

Mcubed

Revolutionary seed funding
that de-risks institutional
investment

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What is important in advancing university research?

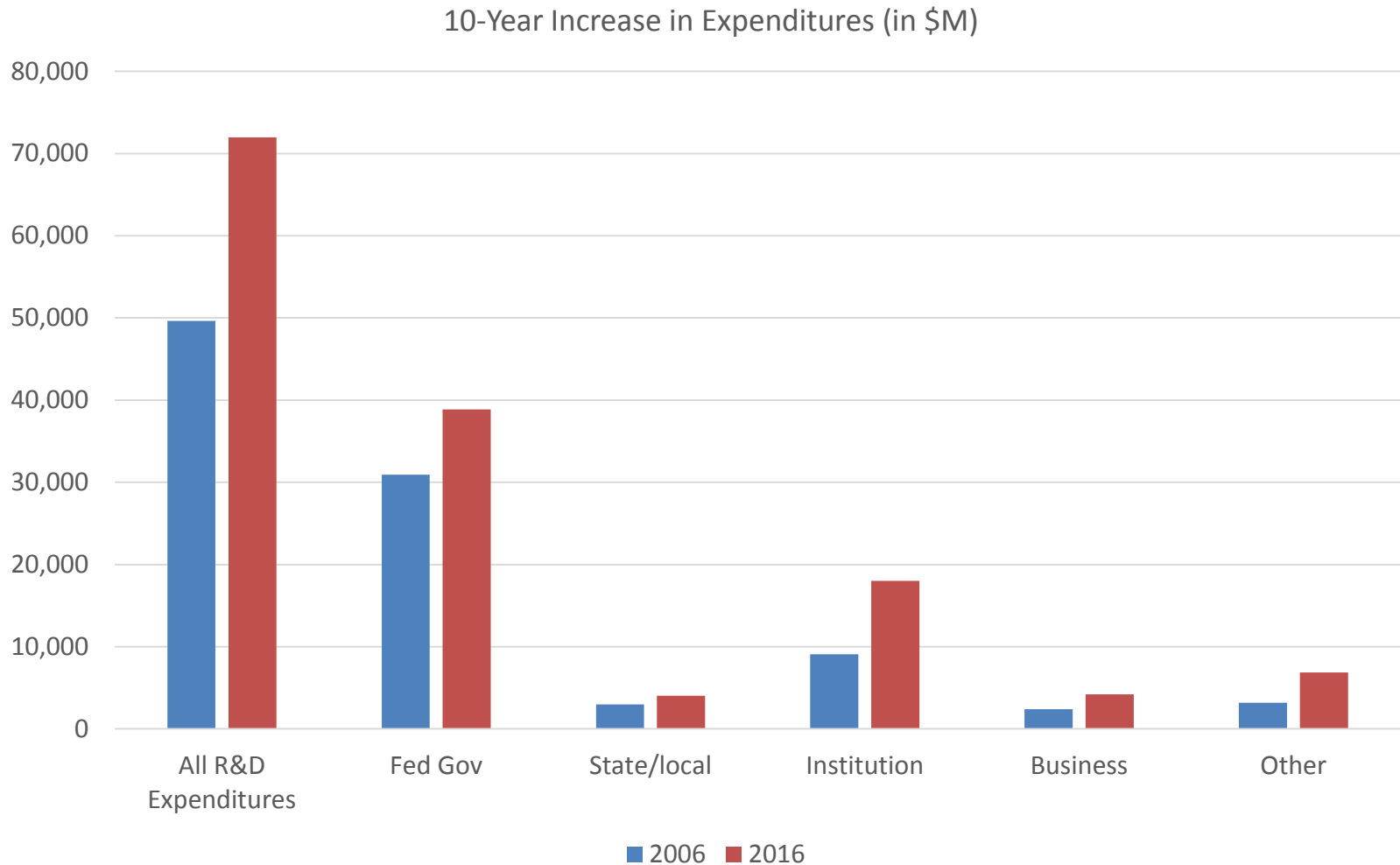
- World-class faculty, students, and staff
- Cutting-edge research facilities
- Key partners in industry, foundations, and government
- Diversity of cultures and thought
- Available resources to initiate research

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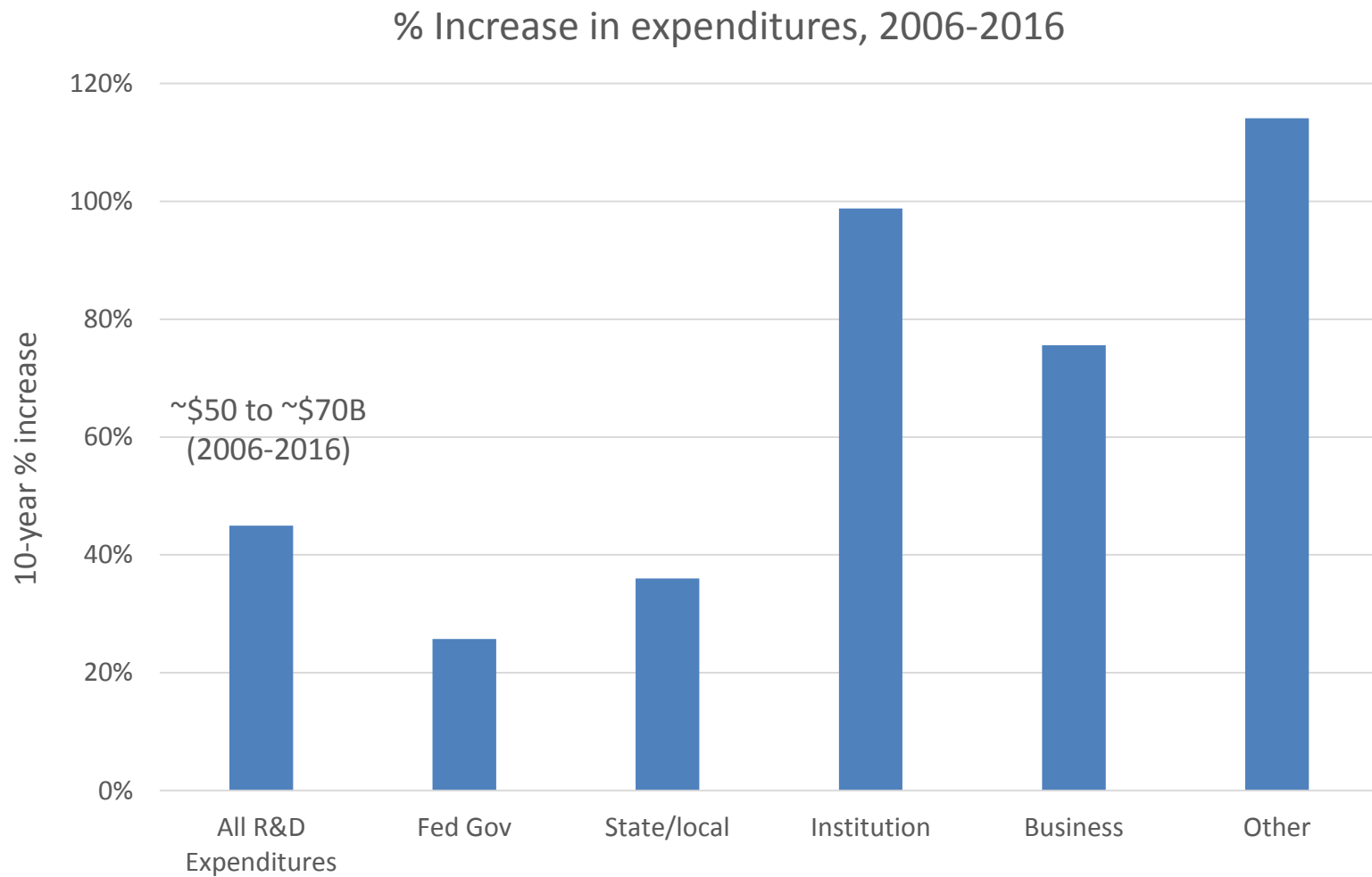
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>>>> How can we acquire and strategically distribute those resources to research teams?

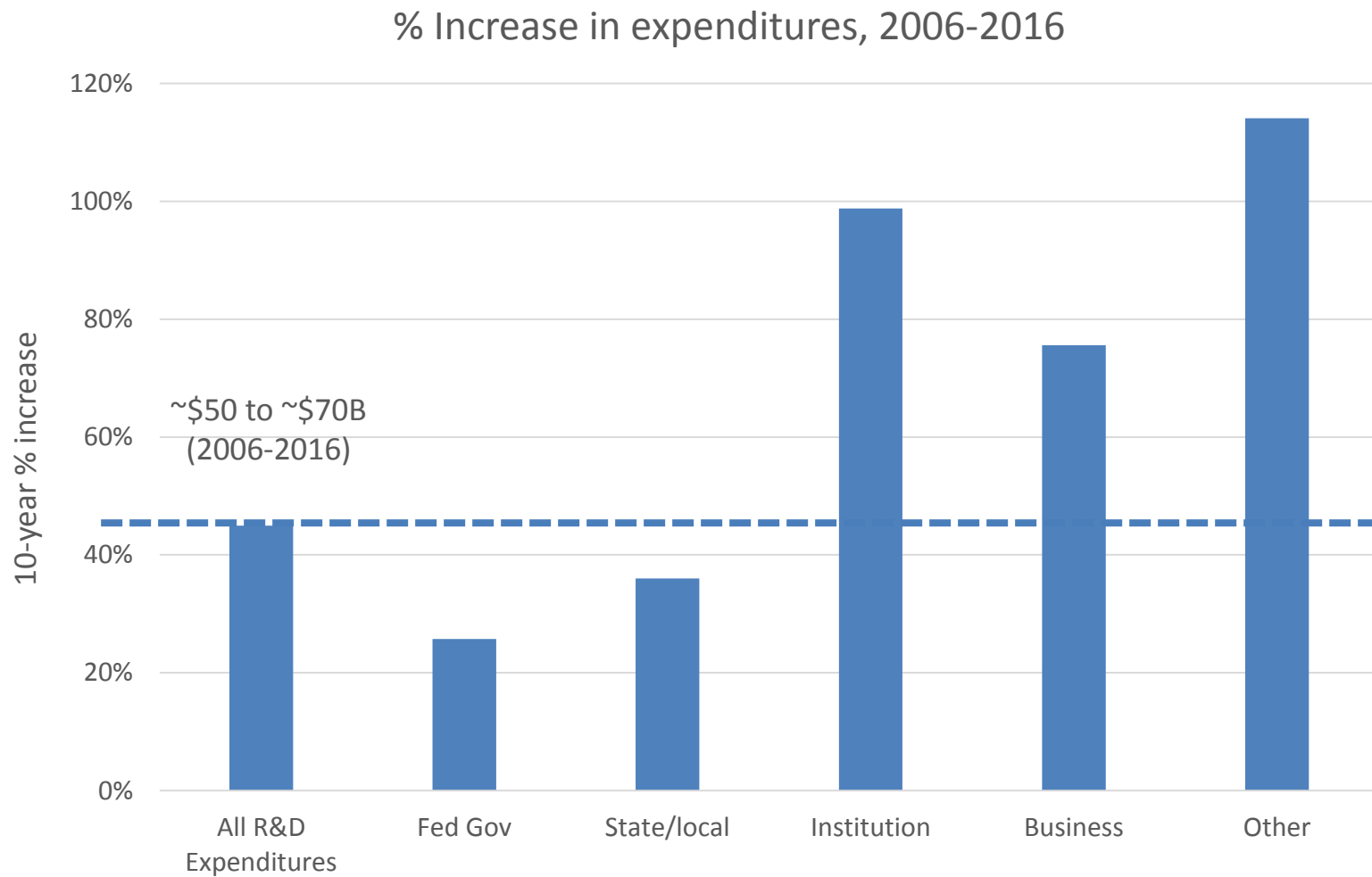
NSF university research expenditure data



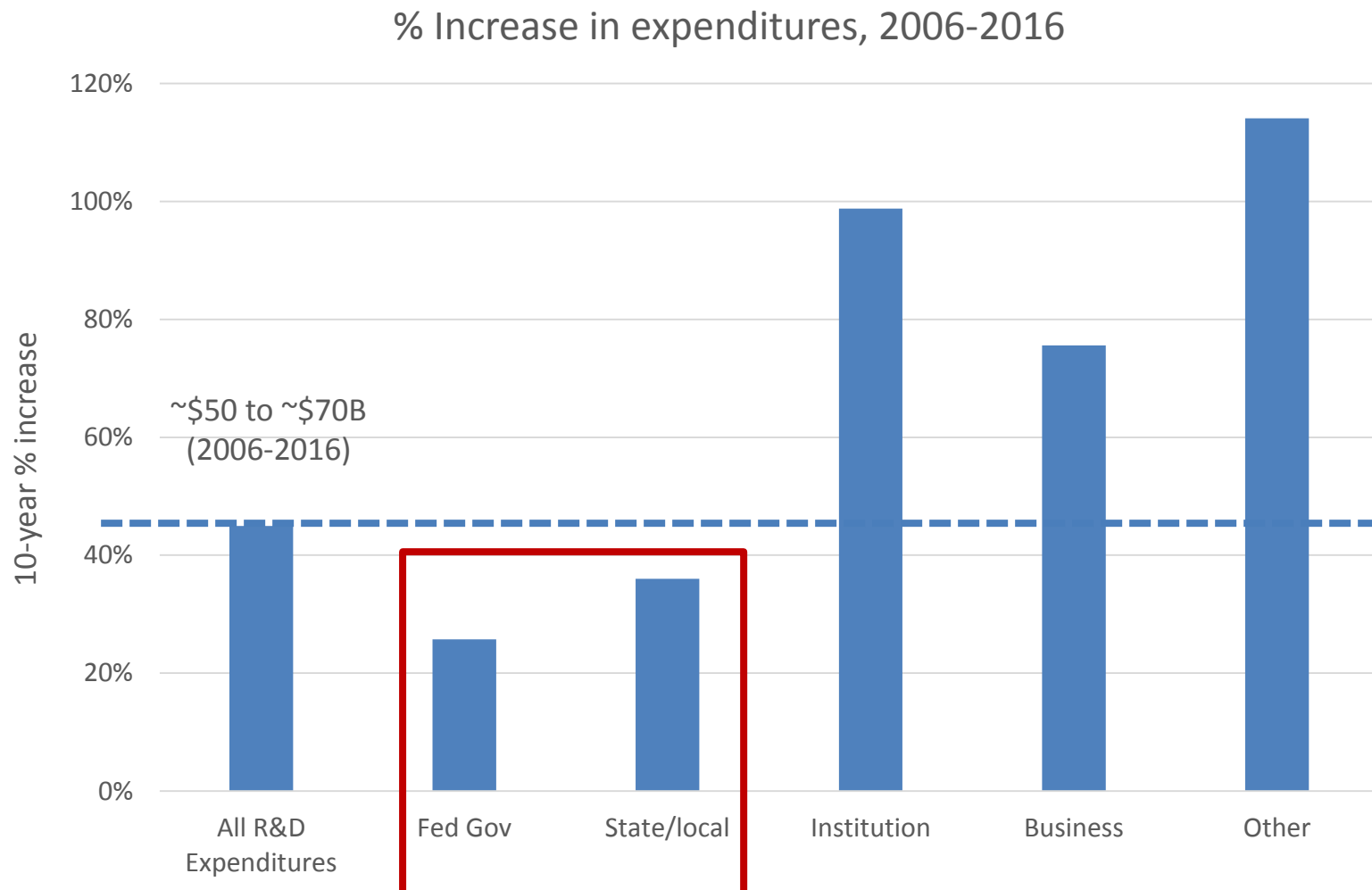
NSF university research expenditure data



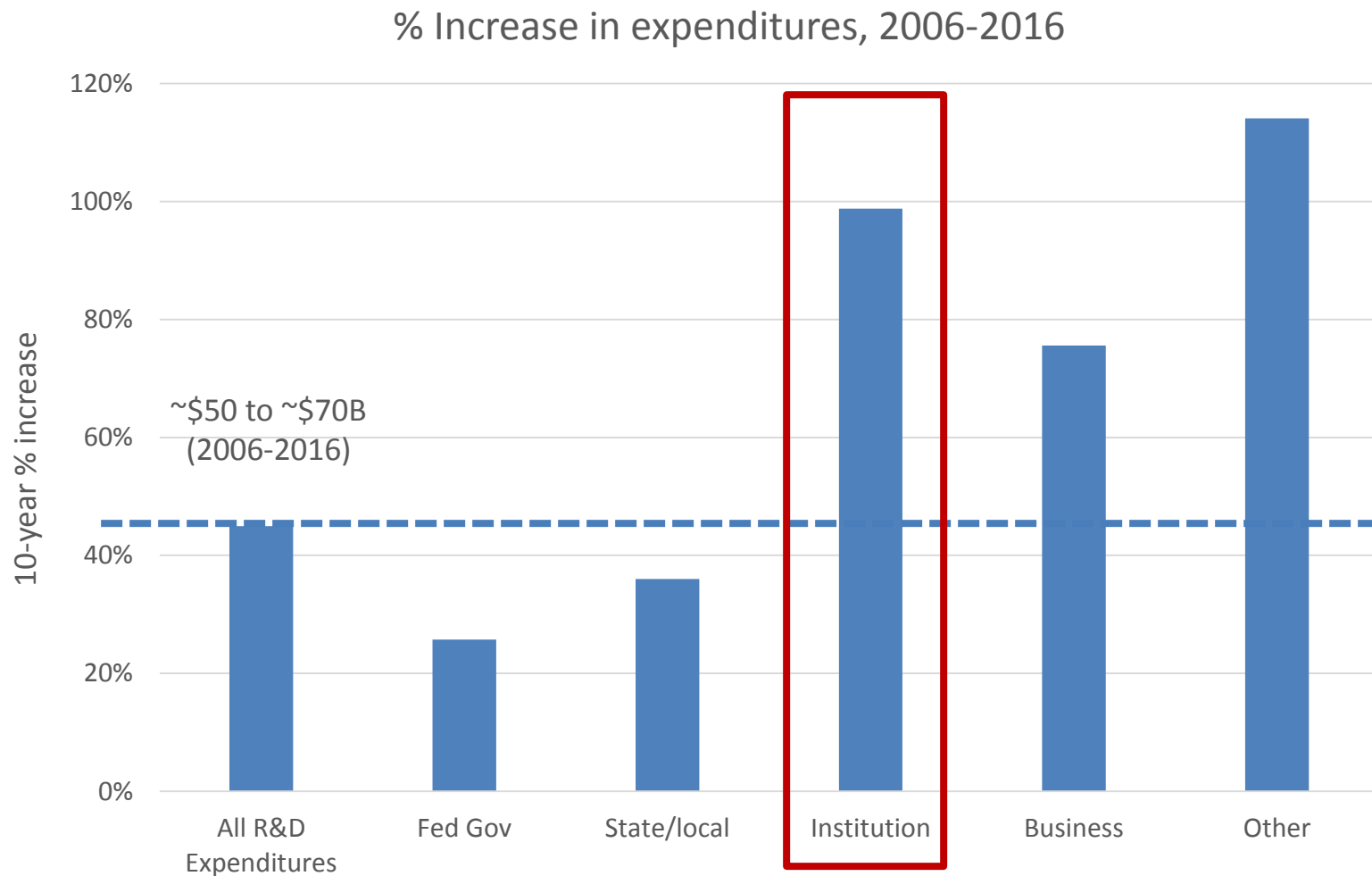
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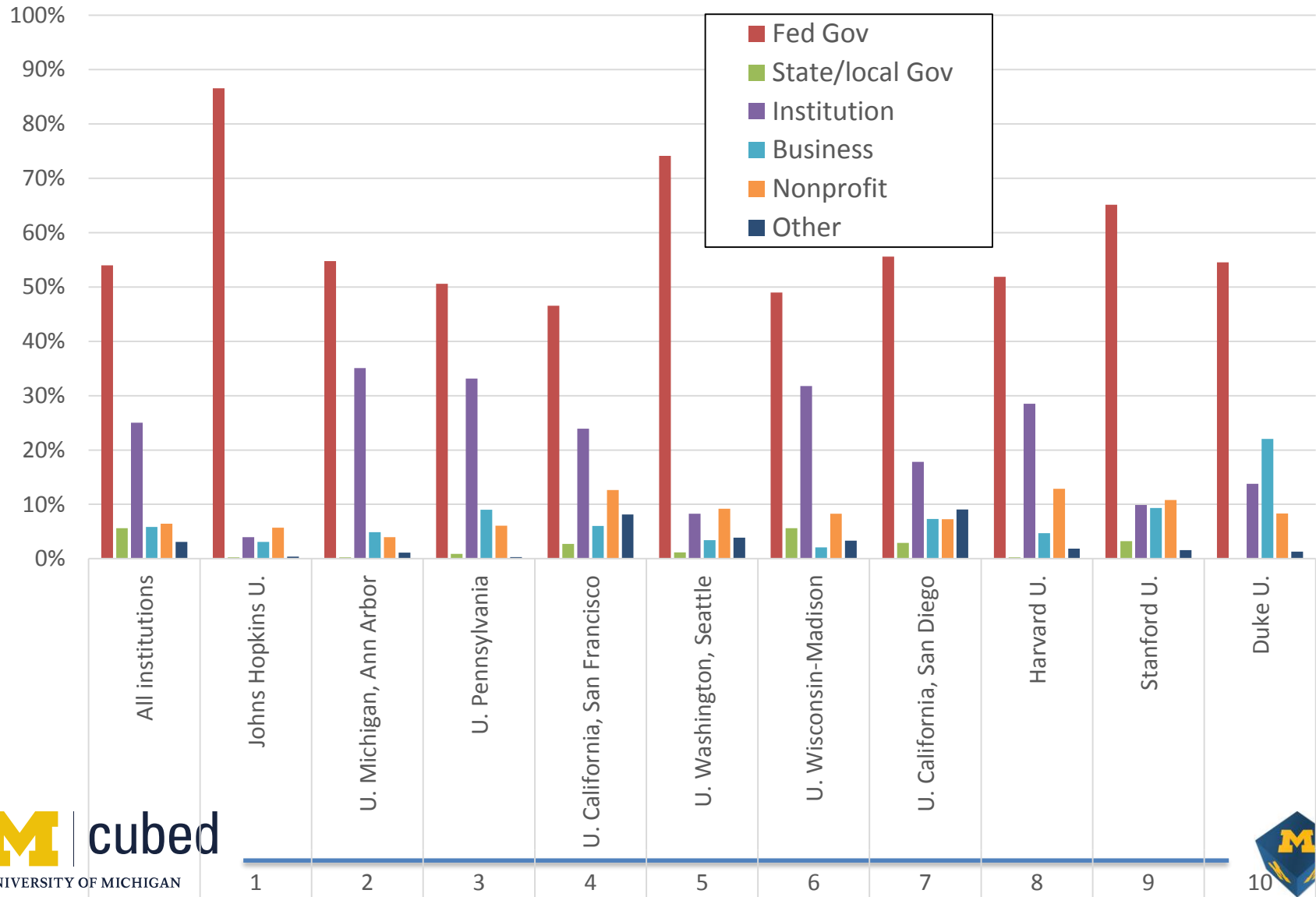


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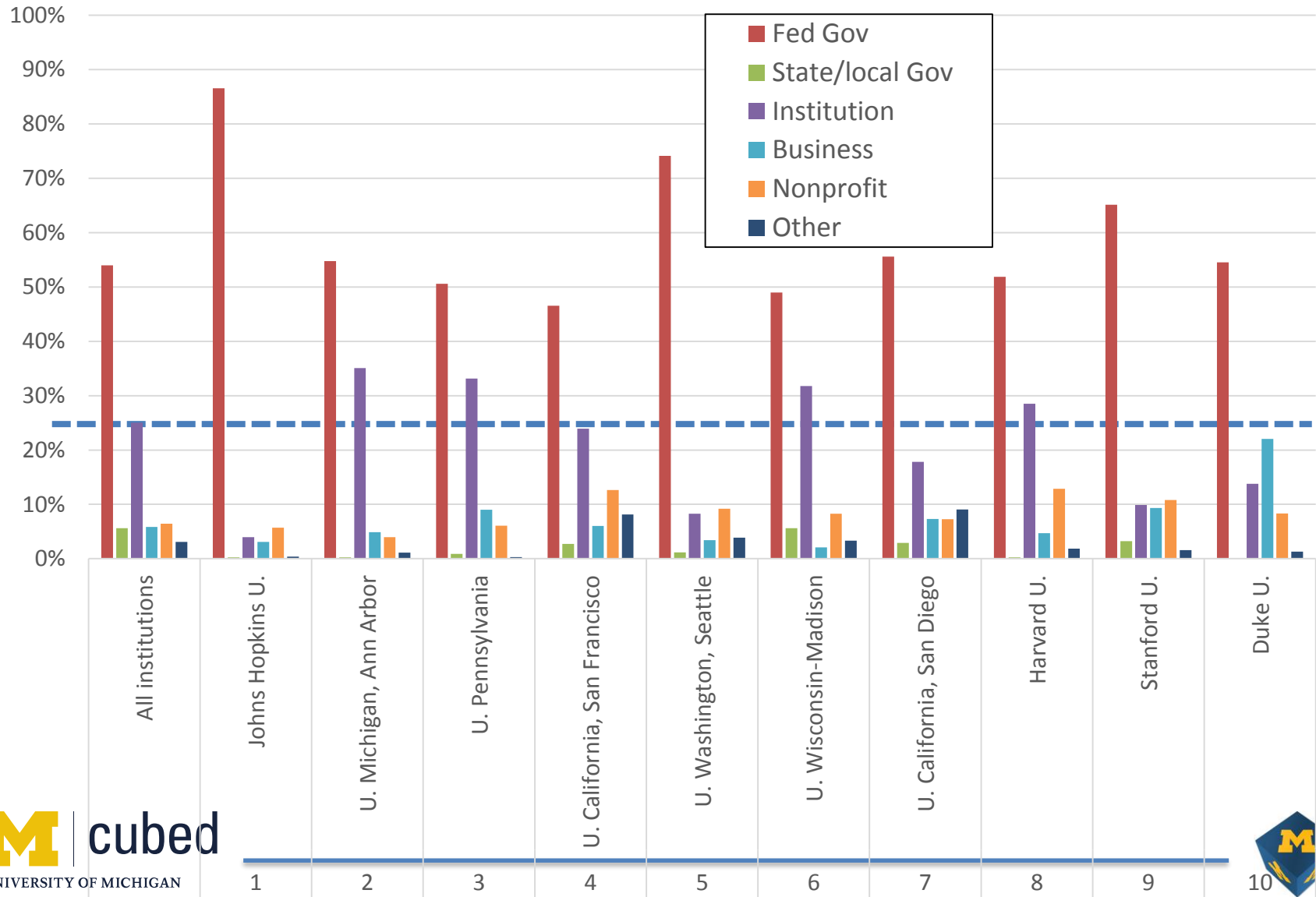
NSF university research expenditure data

As percentage of total expenditures (~\$1-\$1.5B/institution)



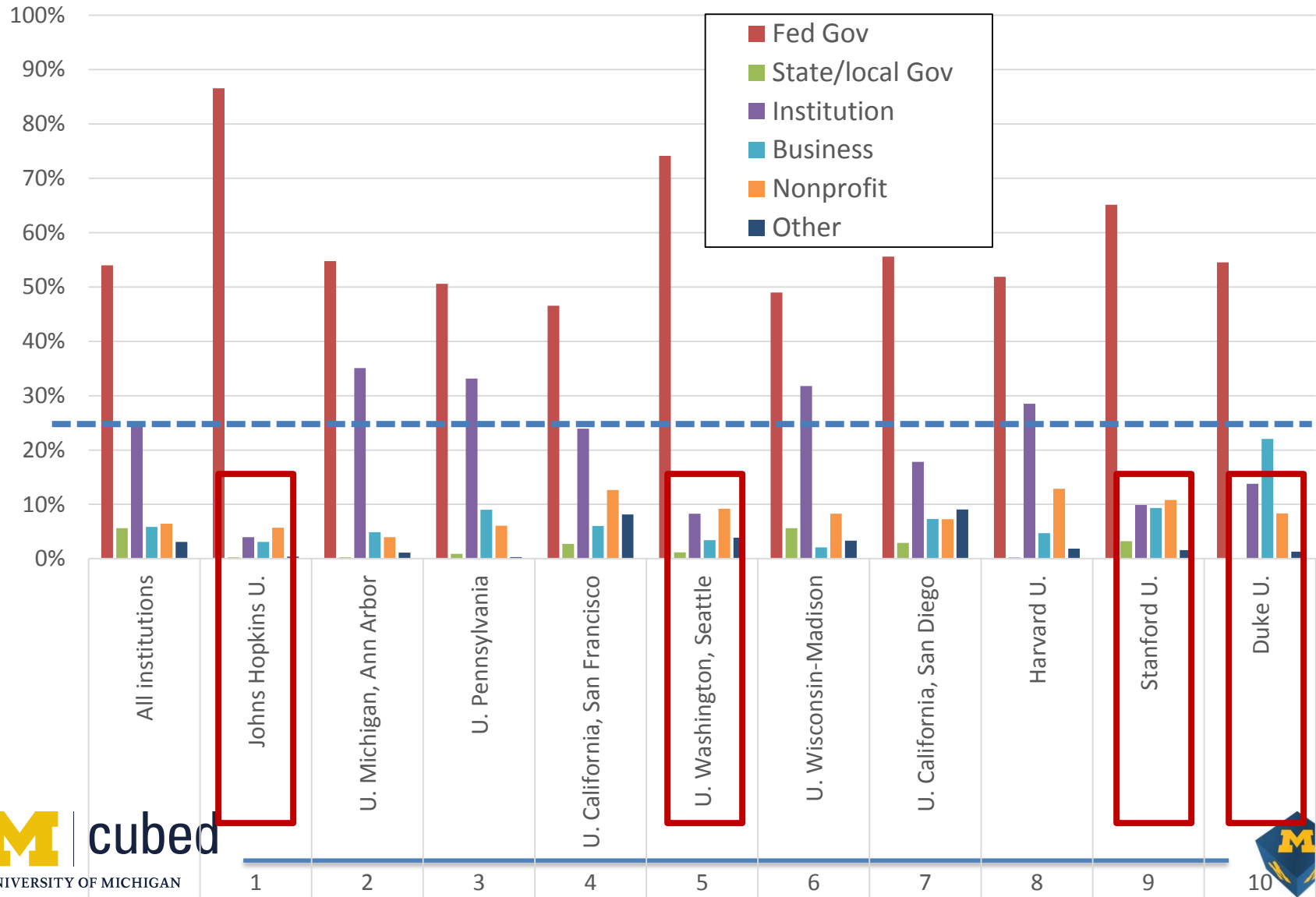
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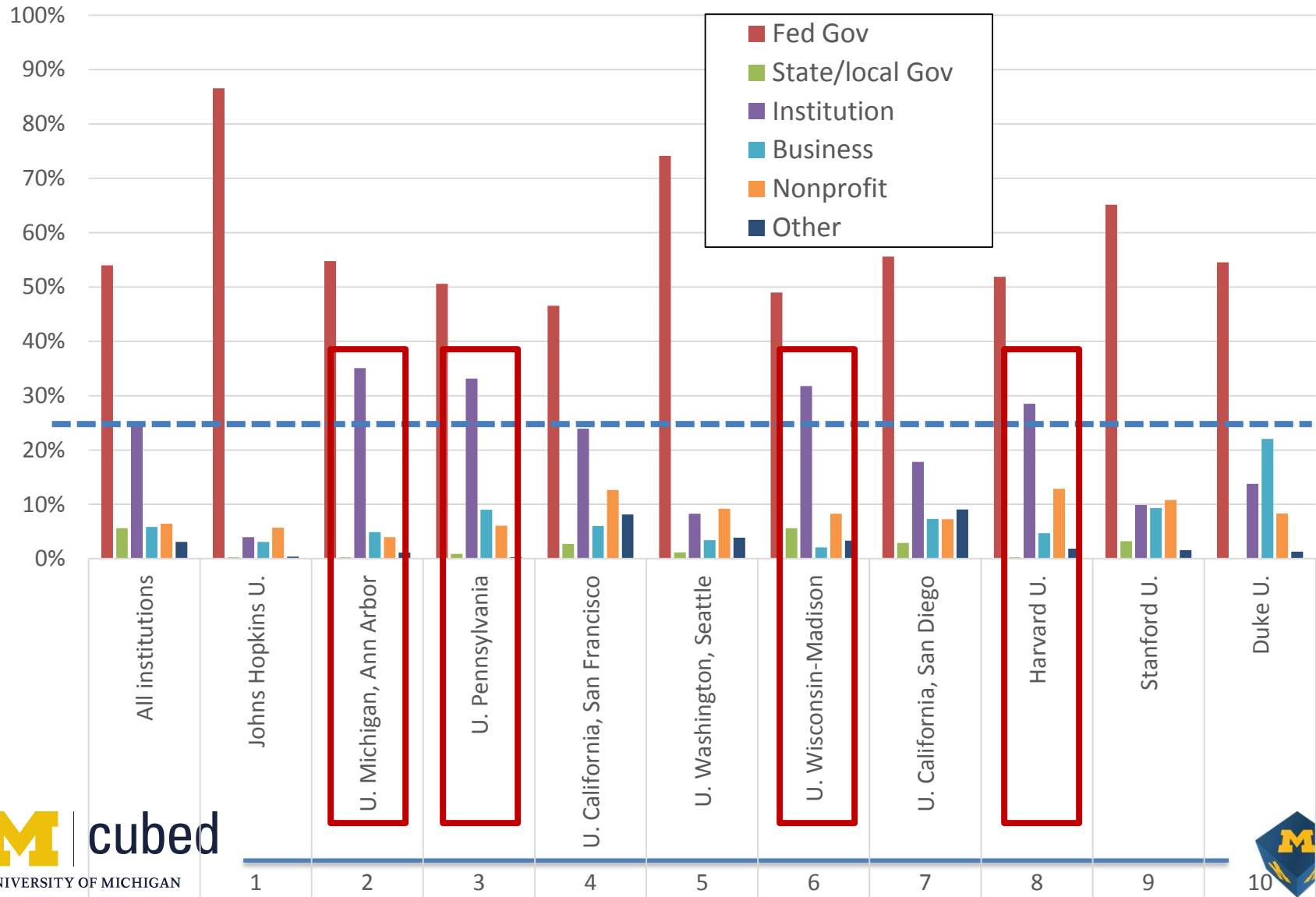
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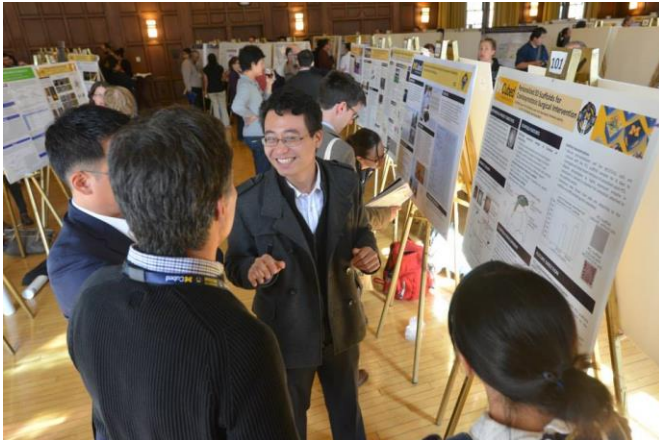
Universities can strategically invest, but...

- Traditional review can be biased against novel, interdisciplinary research
- Difficult for researchers to collectively advocate for central resources
- Major R1 universities are large; difficult to know who is doing what on campus

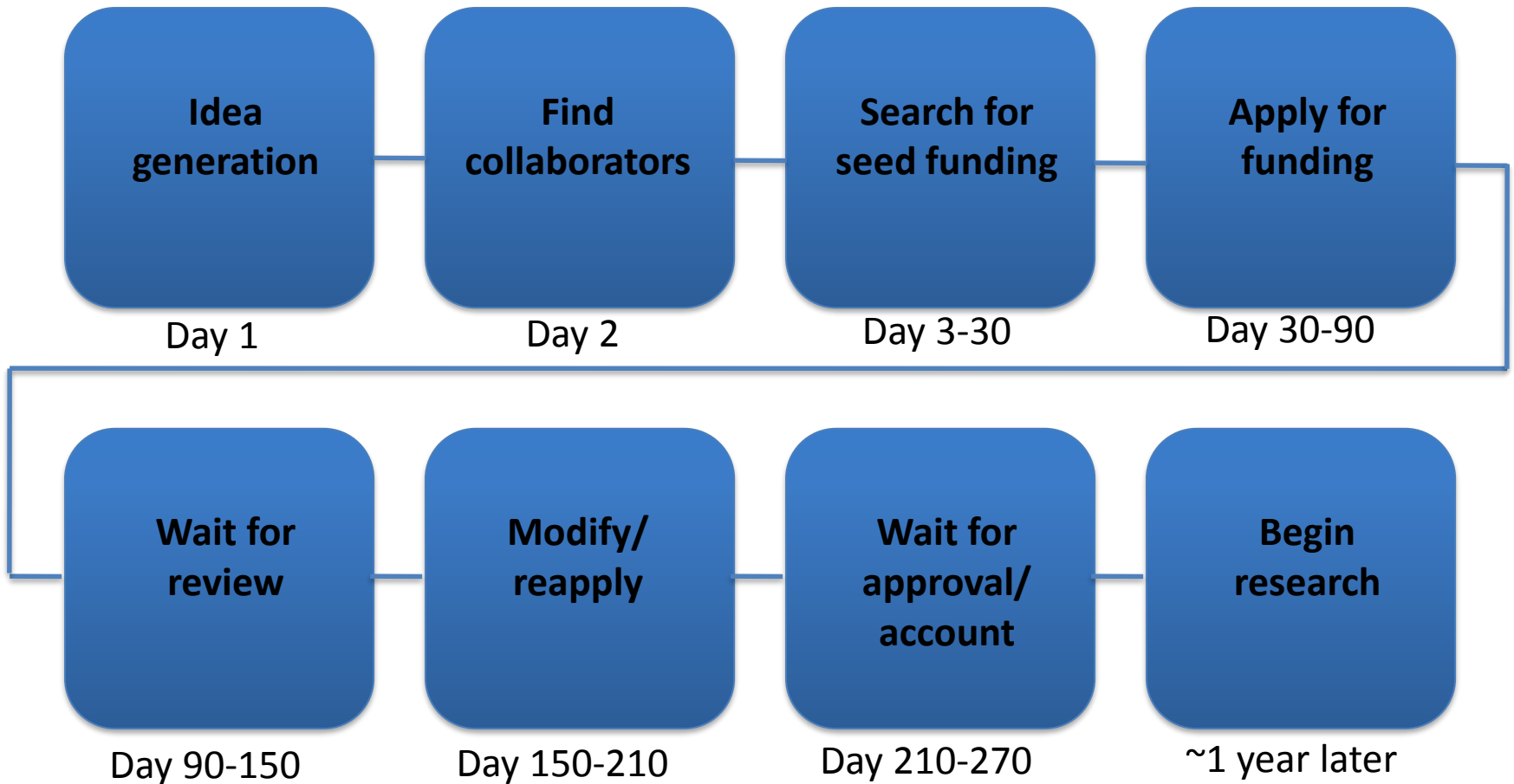


Mcubed

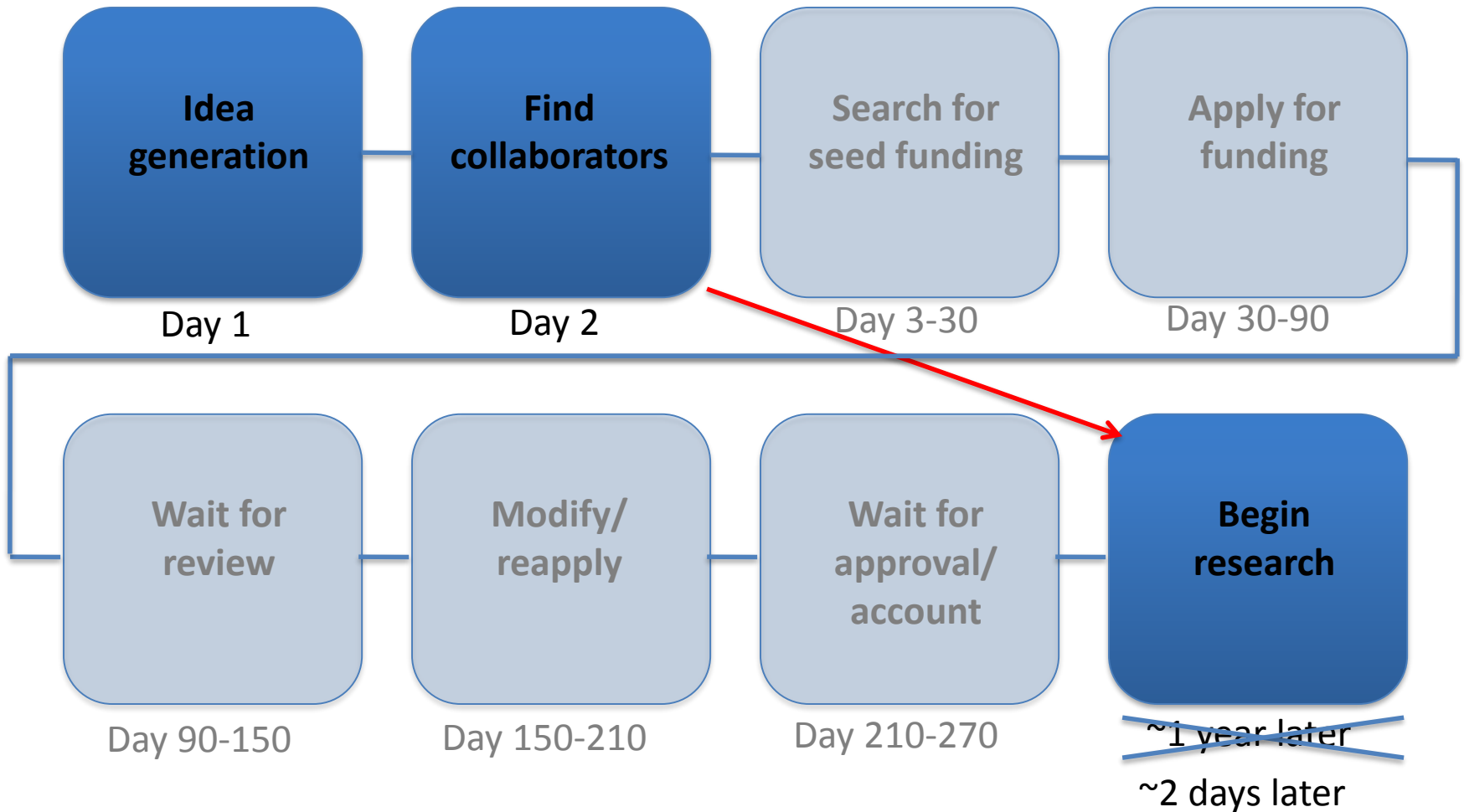
Mcubed provides immediate seed funding without traditional review to multidisciplinary faculty and student research teams (cubes)



Timeline: traditional funding



Timeline: Mcubed



How Mcubed works

- Faculty get virtual token, based on unit-defined eligibility
- Faculty post project ideas on Mcubed website (mcubed.umich.edu)
- 3 faculty, 2 different units = \$60k interdisciplinary cube for 1 year
- Money used to fund undergraduate and graduate students, postdocs
- No formal review!
- Cubes must present at symposium (oral or poster)



Mcubed website



LOCATE
COLLABORATORS

FIND A
PROJECT

VIEW STATUS
OF ALL TOKENS



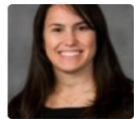
QUICK LINKS



Find Collaborators

Displaying 1 - 24 of 5704

A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
ALL



Andrea Lynn Aagesen
Clinical Instructor



No Tokens Left in Unit

Medicine



Maria Lasonen Aarnio
Assistant Professor



Token Available

LSA: Humanities



Alicia Aarnio
Assistant Research Scientist



Token Available

LSA: Natural Sciences



Richard Aaron
Professor of Cello



Token Available

Music, Theatre & Dance



Keith D Aaronson
Professor



Matthew D. Abbot
Clinical Assistant Professor

Search Collaborators

Search Terms

Advanced search options

University

- ☒ All
☐ University of Michigan - Ann Arbor
☐ University of Michigan - Dearborn

Unit

- Any -

Token Status

- Any -

APPLY

CLEAR

Need MCubed Help?

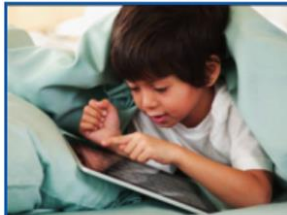


Mcubed website



Find Projects and Cubes

Displaying 1 - 24 of 580



How do children learn from apps and animations?

Twila Tardif (LSA:SocSci)

Cycle: MCubed 2.0



Time Travel on the Internet

Christian Sandvig (Info)

Megan Ankerson (LSA:SocSci)

Derek Vaillant (LSA:SocSci)

Cycle: MCubed 2.0



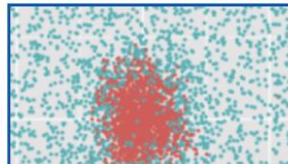
A study of size structured competition models to understand...

Annette Ostling (LSA:NatSci)

Krishna Garikipati (Engineering)

Charles Doering (LSA:NatSci)

Cycle: MCubed 2.0



Search Options

Search Terms

Cube Size

☒ All

☐ Classic Cube (\$60K)

☐ Mini Cube (\$15K)

— [Advanced search options](#) —

APPLY

RESET

Project Folders

Collection (2)

Interesting projects (12)

Mine (3)

Need MCubed Help?



The Case for the Cube

How Real-Time Seed Funding Grows Innovation

MCubed
SYMPOSIUM 2013

NOVEMBER 15, 2013



Mcubed Symposia: Single Deliverable

Keynote Speakers

2013: Tony Fadell

2014: Mark Schlissel

2017: Francis Collins



NOVEMBER 1, 2017



Mcubed unique peer-to-peer review

- Peer review #1 – Faculty must post projects on Mcubed website (*Public accountability*)
- Peer review #2 – Each faculty member can only join one cube each three-year cycle (*Strategic commitment*)
- No proposal is required or reviewed
- Faculty have the freedom to work on the problem that they think is the most impactful

Mcubed has attracted national attention



REUTERS

Detroit Free Press

The Washington Post

Science

THE CHRONICLE OF
HIGHER EDUCATION

TheScientist
EXPLORING LIFE, INSPIRING INNOVATION

nature



JSTOR

DAILY

Other Mcubed-inspired (token-based) programs:

- Michigan State: “WaterCube”
- University of Virginia: “3 Cavaliers”
- Texas A&M University: “T3”



Study: Proposal review process may not distinguish great from good

- Simulated NIH study section
- Reviewed proposals funded first time or were eventually be funded (i.e., after revision)
- Results:



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- Simulated NIH study section
- Reviewed proposals funded first time or were eventually be funded (i.e., after revision)
- Results:
 - No correlation between funded and not funded
 - No correlation between reviewers
 - **Lottery was suggested as a replacement!**

Study: Researchers are more efficient if given more freedom

- Looked at countries in Europe
- Evaluated increase in productivity (i.e., publications) as a function of increased funding
- Results:

Mallaopaty S, “Scientists get more bang for their buck if given more freedom,” *Nature*, May 23 (2018).

Sandstrom U and den Besselaar PV, “Funding, evaluation, and the performance of national research systems,” *J. Informetrics*, **12**, 365-384 (2018).

Study: Researchers are more efficient if given more freedom

- Looked at countries in Europe
- Evaluated increase in productivity (i.e., publications) as a function of increased funding
- Results:
 - **More reviewed**, prescriptive countries (heavily reviewed, research area prescribed) were **less efficient**

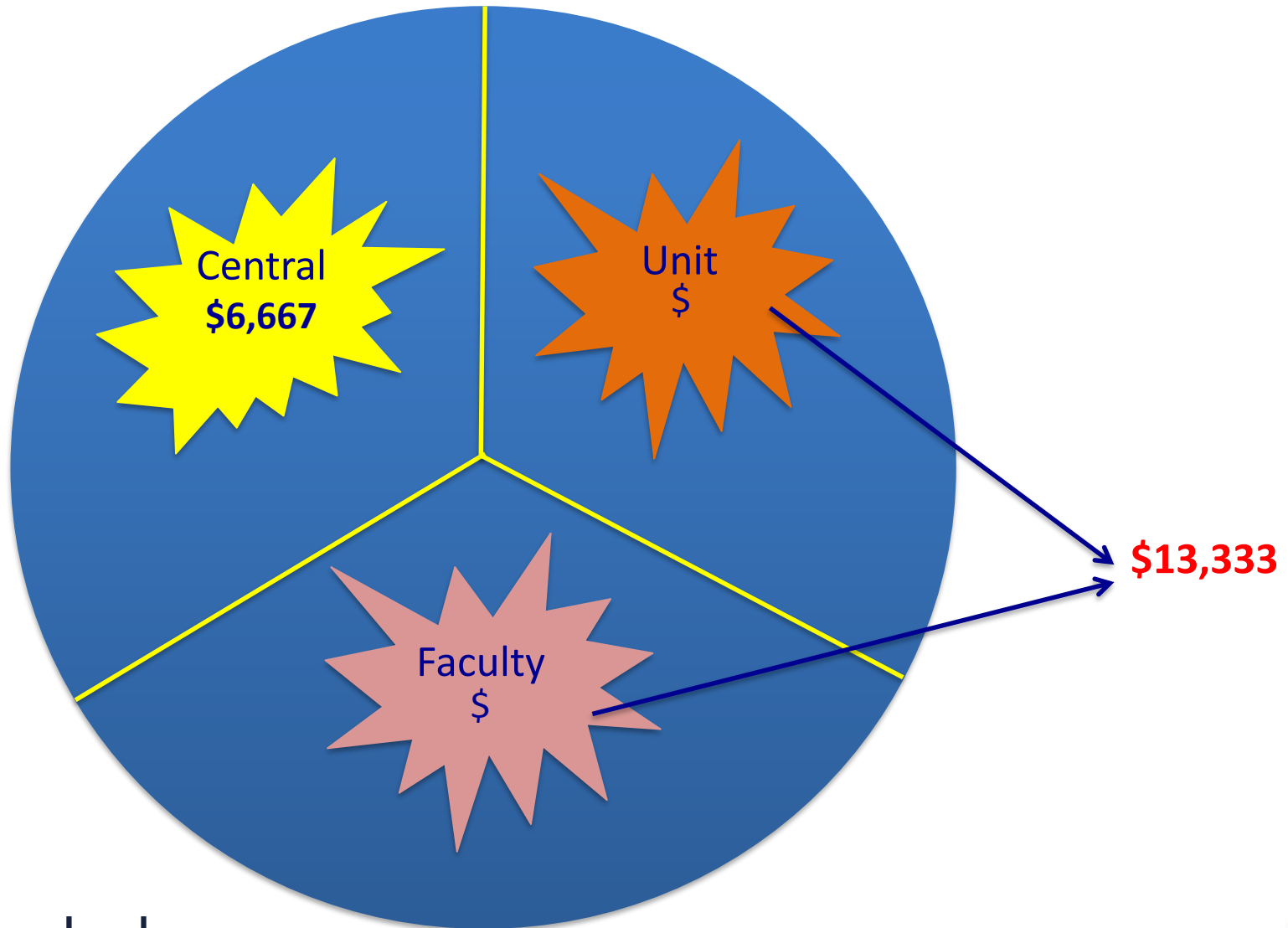
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Mcubed process is less risky

- More efficient than traditional review
- Researchers vote with their feet and are more knowledgeable than study section members
- Relatively low level of support to ~250 teams per cycle means risk is diversified
 - Mcubed: \$4.5M central support to over 700 faculty
 - Other: \$4.5M would reach ~10-20 faculty
- Distributed resources bring buy-in, return on investment

\$20K per faculty token (Classic Cube)



Impact per cycle



\$60M external funding



300 publications,
presentations,
patents, etc.



1000 trainees



700 faculty



~250
Cubes



\$4.5M

Units



\$4.5M

Central
Admin

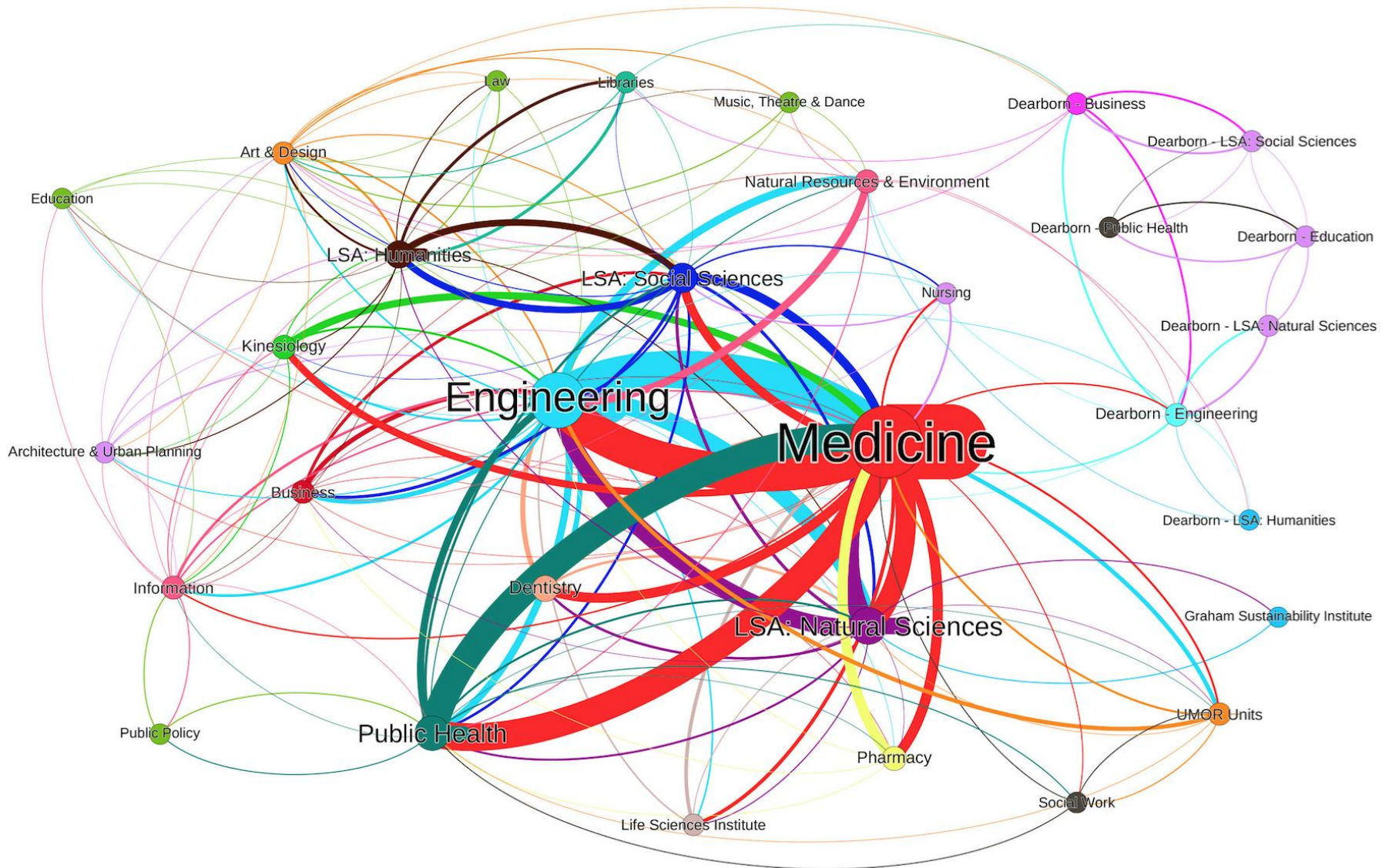


\$4.5M

Faculty



Mcubed stimulates university-wide collaborations



Faculty and Funders
JOINING FORCES
to tackle today's social challenges!



Mcubed Diamond Program supports external partnerships

(\$2.3M raised to date)



How Mcubed Diamond Works

- You post your project idea
- Faculty suggest approaches to tackle problem
- You help select the project owner
- Project then cubes same as internal cycle
- Funding is immediately made available to the team to begin the research



Donors, Corporations, Foundations



Defining Innovative Sustainable Solutions for Film-Based...

Ming Xu (NatResEnv)
Shelie Miller (NatResEnv)
Christian M. Lastoskie
(Engineering)

Funder: Procter & Gamble

Cycle: Diamond



Technologies to Improve Economic Welfare in Developing...

Gargi Ghosh (Engineering)
Krisanu Bandyopadhyay
(LSA:NatSci)
Anish Tuteja (Engineering)

Funder: Ranvir Trehan

Cycle: Diamond



Geospatial analysis of mainstream German periodicals...

Peter McIsaac (LSA:Hum)
Sugih Jamin (Engineering)
Ines Ibanez (NatResEnv)

Funder: Carl Lagoze

Cycle: Diamond



Summary

- New non-traditional review (no formal review)
- Process matches fast-paced exchange of information in today's research environment
- External partners brought in through Diamond including industry, foundations, alumni...
- Investigators explore new solutions to today's most important societal problems
- Mcubed de-risks institutional investment with significant impact and return on investment



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