

**WEDNESDAY, FEBRUARY 24, 2021**  
**RESEARCH, INNOVATION & STRATEGIC PARTNERSHIPS COMMITTEE MEETING**

Lewis Von Thae  
Erin P. Hoeflinger  
Cheryl L. Krueger  
Alexander R. Fischer  
Hiroyuki Fujita  
Reginald A. Wilkinson  
Anand Shah  
Gary R. Heminger (*ex officio*)

Location: Zoom Meeting

Time: 1:00-2:15pm

**Public Session**

*ITEMS FOR DISCUSSION*

1. *Committee Chair's Remarks – Mr. Lou Von Thae* 1:00-1:05pm
2. *Discussion of the Research, Innovation & Strategic Partnerships Committee Charter – All* 1:05-1:15pm
3. *Office of Research, Innovation & Knowledge Enterprise Overview – Dr. Grace Wang* 1:15-1:25pm
4. *Ohio State Research Strengths, Key Opportunities and Highlights – Dr. Grace Wang, Dr. Morley Stone* 1:25-1:50pm

**Executive Session**

1:50- 2:15pm



## Research, Innovation and Strategic Partnerships Committee Charter

*Updated February 4, 2021*

### **Purpose of Committee**

The Research, Innovation and Strategic Partnerships Committee is a standing committee of The Ohio State University Board of Trustees established to consider and provide strategic guidance and oversight regarding matters pertaining to: (1) the research enterprise; (2) corporate partnerships; (3) innovation and technology commercialization; (4) entrepreneurs and university-enabled startups; and (5) relevant policies.

### **Committee Authority and Responsibilities**

In furtherance of its purpose set forth above, the committee shall have the following authority and responsibilities:

- Provide strategic oversight and guidance on the sustainable growth of research and creative expression, corporate partnerships, technology commercialization, as well as entrepreneurial activities.
- Support the advancement of The Ohio State University to be among Top 10 public research universities in terms of annual research and development expenditures.
- Support strategic hiring, retention and planning of faculty and/or staff researchers to increase the university's research and innovation capacity and capability while maximizing societal impact.
- Support policies and programs to incentivize faculty participation in large-scale, interdisciplinary research, industry-sponsored research, technology commercialization and entrepreneurial activities.
- Provide strategic oversight and guidance to make The Ohio State University a national leader in diversity, equity and inclusion across the research and innovation enterprise.
- Provide strategic guidance and oversight, in conjunction with other board committees, for the overall plan and development of the university's Innovation District.
- Review and evaluate the effectiveness of the research and innovation enterprise including but not limited to annual research and development expenditures, scholarly activities such as publications and creative expression, outcomes of technology commercialization, startup activities and corporate partnerships.
- Provide strategic guidance and oversight on large-scale ventures and contracts that require Board of Trustees' review or approval.

### **Committee Meetings**

The committee generally shall meet in conjunction with the regularly scheduled meetings of the full University Board of Trustees and at such other times and places as it deems necessary to carry out its responsibilities. A majority of the voting members of the committee shall be present in person at any meeting of the committee in order to constitute a quorum for the transaction of business at such meeting.

### **Committee Membership**

All members of the committee, as well as the committee chair and vice chair, shall be appointed by the chair of the board. The chair and vice chair of the committee shall be trustees or charter trustees. Trustees, student trustees, charter trustees and non-trustee committee members shall all be voting members of the committee.

The committee shall consist of trustees appointed to the committee, including at least one student trustee, up to one member of the university faculty, and up to two additional non-trustee

members. Each member of the committee shall serve for such term or terms as the chair of the board may determine or until his or her earlier resignation, removal or death.

### **Staff and Other Support**

Primary staff support for the committee shall be provided by the Office of Research, Innovation and Knowledge Enterprise. Further, the committee shall obtain advice and assistance as needed from internal or external experts in science, engineering, technology, medicine, policy, law, finance, facility, research compliance, enterprise risk, intellectual property, venture capital, startups, business development, etc.

### **University Bylaws**

The provisions of this charter are intended to comport with the bylaws of the university. To the extent that these provisions conflict, the university bylaws shall control.



**THE OHIO STATE UNIVERSITY**

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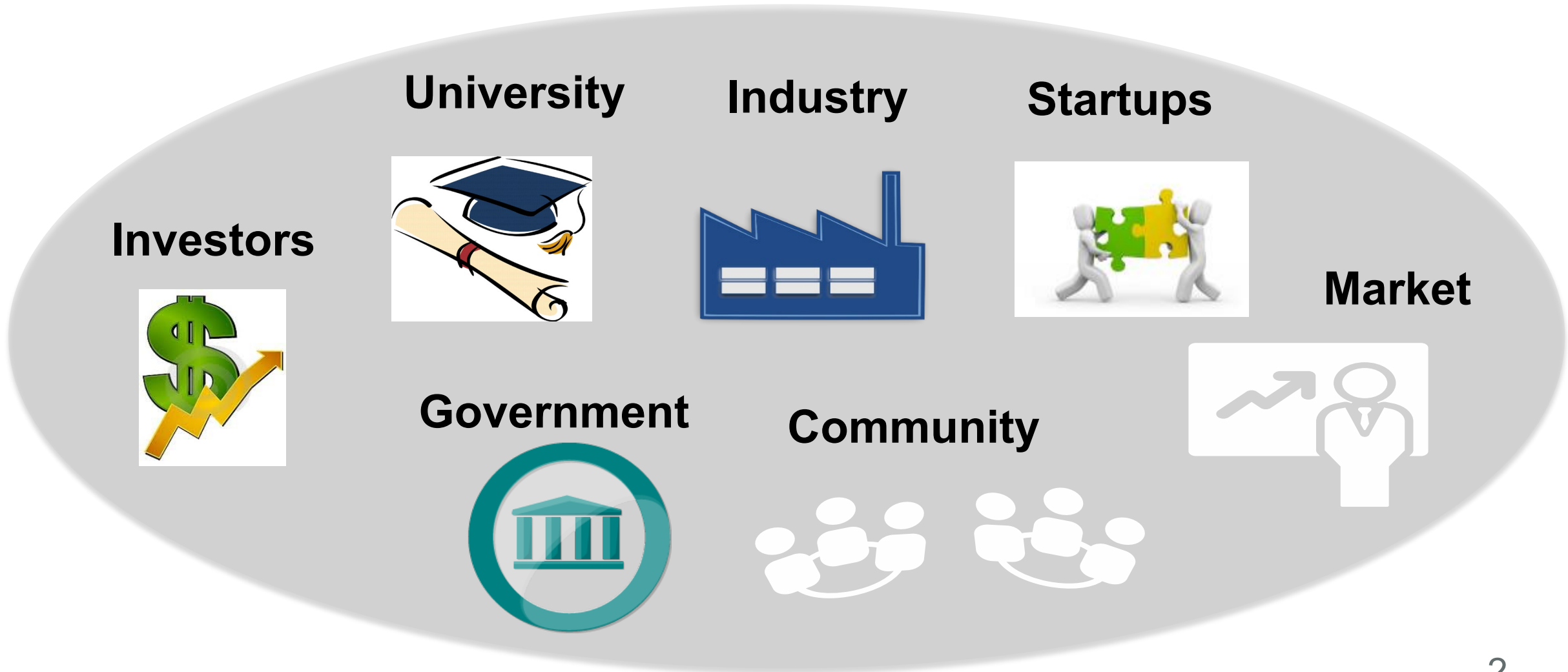
# **Research, Innovation and Knowledge Enterprise**

Grace Wang

Board of Trustees Meeting, Feb. 24, 2021



# Research & Innovation Ecosystem



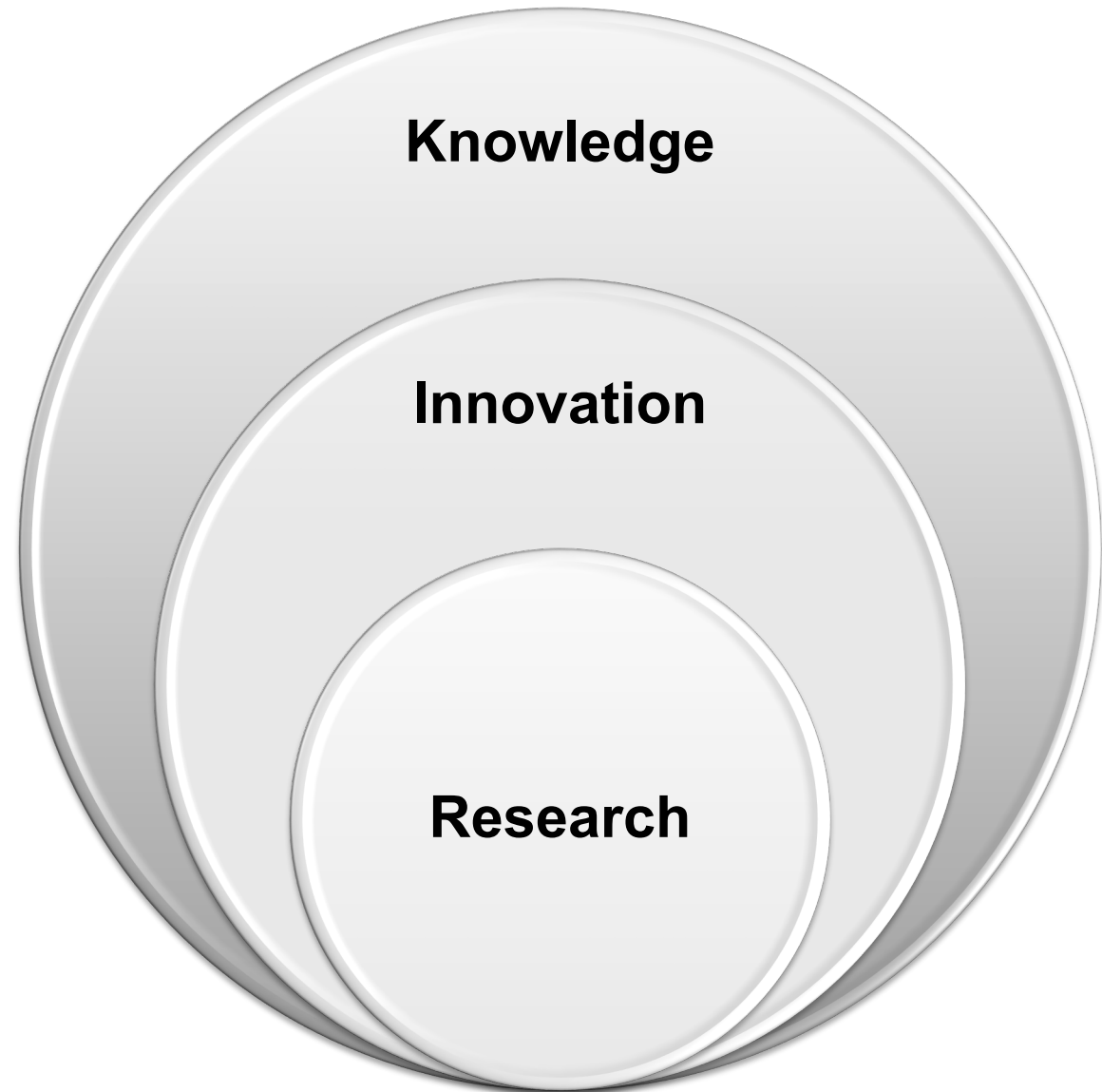


# Growing Research, Innovation and Knowledge Enterprise

**Empower Talent**

**Catalyze Innovation,  
Partnerships and  
Entrepreneurships**

**Grow Research  
Capacities and  
Capabilities**







**THE OHIO STATE UNIVERSITY**

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# **Research Strengths, Key Opportunities and Highlights**

Grace Wang & Morley Stone

Board of Trustees Meeting, Feb. 24, 2021





**3 Million**

Square Feet  
Assigned to  
Organized  
Research

**\$968.3 Million**

in Total Annual  
Research  
Expenditures

– FY2020



**Top 5**

Consistent Ranking  
in Industry-  
Sponsored Research

– Among all universities  
(\$150.2M, FY2020)

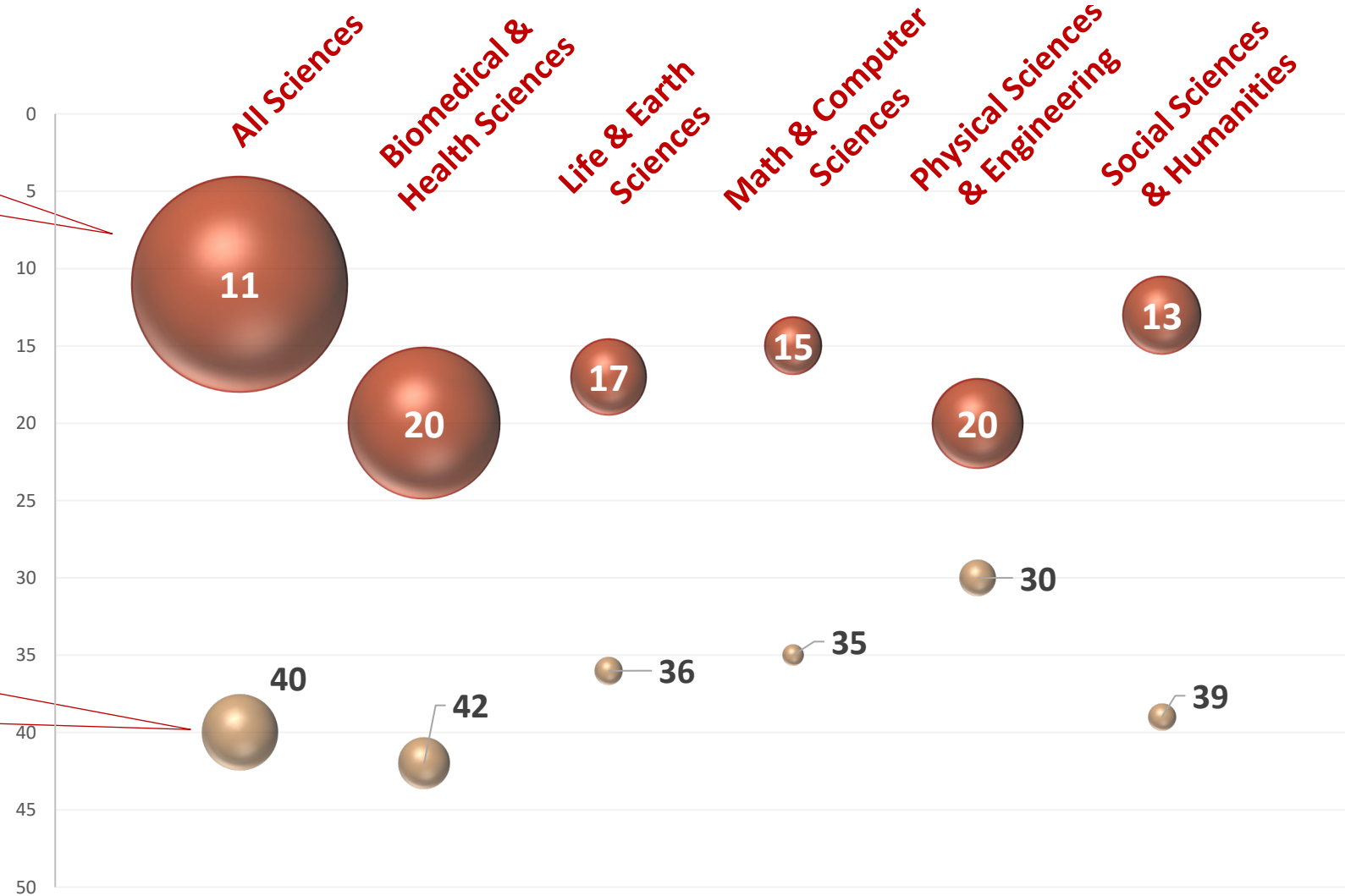


# Research Strengths

# CWTS Leiden University Ranking 2020 for Ohio State (Top 50 in the U.S.)

Publication Output

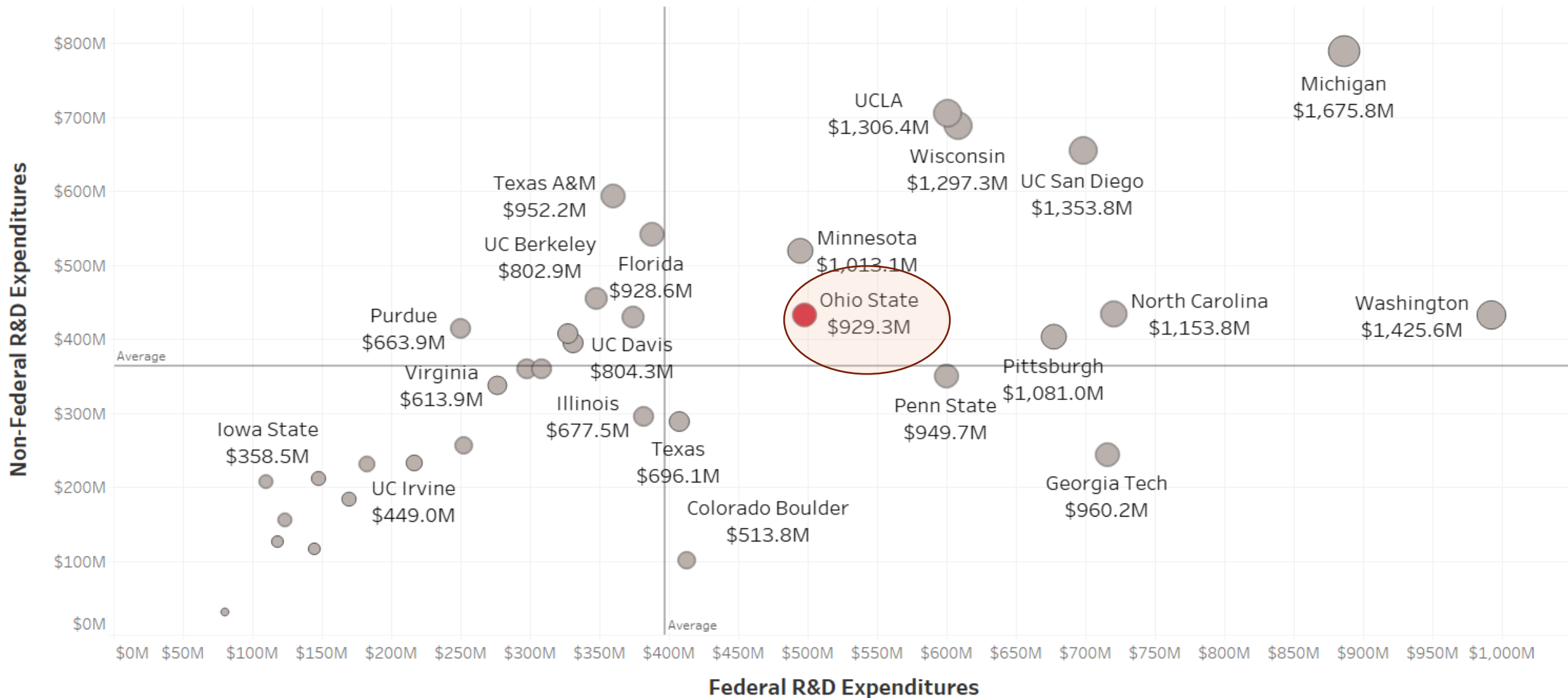
Top 10% Most Cited



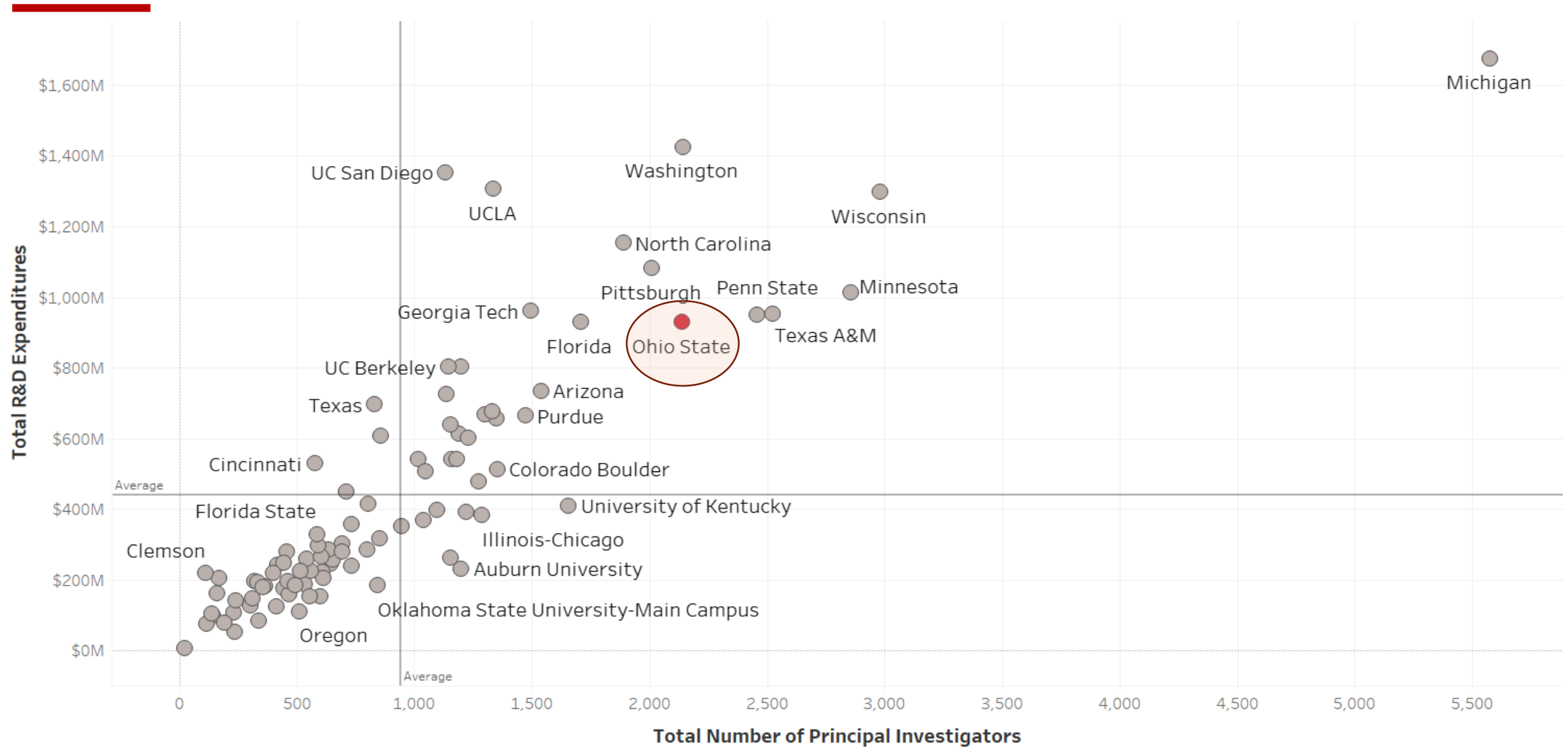
# Benchmarking vs. AAU Public Universities

## By Total Annual R&D Expenditures (FY2019)

By Federal and Non-Federal Sources



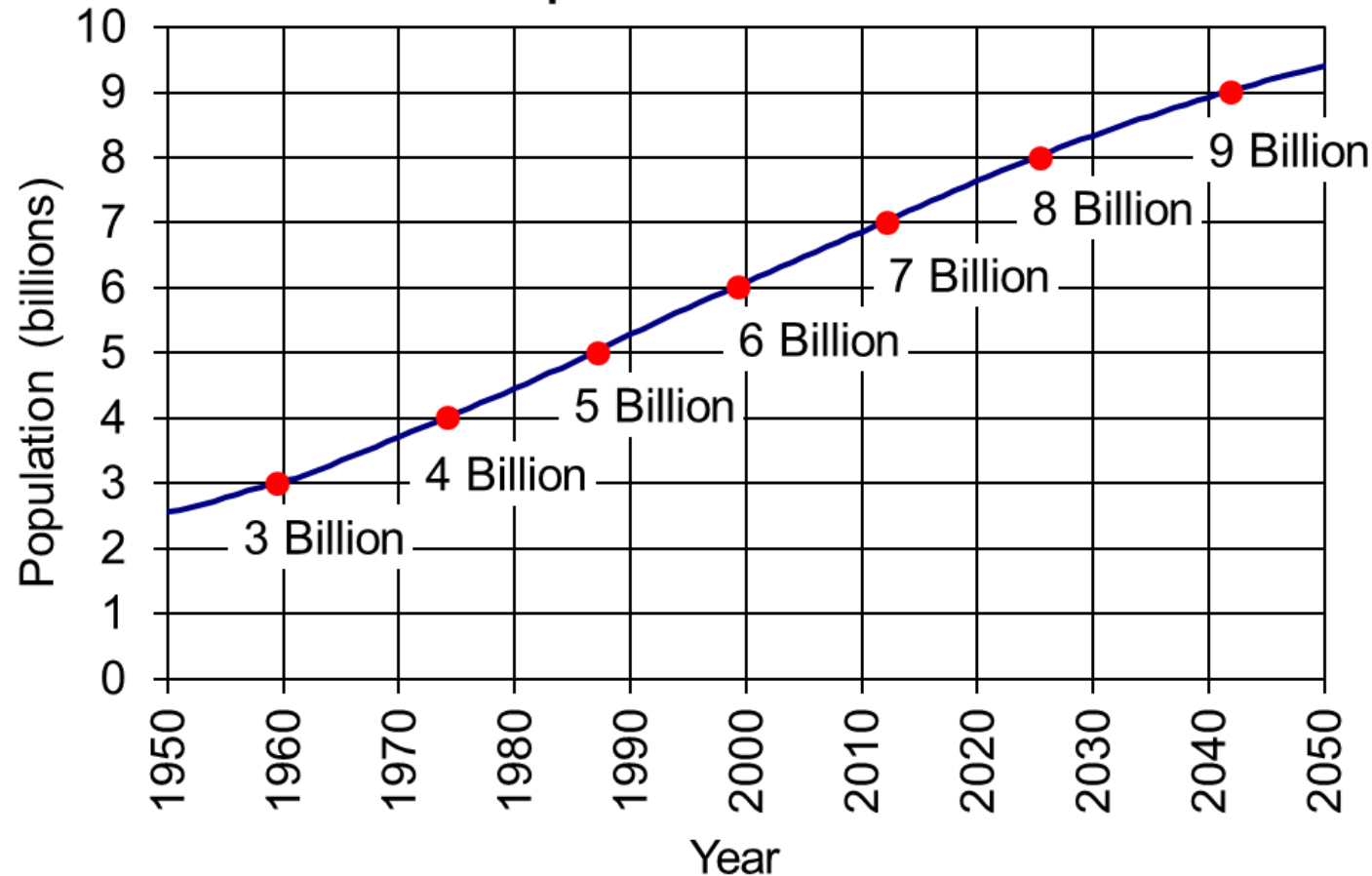
# Total Annual R&D Expenditures vs. # of Active PIs AAU Public Universities (FY2019)





# Key Opportunities

## World Population: 1950-2050

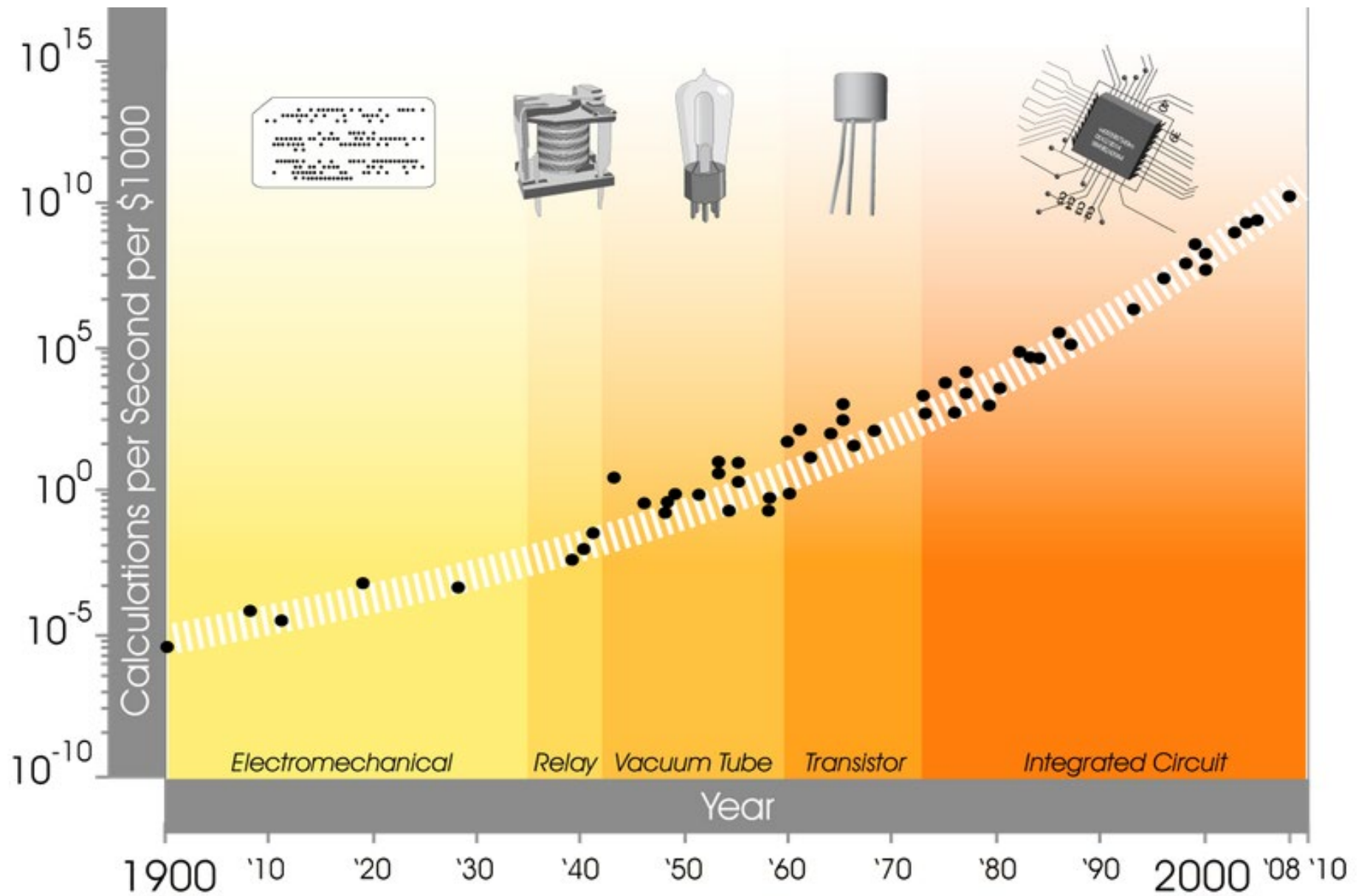


Source: U.S. Census Bureau, International Data Base, July 2015 Update.


- In 1960, about 9% of Americans were ages 65 and older.
- By 2060, about 24% of Americans will be ages 65 and older.

Source: PRB analysis of data from the U.S. Census Bureau

# Significant Advances in Computing







By the end of 2018, there were an estimated **22 billion** internet of things (IoT) connected devices in use around the world.

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Forecasts suggest that by 2030 around **50 billion** of these IoT devices will be in use around the world, creating a massive web of interconnected devices spanning everything from smartphones to kitchen appliances.

Source: IoT connected devices worldwide 2030, published by Statista Research Department, Jan 22, 2021.

# Science

20 December 2013 | \$18

Breakthrough of the Year

## Cancer Immunotherapy

T cells on the attack



## Life Science Breakthroughs in Recent Years

- **CRISPR: Site-Specific Gene-Editing**
- **Cancer Immunotherapy**
- **Vaccine Design**
- **Mini-Organs**
- **Why We Sleep: Brain Mapping & Imaging**
- **Our Microbes, Our Health**
- ....

## Changing Fundamentals



**Scale**    **Nano- to micro- to macro-scale**



**Scope**    **Data & computing driven**

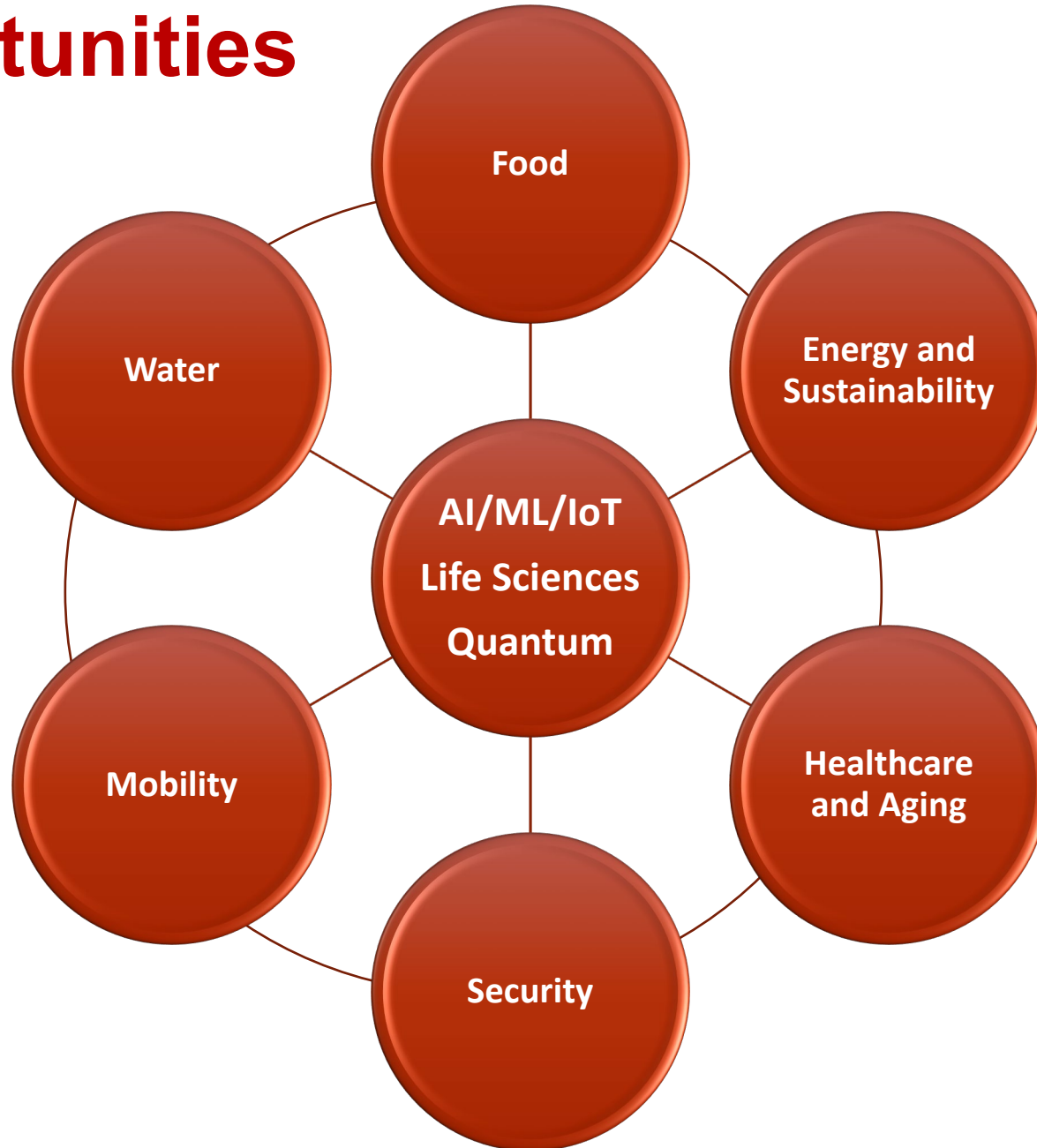


**Smart**    **AI-enabling, more connected**



**Speed**    **Much faster, real-time or near real-time**

# Key Opportunities





# Researcher Highlights

# Highlights – Agricultural Engineering



## **Dr. Darren Drewry**

**Powe Junior Faculty Enhancement Award - 2020**

Assistant Professor, Department of Food,  
Agricultural and Biological Engineering

# Highlights – Chemistry/Biochemistry



## **Devin Swiner**

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**Next Generation Innovator of the Year - 2020**

Graduate Student, Department of  
Chemistry and Biochemistry