

**THURSDAY, FEBRUARY 16, 2023**  
**RESEARCH, INNOVATION & STRATEGIC PARTNERSHIPS COMMITTEE MEETING**

Lewis Von Thaeer, chair  
Reginald A. Wilkinson  
Alexander R. Fischer  
Juan Jose Perez  
Tanner Hunt  
Phillip Popovich  
Hiroyuki Fujita (*ex officio*)

Location: Sanders Grand Lounge, Longaberger Alumni House  
2200 Olentangy River Rd, Columbus, Ohio 43210

Time: 1:00 – 2:30pm

**Public Session**

*ITEMS FOR DISCUSSION*

1. *Committee Chair's Remarks – Mr. Lou Von Thaeer* 1:00-1:05pm
2. *Highlights of New Research, Innovation and Knowledge Quarterly Updates – Dr. Grace Wang* 1:05-1:15pm
3. *Research and Development Expenditures Update - Dr. Peter Mohler* 1:15-1:25pm

ITEM FOR ACTION

4. Approval of November 2022 Committee Meeting Minutes – Mr. Lou Von Thaeer 1:25-1:30pm

**Executive Session**

1:30-2:30pm

# Research, Innovation and Knowledge – Update

Grace Wang

Executive Vice President



**FY2021 Annual R&D Expenditures: \$1.236 Billion**

**Ranking: #12 among all U.S. universities**

Source: NSF Higher Education Research and Development Survey

# Dr. Grejner-Brzezinska appointed to National Science Board

The National Science Board establishes the policies of the National Science Foundation and serves as an advisor to Congress and the President of the United States.



**Dorota Grejner-Brzezinska**  
Vice President for Knowledge Enterprise

# Two faculty members inducted into National Academy of Inventors



**Jianrong Li**  
Professor, Virology  
College of Veterinary Medicine



**Peixuan Guo**  
Sylvan G. Frank Endowed Chair in  
Pharmaceutics and Drug Delivery  
College of Pharmacy

# Four faculty members inducted into American Association for the Advancement of Science



**Antonio J. Conejo**  
Professor, Integrated  
Systems Engineering



**Amy Fairchild**  
Dean, College of  
Public Health

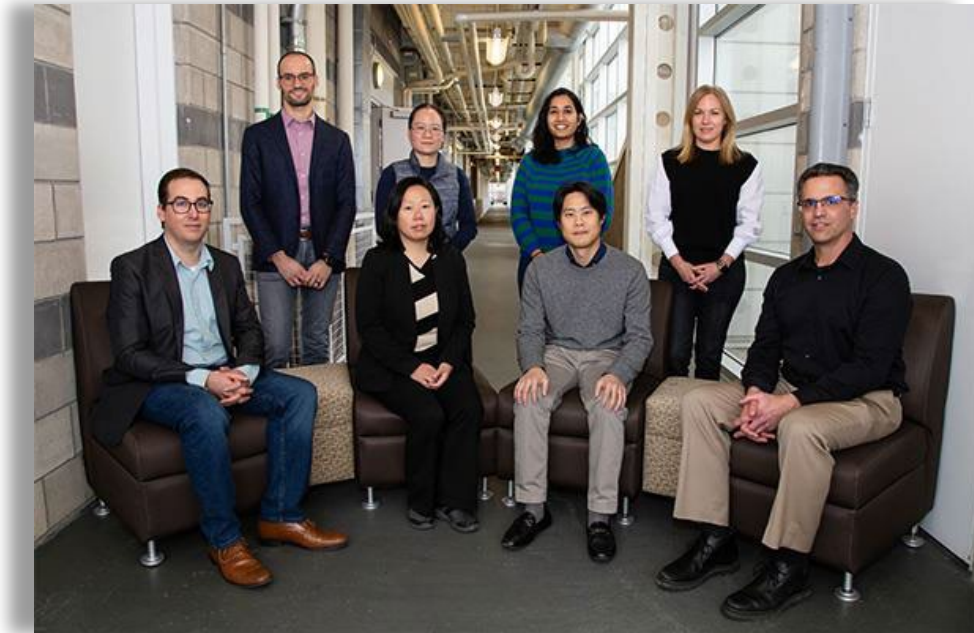


**Mohit Randeria**  
Professor, Physics



**Laura Wagner**  
Professor, Psychology

# Team awarded funding to improve electric vehicle batteries



Anne Co et al

Professor, Chemistry and Biochemistry  
College of Arts and Sciences

U.S. Dept of Energy awarded team \$3.8 million to support the development of more affordable and efficient electric vehicle batteries.



# How the last 12,000 years have shaped what humans are today



Special feature in the journal *Proceedings of the National Academy of Sciences*, led by Professor of Anthropology **Clark Spencer Larsen**, details how many of today's major societal issues have ancient roots.



# Midwest Semiconductor Network adds new members

The Ohio State University  
Bowling Green State University \*  
Case Western Reserve University  
Central State University \*  
Clark State College \*  
Columbus State Community  
College  
Illinois Institute of Technology  
Ivy Tech Community College  
Kent State University \*

Lorain County Community  
College  
Miami University  
Michigan State University  
Oakland University \*  
Ohio University  
Purdue University  
Sinclair Community College  
University of Akron \*  
University of Chicago  
University of Cincinnati

University of Dayton  
University of Illinois Urbana-  
Champaign \*  
University of Louisville \*  
University of Michigan  
University of Notre Dame  
University of Toledo  
Wayne State University \*  
Wright State University  
Youngstown State University

\* New members added since November Board Meeting update

# Efforts to improve research integrity recognized



Bridget Carruthers et al  
Associate Director  
Office of Research Compliance

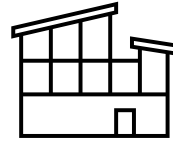
Supported by the U.S. Dept of  
Health and Human Services

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# Strategic Priorities



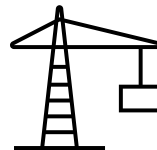
Enable Curiosity-Driven Discoveries and Creative Expression



Build Large-Scale, Interdisciplinary Research and Innovation Centers



Nurture Innovation and Entrepreneurship



Design and Develop Carmenton



# **Accelerating Impact and Improving Rankings: Research Expenditures Highlights**

Peter Mohler  
Vice President for Research

# Why Research Expenditures Matter



- Influences university's national reputation
- Strengthens university's relationship with government and industry partners
- Impacts formation of and participation in interdisciplinary university consortiums
- Influences faculty recruitment efforts as well as student and fellow recruitment
- Impacts regional economic development efforts and state innovation environment

**Success begets success**





# Higher Education Research & Development Survey: HERD

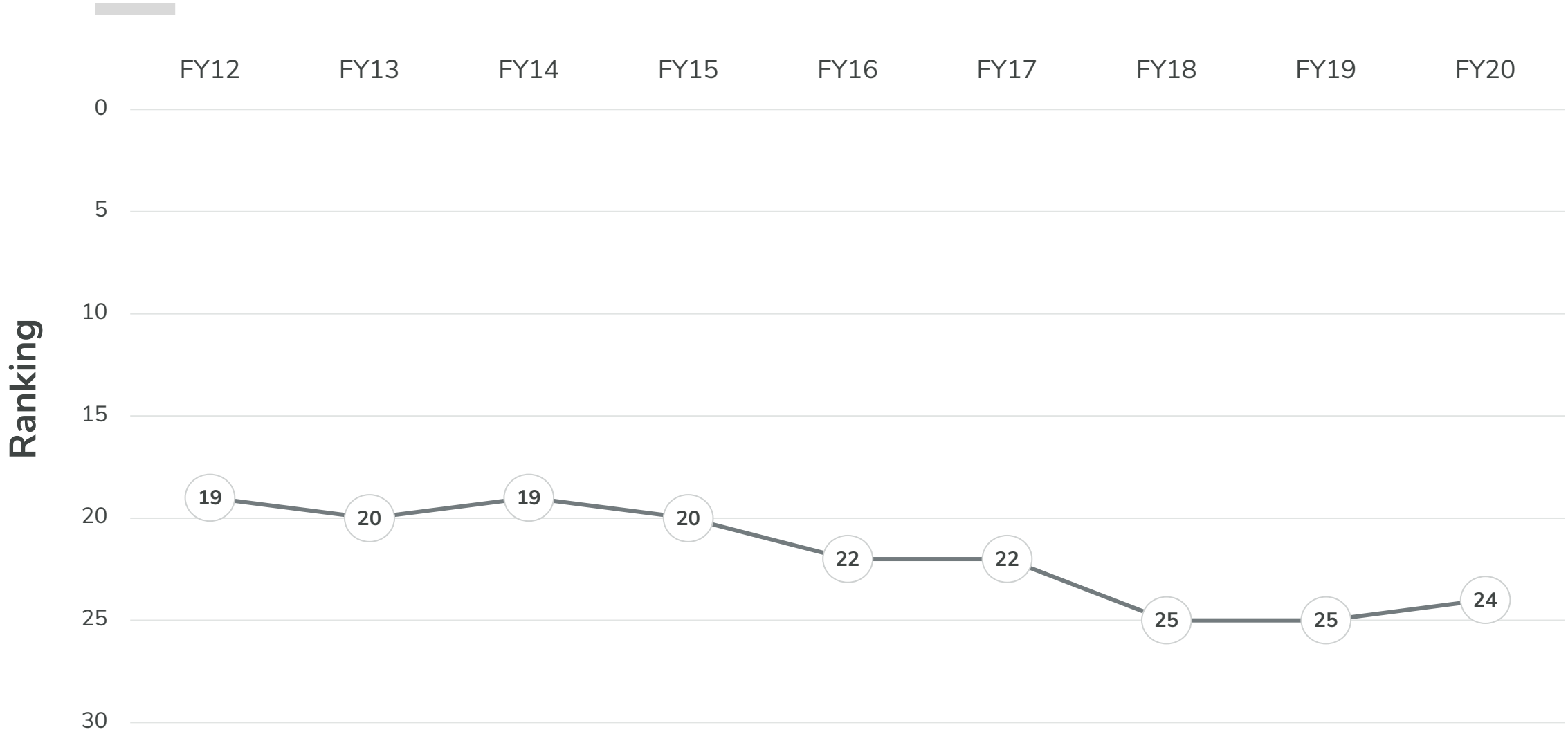
Conducted by the National Science Foundation, the survey ranks institutions based on fiscal year research and development expenditures.

*The primary source of information on R&D expenditures at U.S. colleges and universities*

Collects data on R&D expenditures by field of research, source of funds and R&D personnel headcounts

Based on work from prior fiscal year (FY21 rankings published in Dec. 2022)

# Ohio State's Historical R&D Ranking



Source: Higher Education Research and Development: Fiscal Years 12-21. <https://www.nsf.gov/statistics/srvyherd/#tabs-2&tools&tabs-2>. December 2022.

# **FY 21 Record-Setting R&D Expenditures**

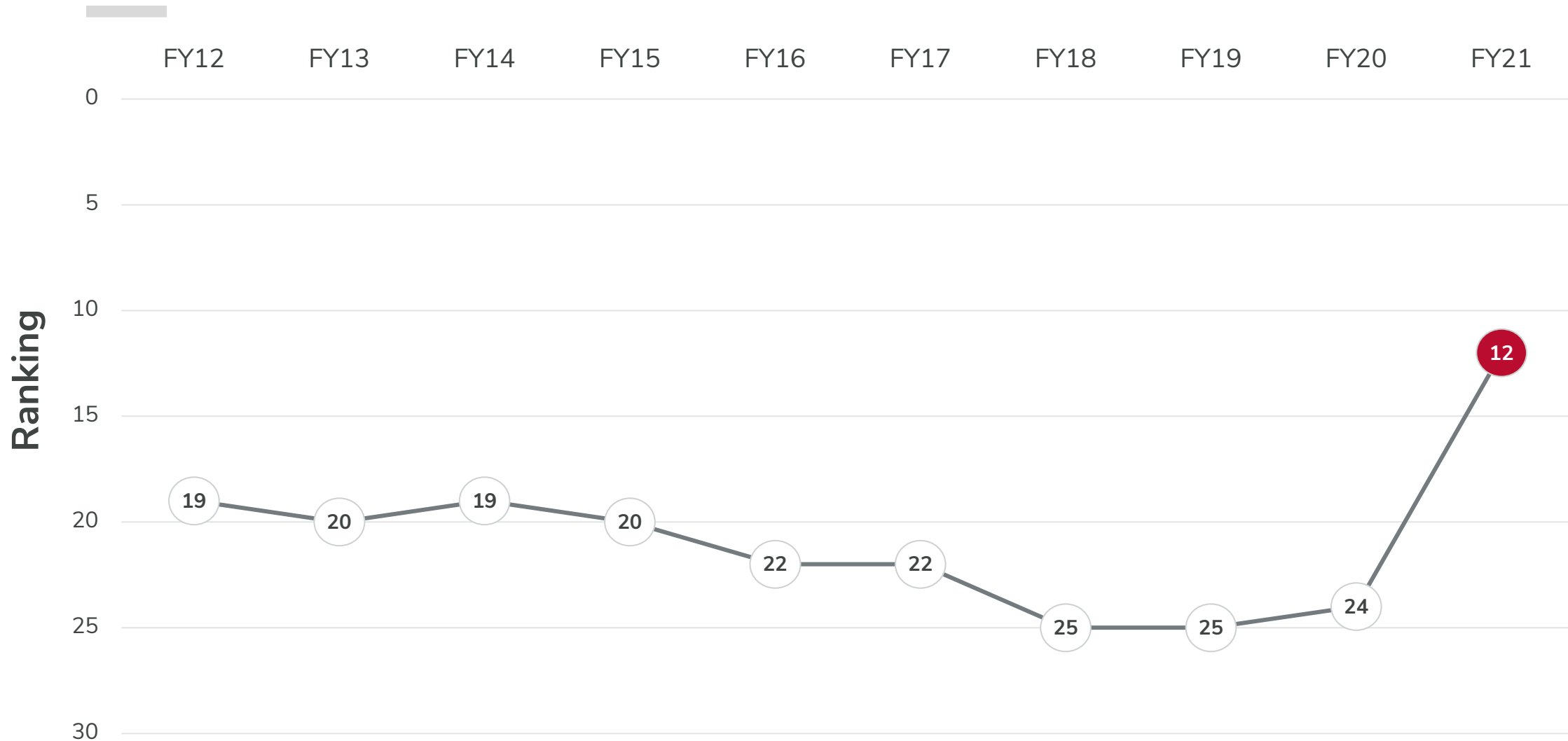
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**\$1.236 Billion**

Ohio State's Total  
Research & Development Expenditures  
Fiscal Year 2021



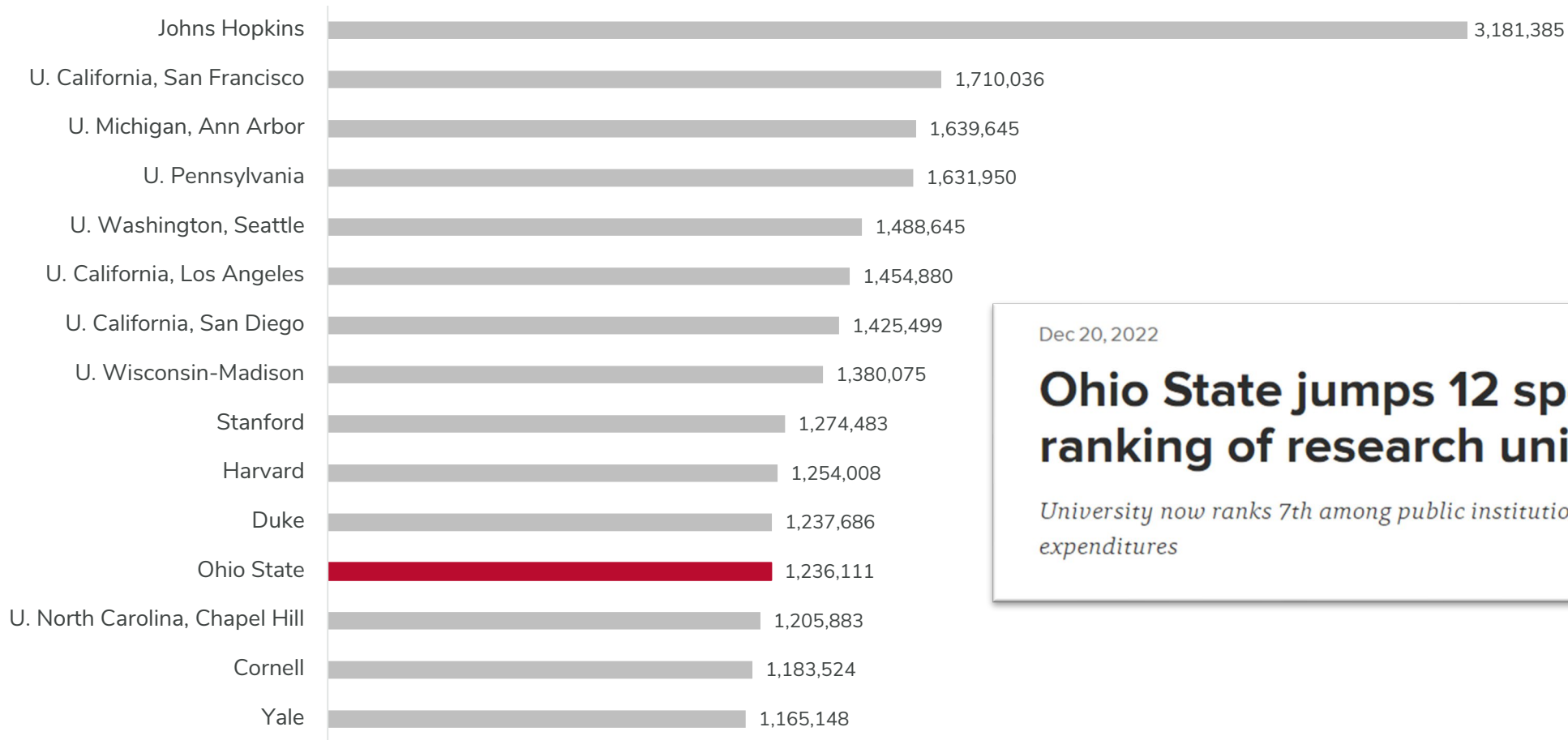
# Ohio State jumps 12 places in R&D Ranking



Source: Higher Education Research and Development: Fiscal Years 12-21. <https://www.nsf.gov/statistics/srvyherd/#tabs-2&tools&tabs-2>. December 2022.

# FY21 National Rankings

Overall research and development expenditures across all universities  
HERD Survey, December 2022



Dec 20, 2022

## Ohio State jumps 12 spots in national ranking of research universities

*University now ranks 7th among public institutions, 12th overall, in research expenditures*



# Ohio State sets new R&D expenditure record in FY22

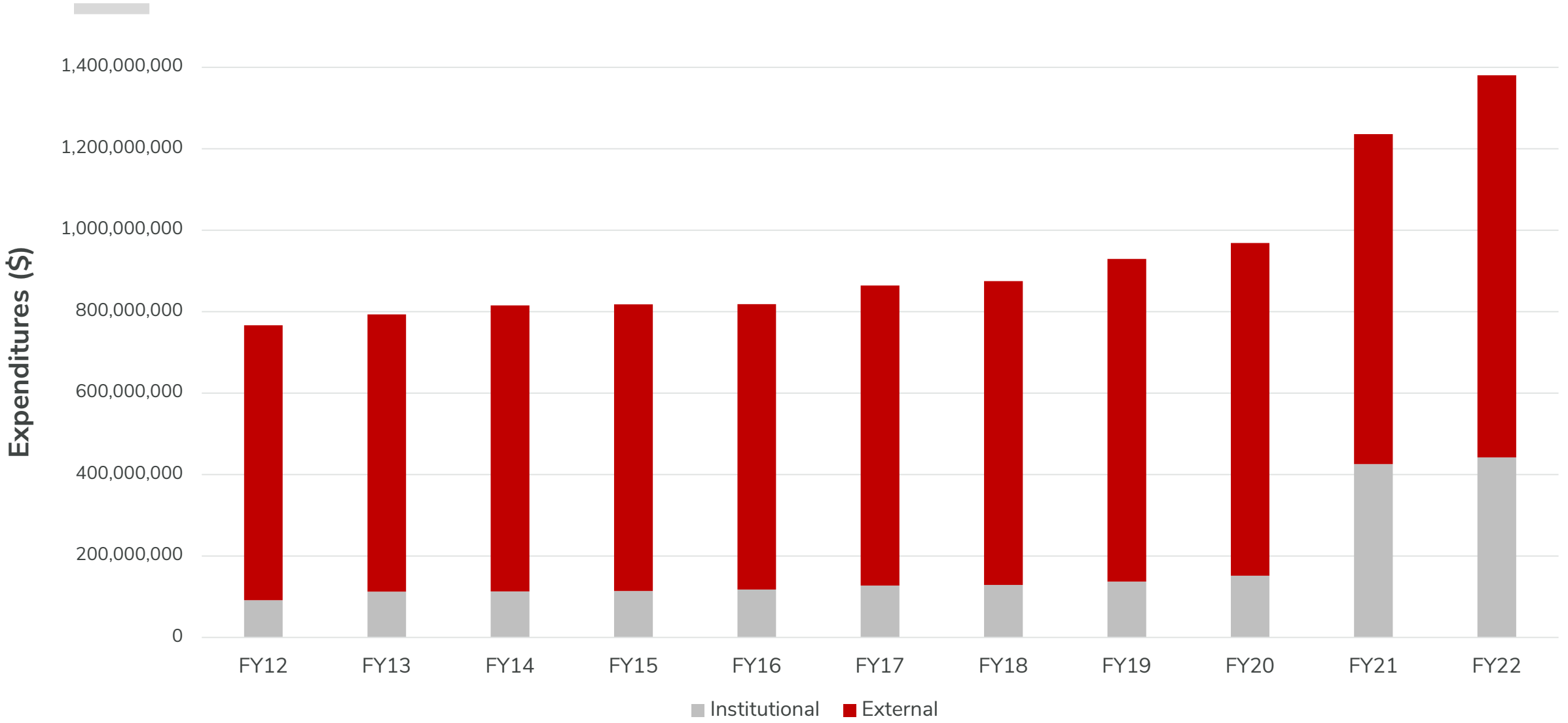
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**\$1.38 Billion\***

Ohio State's Total  
Research & Development Expenditures  
Fiscal Year 2022

\*As reported to the National Science Foundation (NSF) Higher Education Research and Development (HERD) survey.  
Preliminary data and subject to change.

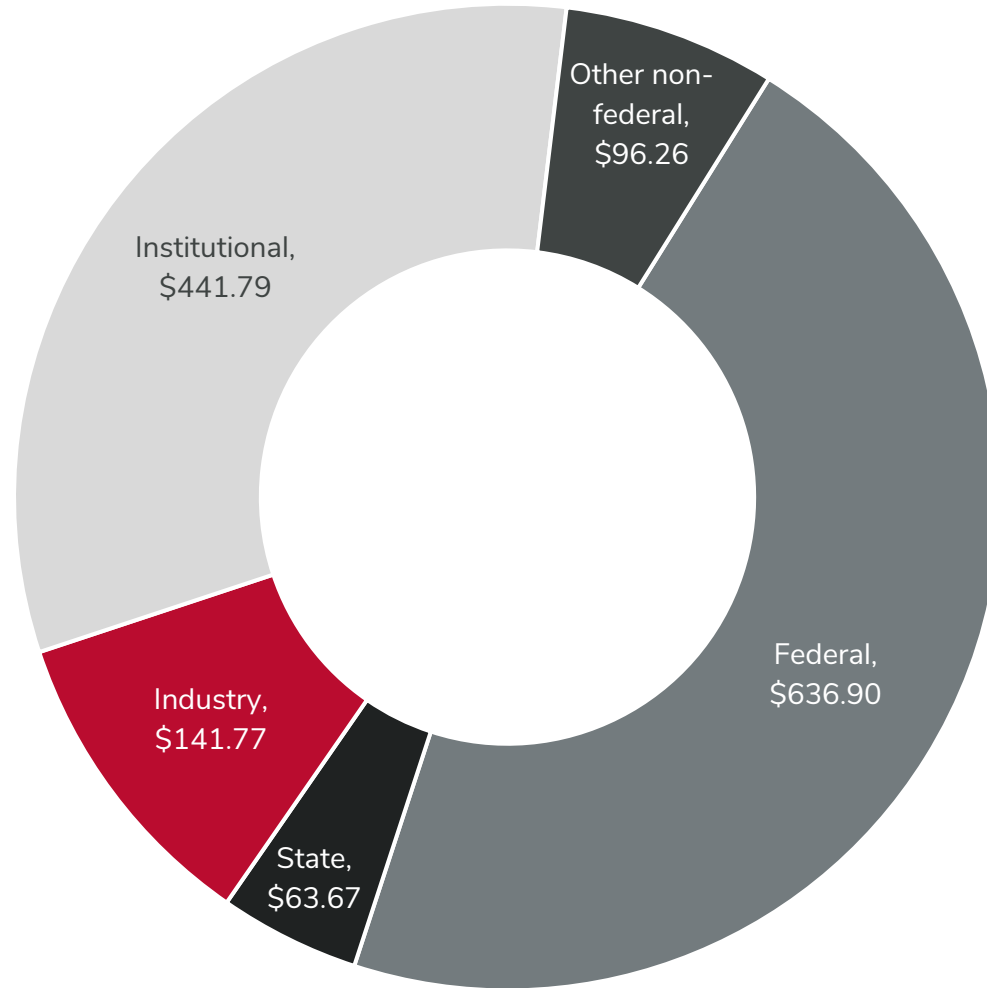
# FY22 R&D expenditures by internal and external sources



Source: HERD Annual Expenditure Submissions. December 2022.

# FY22 R&D Expenditures by Sponsor Category

In millions



**\$1.38 Billion**  
Research & Development  
Expenditures  
Fiscal Year 2022

# External Sponsor R&D Expenditures

Year over year percentage changes in external sponsor expenditures from Fiscal Year 2021 to Fiscal Year 2022

By sponsor	FY 21-22 % CHANGE	
<b>Federal</b>		
National Institutes of Health (NIH)	▲	10%
National Science Foundation (NSF)	▲	21%
Department of Defense (DoD)	▲	6%
Department of Energy (DoE)	▲	8%
Department of Education (ED)	▲	15%
Department of Labor (DoL)	▼	-33%
National Aeronautics & Space Administration (NASA)	▲	8%
Department of Agriculture (USDA)	▲	15%
Other Federal	▲	21%
<b>Total Federal</b>	▲	<b>12%</b>
<b>Non-Federal</b>		
Industry	▲	8%
State	▲	32%
Other non-federal	▲	20%
<b>Total Non-Federal</b>	▲	<b>9%</b>
<b>Total Expenditures</b>	▲	<b>10%</b>

# R&D Expenditures Percentage Growth by College

Colleges with 20%+ increase in expenditures year over year

	2021-2022 CHANGE	
Dentistry	▲	24%
Education and Human Ecology	▲	26%
Engineering	▲	32%
Food, Agriculture, & Environmental Sciences	▲	33%
John Glenn Public Affairs	▲	61%
Pharmacy	▲	26%
Public Health	▲	29%
Social Work	▲	23%



# Looking forward...Strong growth continues in FY23

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August  
2022

National Science Foundation announced **Hybrid Autonomous Manufacturing, Moving from Evolution to Revolution (HAMMER) Engineering Research Center** – 5-year, \$26 million research center with ability to renew for another 5 years at \$26 million.

September  
2022

**Center for Quantum Information Science and Engineering** formally launched with representatives across campus and the Chicago Quantum Exchange.

October  
2022

**NeuroTech Institute**, a new Battelle and Ohio State partnership, launched with initial funding provided from each organization.

November  
2022

Federal Transportation Administration announced \$26.5 million in funding to develop a **Bus Technology Testing Center** to support zero- and low-emission buses.

# FY 23: New and enhanced strategic business partnerships



**September 2022**

With Voyager Space and Nanoracks, JobsOhio, State of Ohio and One Columbus, announced that the George Washington Carver Science Park Terrestrial Analog Facility would be housed at Ohio State.



**September 2022**

Launched the AgTech Innovation Hub – a Nationwide and Ohio State partnership



**September 2022**

Intel announced new opportunities for Ohio State:

- Center for Advanced Semiconductor Fabrication Research and Education
- Ohio Partnership for a Diverse and Inclusive Semiconductor Ecosystem and Workforce



**SUMMARY OF ACTIONS TAKEN**

November 17, 2022 – Research, Innovation & Strategic Partnerships Committee

**Members Present:**

Lewis Von Thae  
Reginald A. Wilkinson

Tanner R. Hunt  
Hiroyuki Fujita (ex officio)

**Members Present via Zoom:**

N/A

**Members Absent:**

Alexander R. Fischer  
Phillip Popovich

The Research, Innovation & Strategic Partnerships Committee of The Ohio State University Board of Trustees convened on Thursday, November 17, 2022, in person at Longaberger Alumni House on the Columbus campus. Committee Chair Lewis Von Thae called the meeting to order at 1:00 p.m.

**PUBLIC SESSION**

***Items for Discussion***

1. Committee Chair's Remarks: Mr. Von Thae kicked off the meeting by welcoming newly appointed trustees, John Perez, Pierre Bigby and Taylor Schwein. Mr. Von Thae continued by congratulating Senator Sherrod Brown and OSU's Center for Automotive Research and their completed agreement with the U.S. Department of Transportation's Federal Transit Administration providing more than \$26 million to establish and operate a testing center that will support the deployment of zero- and low-emission public transportation buses. Also highlighting the partnership between Ohio State and Battelle to launch an independent state-of-the art neurotechnology accelerator called the NeuroTech Institute.

Mr. Von Thae also took a moment to publicly acknowledge and thank Grace Wang for her service to Ohio State as she moves on to be the 17<sup>th</sup> president of the Worcester Polytechnic Institute.

2. Highlights of New Research, Innovation and Knowledge Achievements: Dr. Wang, Executive Vice President for Research, Innovation and Knowledge, shared a year-in-review report that highlights accomplishments in four strategic priority areas – 1) Enable Curiosity-Driven Discoveries and Creative Expression; 2) Build Large-Scale, Interdisciplinary Research and Innovation Centers; 3) Design and Develop the Innovation District; and 4) Nurture Innovation and Entrepreneurship.

(See Attachment X for background information, page number XX)

3. Interdisciplinary Research Facility: Dr. Peter Mohler, Vice President for Research, provided an update on the progress of the Interdisciplinary Research Facility and the Energy Advancement and Innovation Center, which are both scheduled to open next year.

(See Attachment X for background information, page number XX)



***Items for Action***

4. Approval of Minutes: No changes were requested to the August 18, 2022, meeting minutes; therefore, a formal vote was not required, and the minutes were considered approved.

**EXECUTIVE SESSION**

It was moved by Mr. Von Thaer, and seconded by Dr. Wilkinson, that the committee recess into executive session to consider business-sensitive trade secrets required to be kept confidential by federal and state statutes, and to consult with legal counsel regarding pending or imminent litigation.

A roll call vote was taken, and the committee voted to go into executive session with the following members present and voting: Mr. Von Thaer, Dr. Wilkinson, Mr. Hunt and Dr. Fujita.

The committee entered executive session at 11:15 a.m. and the meeting adjourned at 11:57a.m.

DRAFT