

# University Senate: State of the Campus Address

Darryll J. Pines, President  
October 3, 2023



# Maryland on the Rise



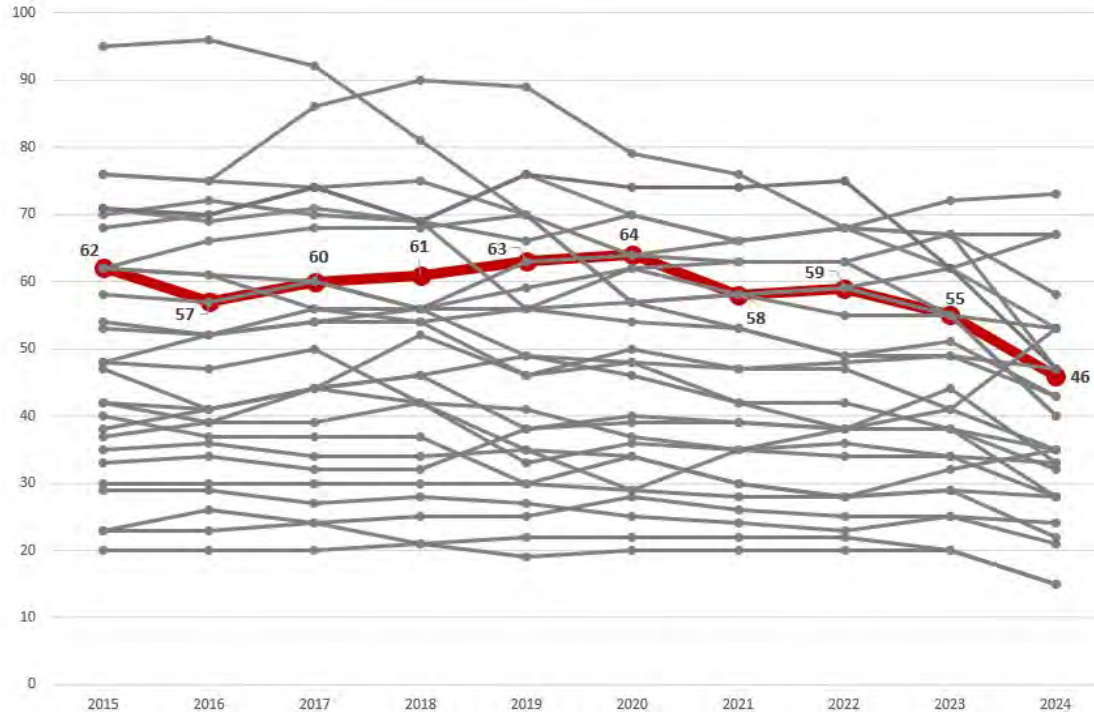
# U.S. News & World Report: Best Colleges Rankings

- **#19** Top Public Universities
- **#46** Overall National Universities
- **#19** Best Public College for Veterans
- **#8** Living-Learning Communities
- **#58** Overall Most Innovative
- **69** Top 25 Undergraduate and Graduate Programs



# Ten-Year Trend: Public Institutions Overall Ranking

2015: UMD is tied at **62** with Clemson, Georgia, Pitt, and Purdue



2024: UMD is in the top 50 at **46**





# Notable Recognitions

- **#1** for **Best Colleges for LGBTQ+ Students** by the Campus Pride Index
- **#7** in Maryland on Forbes' list of **America's Best Employers** By State
- **#12** among U.S. Public Institutions, according to the **Academic Ranking of World Universities**
- **#13** among public institutions in Forbes' list of **America's Top Colleges**



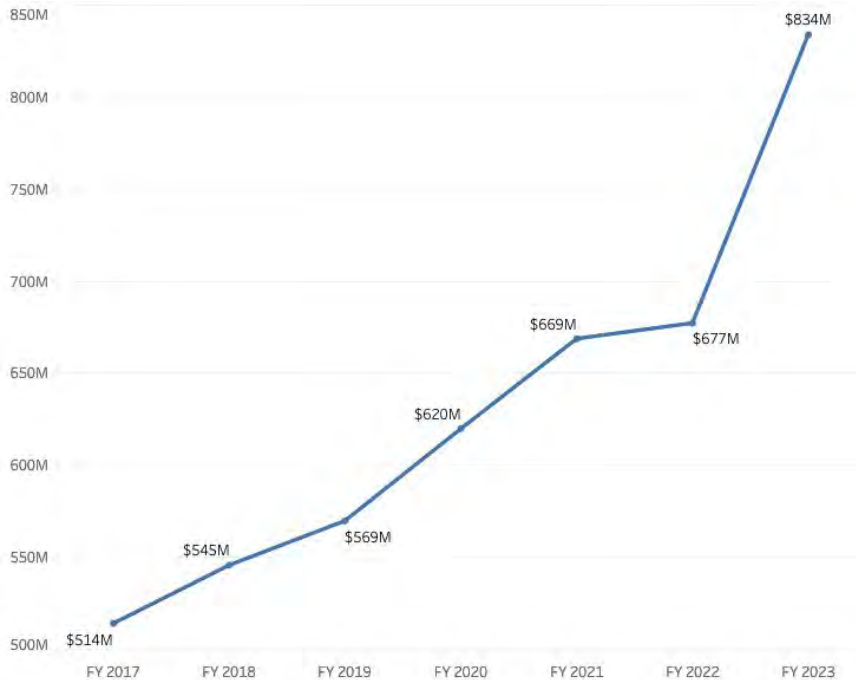
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- **#14** among U.S. public institutions for **patents awarded in 2022** along with other USM institutions, according to the National Academy of Inventors and the Intellectual Property Owners Association
- **#16** among public four-year institutions for **Colleges with the Best 6-Year Graduation Rates for Pell Students** in the Chronicle's Almanac
- **4-Star** **America's Greatest Workplaces**, according to Newsweek

# UMD Research on the Rise



- **UMD had a record-breaking research year in FY2023: \$834 million in research awards**
- Highest total amount in research awards ever recorded by our College Park campus
- Increase of 23%—more than \$157 million—over FY22
- Includes ORA + Non-ORA

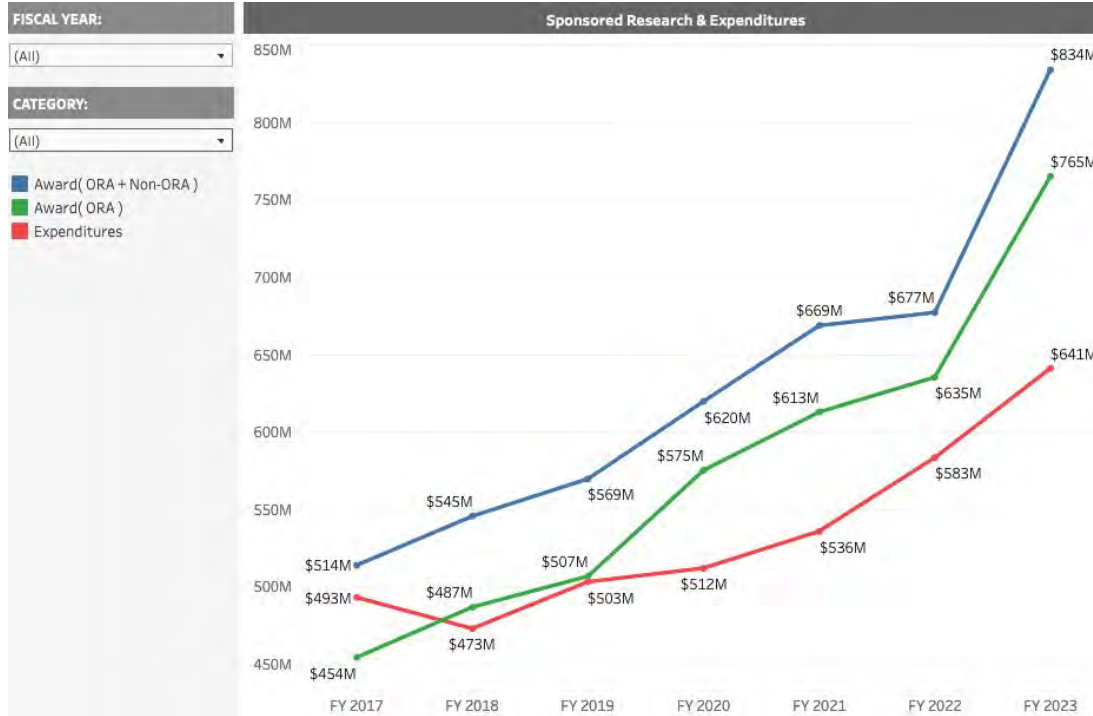


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# UMD Research on the Rise: Part II



- **Research expenditures were also up in FY23, marking a 10% increase over FY22**
- **As our award amount increases, this will provide more funding for future growth in expenditures**



# Faculty Achievement



**Inbal Becker-Reshef**  
NASA Exceptional Public  
Achievement Medal



**Deneen L. Brown**  
NABJ Salute to  
Excellence Award



**Alessandra Buonanno**  
Elected to Italian National  
Academy of Sciences



**You Zhou**  
2023 Maryland Science Center  
Outstanding Young Scientist



**Jioni Lewis**  
Fellow of American  
Psychological  
Association



**J. Carson Smith**  
Fellow of National  
Academy of  
Kinesiology



**Partha Lahiri**  
President-Elect,  
International Association  
of Survey Statisticians



**Psyche Williams-Forson**  
2023 James Beard  
Foundation Media Award







# NIST UAS Challenge

- Grand Prize (2X Winner)
- Best-in Class for Additional Preferred Capabilities, Flyability and Ease of Operation
- Co-Recipient of First Responder Choice Award
- >\$150,000 in Prize Money





# Exploring New Frontiers



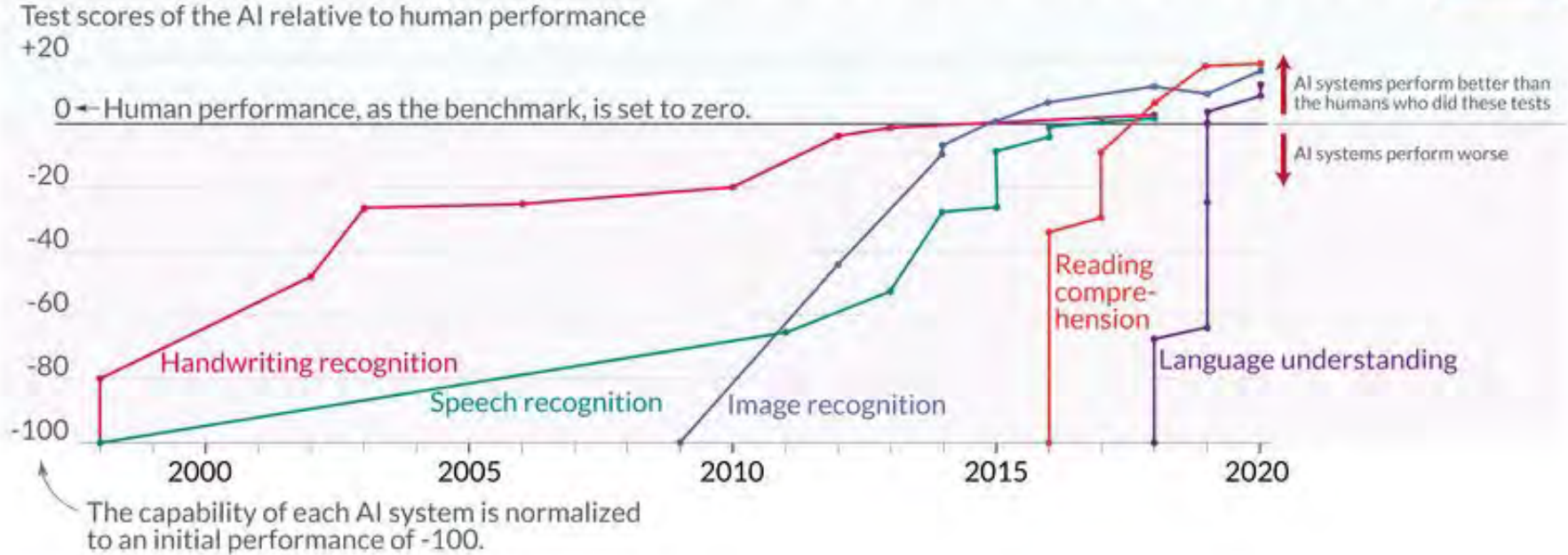


# ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING



# Where Are We in AI?

Language and image recognition capabilities of AI systems have improved rapidly



Data source: Kiela et al. (2021) - Dynabench: Rethinking Benchmarking in NLP  
OurWorldinData.org - Research and data to make progress against the world's largest problems.

Licensed under CC-BY by the author Max Roser





# Hype Cycle for Artificial Intelligence, 2023



Plateau will be reached:

- less than 2 years
- 2 to 5 years
- 5 to 10 years
- more than 10 years
- obsolete before plateau
- As of July 2023

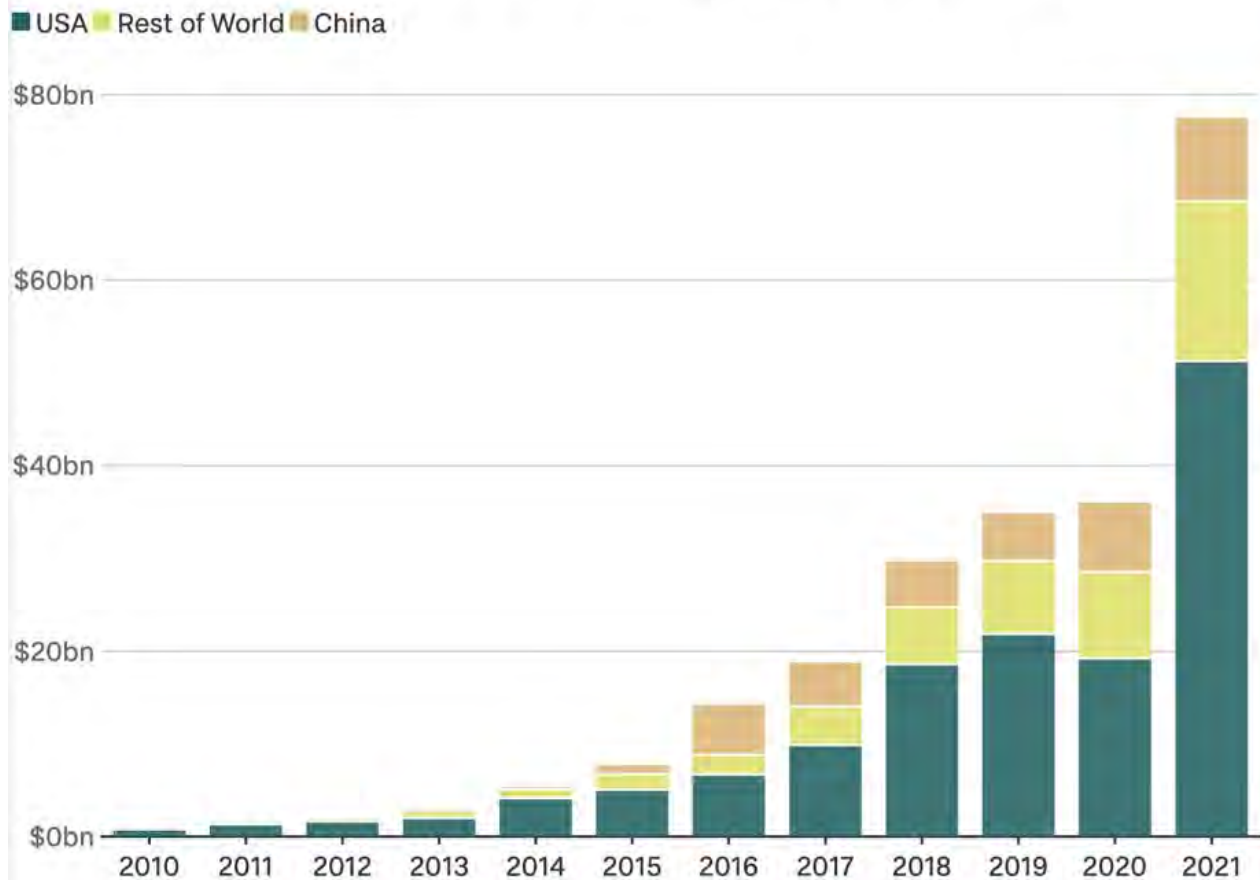
[gartner.com](https://www.gartner.com)

Source: Gartner  
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**Gartner.**



# Global investment in AI jumps to record high



Source: Tortoise Global AI Index/ Crunchbase



# Presidential Commission on “AI for Maryland”

“The purpose of the Presidential Commission on AI for Maryland is both bold and practical: How can our entire campus be a nationwide model for leveraging the incredible potential of machine learning and artificial intelligence to make us better, smarter and more impactful.”



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# Presidential Commission on “AI for Maryland”

## Co-Chairs

- Axel Persaud, Assistant Vice President, Enterprise Engineering, DIT
- Jen Golbeck, Professor and Director, iSchool



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# Presidential Commission on “AI for Maryland”

## *Areas for Innovation*

- Academic (Teaching and Learning)
- Student Recruitment and Enrollment
- Student Life (Residential Experience, Health, Activities)
- Student Success (Advising, Personalized Tutoring, Career Placement)
- Administrative Services (Procurement, Human Resources, Facilities Management)
- Marketing and Communications (Target Campaigns, Content Optimization)
- IT (Service Desk, Call Centers, Predictive Maintenance, etc.)
- University Relations/Advancement (Prospect ID, Alumni Engagement)
- Research
- Ethics and Policies
- And many, many more

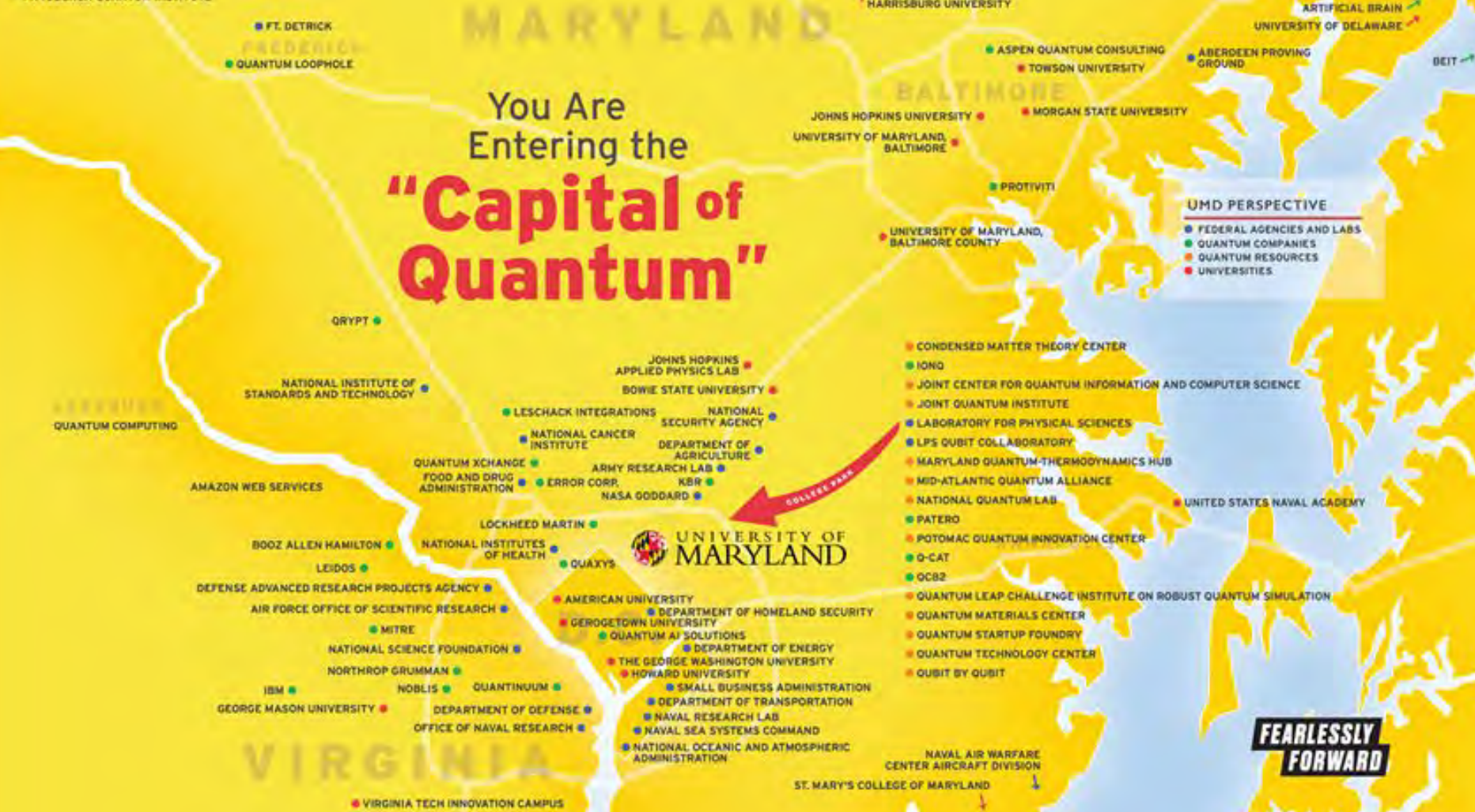






# QUANTUM COMPUTING

# You Are Entering the "Capital of Quantum"



FT. DETRICK  
FREDERICK  
QUANTUM LOOPHOLE

HARRISBURG UNIVERSITY  
ASPEN QUANTUM CONSULTING  
TOWSON UNIVERSITY  
ABERDEEN PROVING GROUND  
BEIT  
JOHNS HOPKINS UNIVERSITY  
UNIVERSITY OF MARYLAND, BALTIMORE  
MORGAN STATE UNIVERSITY  
PROTIVITI  
UNIVERSITY OF MARYLAND, BALTIMORE COUNTY

**UMD PERSPECTIVE**

- FEDERAL AGENCIES AND LABS
- QUANTUM COMPANIES
- QUANTUM RESOURCES
- UNIVERSITIES

CRYPT  
NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY  
AMAZON WEB SERVICES

BOOZ ALLEN HAMILTON  
LEIDOS  
DEFENSE ADVANCED RESEARCH PROJECTS AGENCY  
AIR FORCE OFFICE OF SCIENTIFIC RESEARCH  
MITRE  
NATIONAL SCIENCE FOUNDATION  
NORTHROP GRUMMAN  
IBM  
NOBLIS  
QUANTINUM  
GEORGE MASON UNIVERSITY  
DEPARTMENT OF DEFENSE  
OFFICE OF NAVAL RESEARCH  
VIRGINIA TECH INNOVATION CAMPUS

JOHNS HOPKINS APPLIED PHYSICS LAB  
BOWIE STATE UNIVERSITY  
LESCHACK INTEGRATIONS  
NATIONAL CANCER INSTITUTE  
QUANTUM XCHANGE  
FOOD AND DRUG ADMINISTRATION  
ERROR CORP.  
ARMY RESEARCH LAB  
NASA GODDARD  
NATIONAL SECURITY AGENCY  
DEPARTMENT OF AGRICULTURE  
KBR

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AMERICAN UNIVERSITY  
DEPARTMENT OF HOMELAND SECURITY  
GEORGETOWN UNIVERSITY  
QUANTUM AI SOLUTIONS  
DEPARTMENT OF ENERGY  
THE GEORGE WASHINGTON UNIVERSITY  
HOWARD UNIVERSITY  
SMALL BUSINESS ADMINISTRATION  
DEPARTMENT OF TRANSPORTATION  
NAVAL RESEARCH LAB  
NAVAL SEA SYSTEMS COMMAND  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

CONDENSED MATTER THEORY CENTER  
IONQ  
JOINT CENTER FOR QUANTUM INFORMATION AND COMPUTER SCIENCE  
JOINT QUANTUM INSTITUTE  
LABORATORY FOR PHYSICAL SCIENCES  
LPS QUBIT COLLABORATORY  
MARYLAND QUANTUM-THERMODYNAMICS HUB  
MID-ATLANTIC QUANTUM ALLIANCE  
NATIONAL QUANTUM LAB  
PATERO  
POTOMAC QUANTUM INNOVATION CENTER  
Q-CAT  
QCB2  
QUANTUM LEAP CHALLENGE INSTITUTE ON ROBUST QUANTUM SIMULATION  
QUANTUM MATERIALS CENTER  
QUANTUM STARTUP FOUNDRY  
QUANTUM TECHNOLOGY CENTER  
QUBIT BY QUBIT  
UNITED STATES NAVAL ACADEMY  
NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION  
ST. MARY'S COLLEGE OF MARYLAND

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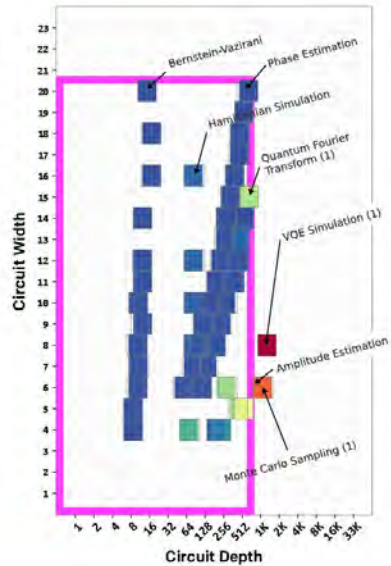
# QLab Grand Opening

- \$20M Investment
- Partnership with IonQ
- Opens Quantum Computers to Experts from Around the World
- Node in Mid-Atlantic Regional Quantum Internet (MARQI)

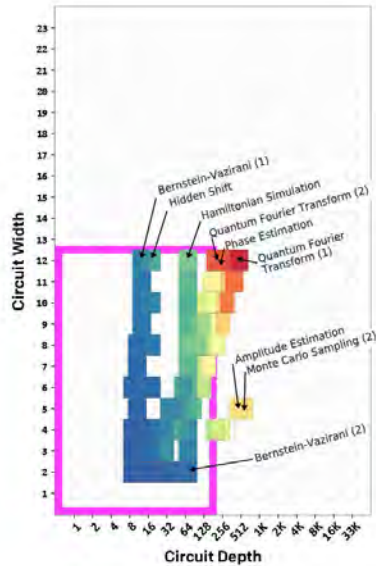


# Why an IonQ-UMD Partnership?

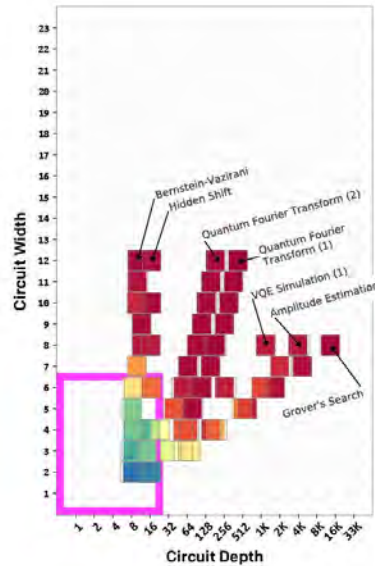
**Ion Trap**



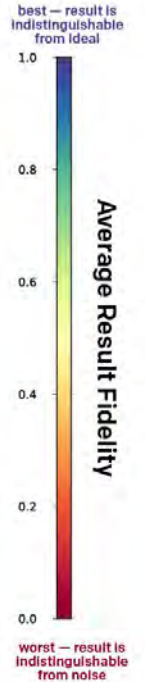
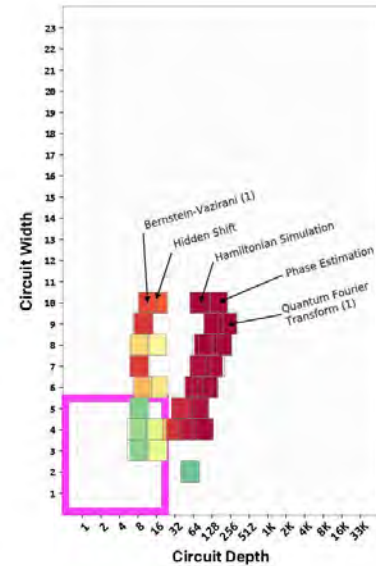
**Ion Trap**



**Semiconductors**



**Superconducting**



21 QuBits

**IonQ**  
IonQ Aria

**Quantinuum**  
Model H1.1

**IBM**  
Falcon r4P (Guadalupe)

**Rigetti**  
Aspen-M-1

IBM and Quantinuum data adapted from *Application-Oriented Performance Benchmarks for Quantum Computing* (2022) <https://arxiv.org/abs/2110.03137>  
Rigetti data taken using Bracket between February 18th and 20th, 2022



**Exponentially Larger Area for Application Success**



# Breakthroughs in Information Telecommunications

## Telegraph

“What hath God wrought?”



Samuel Morse

1844

## Telephone

“Mr. Watson, come here; I want you.”



Alexander Graham Bell

1876

## Internet

“LO-Lo and Behold”



Charley Kline

1969

## Quantum “Ion Trap” Internet

What will be the first Quantum Internet message?



TBD

2024







# Taking on Grand Challenges





# New Do Good Initiatives

- Do Good Campus Fund (Grants of \$5K-50K)
- Do Good Campus Strategic Leadership Council
- Do Good Innovator Awards



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XFOUNDRY  
@UMD



# XFOUNDRY @ UMD

***15 Months, 8 credits, 1 competition***

- **XPLORE** (Fall 2023): Interactive campuswide event choosing a topic
- **XPERIMENT** (Spring-Summer 2024): Two-course sequence on entrepreneurship with team formation and pitches
- **XCELERATE** (Fall 2024-Spring 2025): Final Competition
- **XECUTE** (Spring 2025): Winner chosen with \$250K-\$2M investment





# Our Shared Humanity



THE CLARICE

WHERE CREATIVITY &  
COMMUNITY CONVERGE

Next Now  
20 Fest 23



# NextNOW Fest 2023

- **10th** Anniversary
- **8** Days
- **47** Events
- **4,000** Students and Community Members
- Venues included The Clarice, Stamp Student Union, Parren Mitchell Building, Iribe Center, The Hall CP



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A vibrant campus scene featuring a large green lawn, trees with autumn foliage, and a building in the background. The text 'FEARLESSLY' is overlaid in a white, bold, italicized font.

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**FORWARD**