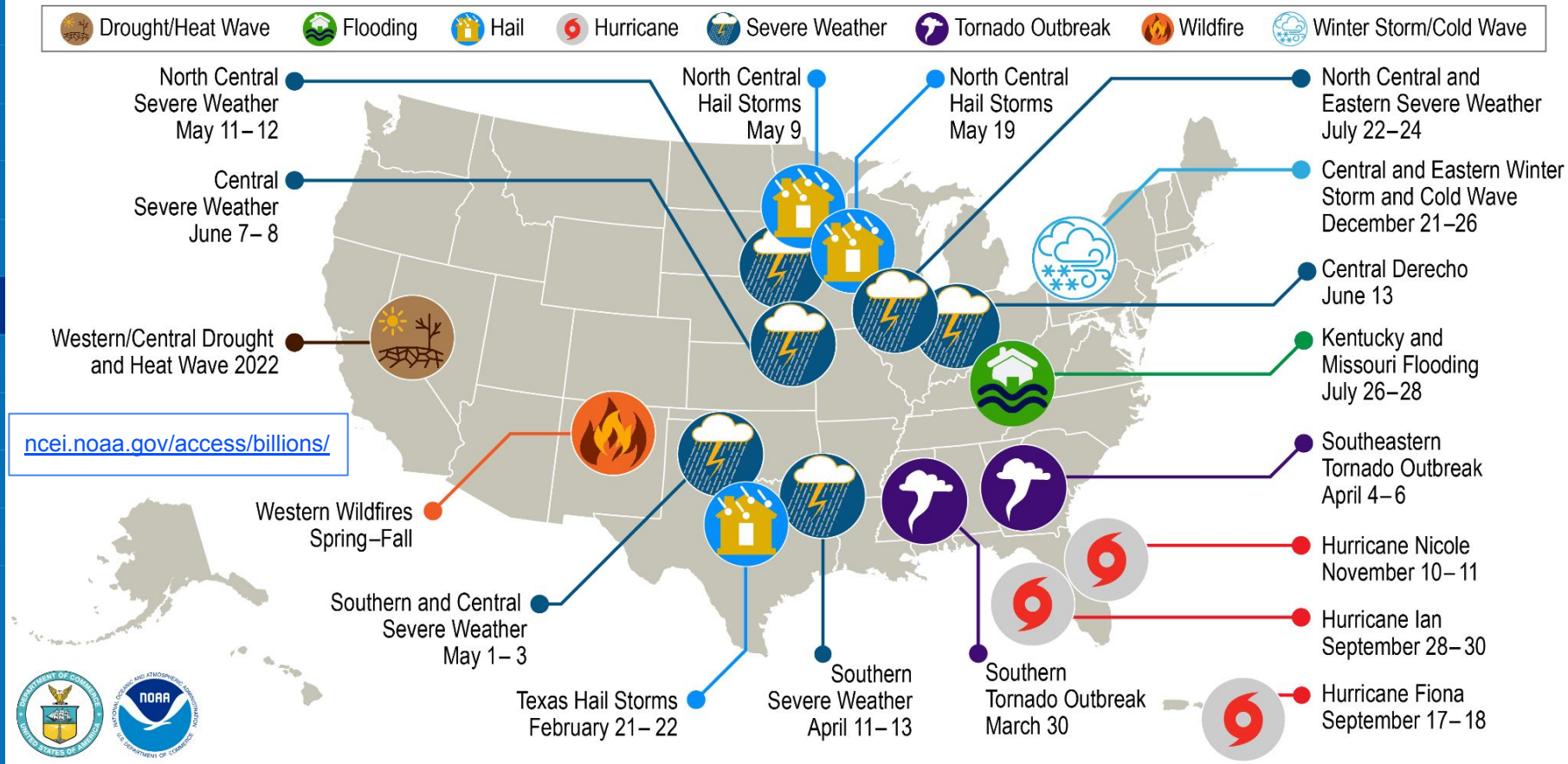
FORECAST FOCUS

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



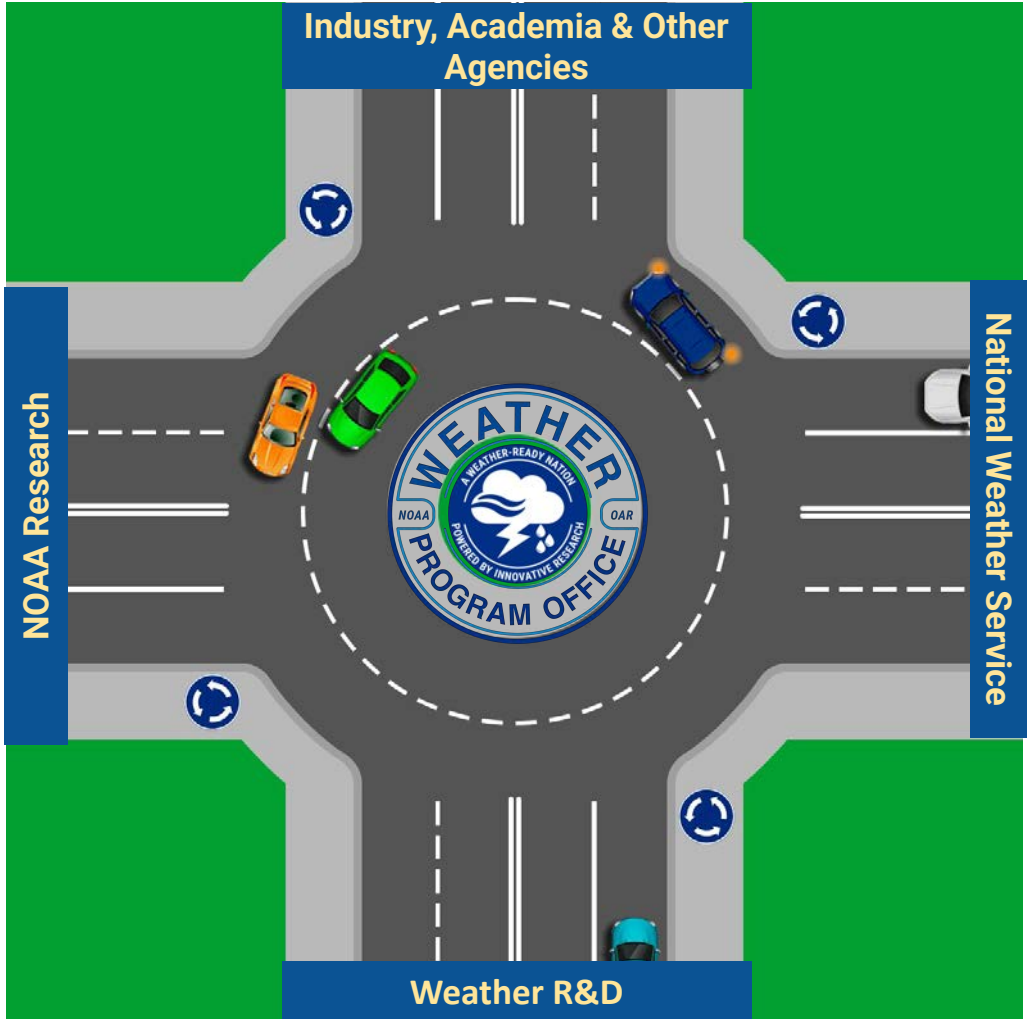
*This map denotes the approximate location for each of the **18 separate billion-dollar weather and climate disasters that impacted the United States in 2022.***

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

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.



*Comprised of academia, public sector, industry, and non-profit sectors

LEGISLATIVE DRIVERS

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)

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)
- **Infrastructure Investment and Jobs Act** (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 initiatives that:

- Encompass a range of perspectives and experience
- Broaden opportunities for the future science and research workforce
- Include student and fellowship opportunities

PARTNERSHIPS

United States Global Change Research Program

WMO

AAAS AGU AMS

BASIC vs. APPLIED RESEARCH

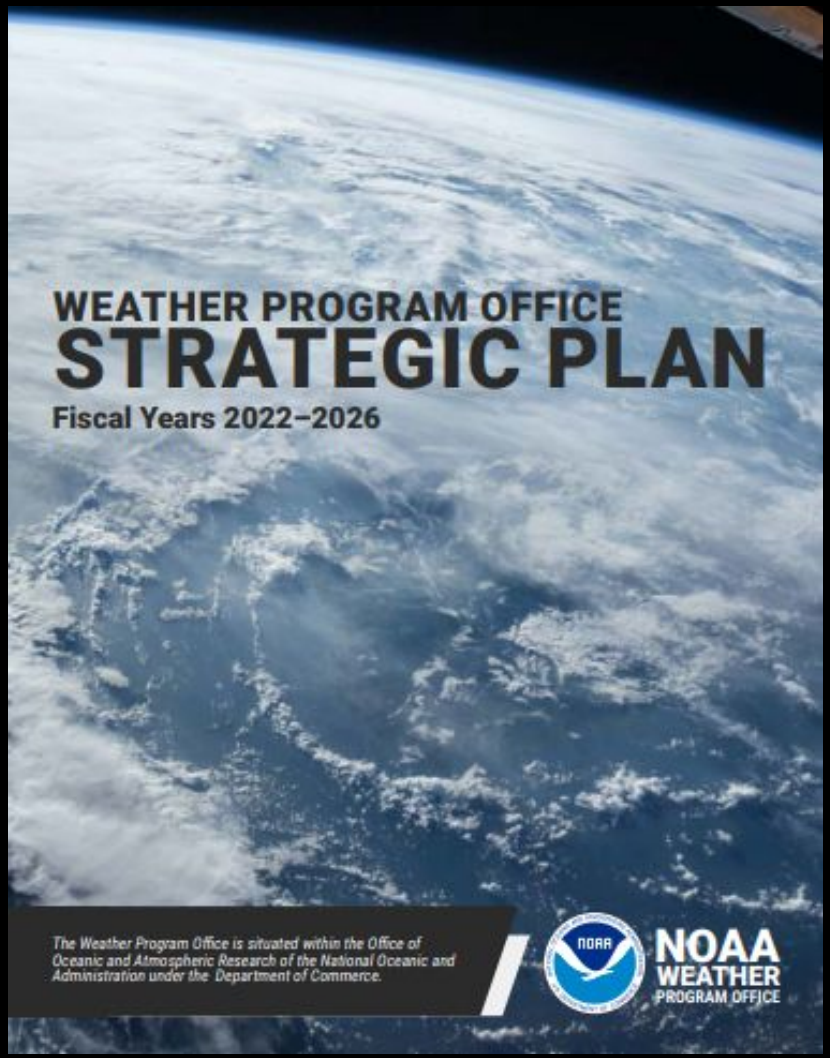
National Science Foundation
Independent agency, reports directly to the National Science Board (NSB)

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.

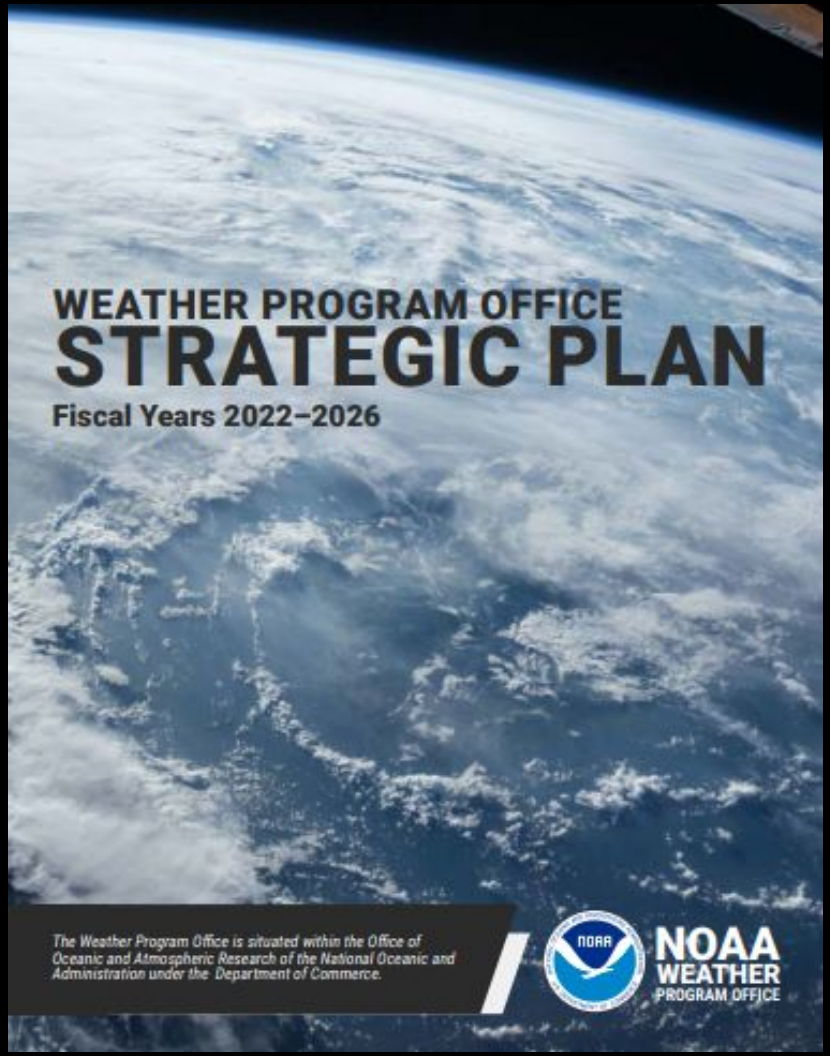


Vision

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.*

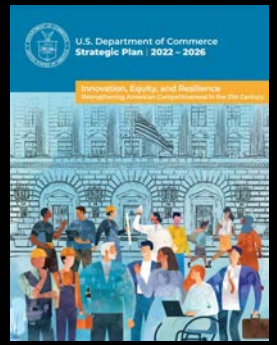

WEATHER PROGRAM OFFICE
STRATEGIC PLAN
Fiscal Years 2022–2026
The Weather Program Office is situated within the Office of Oceanic and Atmospheric Research of the National Oceanic and Administration under the Department of Commerce.
NOAA
WEATHER
PROGRAM OFFICE


OAR Strategy
2020-2026
Deliver NOAA's Future

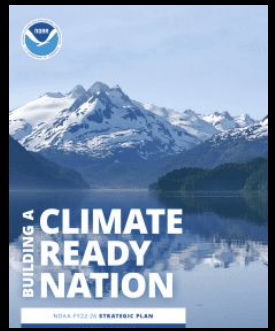

PRECIPITATION PREDICTION
GRAND CHALLENGE
STRATEGY
WEATHER, WATER
AND CLIMATE BOARD


Weather, Water, and
Climate Strategy
FY 2023-2027


DECEMBER
2021
A REPORT ON
Priorities for
Weather Research
NOAA SCIENCE ADVISORY BOARD


U.S. Department of Commerce
Strategic Plan | 2022 – 2026
Innovation, Equity, and Resilience

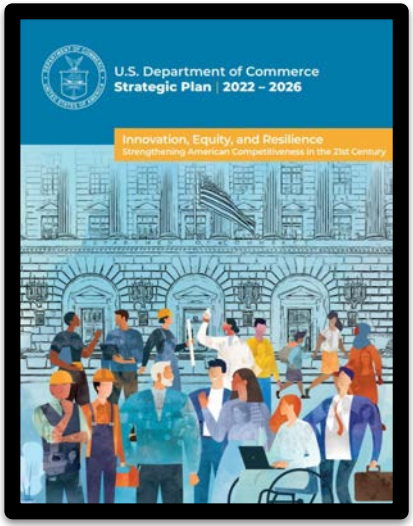

2019-2022
STRATEGIC PLAN
NOAA's
National Weather Service


BUILDING A
CLIMATE
READY
NATION


STRATEGIC PLAN
NOAA'S NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE

DOC, NOAA, (WPO) STRATEGIC PLAN ALIGNMENT

- **DOC Goal 1: Drive U.S. Innovation and Global Competitiveness**
- **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**
  - Improve Commerce data usability and advance ethical and responsible, data practices
- **DOC Goal 5: Provide 21st Century Service with 21st Century Capabilities**
  - Deliver exceptional customer experience



OCEANIC AND ATMOSPHERIC RESEARCH (OAR) STRATEGY

1 Explore the Marine Environment

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

2 Detect Changes in the Ocean and Atmosphere

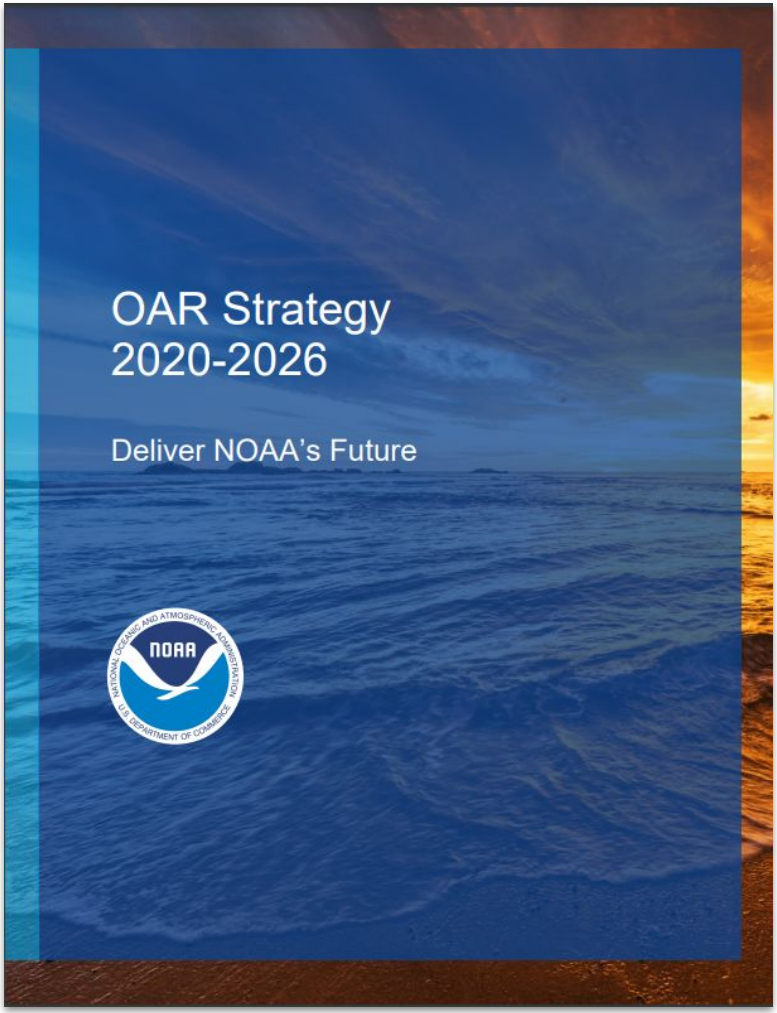
Produce, analyze, and interpret observation records to understand the Earth system and inform the public.

3 Make Forecasts Better

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

4 Drive Innovative Science

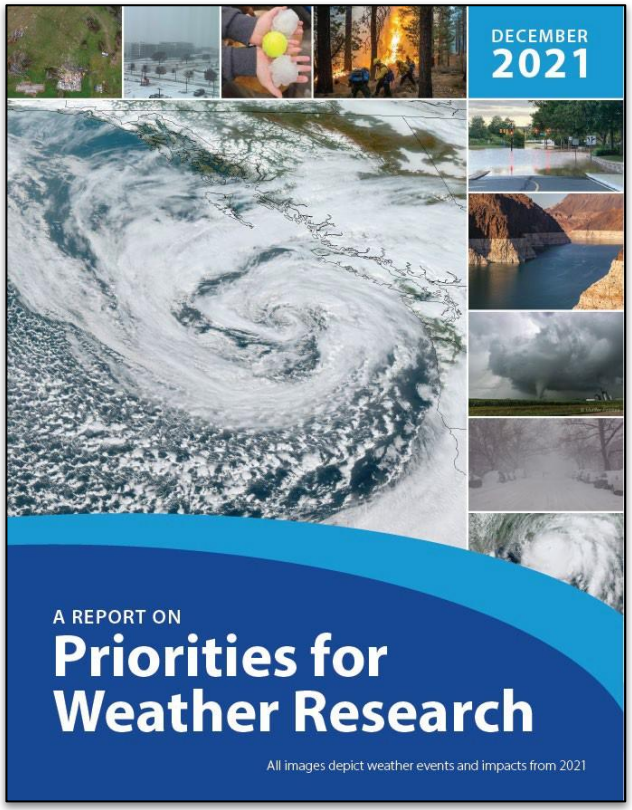
Cultivate and deliver mission-relevant research to lead the environmental science community.



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

Several PWR Report Recommendations **align** 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



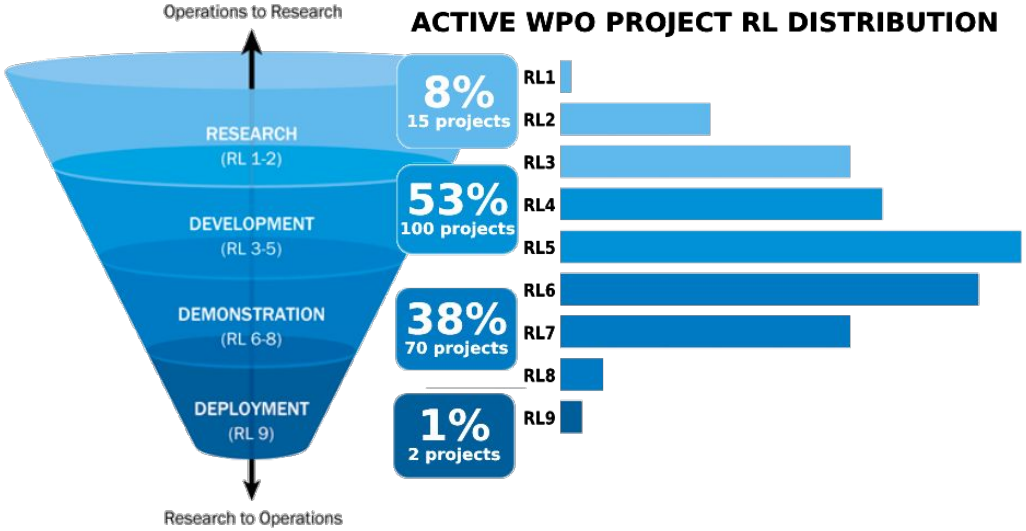
CROSS-NOAA STRATEGIES

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

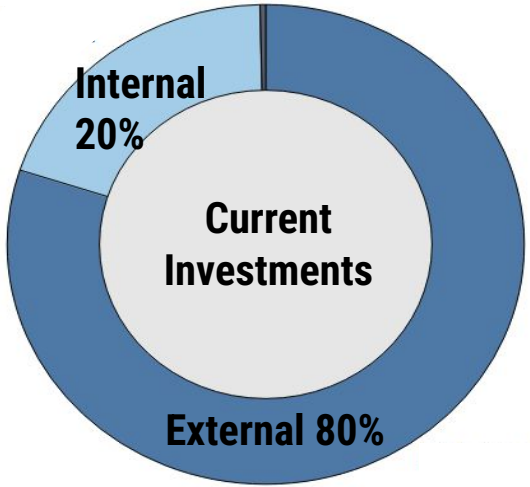
- Earth Systems Integration Board (ESIB; previously Weather, Water, Climate Board)
  - Weather Team
  - Modeling Team
  - Water Team
- Precipitation Prediction Grand Challenge
- Hurricane Forecast Improvement Program

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).



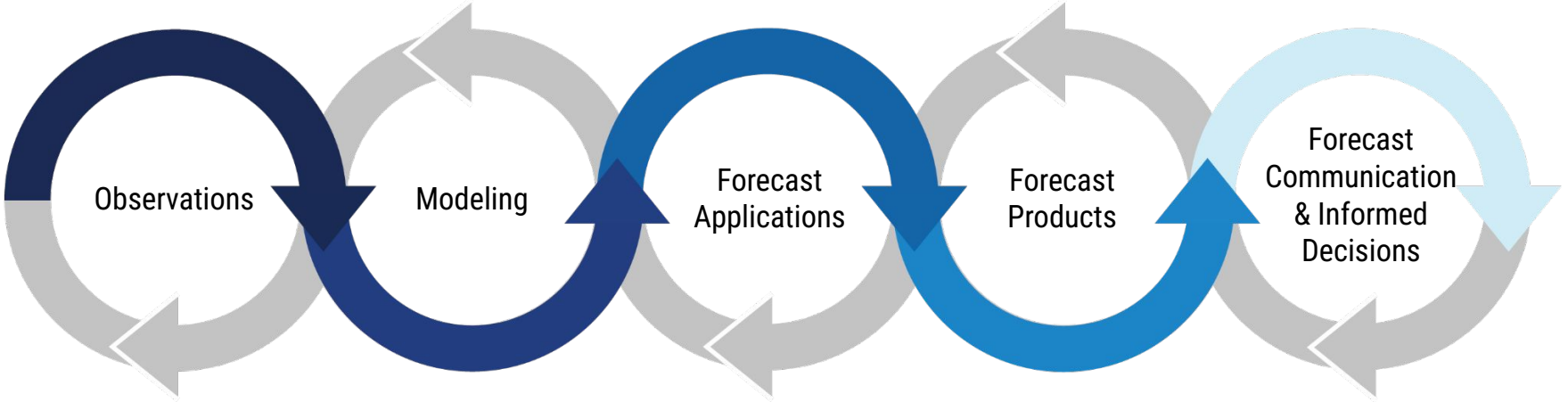
Internal/External
Coordinate NOAA Labs/Centers with external community, through careful balance of internal and external investments.



BALANCING FUNDING STRATEGY

Value chain

WPO research spans the forecast value chain.



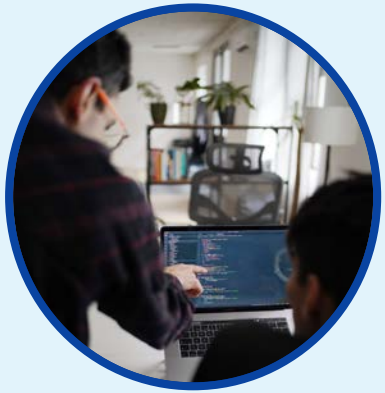
ACTIVITY AREAS FOR THE REVIEW

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.
- Developing student and fellowship opportunities to cultivate the next-generation workforce.

Activity Area 2:
Weather Research Models, Observations, and Tools



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

Tuesday

Activity Area 1:
Organizational Excellence

- Policy and Budget Overview
- Notice of Funding Opportunity Overview
- 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

Buckle Up, Let's Go!

NOAA WEATHER PROGRAM OFFICE

Organizational Excellence
Past, Present, Future

NOAA WEATHER PROGRAM OFFICE

January 24, 2023

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 and talented, 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 value proposition, and aims to undergo organizational restructuring to improve goal alignment.

WPO’s HISTORY

EARLY HISTORY AND CONTEXT FOR WPO

The U.S. Weather Research Program (USWRP) began in 1992, and primarily was executed through the National Science Foundation (NSF) and National Center for Atmospheric Research (NCAR)

THORPEX concluded, but OWAQ's early days helped build the foundation of the future WPO

2000

1980–1995 | 1996–2005 | 2005–2009

1992

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

Sea Grant

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

WMO

WPO TIMELINE: 2009–2023


John Gaynor


Roger Pierce (A)


John Cortinas


Bill Lapenta


Kandis Boyd (A)


Russ Schneider (A)


Dorothy Koch

2009 **2009** **2010** **2019** **2019** **2020** **2021**

2009–2010 | 2011–2018 | 2019–2020 | 2021–2023

2009 JHT, USWRP & THORPEX

2012 ESPC

2016 JTTI

2017 OBS

2018 S2S

2018/19 Dis. Supp.

2019 Social Sci

2019 OWAQ Becomes WPO

2020 EPIC

2022 DRSA, IIJA, IRA

$4M → $50M

FY19–21 STRATEGIC PLAN

Strategic Goals

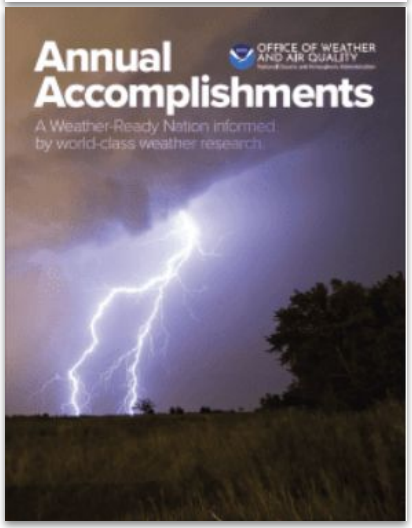
1 Improve effective communication of weather information to strengthen decision-making and forecasting abilities

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

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
- Transitioned many key products and services to operations, including HRRRv4, MRMS, etc.
- Increased coordination of WPO programs through a single annual WPO notice of funding opportunity (NOFO).
- Established research support/project management function for NOAA FY18/19/22 disaster supplemental appropriations

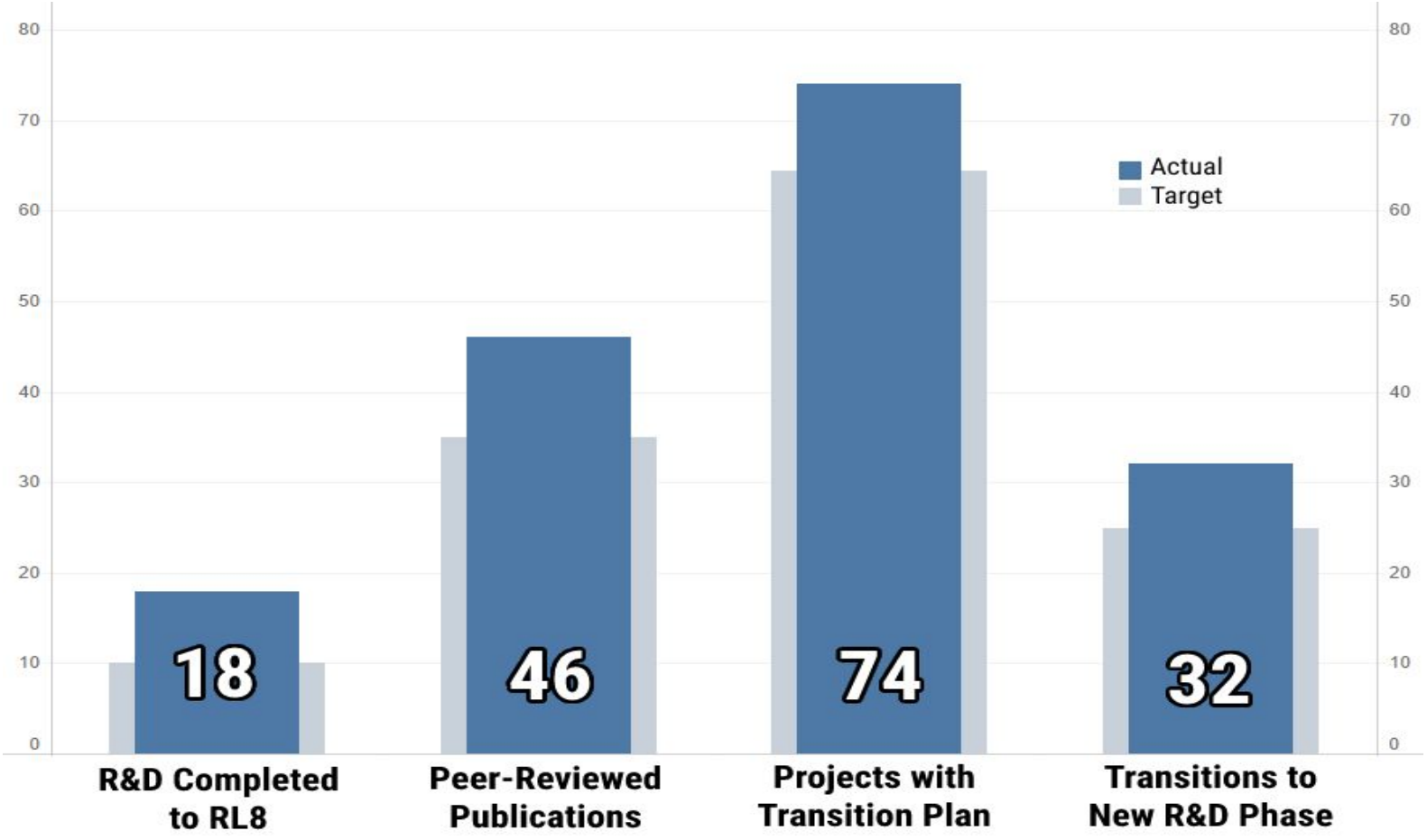


STRATEGIC PLAN FY19–21 OUTCOMES

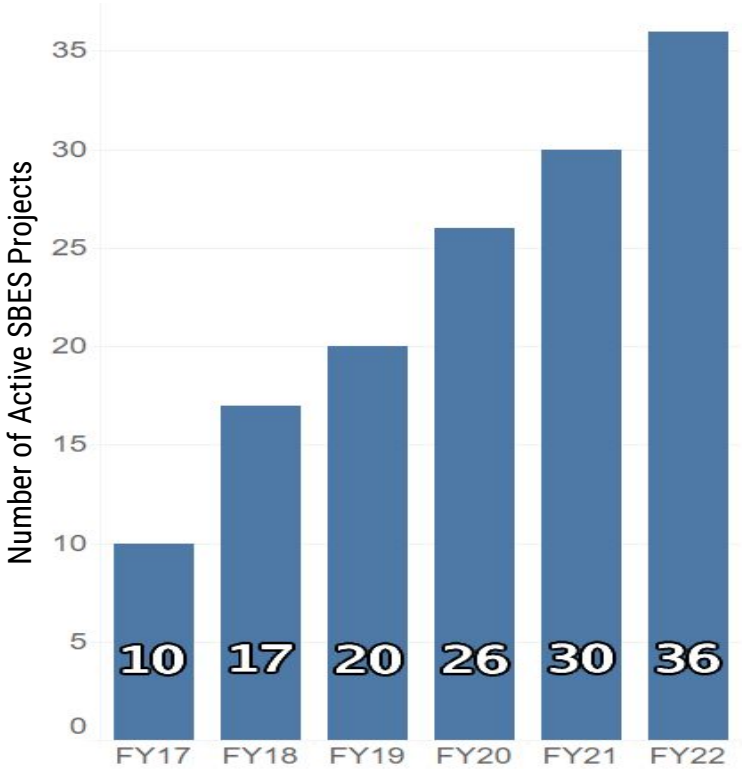
✓ Significant Progress
✓ Partial Progress

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	✓
1.3 Enhanced communication, understanding, and use of forecasts by decision makers	✓
1.4 Established SBES-specific funding programs within OWAQ.	✓
2.1 Advanced U.S. leadership in numerical weather prediction and forecasting	✓
2.2 Advanced understanding of Subseasonal-to-Seasonal forecast capabilities for atmospheric events and impacts	✓
2.3 Enhanced extreme weather forecasting capabilities	✓
3.1 A robust pipeline of research projects across the readiness-level continuum to ensure ongoing availability of projects for transition to operations	✓
3.2 Codified transition policies and procedures in formats that are routinely utilized by staff across OWAQ	✓
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.	✓
4.2 Implemented procedures to ensure equal access to the opportunities OWAQ offers, including employment, professional development, and funding	✓
4.3 Expanded and enhanced professional development opportunities for underrepresented stakeholders/groups	✓

OUR KEY METRICS - FY22

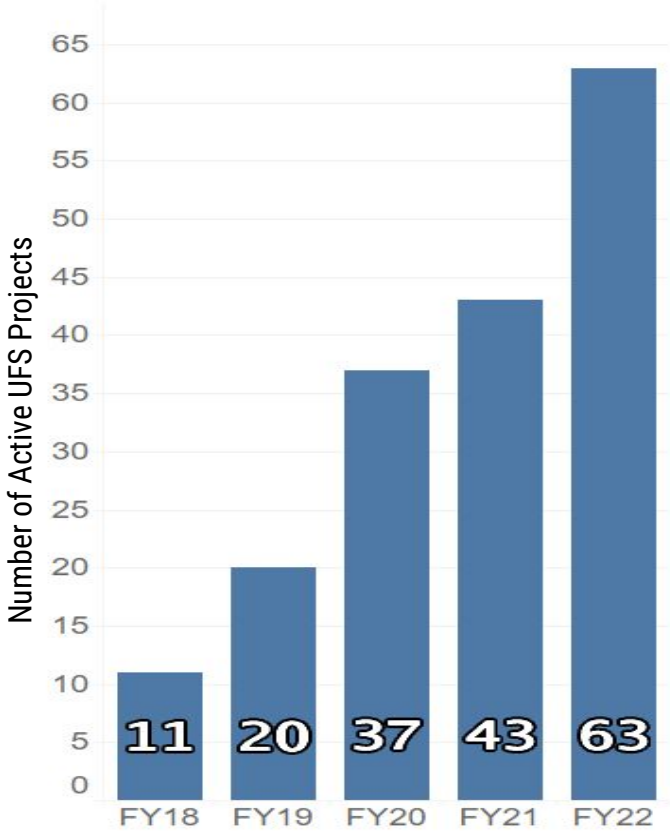


PRIORITIZING NEW AREAS



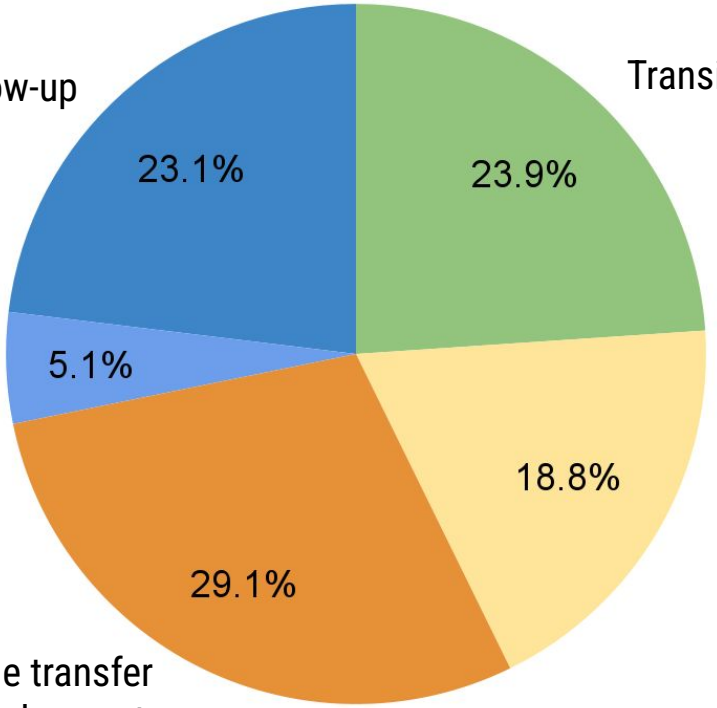
Number of active projects that include **social science research and methods** to address forecaster and user needs*

*OAR Strategic Implementation Plan Metric assigned to WPO



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

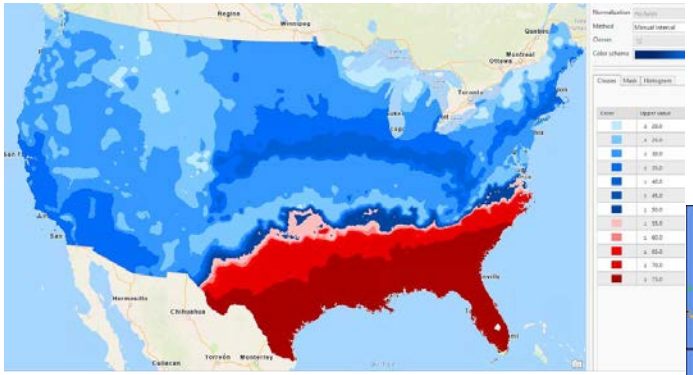
R2O SUCCESSES & CHALLENGES



Source: Completed projects/awards (Testbeds, USWRP, JTTI programs) funded FY16–19: **117** total projects

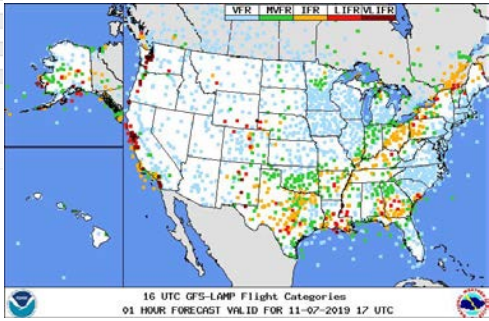
IMPROVED ACCURACY AND ACTIONABILITY OF WEATHER FORECASTS

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

[Explore all FY22 Funded Projects]

TEAM WPO

OUR PEOPLE

JANUARY 2023

DOROTHY KOCH, PHD
Director

JOHN TEN HOEVE, PHD
Deputy Director

CARMEN DAVILA
Supervisor, Management & Administration Division

CATHERINE GARDINER
Employee Resources and Logistics-Contracts

STEPHANIE HOEKSTRA, PHD
VORTEX Program Coordinator and Social Scientist

CASTLE WILLIAMSBERG, PHD
Social Science Research-to-Applications Coordinator

CHANDRA KONDRAGUNTA, PHD
JTTI Program Manager

CHRISTINE BASSETT
Subseasonal to Seasonal Program

CHRISTOPHER SPELLS, PHD
Hurricane Supplemental Coordinator

CLAUDIA WOMBLE

DK KANG, PHD
Subseasonal to Seasonal Program Coordinator

FELICIA GUARRIELLO
Testbeds & Air Quality & Fire Weather Program Coordinator

GINA EOSCO, PHD
Social Science and FACETs Program Manager

SHANNON SIMMONS
Contracting Officer Representative

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JTTI Program Coordinator

ALISON AGATHER, PHD
FACETS Program Coordinator

BEN WOODS
Hurricane Supplemental Coordinator

CASSANDRA SHIVERS-WILLIAMS, PHD
Social Science Deputy Program Manager

JORDAN DALE
Testbeds & Air Quality & Fire Weather Program Manager

JOSE-HENRIQUE ALVES, PHD
EPIC & JTTI Research Physical Scientist

KRISHNA KUMAR, PHD
EPIC Program Coordinator & Senior Program Scientist

Laura DeHaan
Research to Transitions

LEAH DUBOTS
EPIC Management and Program Analyst

LEVI MATTHEWS
Budget Analyst

MAOYI HUANG, PHD
EPIC Program Manager

MARK OLSEN, PHD
S2S Deputy Program Manager

HARISH VASUDEVAN
Budget and Financial Analyst

JENNIFER VOGT
EPIC Coordinator

JESSE CARMAN, PHD
Subseasonal to Seasonal Program Manager

JONATHON MOTE, PHD
Social Science Program Coordinator

MARK VINCENT, PHD
Observations Program Manager

MATTHEW MAHALIK
Research to Operations Transition Analyst

MELISSA PRATT-ZOSSOUNGBO
Administrative Officer

RENEE RICHARDSON
Observations Coordinator

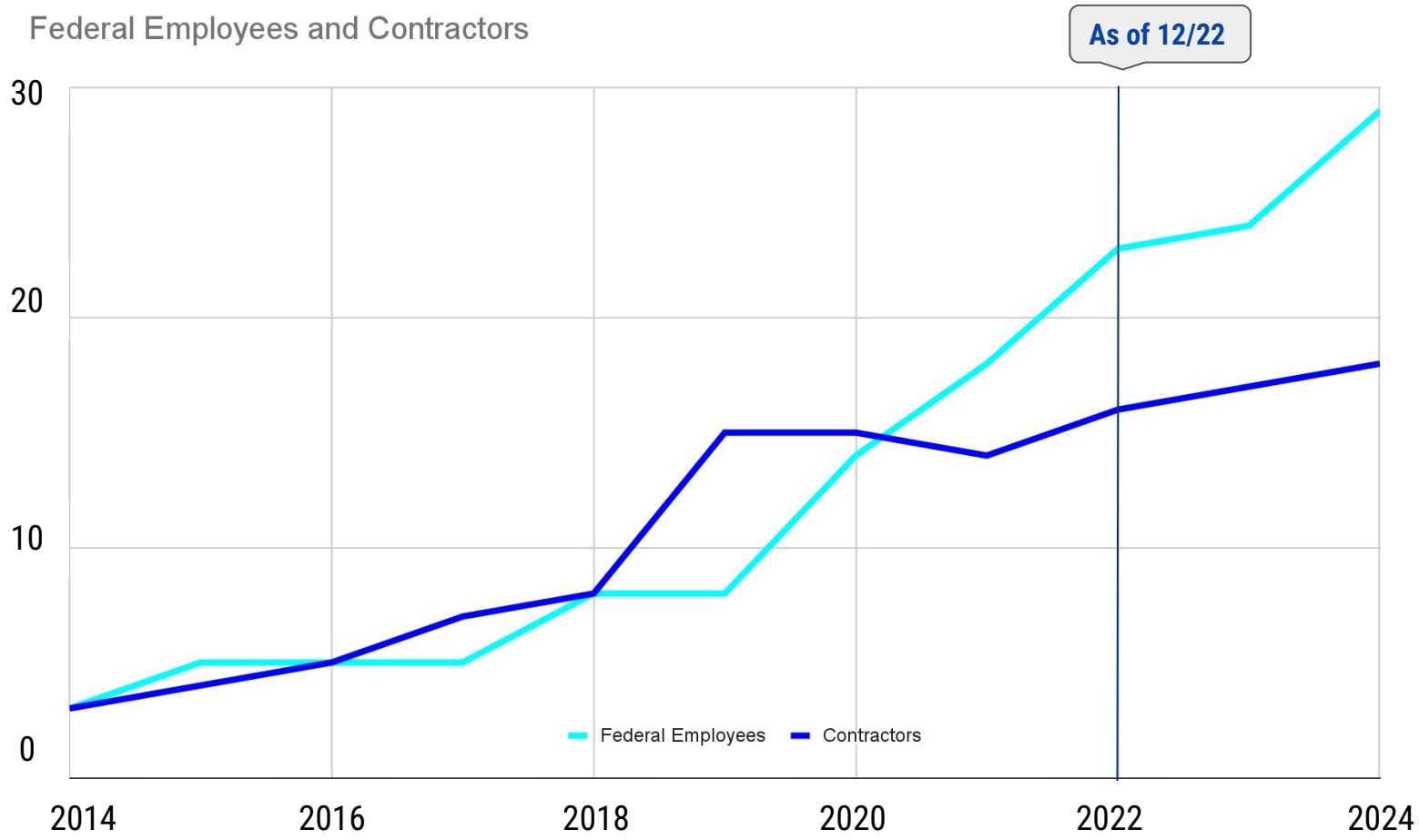
SANDRA LACORTE
Observations Coordinator

SEGAYLE THOMPSON, PHD
Project Manager, Phased Array Radar Acquisition

TAMARA BATTLE
Policy & Partnerships Manager

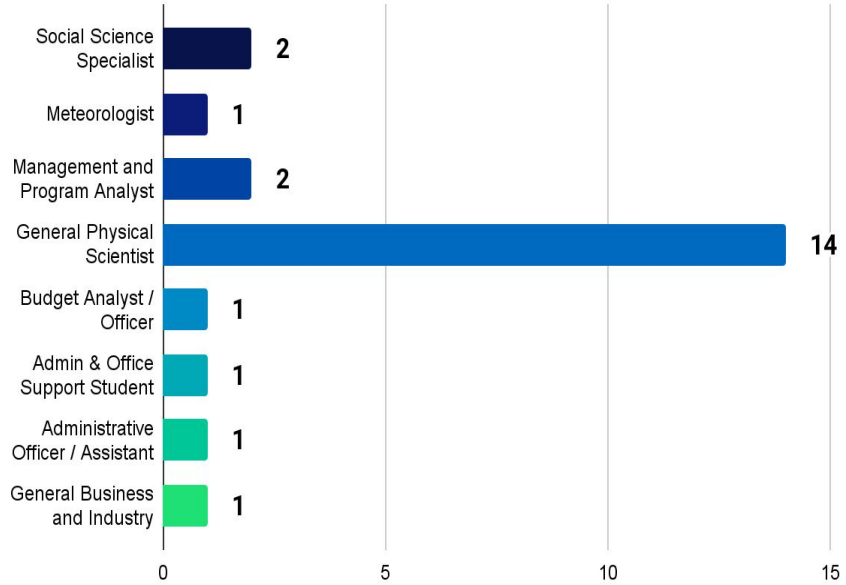
VALBONA KUNKEL, PHD
NOAA Atmospheric Scientist 820 Coordinator

STAFFING TRENDS

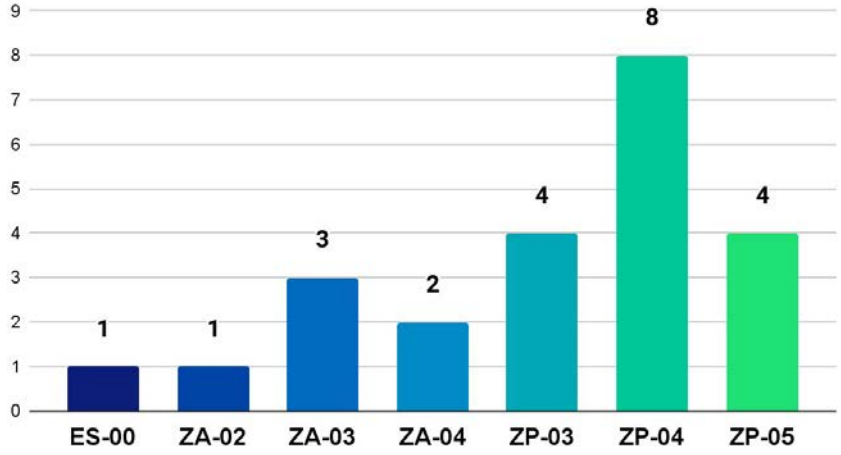


WPO BY THE NUMBERS (Data as of 1/05/23)

Occupational Series (Federal Employees Only)



Grade/Band (Federal Employees Only)



WPO INTO THE FUTURE

WPO's NEW STRATEGIC PLAN 2022–2026

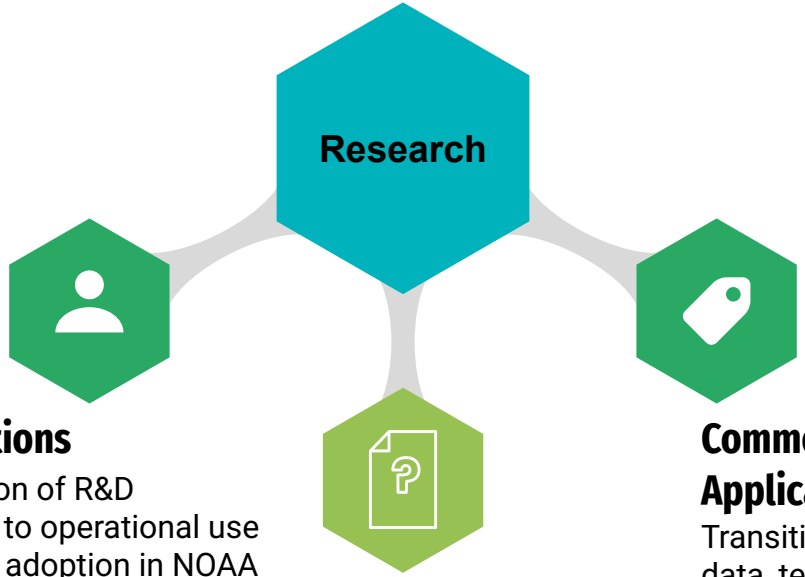
Strategic Goals

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.

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

WPO's VALUE PROPOSITION: RESEARCH TRANSITIONS



Operations

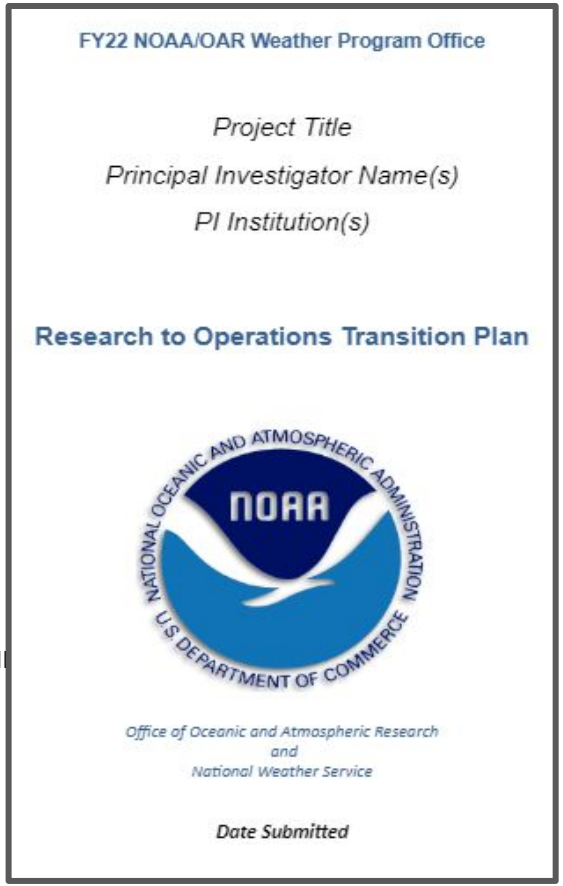
Transition of R&D outputs to operational use through adoption in NOAA or elsewhere

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)

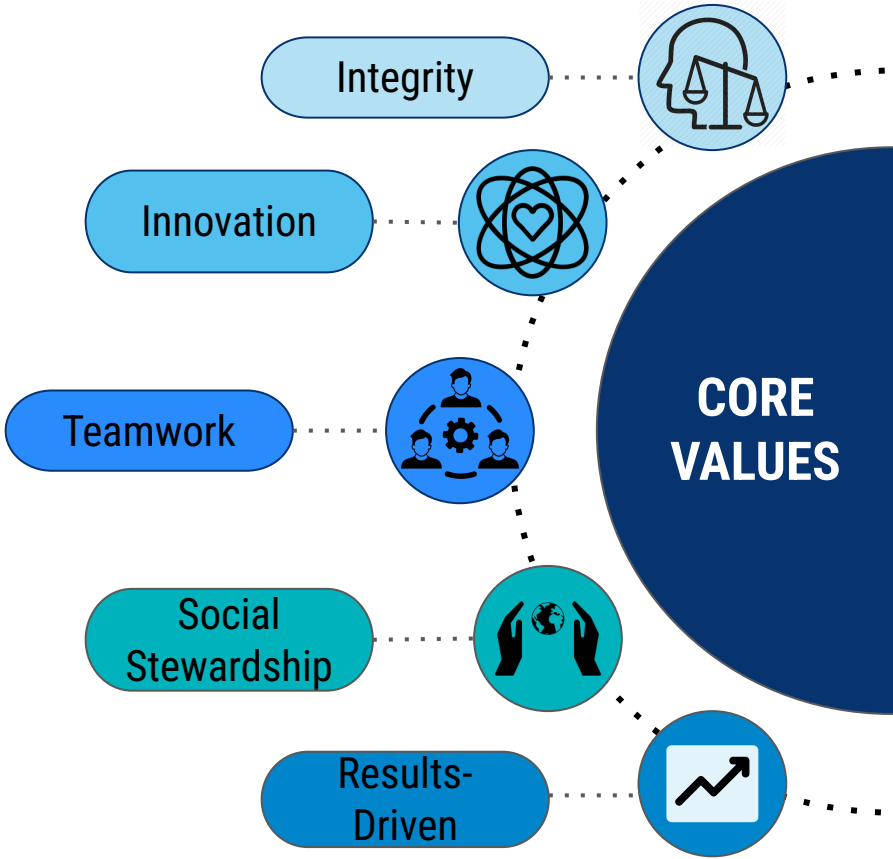
Research to Operations Transition Plan

Office of Oceanic and Atmospheric Research and National Weather Service

Date Submitted

WPO's NEW CORE VALUES

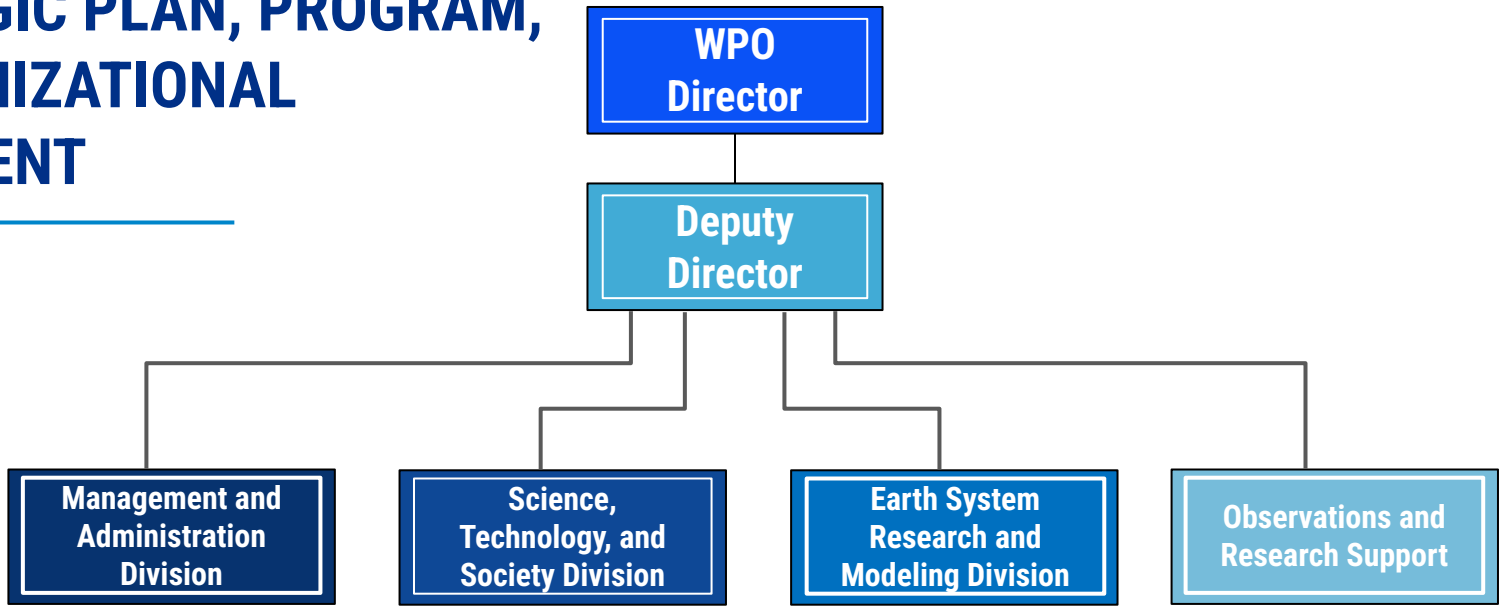
1. **Integrity:** We adhere to the highest scientific, personal, and professional standards.
2. **Innovation:** We welcome knowledge and ideas that drive open-science solutions.
3. **Teamwork:** We value collaborative approaches and transparent communications across WPO and with our partners.
4. **Social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



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.)	●			●
R2O Policy and Research Evaluation	●			●
Policy, Partnerships, and Communications	●			
Administration, Logistics, Budget Management	●			

STRATEGIC PLAN, PROGRAM, & ORGANIZATIONAL ALIGNMENT



- Budget
- Human Resources
- Contracts
- Grants Mgmt
- Logistics
- Partnerships
- Communications

- Testbeds
- Social Science
- JTTI

- EPIC
- S2S
- Air Quality*

- Observations
- Supplemental Management
- Research Evaluation
- PAR Project Management

NOAA WEATHER PROGRAM OFFICE

January 24, 2023

Activity Area #1: Organizational Excellence

Dr. John Ten Hoeve, Deputy Director

CORNERSTONE OF ORGANIZATIONAL EXCELLENCE

Successfully managing resources to support science and research innovation for timely and accurate forecasts.

Developing opportunities to find, foster and fund collaborative weather and air quality research.

Cultivating well-versed, knowledgeable, and insightful future leaders, researchers and scientists.

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, 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.

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

Policy & Budget Overview
Tamara Battle & Melissa Pratt-Zossoungbo

20 Minutes

Notice of Funding Opportunity Overview
Christine Bassett

20 Minutes

Intern and Fellow Opportunities
Leah Dubots

20 Minutes

Q&A Session

3:00–4:00pm


NOAA
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PROGRAM OFFICE
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Lunch

NOAA WEATHER PROGRAM OFFICE

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

Intern and Fellow Opportunities
Leah Dubots

20 Minutes

Q&A Session

3:00–4:00pm

NOAA WEATHER PROGRAM OFFICE

January 24, 2023

Policy and Budget:
Authorizations and Appropriations

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

MANAGEMENT AND ADMINISTRATION DIVISION

Carmen Davila
M&A Division Chief
Joined WPO 2023

Administration

Melissa Pratt-Zossoungbo
Administrative Officer
Joined WPO 2019

Budget Execution

Levi Matthews
Budget Analyst
Joined WPO 2020

Harish Vasudevan
Financial Analyst
Groundswell
Joined WPO 2020

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

NOAA WEATHER PROGRAM OFFICE

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

"Authorized by Legislation" vs "Authorized by Appropriation"

AUTHORIZING LEGISLATION

Enacted

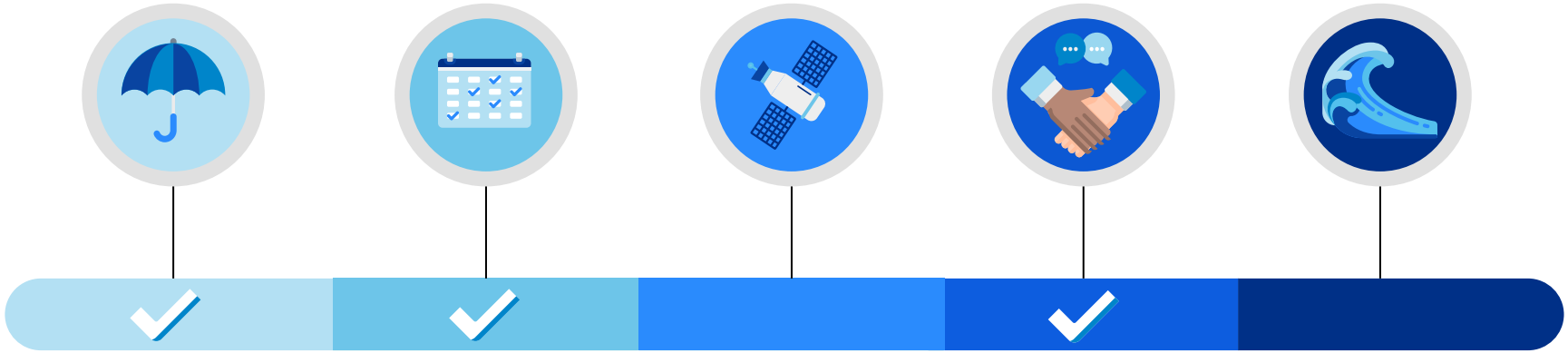
- NOAA Authorization Act of 1992
- Weather Research and Forecasting Innovation Act of 2017
- NIDIS Reauthorization Act of 2018
- LEGEND Act of 2021
- FLOODS Act of 2022
- PRECIP Act of 2022

Introduced

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

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

NOAA WEATHER PROGRAM OFFICE

Appropriations

Planning → NOAA/DOC/OMB → Appropriations → Execution

AUTHORIZATION VS. APPROPRIATION

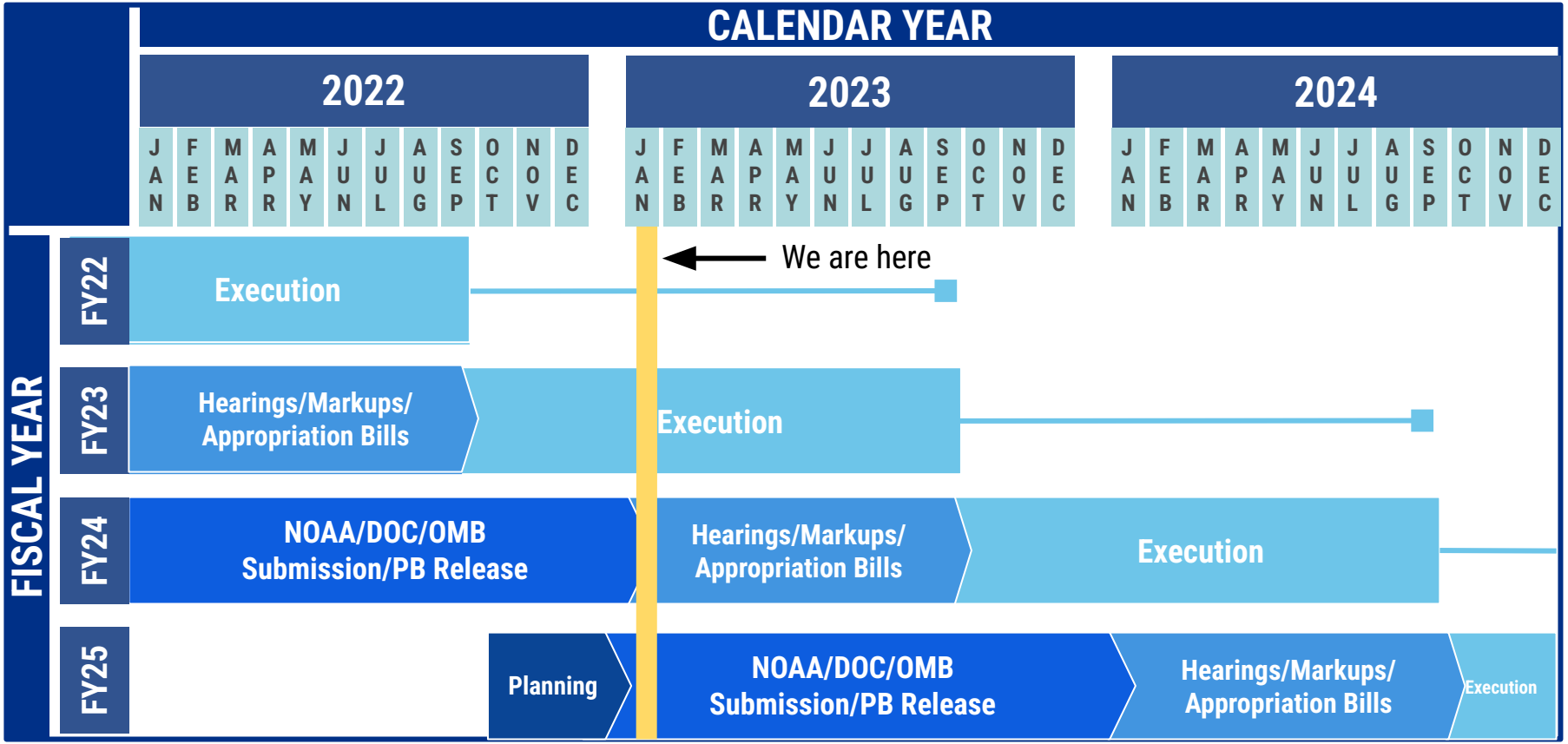
Appropriation

- 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

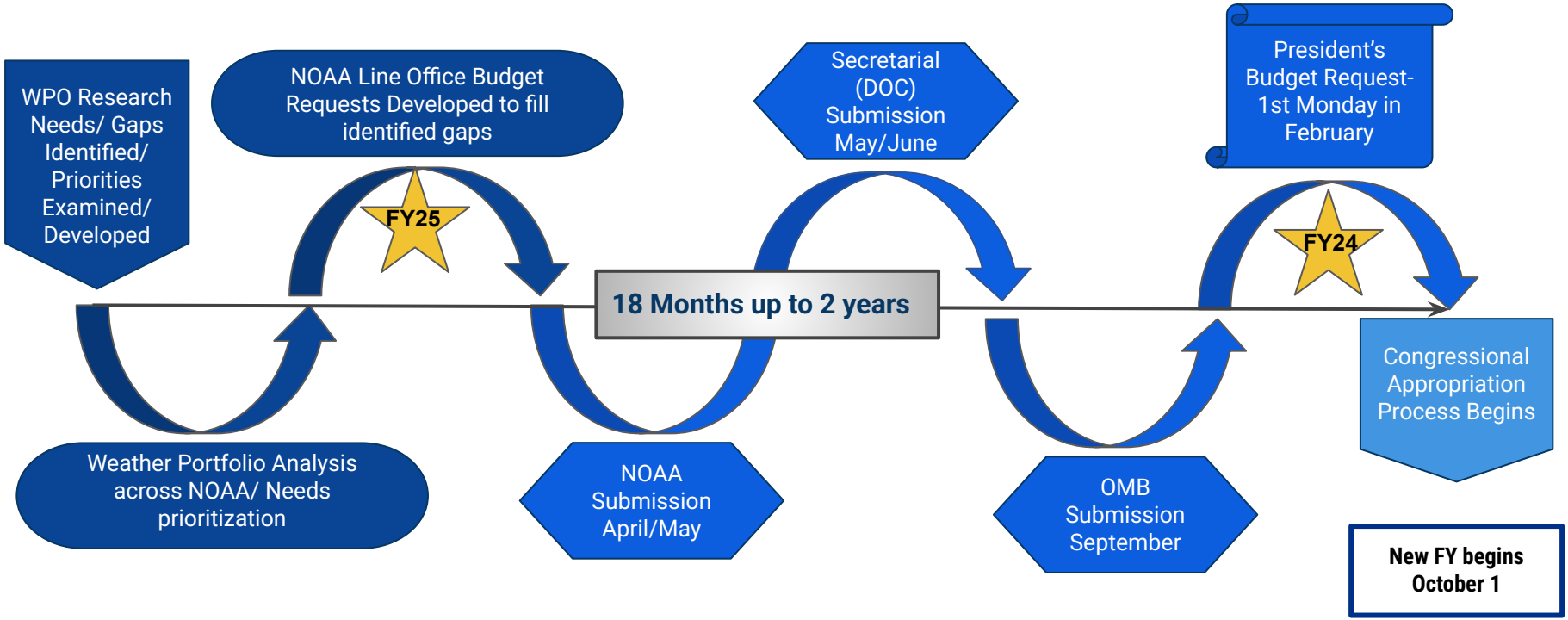
“Authorized by Legislation” vs “Authorized by Appropriation”

FEDERAL APPROPRIATIONS TIMELINE

Planning | NOAA/DOC/OMB | Appropriations | Execution



WPO APPROPRIATION TIMELINE

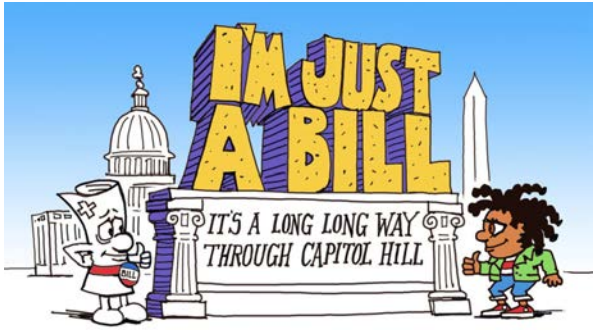


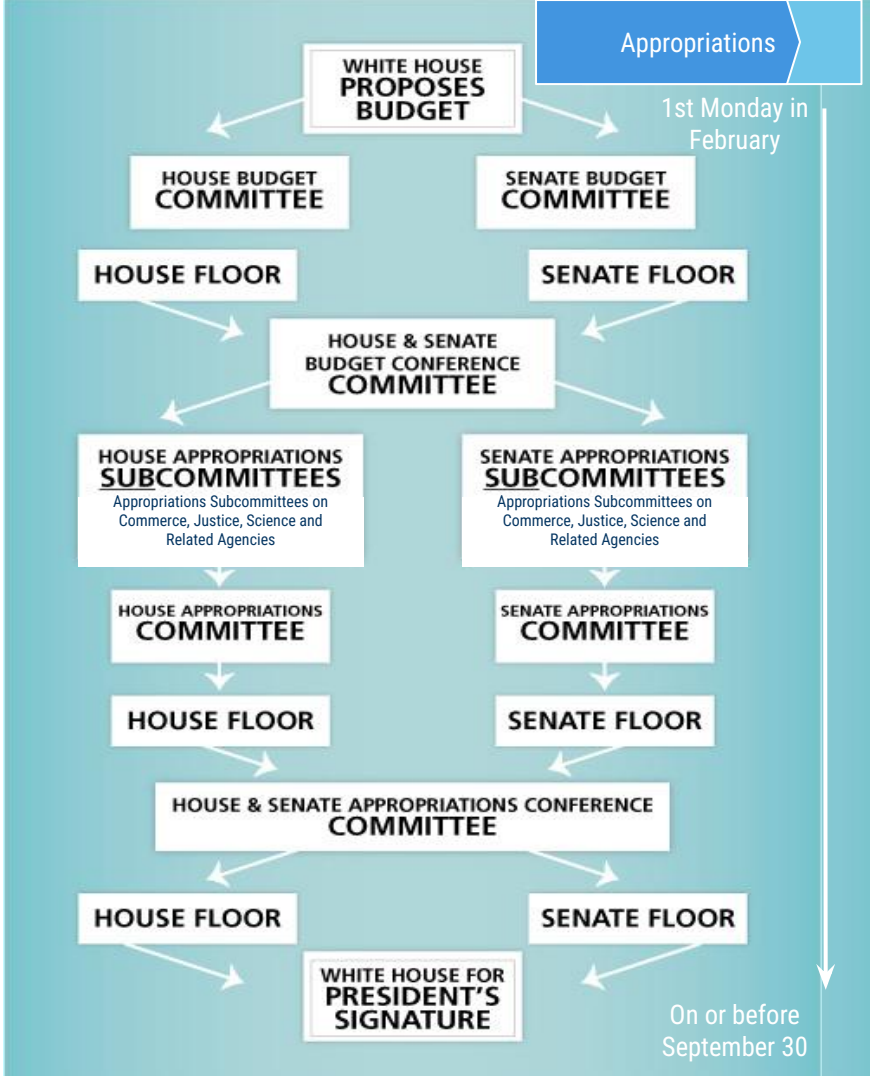
WPO APPROPRIATIONS

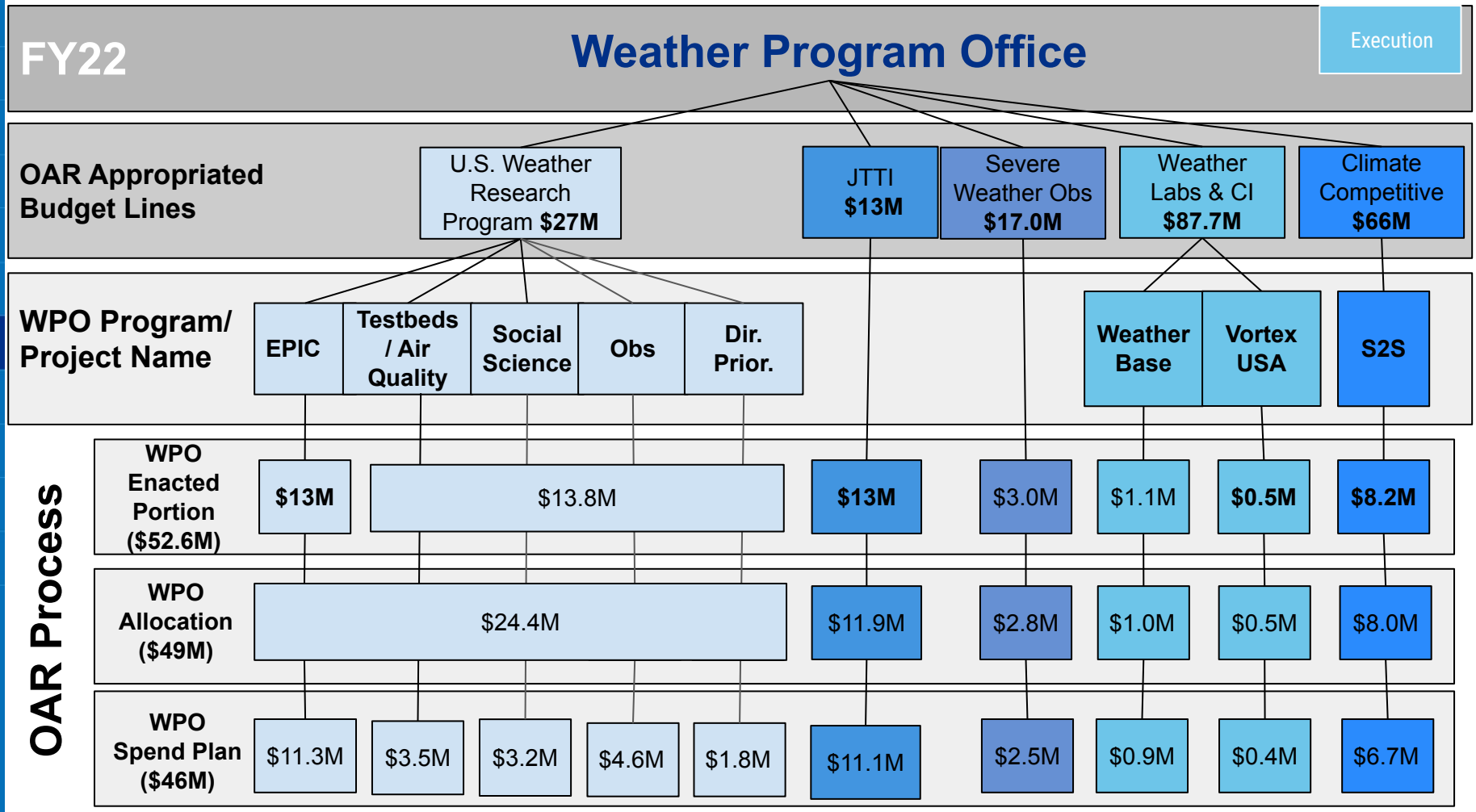
DIVISION B -COMMERCE, JUSTICE, SCIENCE, AND RELATED AGENCIES APPROPRIATIONS ACT

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





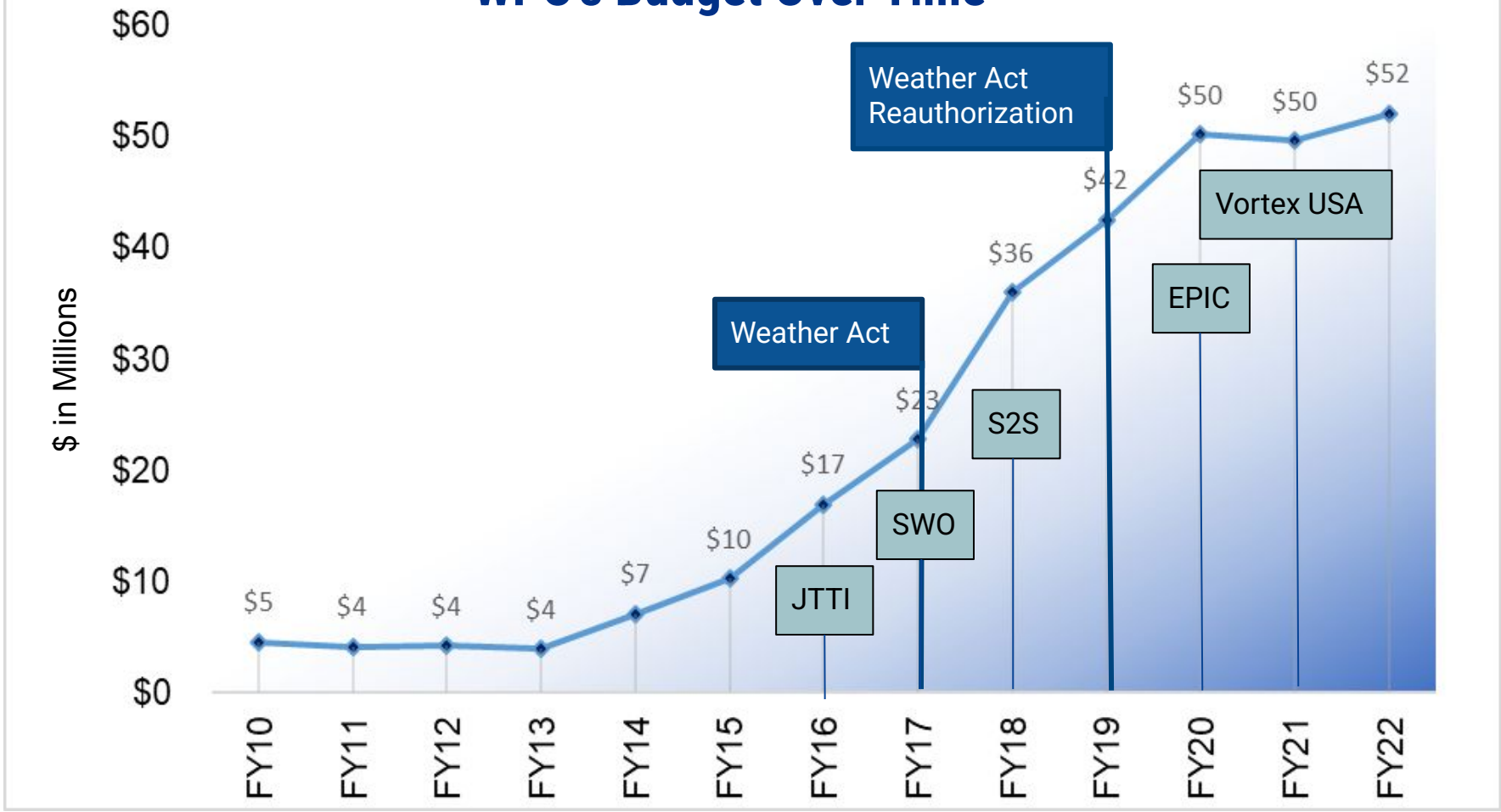


*Bold text indicates congressional direction/ language associated with the program/ project

NOAA WEATHER PROGRAM OFFICE

Budget History and Spending

WPO's Budget Over Time



WHAT WE SPEND OUR MONEY ON

Federal Labor

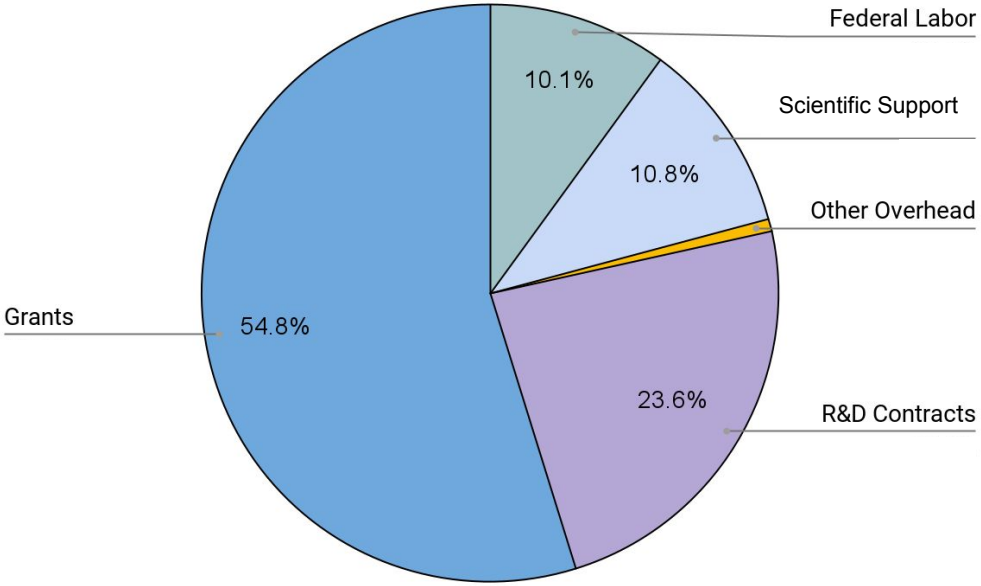
- 29 Positions
  - 23 on-board staff
  - 6 vacancies

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.

ACCOMPLISHMENTS

Growth

Budget Increased 10-fold since Inception

$5M to $52M

Administrative Team Established

Increased from 1 to 9 staff members

Oversight

$52M Appropriation

$253M over 5 years

$20M Grants awarded

$96M over 5 years

FY22

30 Contract Actions

$30M 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

NOAA
WEATHER
PROGRAM OFFICE

Thank You

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NOAA WEATHER PROGRAM OFFICE

WPO Notice of Funding Opportunity (NOFO)

NOAA WEATHER PROGRAM OFFICE

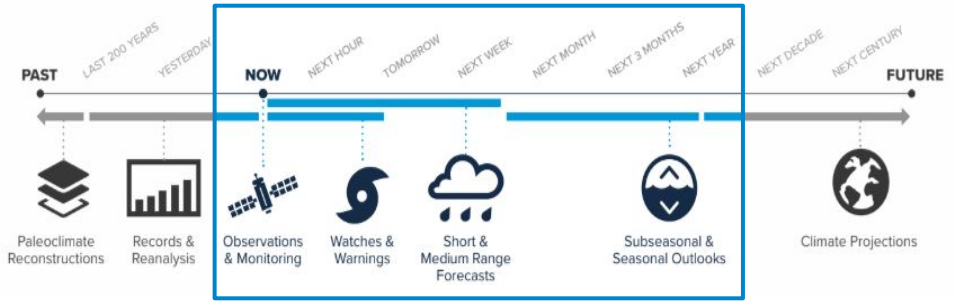
January 24, 2023

Christine Bassett, S2S Program Coordinator

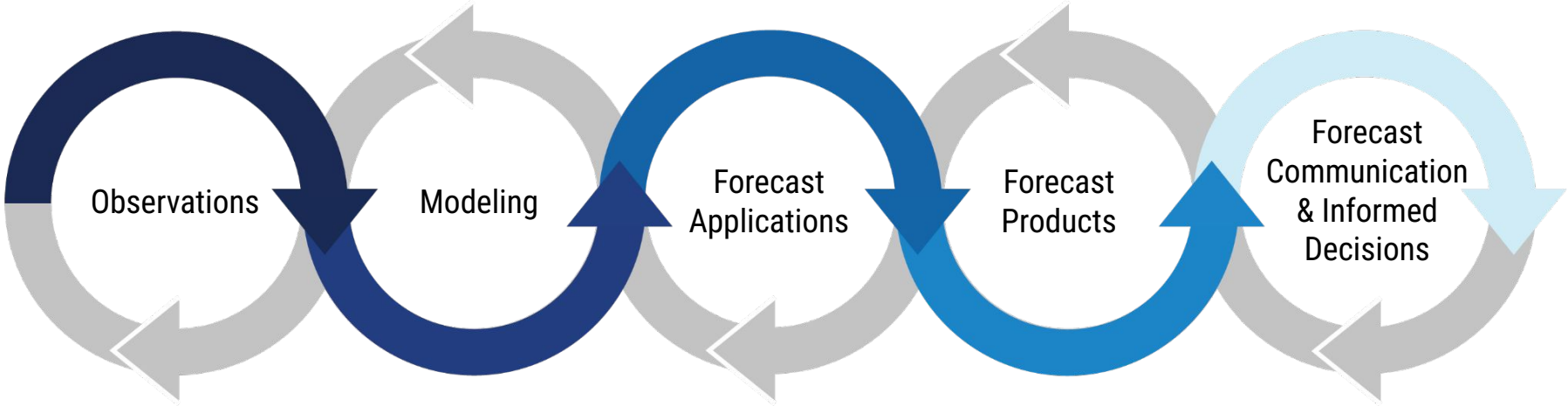
Activity Area 1: Organizational Excellence

Photo by Christine Bassett, 2019

BALANCING INVESTMENTS



WPO research spans the forecast value chain.



Observations | **EPIC** | **S2S** | **Air Quality** | **Testbeds** | **JTTI** | **Social Science**

BALANCING INVESTMENTS

1) Competitive Funding

NOFO (External Competition run once a year)

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

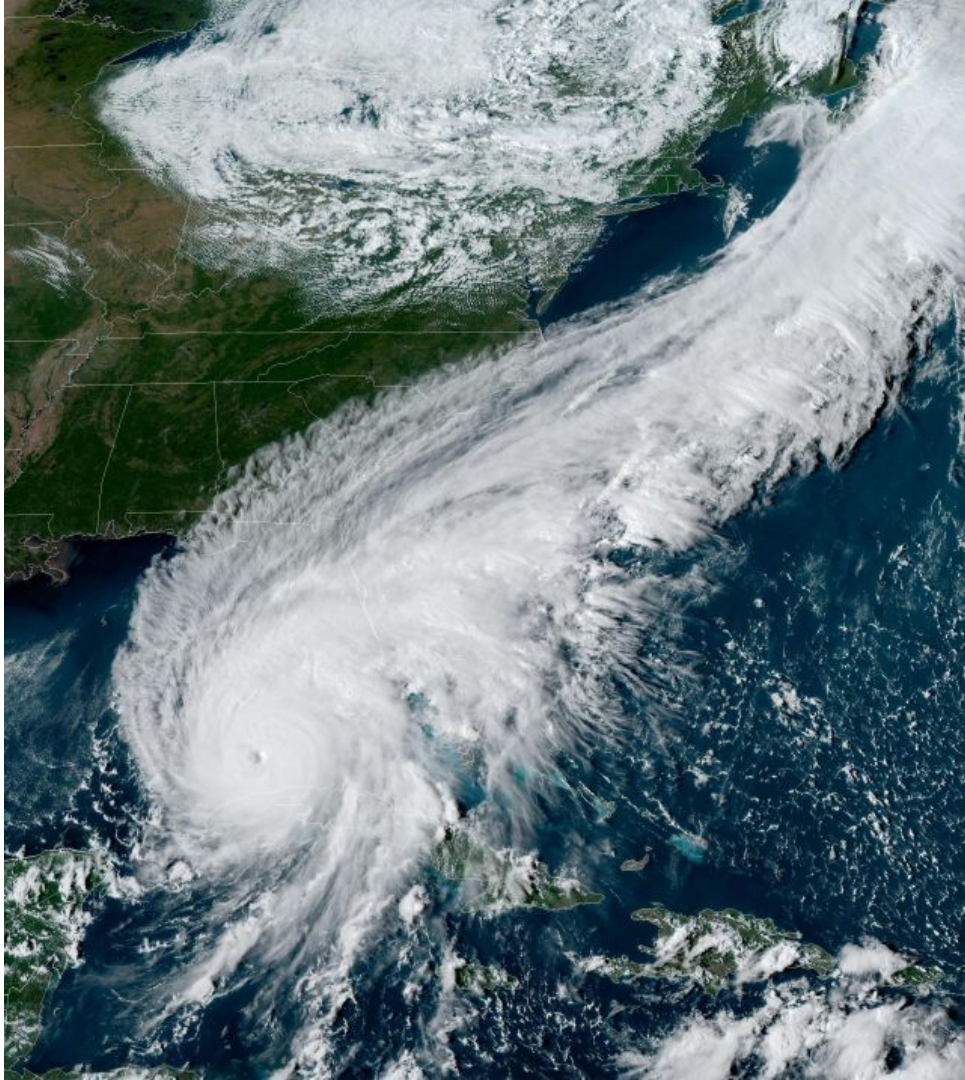
Other Competitions

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)

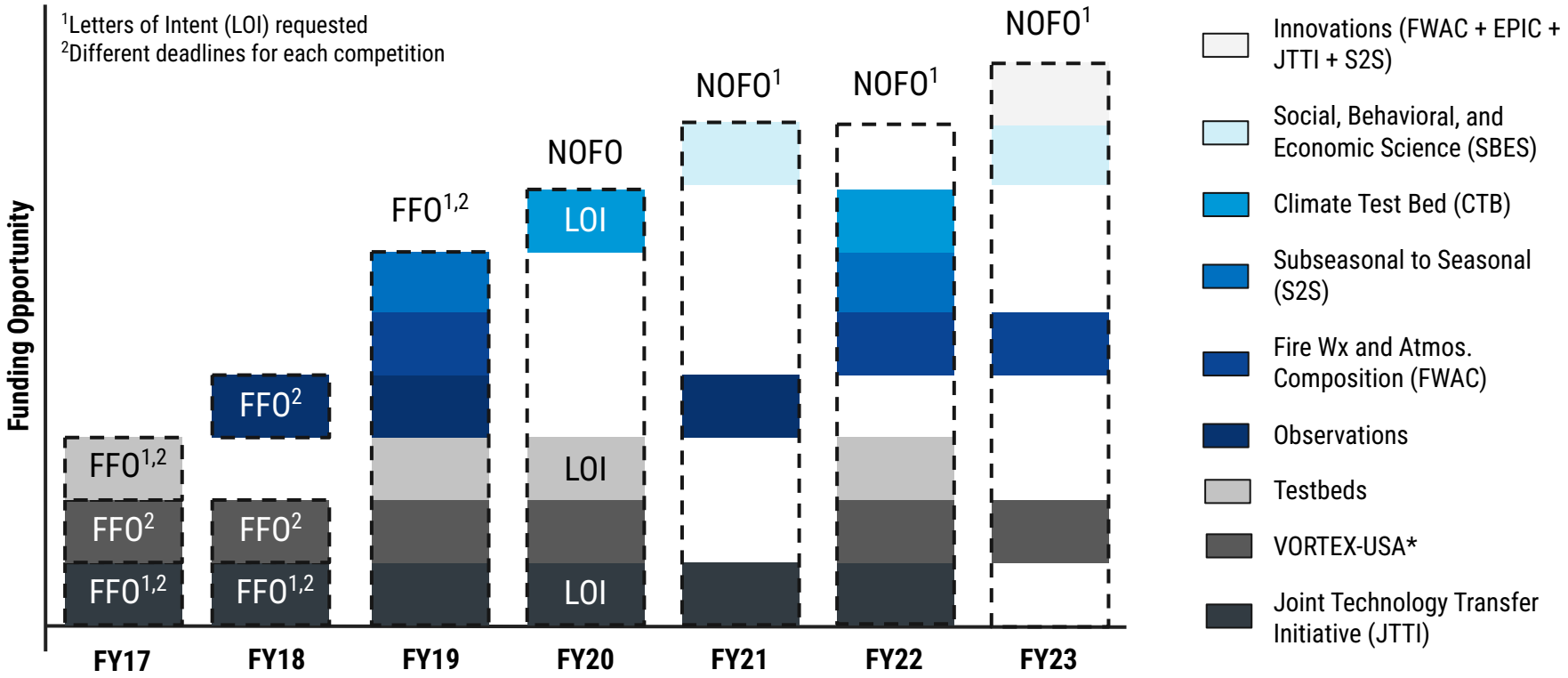
3) Cooperative Institutes



WPO NOFOs 2017–2022

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.



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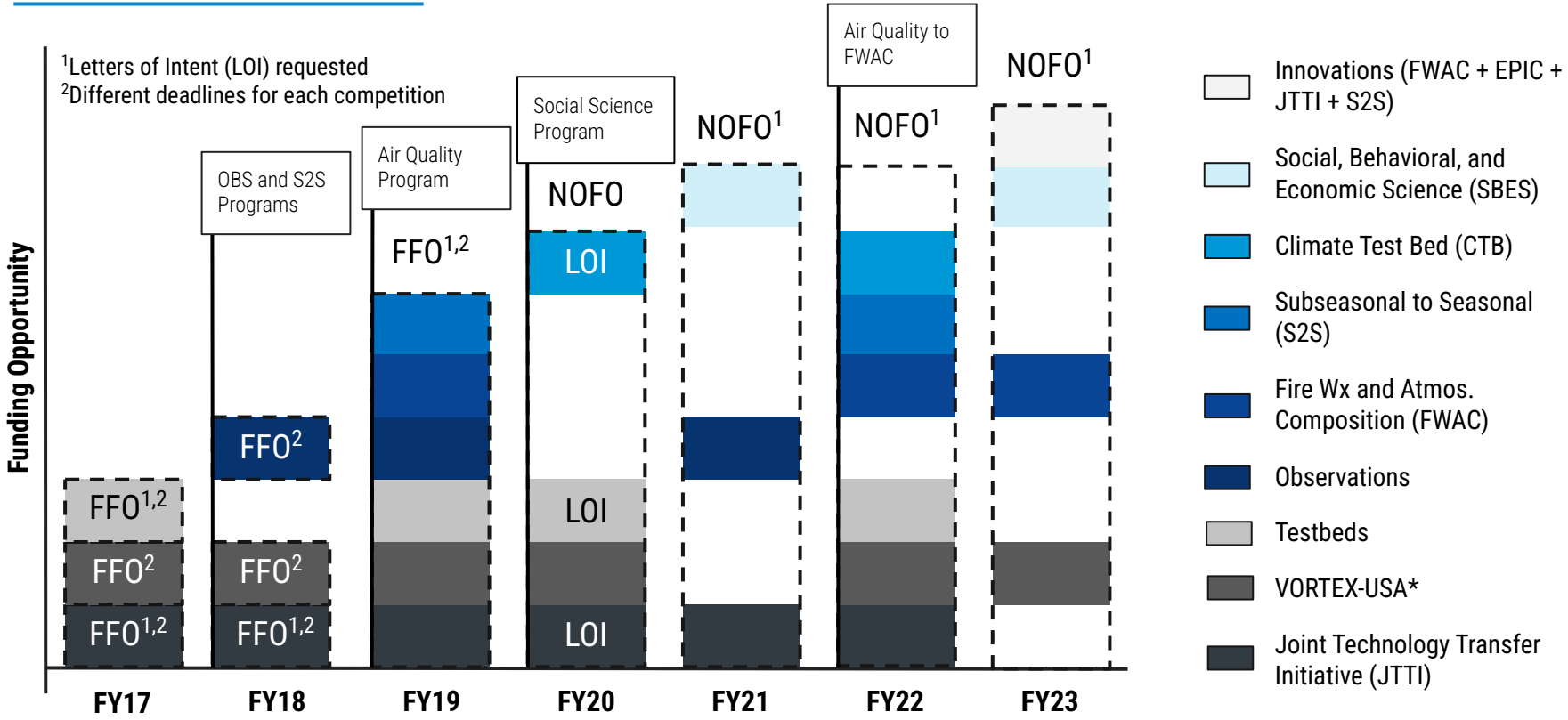
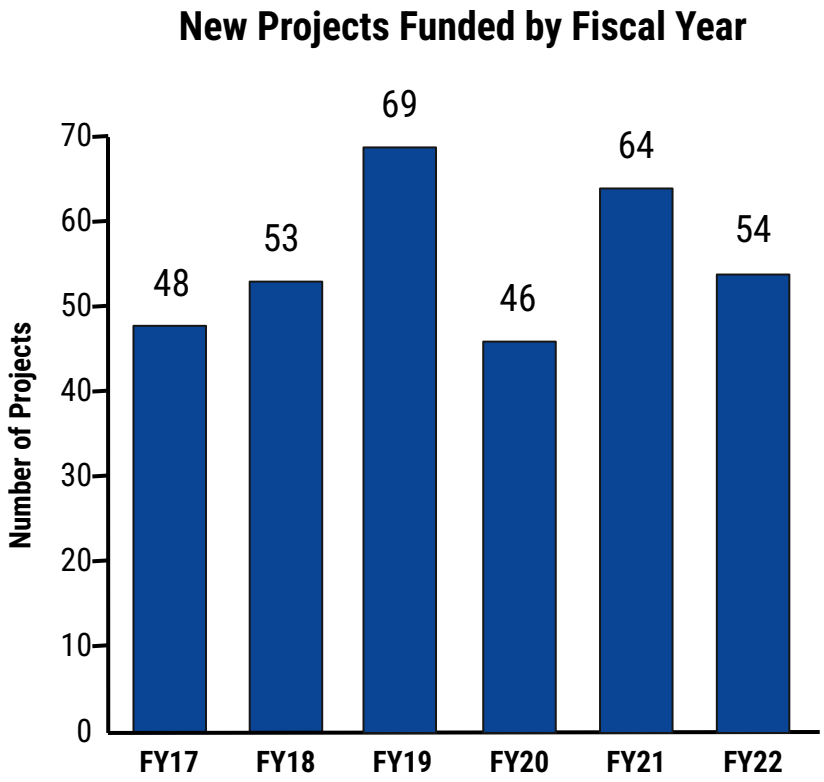
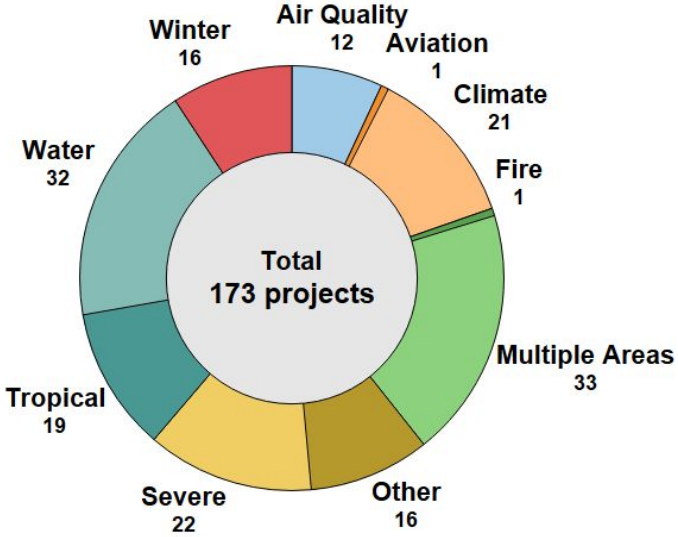


WPO NOFOs 2017–2022

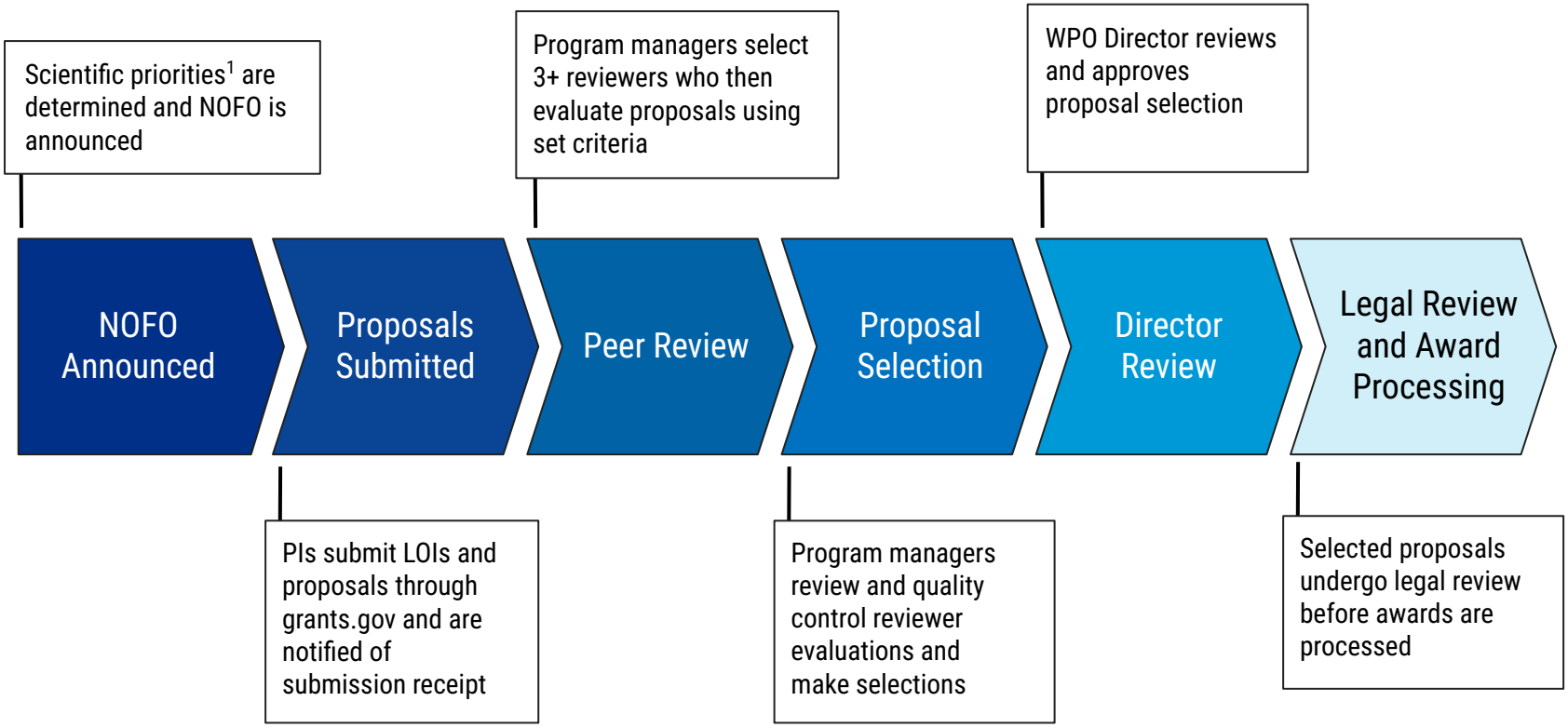




Distribution of forecast areas across active projects in FY22

NOFO PROCESS SUMMARY

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



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.)

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 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%)

NOFO PROCESS SUMMARY

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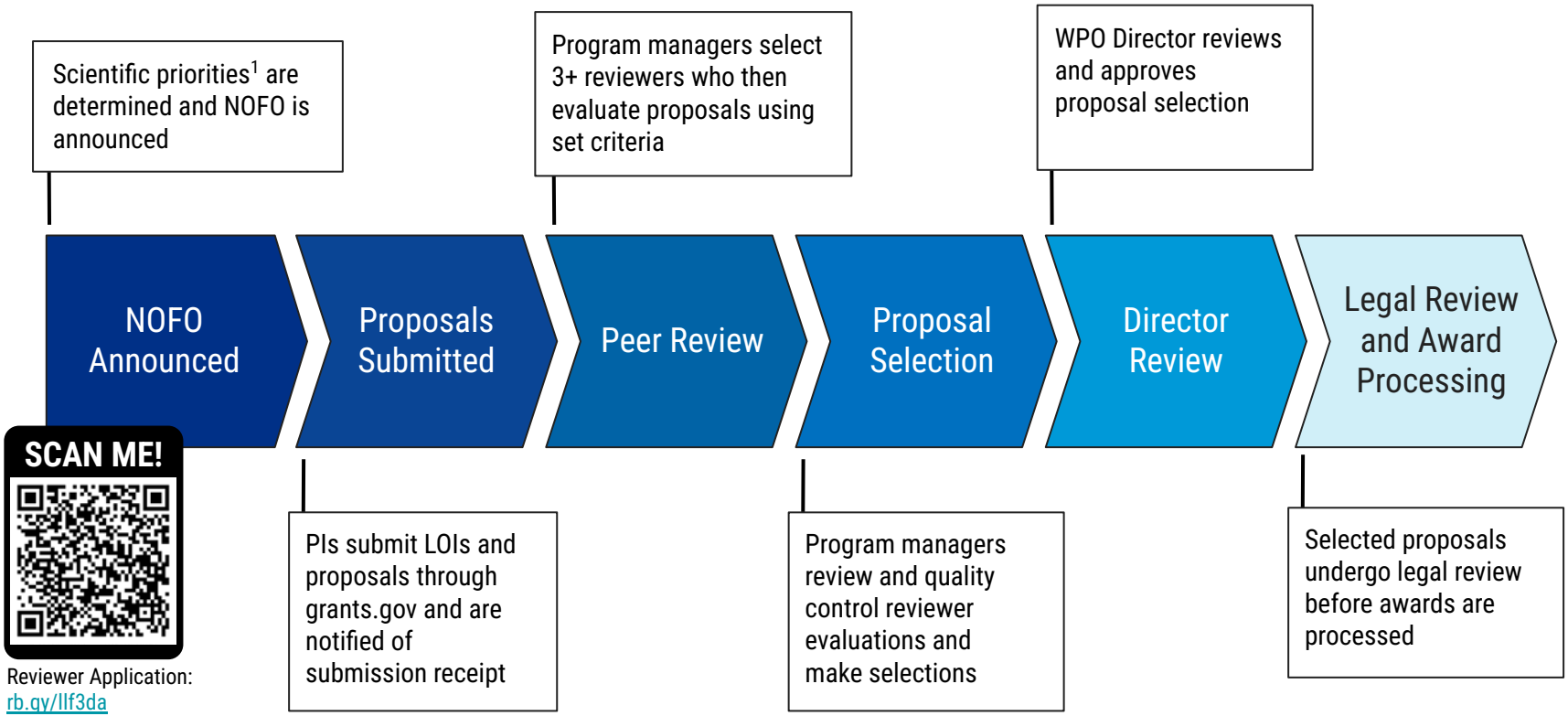


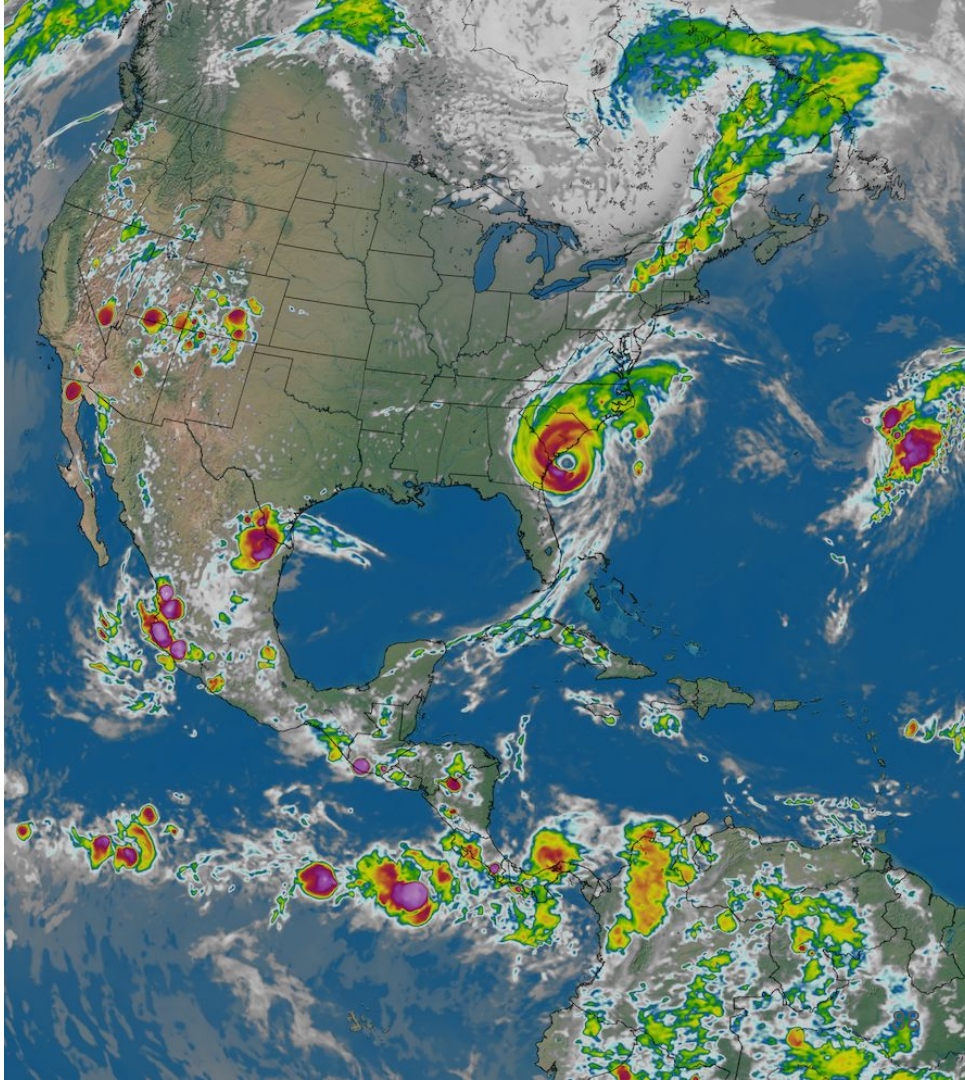
SCAN ME!

Reviewer Application: rb.gy/llf3da

LOOKING FORWARD: INNOVATE

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

- VORTEX-USA
- Observations
- Social & Behavioral Sciences
- Innovations for Community Modeling



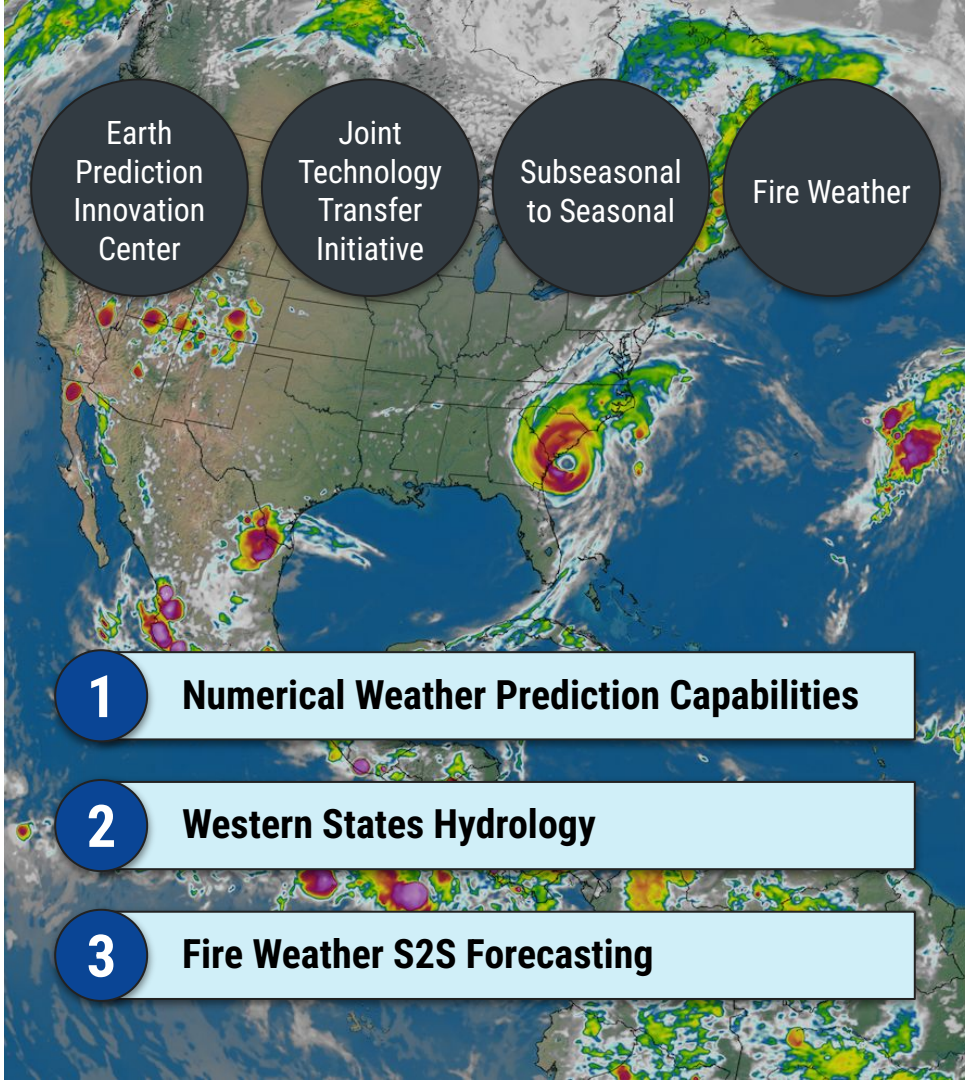
LOOKING FORWARD: INNOVATE

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



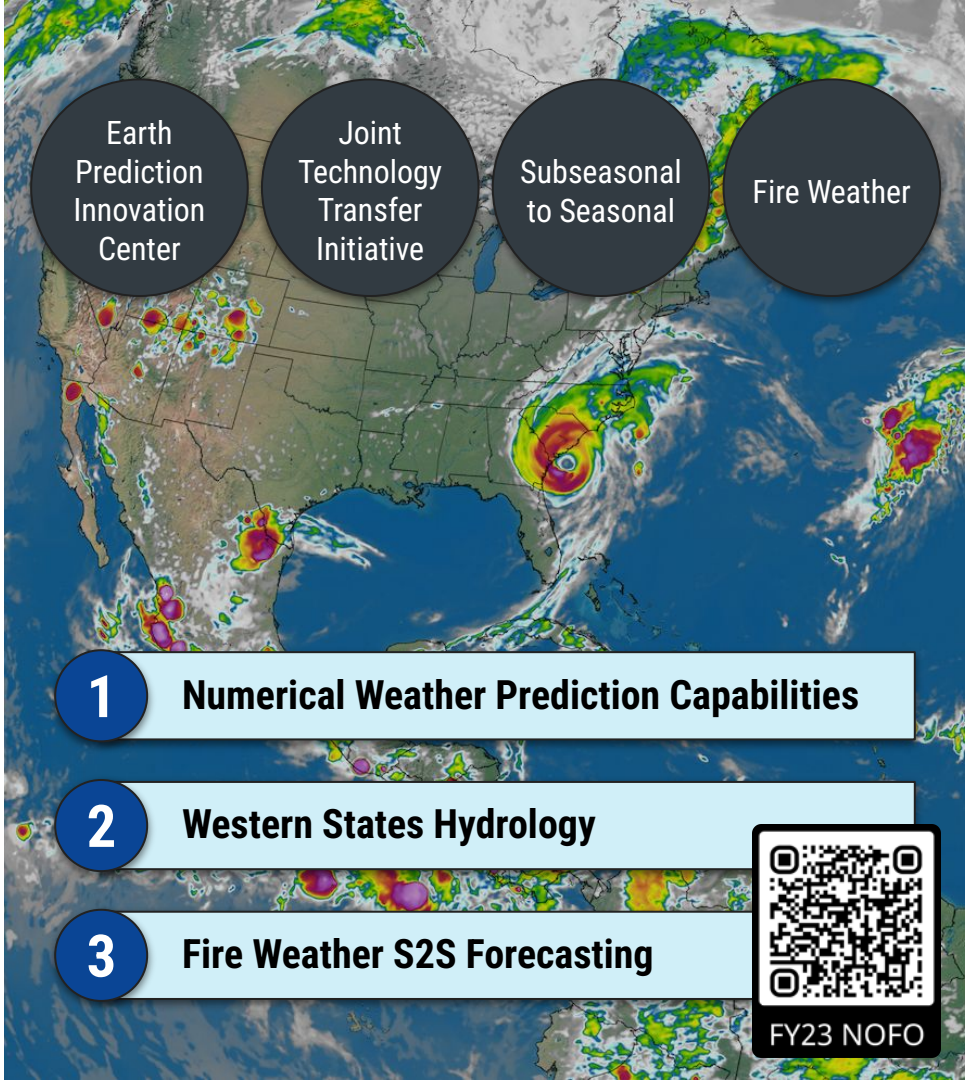
LOOKING FORWARD: INNOVATE

To qualify as innovative, proposals must:

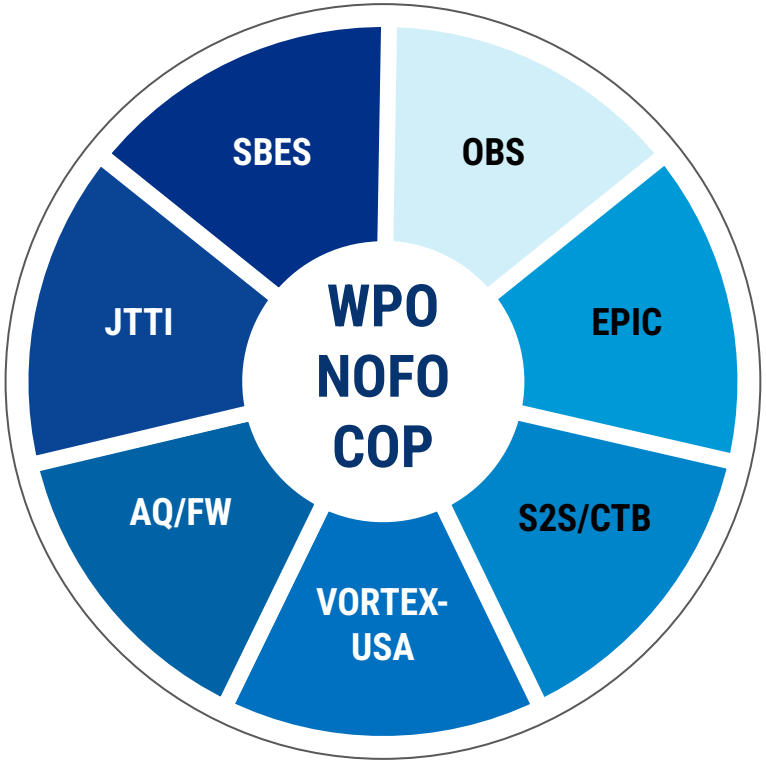
- Focus on substantially new approaches and not incremental changes,
- Focus on development of UFS systems that are expected to be implemented into operations in 5 years or later, or
- Make a compelling case for why and how introducing new systems into the UFS will advance forecast skill and efficiency.

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

Innovations for Community Modeling



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

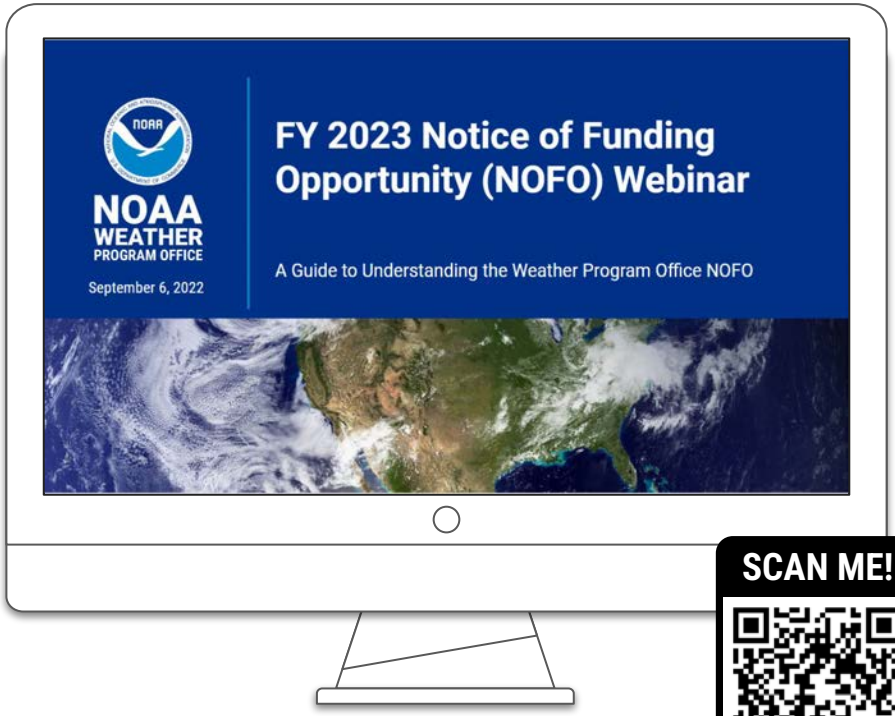
GOAL: Improve ability for advanced planning throughout the grants process

LOOKING FORWARD: NOFO Webinar

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

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

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



SCAN ME!

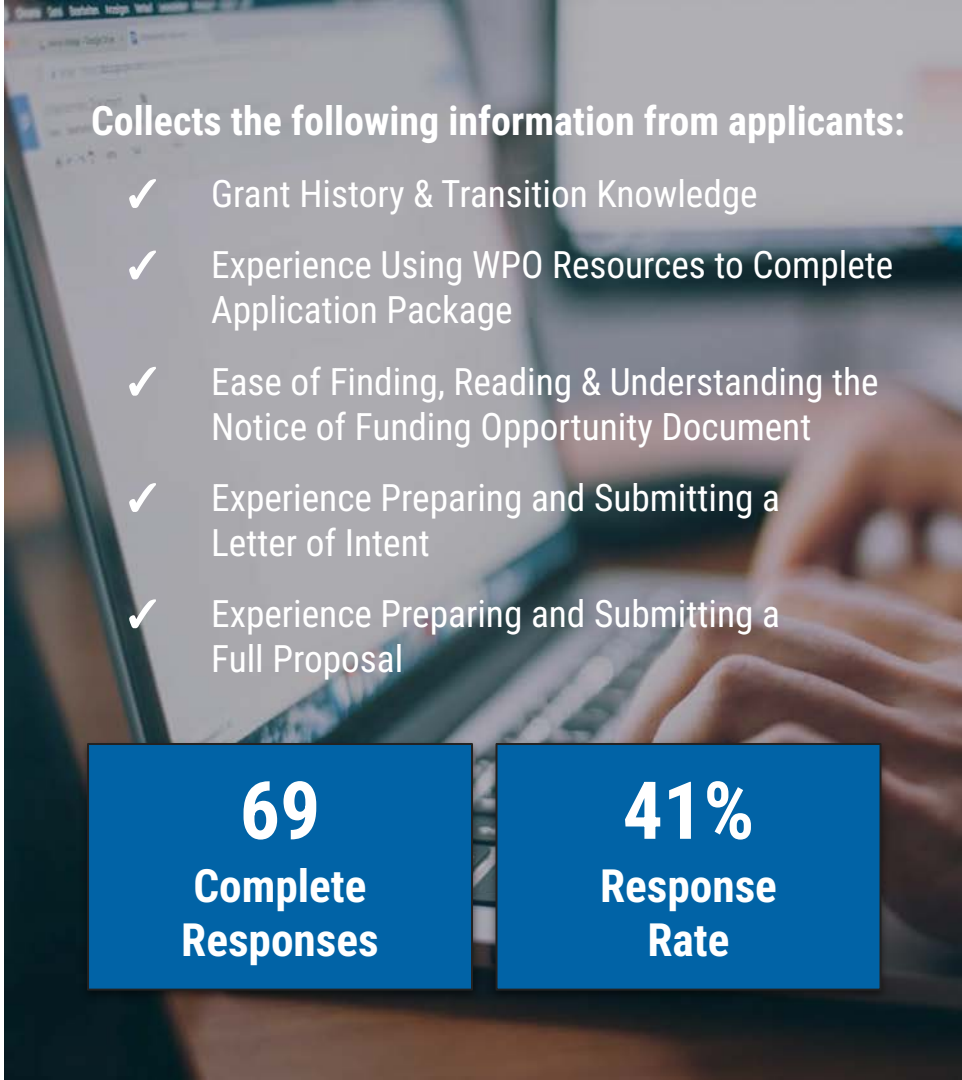
Webinar Link: rb.gy/feylzv

LOOKING FORWARD: ACES Survey

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

69
Complete Responses

41%
Response Rate


NOAA
WEATHER
PROGRAM OFFICE
THANK YOU
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Photo by Christine Bassett, 2019

NOAA WEATHER PROGRAM OFFICE

NOAA WEATHER PROGRAM OFFICE

January 24, 2023

Intern and Fellow Opportunities

Leah Dubots, Management and Program Analyst

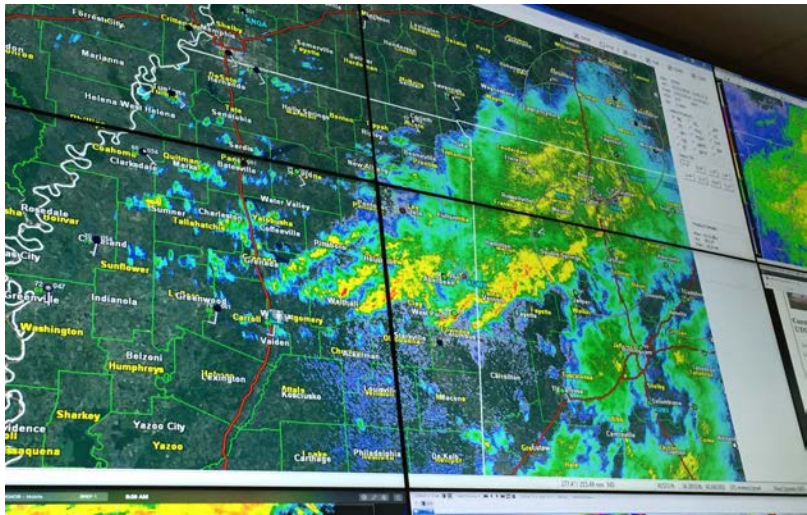
Activity Area 1: Organizational Excellence

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 wide range of weather-related topics, hosting interns:

- Provides assistance with accelerating projects;
- 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 Eosco.

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.

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

3 Pathways Interns, with **2** **transitioning to Federal employment**

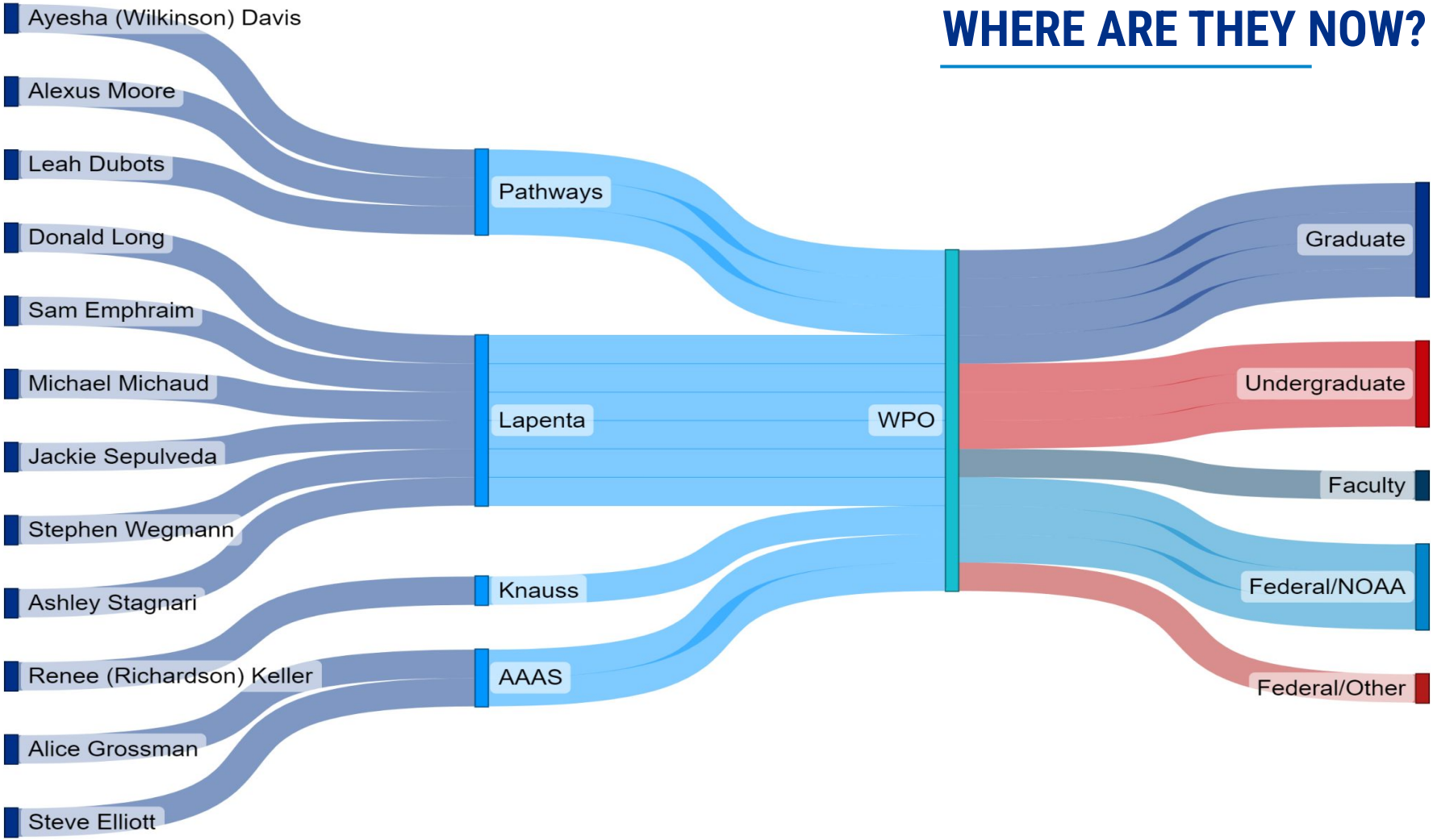
1 John A. Knauss Marine Policy Fellow, **hired in WPO**

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**

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

WHERE ARE THEY NOW?



HIGHLIGHTS


Pathways


Knauss


AAAS


Lapenta


STUDENT
OPPORTUNITIES
Opportunities for Advancement within the Weather Program Office

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

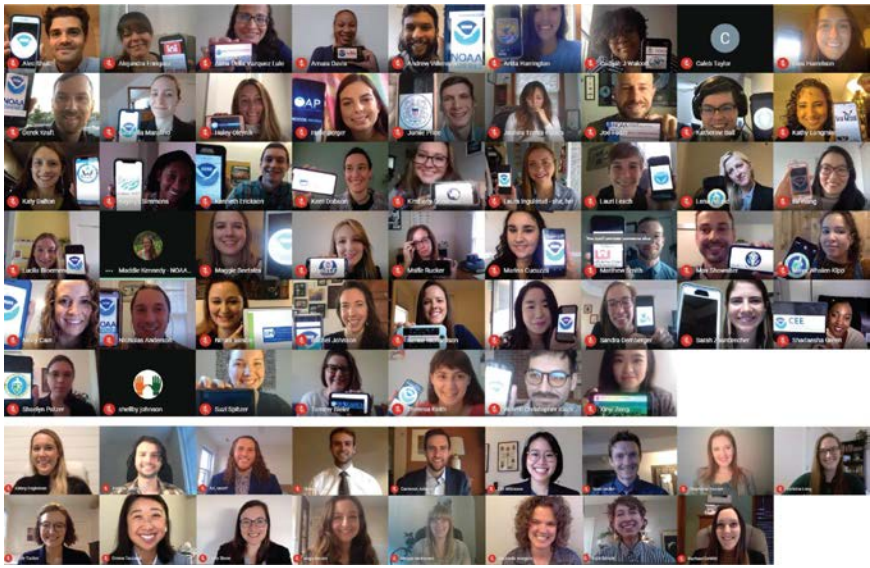
JACKIE SEPULVEDA, Undergraduate Student at Valparaiso University
B.Sc., Meteorology with a minor in Mathematics

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



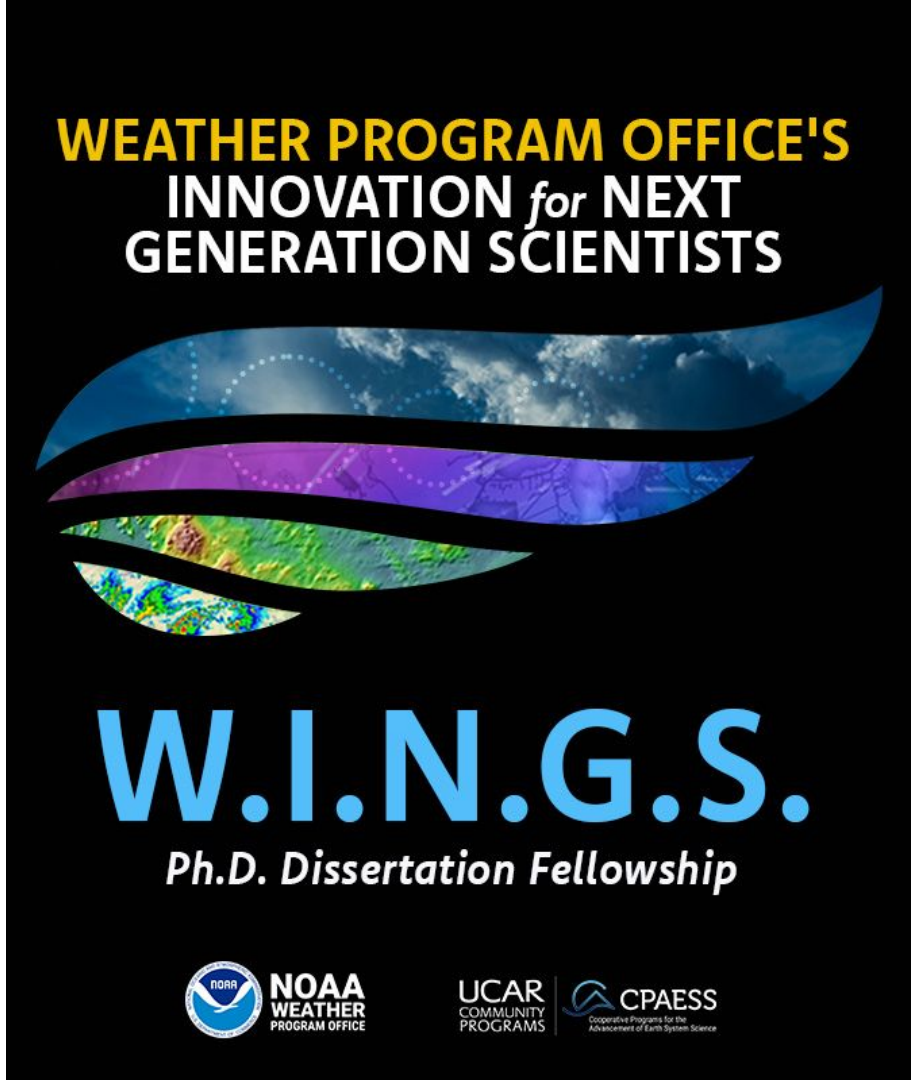
2021 Virtual Knauss Placement week photo

WPO's Renee (Richardson) Keller, Knauss Fellow placement week photo

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.*



NOAA WEATHER PROGRAM OFFICE

THANK YOU

wpo.noaa.gov

@NOAA_WPO

NOAA WEATHER PROGRAM OFFICE

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 + AI
- 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

University of Delaware
PhD Student, Disaster Science & Management

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