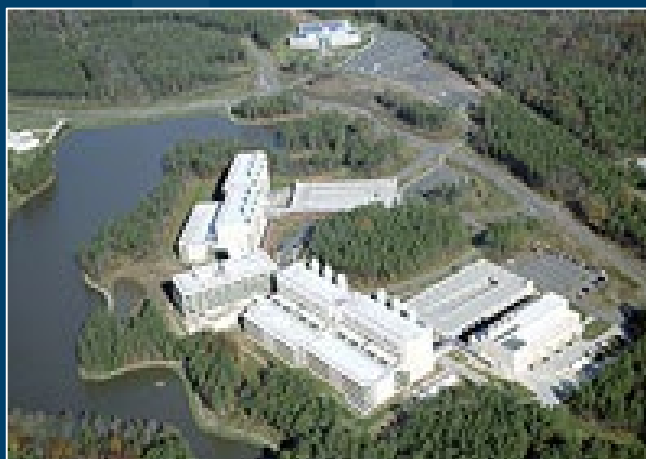


# Ensuring a Vibrant EPA-ORD S&T Workforce

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Associate Director for Science  
EPA Office of Research & Development

PCAST November 29, 2021



EPA-ORD Research Triangle Park



EPA-ORD Cincinnati



## EPA Office of Research and Development

### ORD Mission

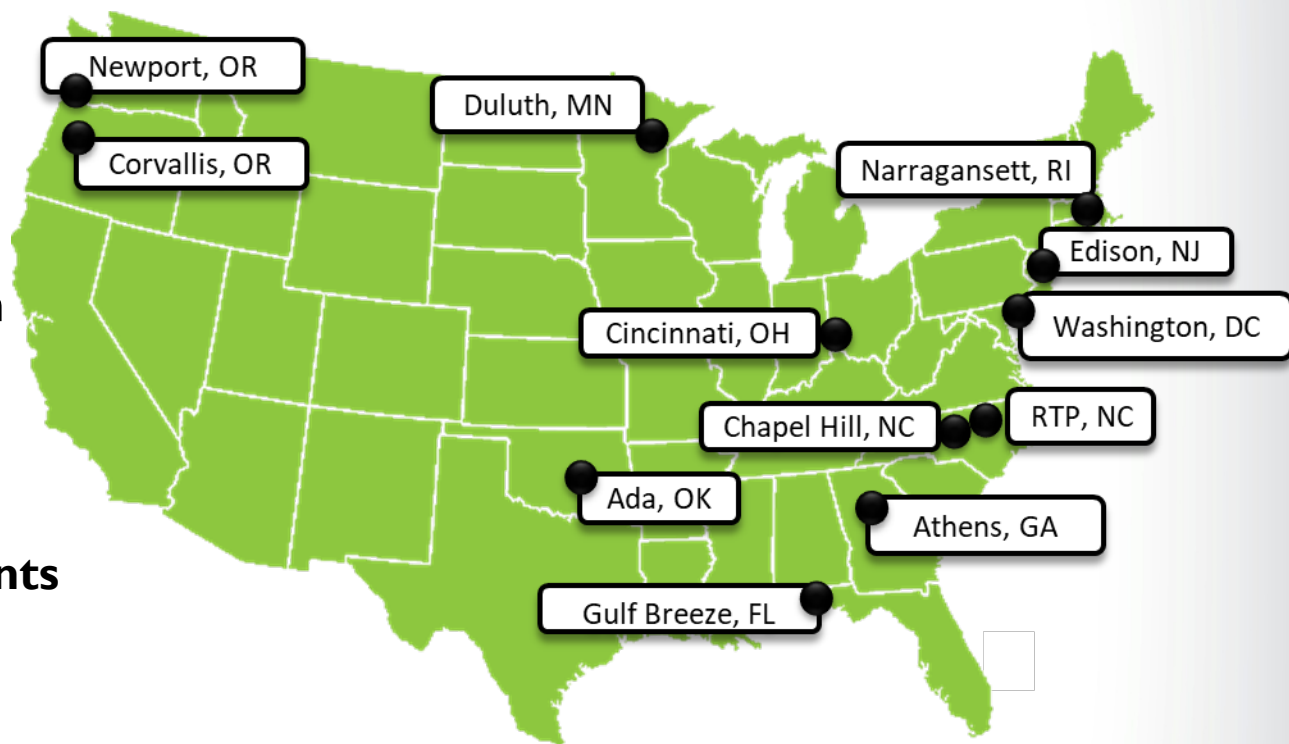
Provide the science, technical support, technology, and tools to inform U.S. EPA's mission to protect public health and the environment

**1,516 Full Time Equivalents**

**\$526 million budget**

**12 locations**

(FY 2021 Operating Plan)



EPA has even more scientists – PhD, Masters, Bachelors – across our regulatory Programs and 10 Regional Offices.



# ORD Research Coverage

## Air, Climate and Energy (ACE)

- Understanding Air Pollution and Climate Change and Their Impacts on Human Health and Ecosystems
- Responding to Risks and Impacts and Preparing for the Future

## Chemical Safety for Sustainability (CSS)

- Chemical Evaluation
- Complex Systems Science
- Knowledge Delivery and Solutions-Driven Translation to Support Chemical Safety Decision Making

## Homeland Security (HS)

- Contaminant Characterization and Risk Assessment
- Environmental Cleanup and Infrastructure Remediation
- Community Engagement and Systems-Based Tools Supporting Resilience Equity

## Human and Environmental Risk Assessment (HERA)

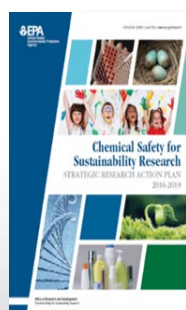
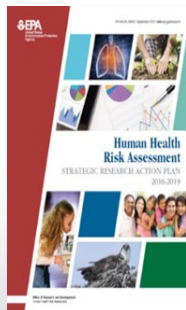
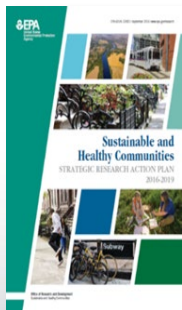
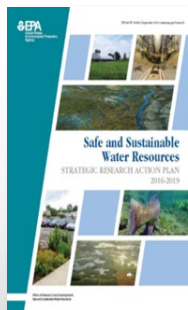
- Science Assessments and Translation
- Advancing the Science and Practice of Risk Assessment

## Safe and Sustainable Water Resources (SSWR)

- Watersheds
- Nutrients and Harmful Algal Blooms
- Water Treatment and Infrastructure

## Sustainable and Healthy Communities (SHC)

- Advancing Remediation and Restoration of Contaminated Sites
- Materials Management and Beneficial Reuse of Waste
- Integrated Systems Approach to Building Healthy and Resilient Communities



*FY 2019-2022 StRAPs  
available on EPA's website*

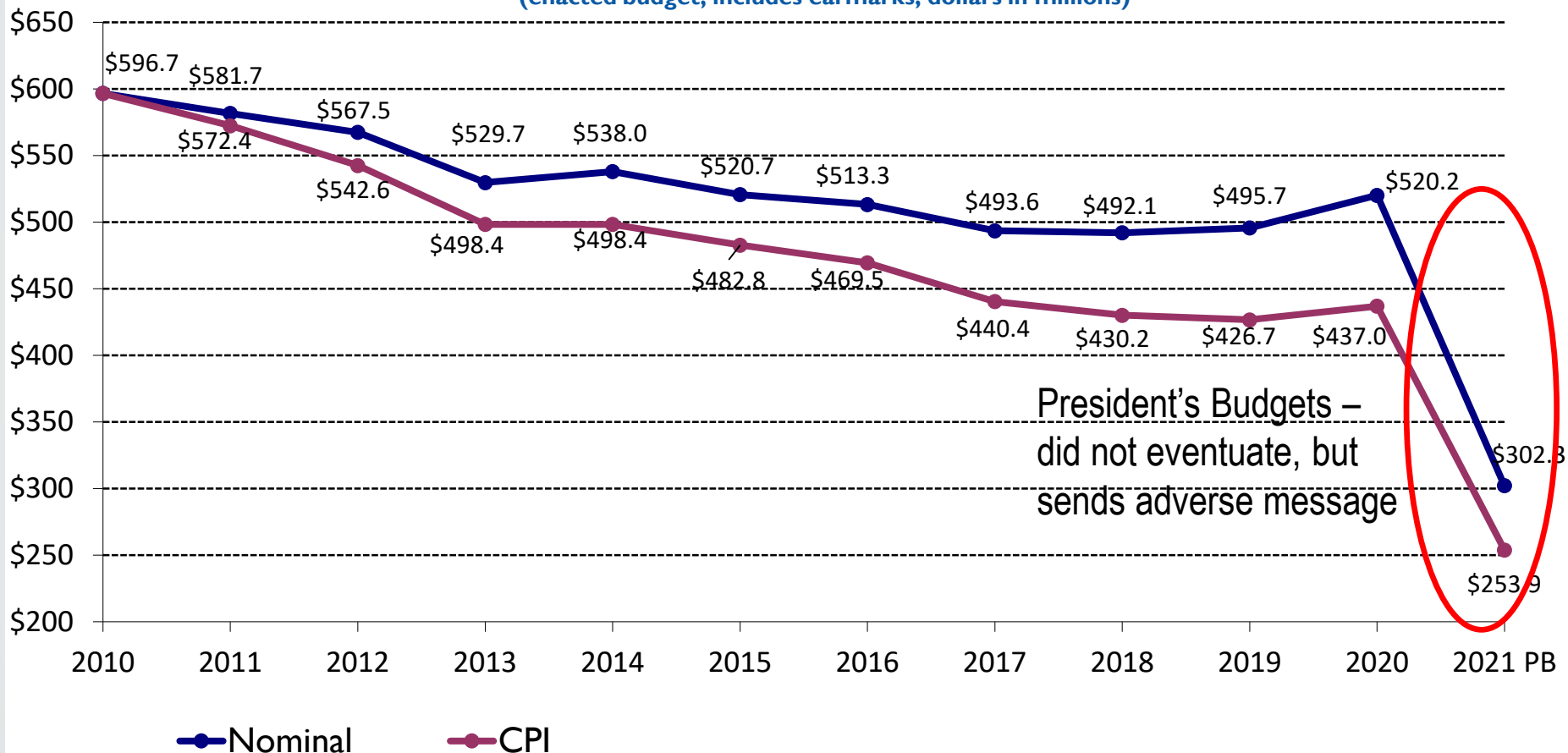
*FY 2023-2026 in planning*



# ORD Resource Trends with '21 Pres. Bud

## ORD Total Budget with Inflation Indices

(enacted budget, includes earmarks, dollars in millions)

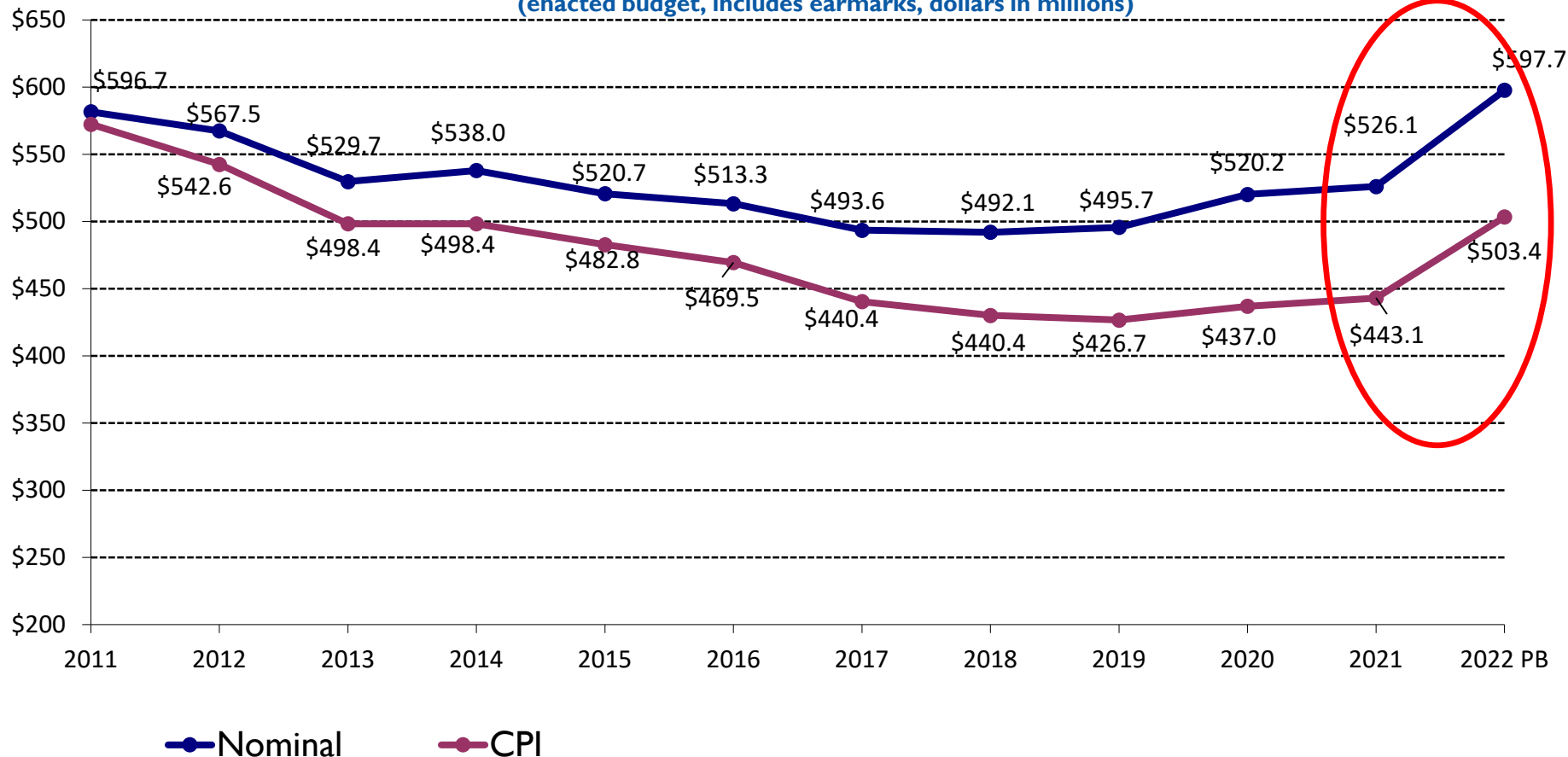




# ORD Resource Trends with '22 Pres. Bud

## ORD Total Budget with Inflation Indices

(enacted budget, includes earmarks, dollars in millions)

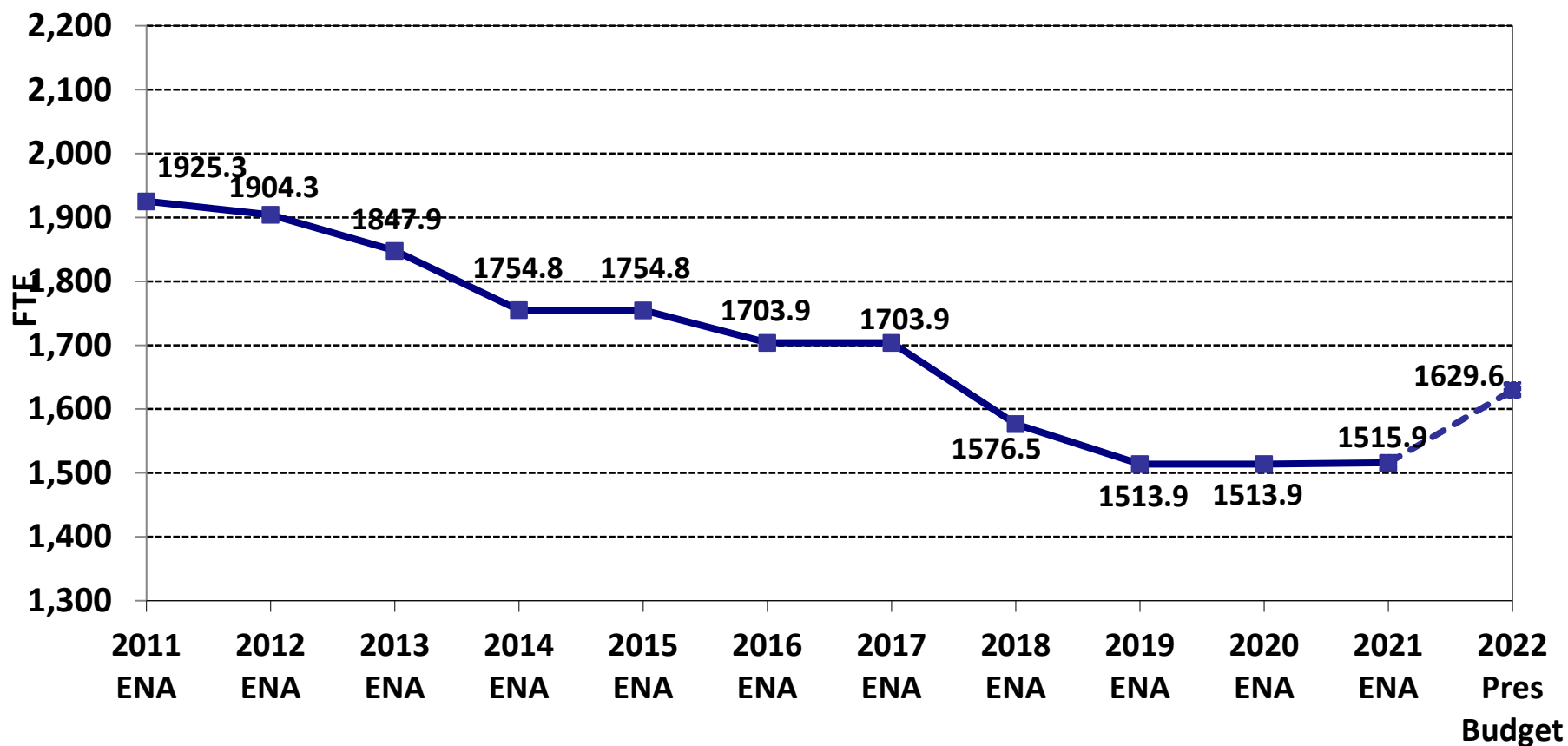


Source: Bureau of Labor Statistics: CPI Inflation Calculator



# ORD FTE Trend

## ORD FTE, FY 2011 to FY 2022

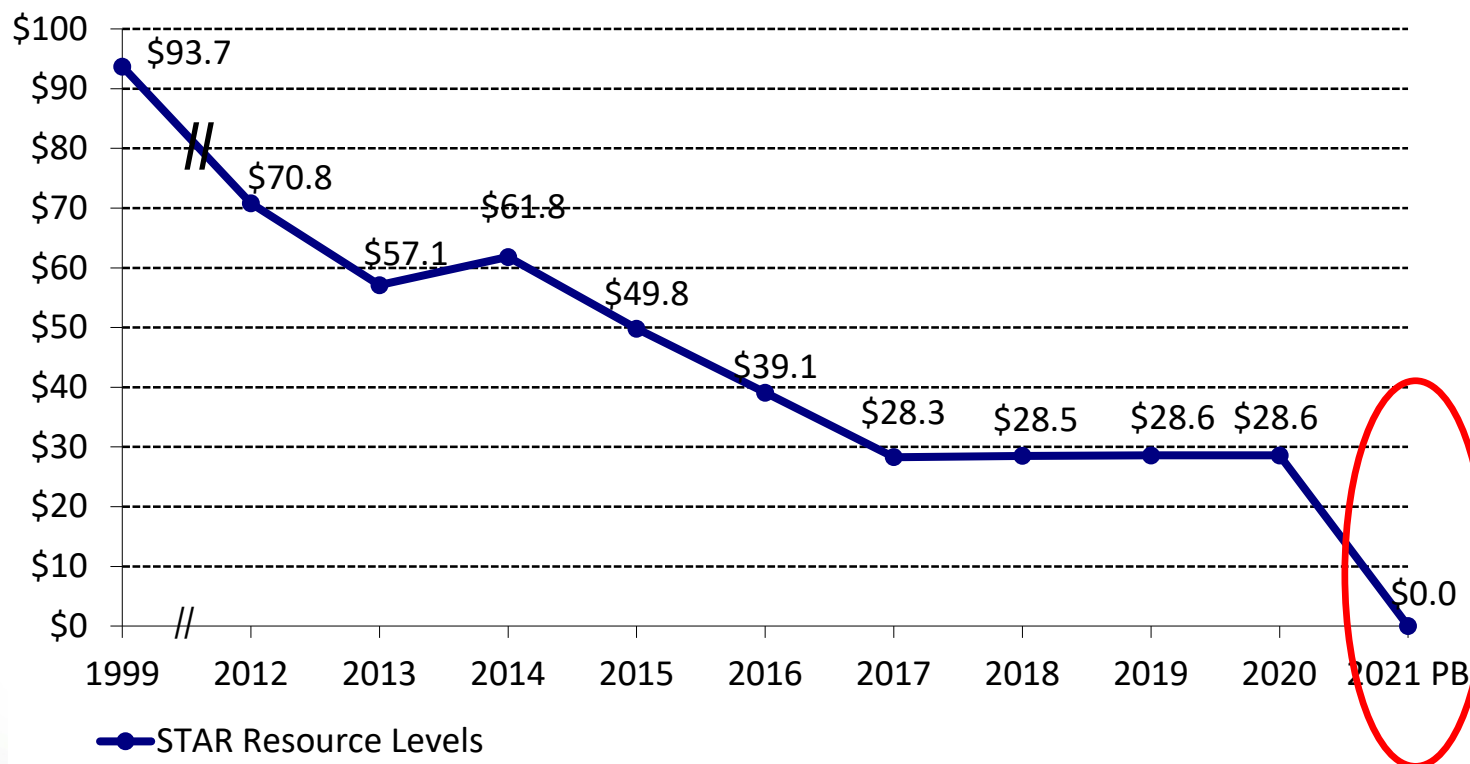




# STAR Grants Resources

## ORD's Science to Achieve Results (STAR) Grants Budget

(dollars in millions)



// - Denotes non-linear changes in resources between 1999-2011.

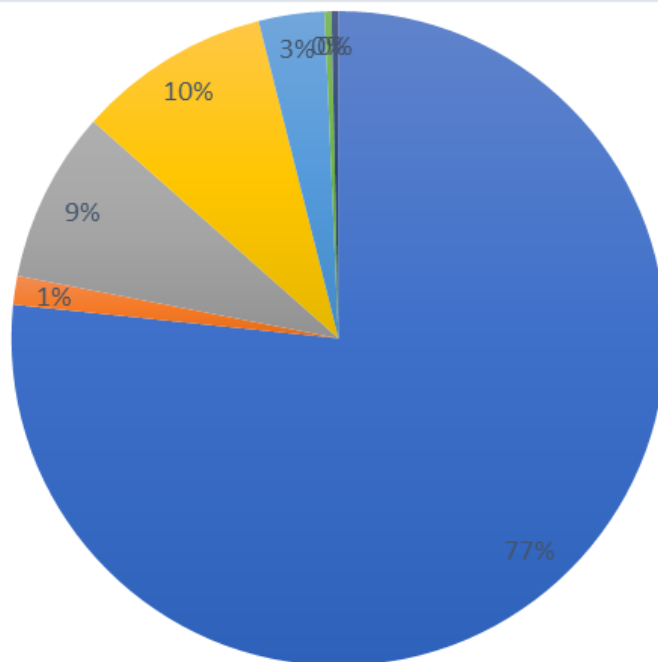


## ORD Diversity (August 2021)

	Total	Percent of Total	%Female
<b>ORD Total FTE</b>	1477	100.0	47.6
<b>White</b>	<u>1132</u>	76.6	45.2
<b>American Indian or Alaska Native</b>	21	1.4	42.9
<b>Asian</b>	125	8.5	46.4
<b>Black or African American</b>	141	9.5	65.2
<b>Hispanic or Latino</b>	48	3.2	56.3
<b>None Specified</b>	5	0.3	40
<b>Two or More Races</b>	5	0.3	60

### ORD Workforce

- White
- American Indian or Alaska Native
- Asian
- Black or African American
- Hispanic or Latino
- None Specified
- Two or More Races







## ORD's Current Retirement Eligibility

- 26% of ORD staff are currently fully retirement eligible.
- Highest eligibility concentrations are in the following series families:
  - 50%: 0000 – SHEM/EPS (safety, health, environmental management)
  - 38%: 1600 – Facilities & Services
  - 37%: 0800 – Engineering
  - 34%: 1500 – Mathematical Sciences/Statistics
  - 29%: 1300 – Physical Sciences
  - 28%: 0300 – Administrative/Office
  - 27%: 0400 – Eco/Biological Sciences
  - 20%: 0500 – Accounting/Budget
  - 13%: 2200 – Information Technology
  - 11%: 0600 – Medical/Public Health



## ORD's Pathways and Post Docs

In the GS pay plan, in addition to special hiring authorities (Veterans, Schedule A, direct hiring), ORD also has GS staff on term appointments including:

- Pathways Interns/Trainees
- Presidential Management Fellows
- Schedule R Post-Doctoral (Post Doc)

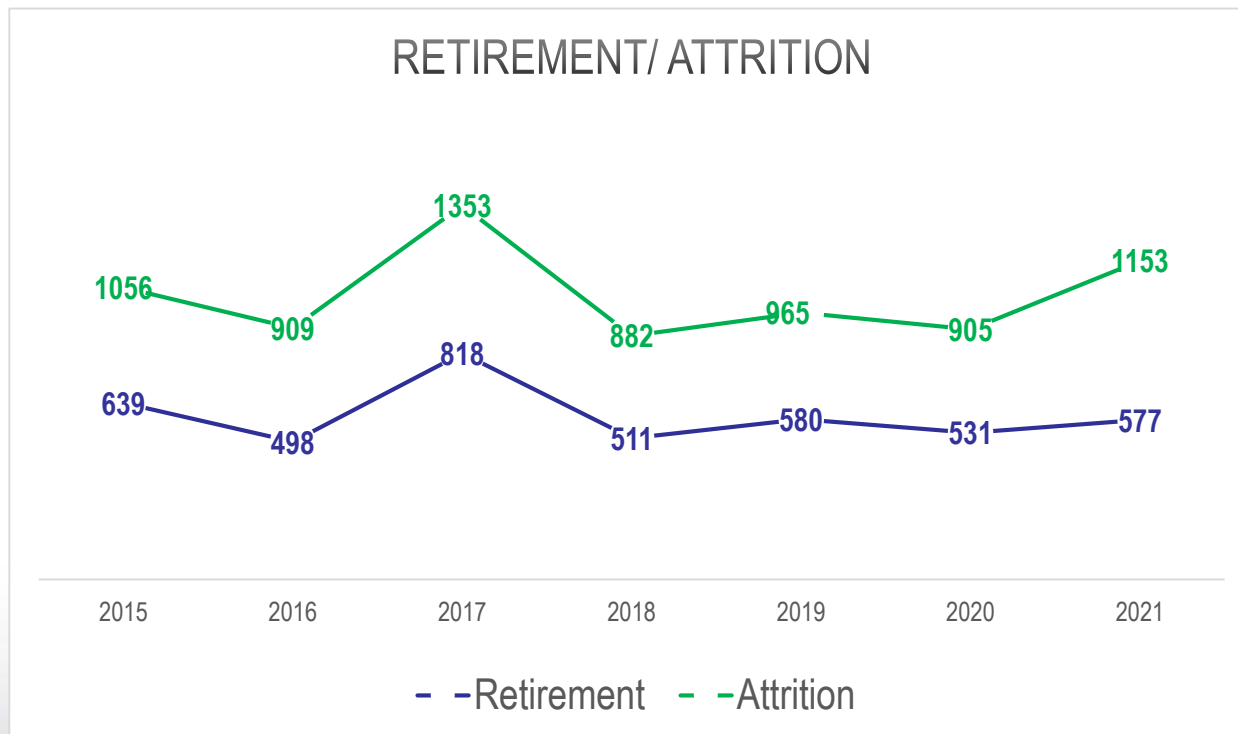
<b>Appointment Types by Series Families</b>	<b>Count</b>
<b>Pathways Other</b>	<b>8</b>
0300 - Admin/Office/Org Service	1
0400 - Natural Resources Mgmt/Biology	4
1300 - Physical Sciences	3
<b>Pathways PMF</b>	<b>1</b>
0400 - Natural Resources Mgmt/Biology	1
<b>Post Doc Appointment</b>	<b>59</b>
0100 - Social Sciences/Psychology/Welfare	7
0400 - Natural Resources Mgmt/Biology	26
0600 - Medical/Health	1
0800 - Engineering	9
1300 - Physical Sciences	16
<b>Grand Total</b>	<b>68</b>

ORD also contracts with the Oak Ridge Institute for Science and Education (ORISE) regarding PostDoctoral and other Fellowship training opportunities



# EPA S&T FTE Attrition Rate

- EPA's annual employee attrition rate is generally about 5% to 6%
- Since FY15, retirements account for 58% of the Agency's attrition
  - 24% of the Agency is eligible
  - 33% of supervisors
  - 44% of Senior Executive Service (SES)





# Expansion of EPA Direct Hire Authority

**Approximately 14% of EPA new hires annually are brought on through Direct Hire Authority (DHA).**

- In order for the Agency to meet its appropriated ceiling, and to hire the new talent required to meet its mission, EPA faces the challenge of recruiting specialized scientists and engineers who are difficult to recruit into federal service.

**EPA proposes the following additions (in red) to the Current DHA Covered Positions**

Position Title	Occupational Series	Grade Levels
<b>STEM (Scientific, Technical, Engineering, and Mathematics)</b>		
Economist	GS-0110	11-15
Biological Science	GS-0401	
<b>Microbiology</b>	<b>GS-0403</b>	
<b>Toxicology</b>	<b>GS-0415</b>	
Fishery Biologist	GS-0482	
General Engineer	GS-0801	
Civil Engineer	GS-0810	
<b>Environmental Engineer</b>	<b>GS-0819</b>	
<b>Mechanical Engineer</b>	<b>GS-0830</b>	
Nuclear Engineer	GS-0840	
Bioengineering and Biomedical Engineering	GS-0858	
Mining Engineering	GS-0880	
Petroleum Engineering	GS-0881	
<b>Chemical Engineering</b>	<b>GS-0893</b>	
Physical Sciences	GS-1301, 1306, 1310, 1320 only	
Geology	GS-1350	
Actuary	GS-1510	
Mathematics	GS-1520	
Mathematical Statistician and Statistician	GS-1529, 1530	
Acquisitions	GS-1102	



## Ensuring a Vibrant EPA S&T Workforce - I

- **Recognize “regulatory science” as critical to national prosperity**
  - Federal researchers and scientists have the ability to directly influence beneficial change for the Nation.
  - Proximity to decision makers increases impact ... and scrutiny.
- **Reverse declines, depoliticize support for research**
  - Adequate resourcing (\$, FTE) is essential for responding to increasing science opportunities and the need to protect human health and the environment.
  - ORD budget lines are set by Congress and must pay for facilities, salaries, and laboratory expenses within the cap; OMB sets FTE limits.
- **Encourage predictability of budget and personnel numbers**
  - Predictability facilitates planning, recruitment, hiring, and retention.
  - ORD’s predominantly intramural research program has long timelines – our research staff have long and productive careers with EPA, with many now eligible to retire.
  - ORD needs to replace this lost expertise, and also anticipate and follow science advances into emerging priority fields, such as social sciences, synthetic biology, artificial intelligence, etc.



## Ensuring a Vibrant EPA S&T Workforce - 2

- **Increase the S&T pipeline:** Future hiring, including DEI, in environmental science disciplines will benefit from an expanded S&T workforce, commencing with support for high school, college, and graduate students.
- **Empower S&T recruitment:** EPA/ORD recruitment and retention of scientists must compete with a dynamic private and academic sector – competition on salaries and nimbleness/speed in recruitment.
- **Expand T42 and Direct Hire Authorities:** Title 42 authority allows for direct hire, competitive salaries, and term appointments to compete for high-demand science disciplines.
  - Current Congressional appropriations request to increase ORD T42 to 75 FTE cap, with a new 25 T42 for the Office of Chemical Safety and Pollution Prevention. T42 authority for EPA is still not permanent.
- **Diversity, Equity, Inclusion:** EPA/ORD needs to encourage ... and will benefit from ... an increased pipeline and advancement opportunities for DEI scientists.
  - Core disciplines
  - Solutions-driven research, community science, outreach, and communication.

# Thank you!

**Bruce Rodan**

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