

PREPARE YOUR
INSTITUTION FOR THE **NEXT**
GENERATION RESEARCH
ENTERPRISE



Agenda Future of Research

1. Overview
2. Introductions
3. Research Trends
4. Researcher Trends
5. Technology Trends
6. Open Discussion
7. Summary

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INTRODUCTIONS & INFORMATION

Today's Moderator



GARY WHITNEY

Managing Director, Huron's Education
and Life Sciences Practice

Gary has 30+ years experience in software and technology products. He assists clients with automation and deployment strategies in the areas of research compliance, grants and contracts administration and clinical trials management.

Prior to joining Huron, Gary served as the VP of sales and marketing for Click Commerce. He co-founded Click Commerce's ".com" predecessor, Webridge, an enterprise web-based solutions startup.

Today's Presenters



SEAN DUDLEY

Executive Director, Research Technology Office
Arizona State University

- A biology and philosophy geek at heart, I started out at ASU in an evolutionary genomics center
- I joined the administration to help advance research through the selective implementation of technologies, policies, and services at the enterprise level
- With a decade of administrative tech as our focus, we recently gained responsibility for delivering new IT services aimed at directly enabling sponsored projects
- I deeply enjoy working for a highly transparent and measured institution that is willing to evaluate and accept risks in favor of reducing burden and enabling our customers

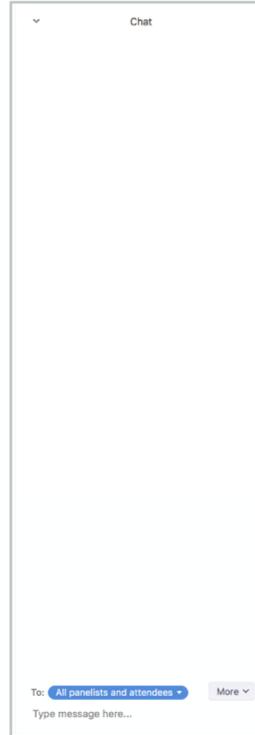
Today's Presenters

WES HARROTT

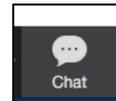
MD Anderson Cancer Center

- Over 19 years experience in the Research Community
- 12 years over Research Administration, MD Anderson
- Business Sections experience at MD Anderson:
 - Conflict of Interest (COI)
 - Institutional Animal Care and Use Committee (IACUC)
 - Material Transfer Agreements (MTA)
 - Institutional Biosafety Committee (IBC)
 - State and Internal Funding
 - Research Integrity
- Current Focus New Research Business Development

Ask Us Your Questions Through the Chat Feature



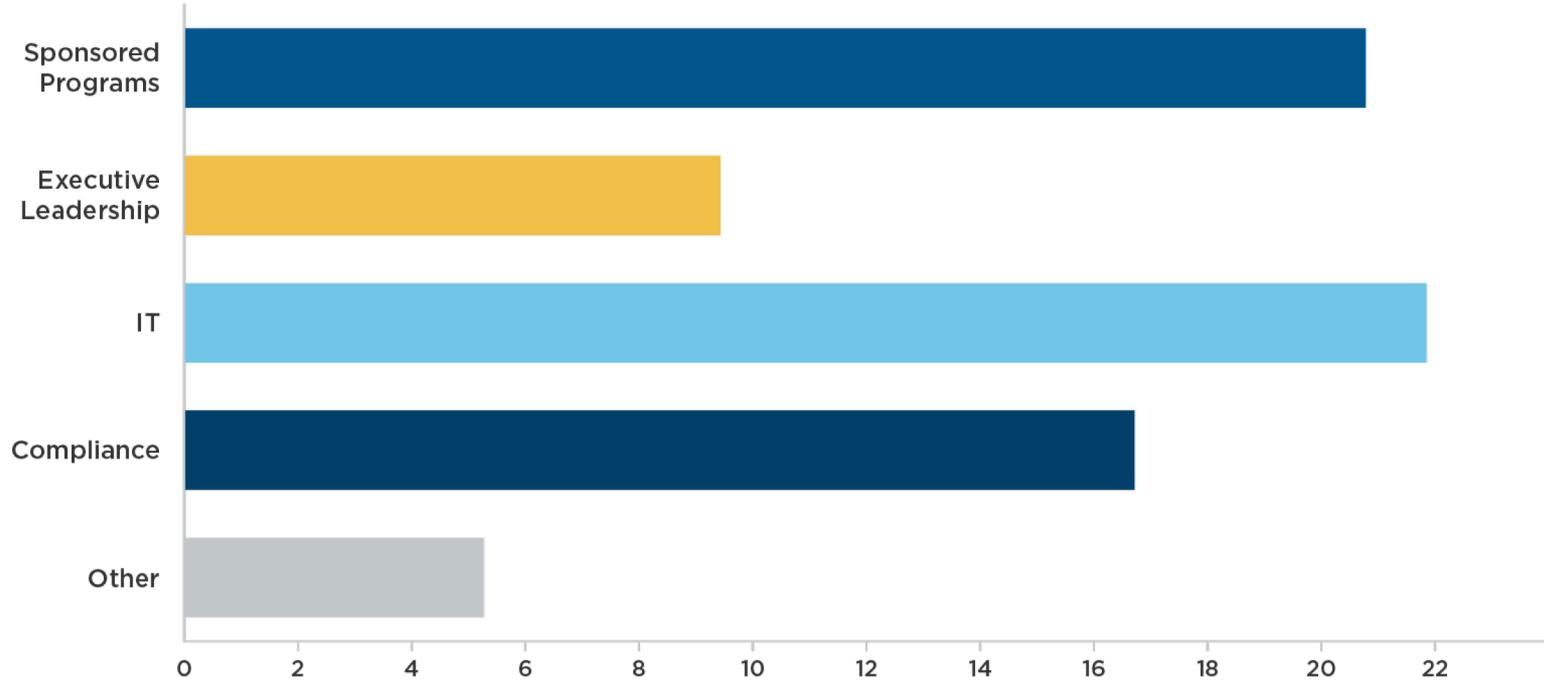
Enter a question in this
dialog area at any time



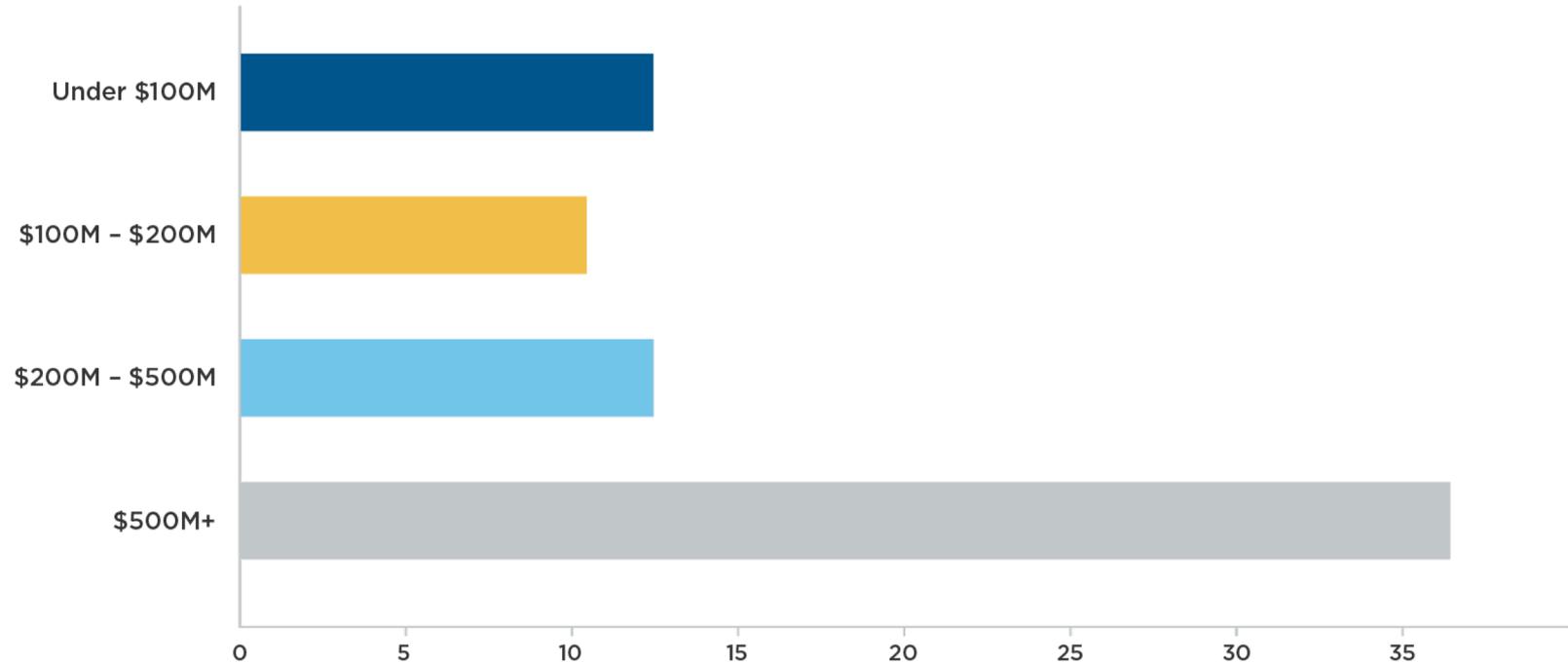
Ten Trends in Research

1. The Business of Research
 1. Federal Funding % will Decline
 2. Smaller Players will Consolidate
 3. Outsourcing will Accelerate
 4. Science will Drive Fiscal Policy
2. Researchers
 1. Aging Researchers will Retire
 2. Administrative Burden will Shrink
 3. Big Breakthroughs will Occur Through Cross-disciplinary Research
3. Technology
 1. Data Centers will Move to the Cloud
 2. Big Data will Revolutionize Science and Administration
 3. Security will still be Job #1

Survey Results - Job Function



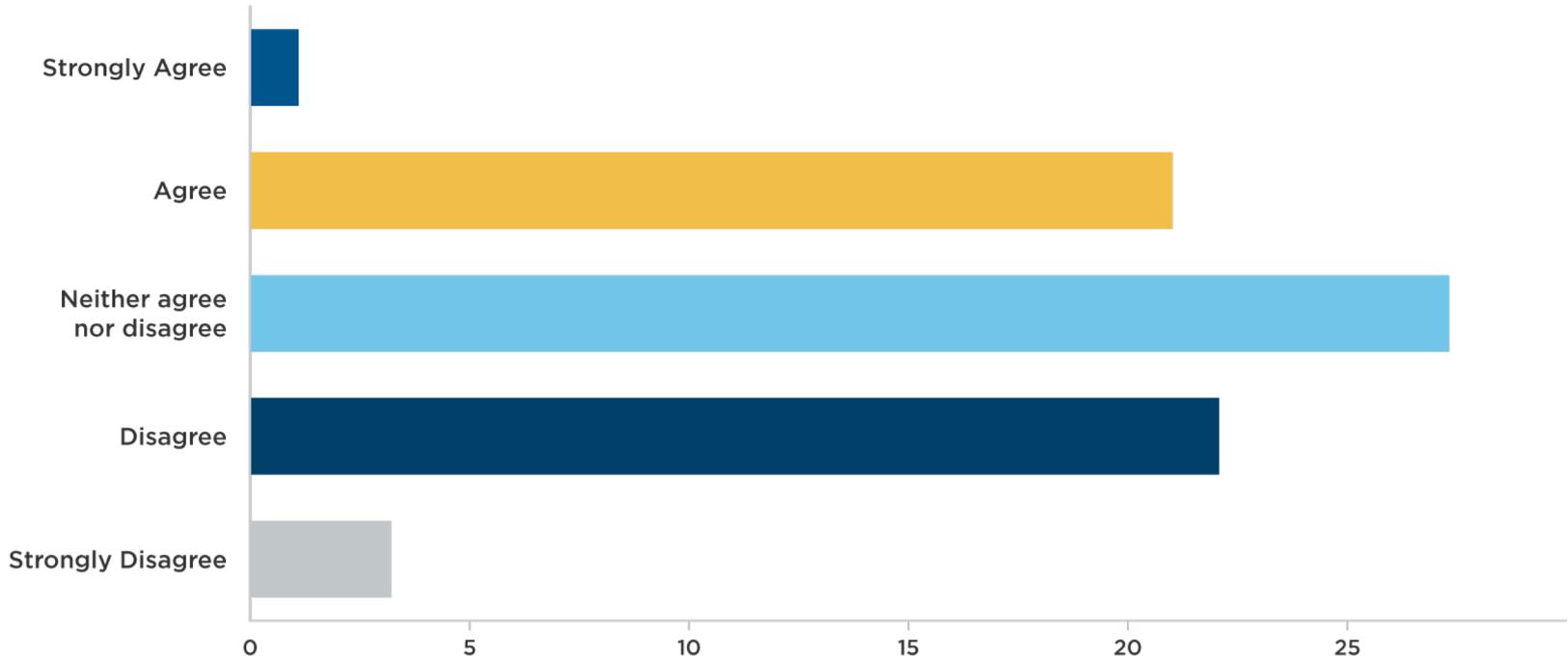
Survey Results - Organization Size



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SURVEY RESULTS BUSINESS OF RESEARCH

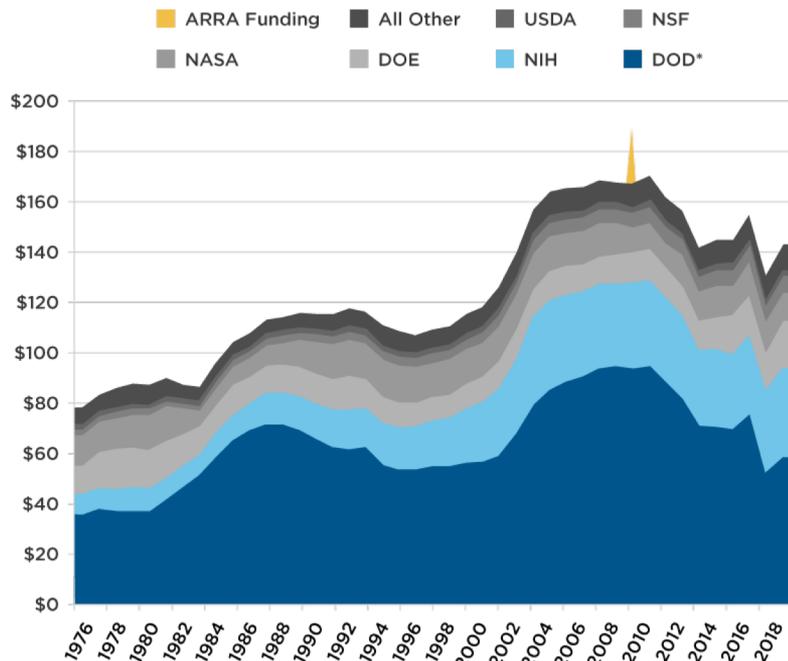
By 2025, most university research funding won't come from the federal government



Historical Trends in Federal R&D

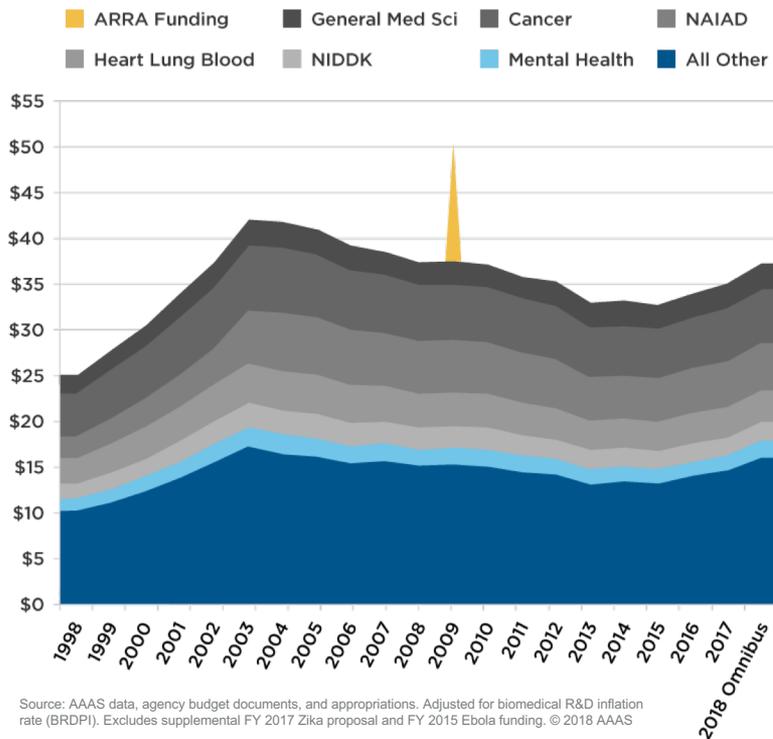
Trends in R&D by Agency

in billions of constant FY 2018 dollars



National Institutes of Health Budget, 1998-2018

budget authority in billions of constant FY 2018 dollars



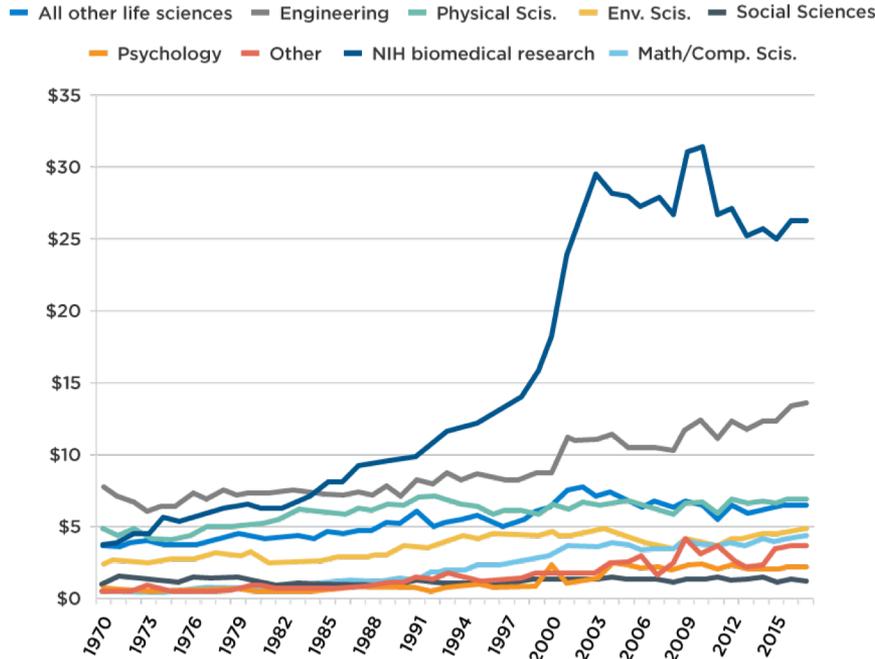
*NOTE: Beginning in FY 2017, a new official definition of R&D has been adopted by federal agencies. Late-stage development, testing, and evaluation programs, primarily within the Defense Department, are no longer counted as R&D. FY 2018 figures are AAAS estimates based on omnibus-enacted appropriations. 1976-1994 figures are NSF data on obligations in the Federal Funds survey. Source: AAAS Report: Research & Development series and analyses of FY 2018 omnibus legislation. © 2018 AAAS

Source: AAAS data, agency budget documents, and appropriations. Adjusted for biomedical R&D inflation rate (BRDPI). Excludes supplemental FY 2017 Zika proposal and FY 2015 Ebola funding. © 2018 AAAS

Historical Trends in Federal R&D (2)

Trends in Federal Research by Discipline, FY 1970-2017

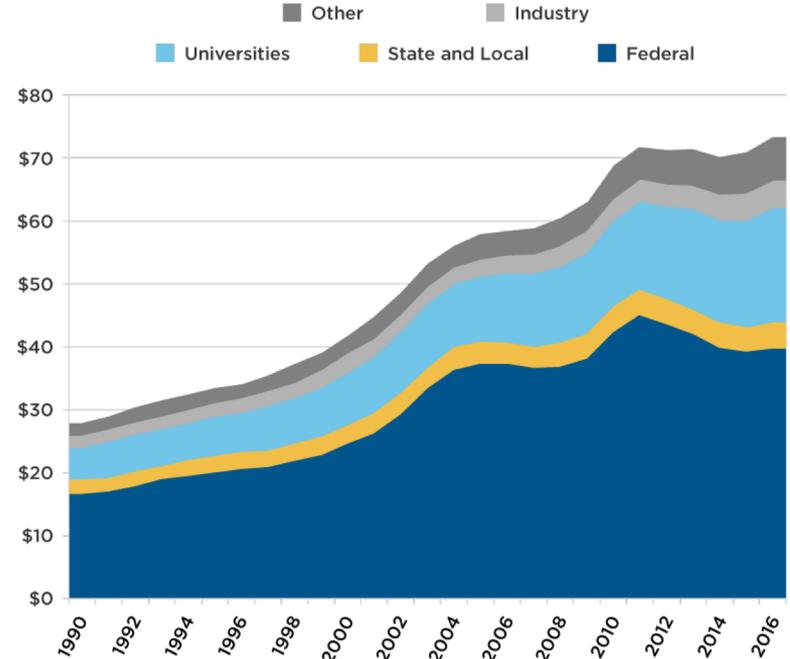
obligations in billions of constant FY 2017 dollars



"Other" includes research not classified (includes basic research and applied research; excludes development and R&D facilities). Life sciences are split into NIH support for biomedical research and all other agencies' support for life sciences. Source: National Science Foundation, *Federal Funds for Research and Development* series. FY 2016 and 2017 data are preliminary. Constant-dollar conversions based on OMB's GDP deflators. © 2017 AAAS

University R&D Funding by Source

expenditures in billions, FY 2017 dollars

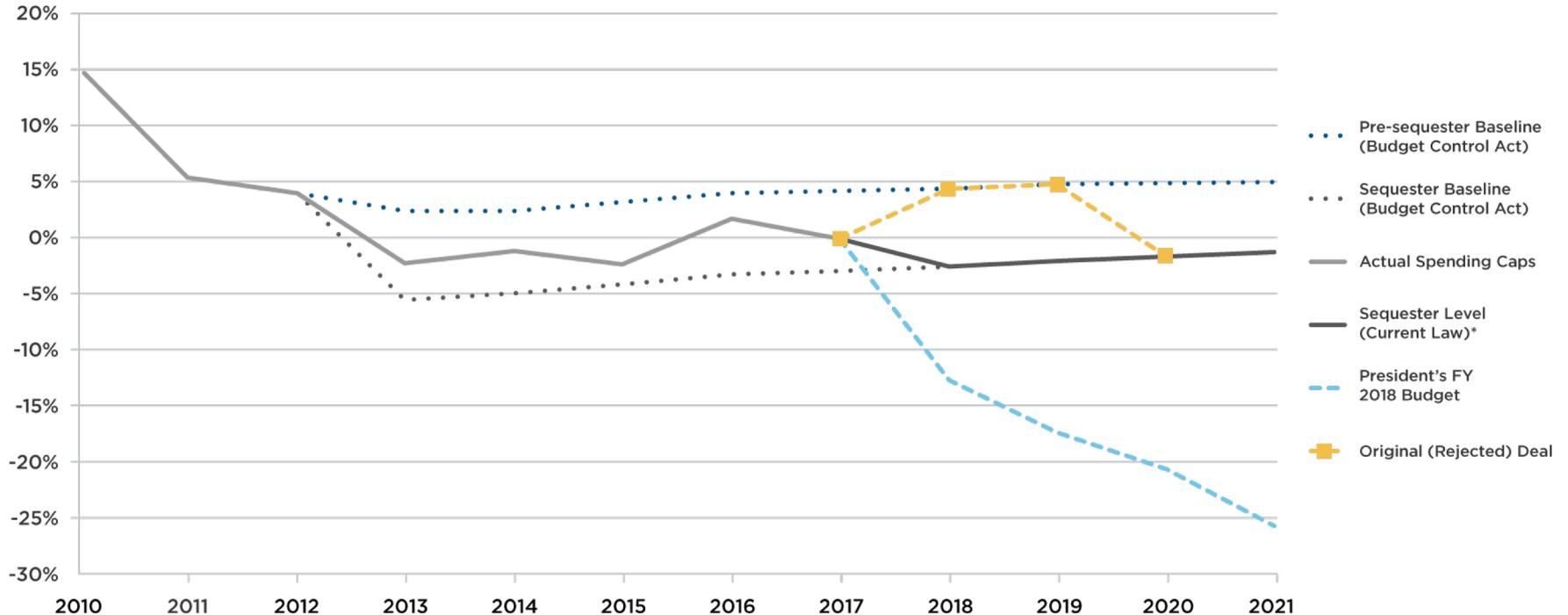


Source: NSF, National Center for Science and Engineering Statistics, *Higher Education R&D* series, based on national survey data. Includes Recovery Act funding. © 2017 AAAS

AAAS Study by Matt Hourihan

Limits on NONDEFENSE Spending

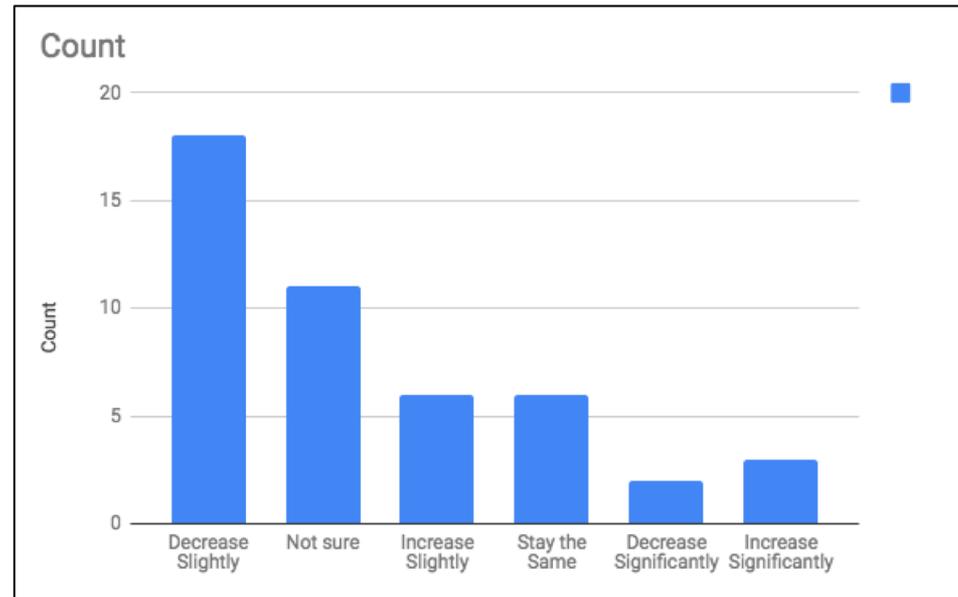
Estimated percent change from current year, inflation adjusted



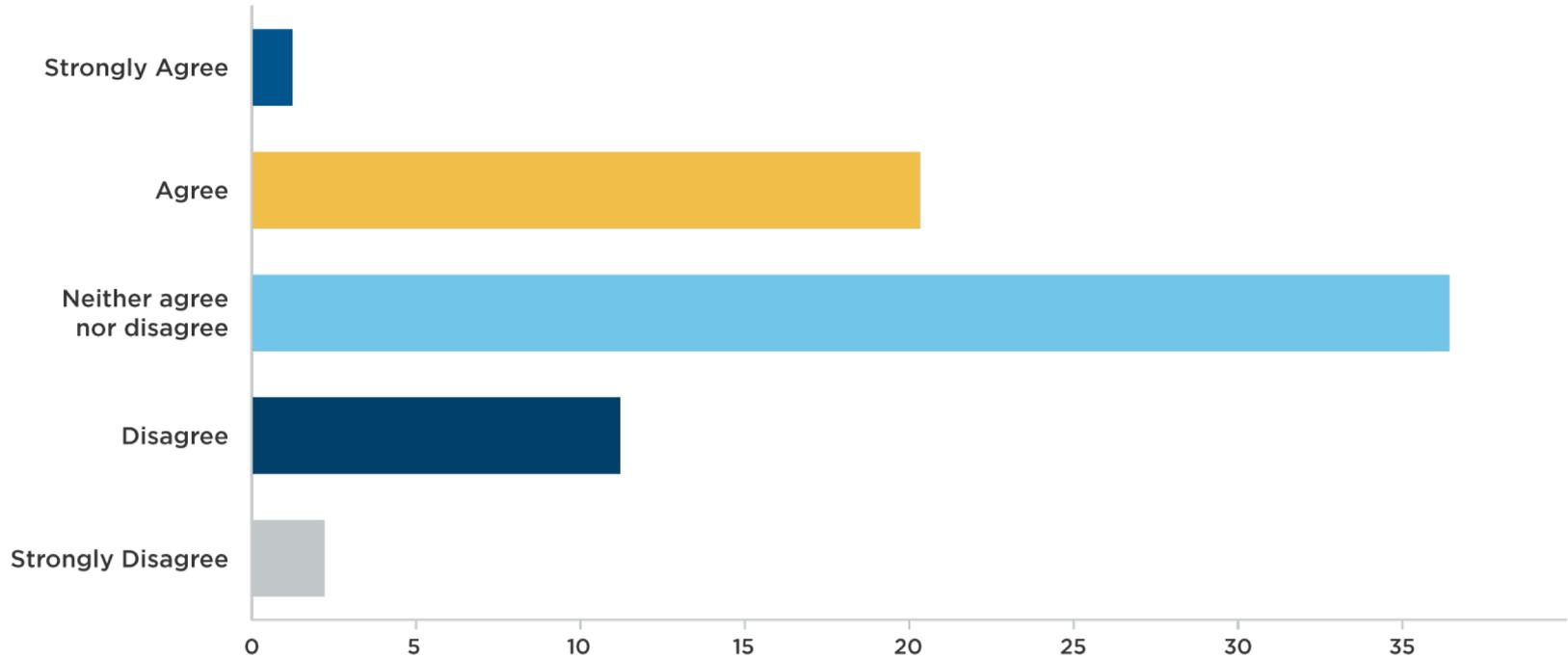
*Current caps last through 2021; spending is projected beyond.
Based on past and current budget resolutions, the Budget Control Act and subsequent legislation, and the FY 2018 OMB summary tables. © 2017 AAAS

Polling Question – Federal Funding

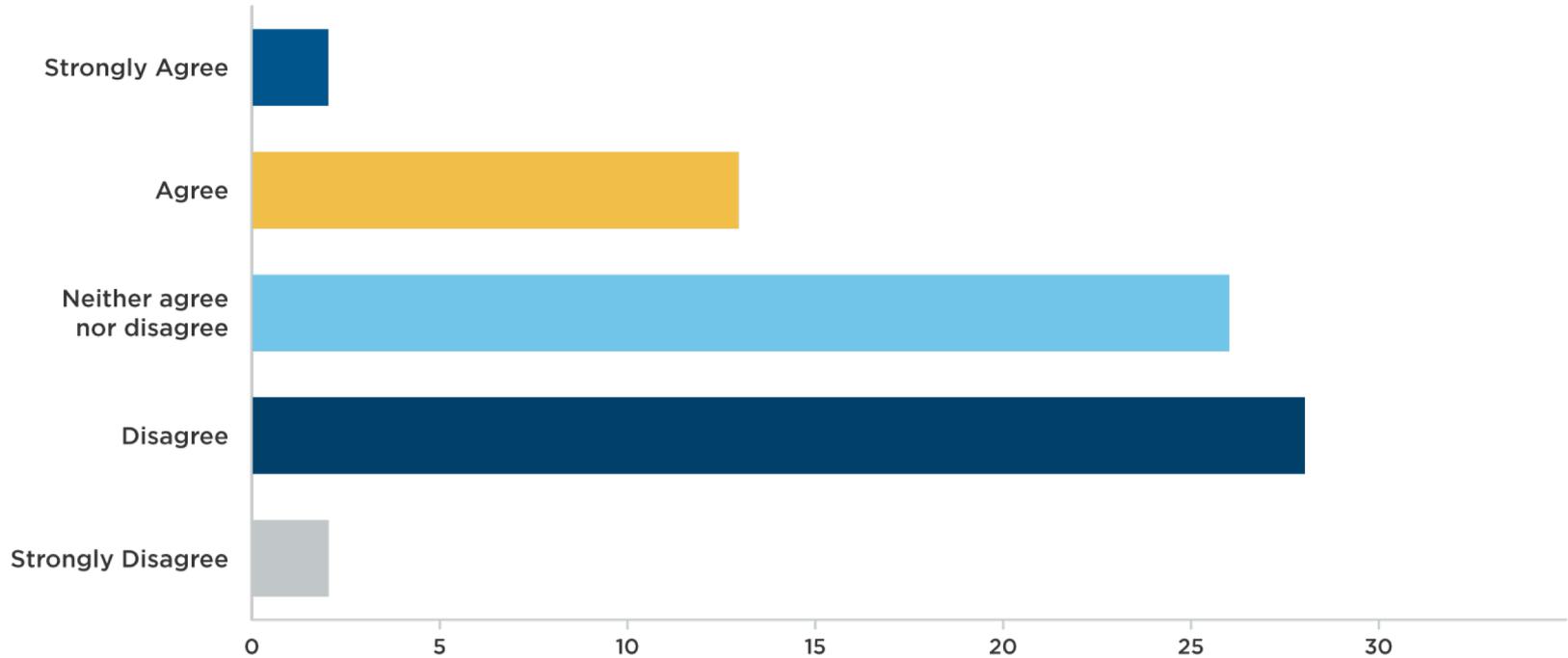
What will happen to the % of Federal Funding at your organization in five years?



By 2025, a third of the research enterprises with funding under \$25M will merge or close.



By 2025, half of all “routine” research administration functions will be outsourced.

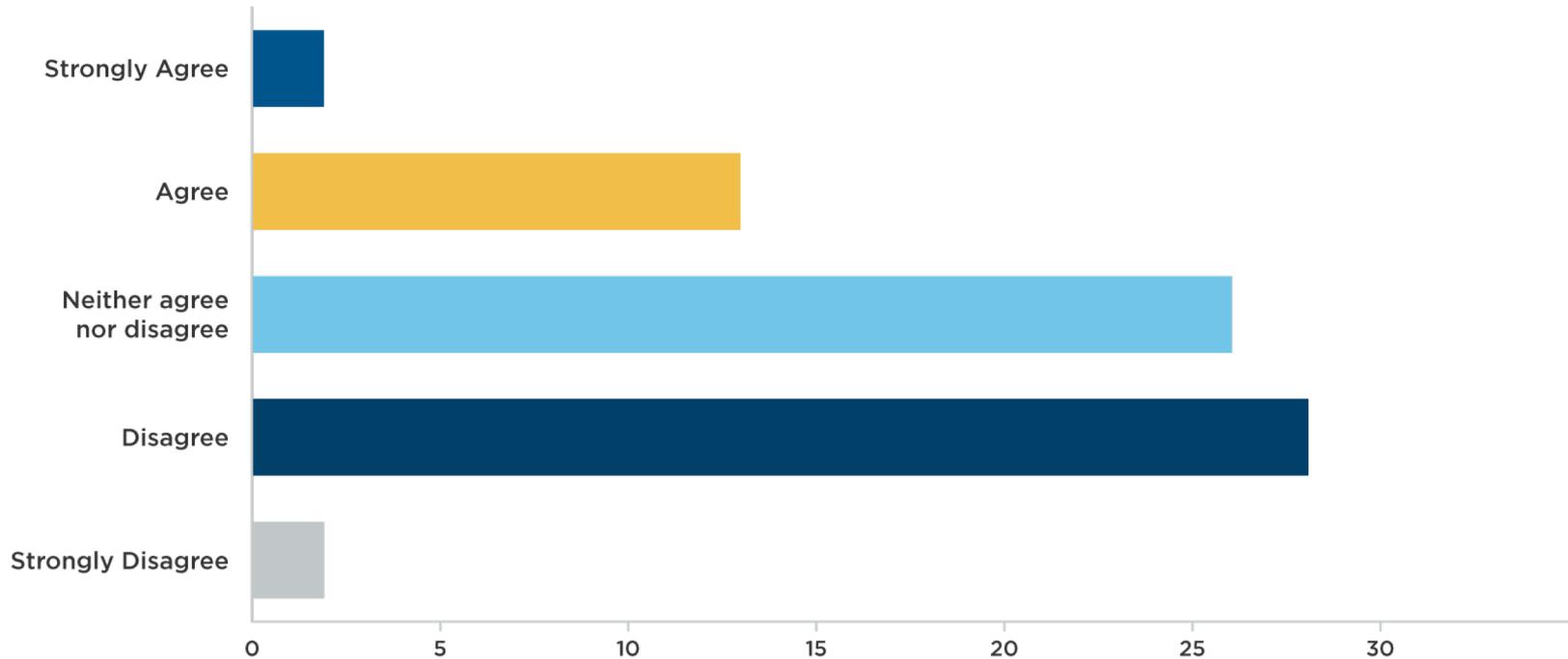


Polling Question – Outsourcing

Which of the following research functions have experienced some outsourcing at your organization?

1. Legal Contracting
2. Application Hosting
3. Compliance Reviews (e.g. commercial IRB)
4. Medicare Coverage Analysis
5. Other
6. Not sure

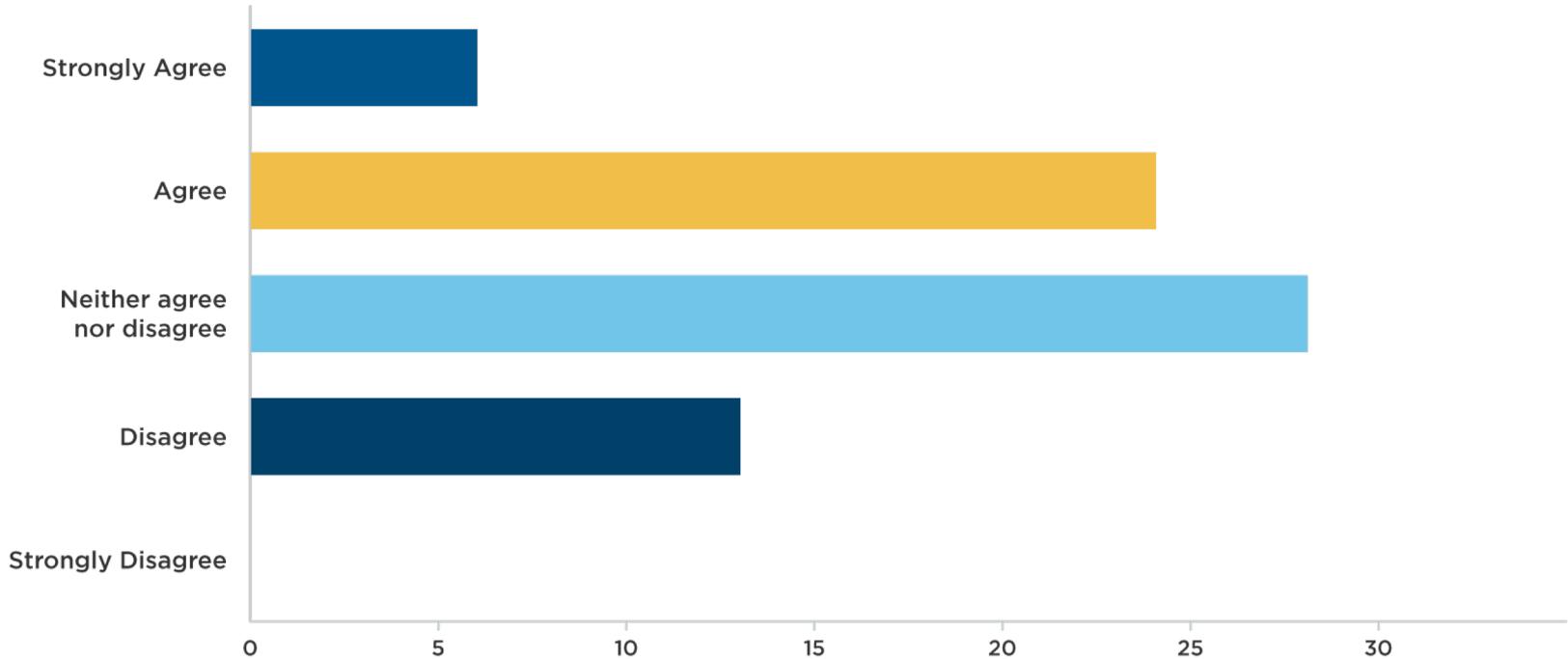
By 2025, the US will make a major shift towards evidence-based fiscal policy and decision making



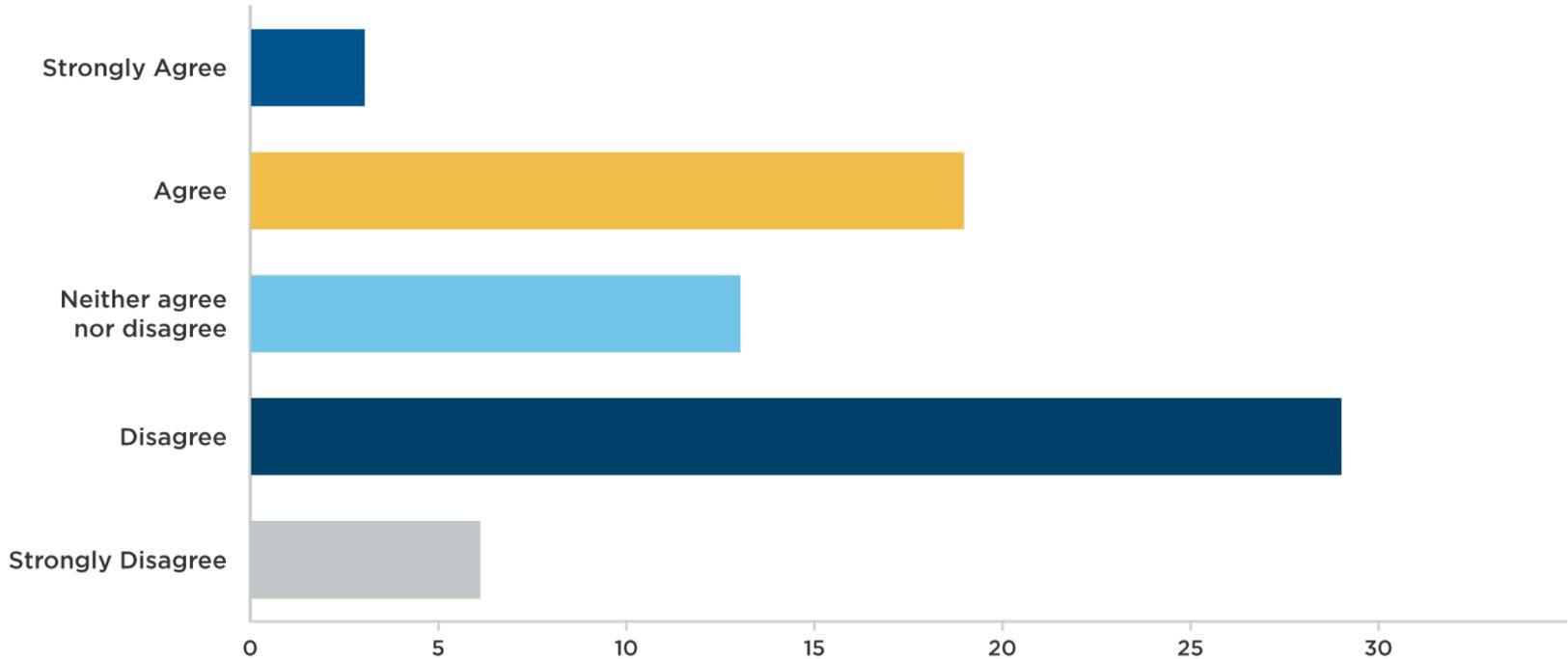
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SURVEY RESULTS RESEARCHERS

By 2025, almost half of today's top-funded researchers will have retired

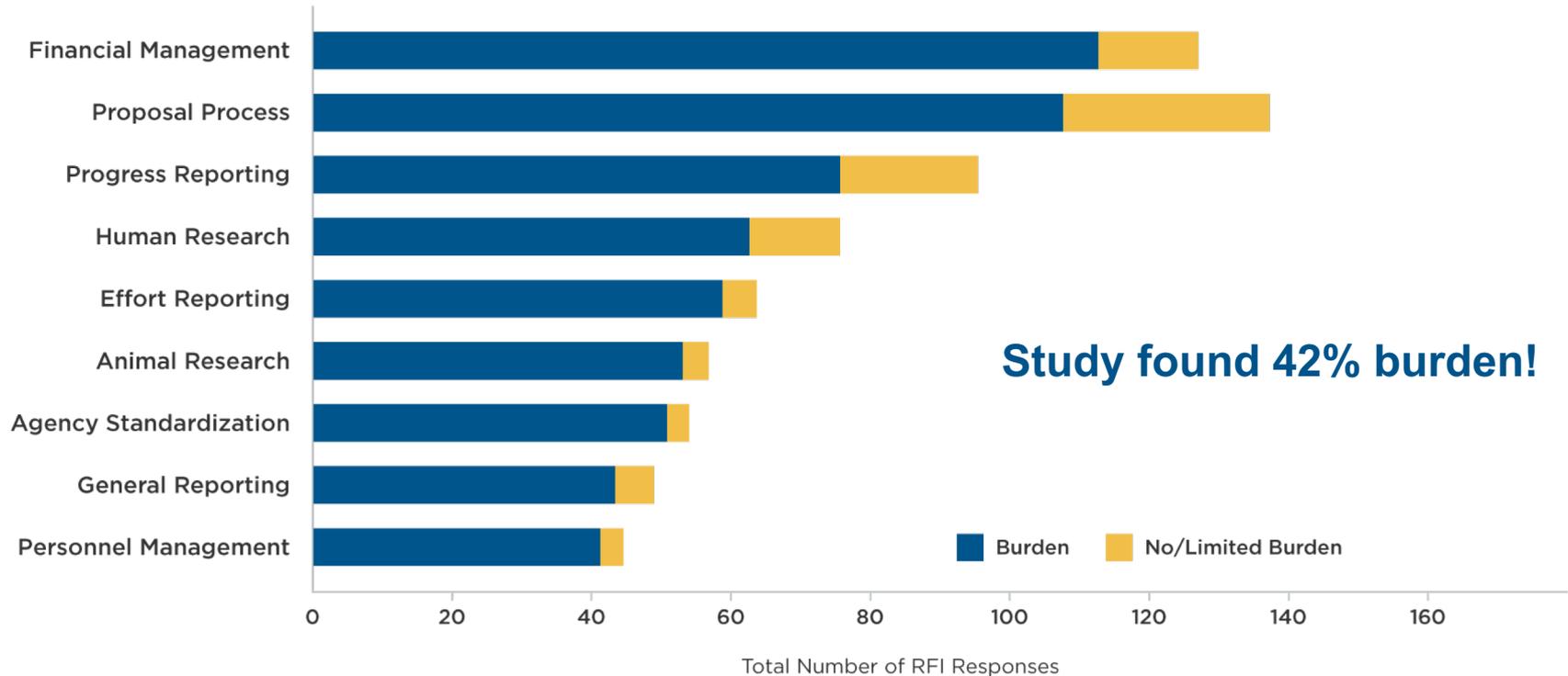


By 2025, reductions in administrative burden will give researchers 25 percent more time for research



FDP Studies on Researcher Burden

Figure 1: Total number of responses that mention each type of burden, limited to those mentioned in 20 percent or more of the responses



NSF 2014 Study on Faculty Burden

Figure 2: Faculty responses to a follow-up question on proposal-preparation burdens

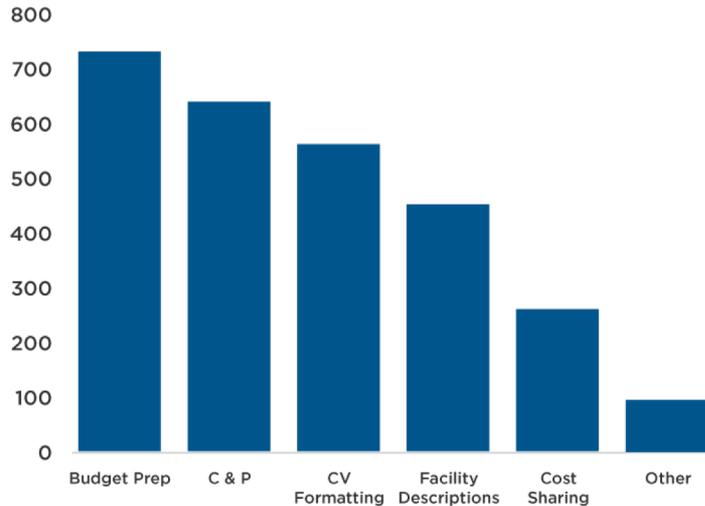
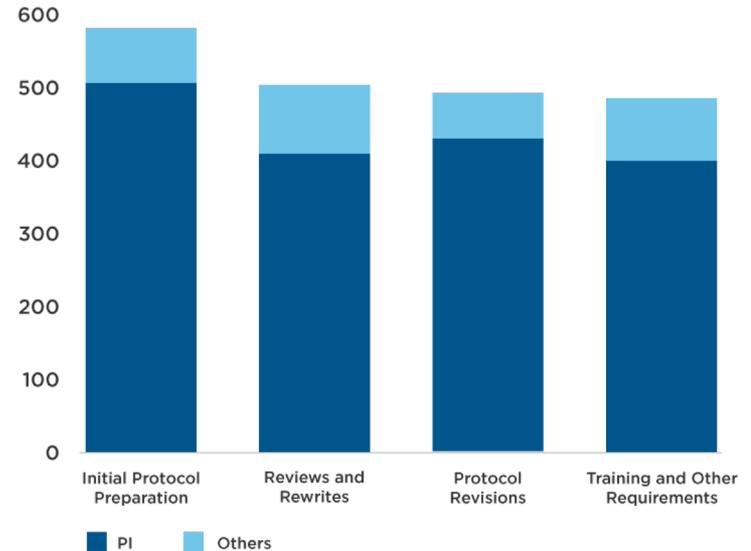


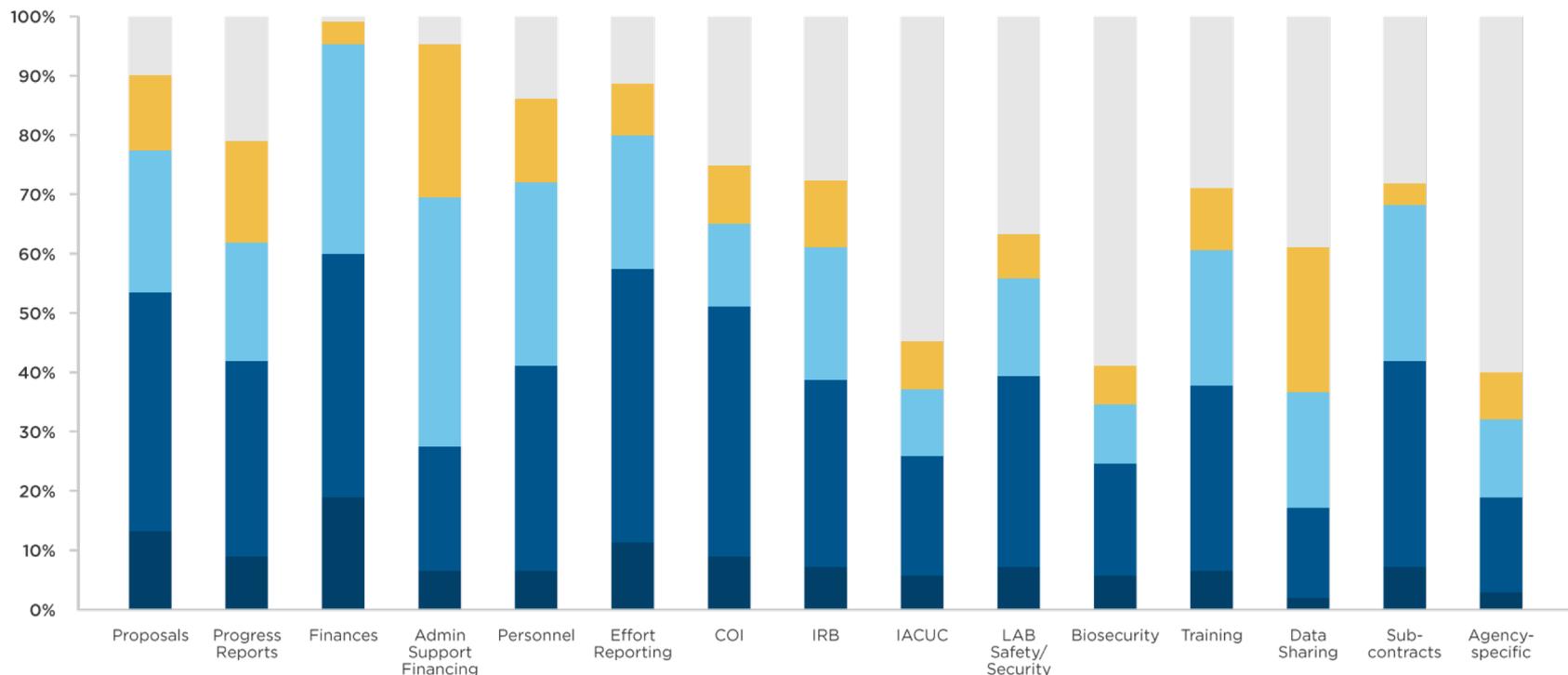
Figure 3: Faculty responses to follow-up questions on IRB and IACUC requirements and whether they are fulfilled by the PI or others



NSF 2014 Study on Faculty Burden

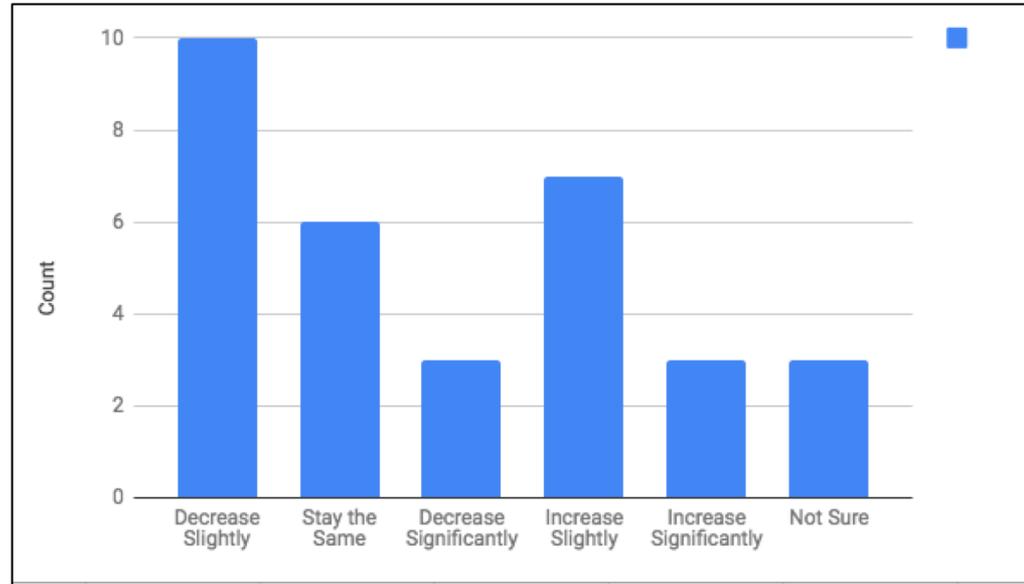
Figure 5: PI perceptions of the level, quality, and necessity of administrative support

No help needed
 Help needed but not provided
 My institution's help: poor
 My institution's help: adequate
 My institution's help: excellent

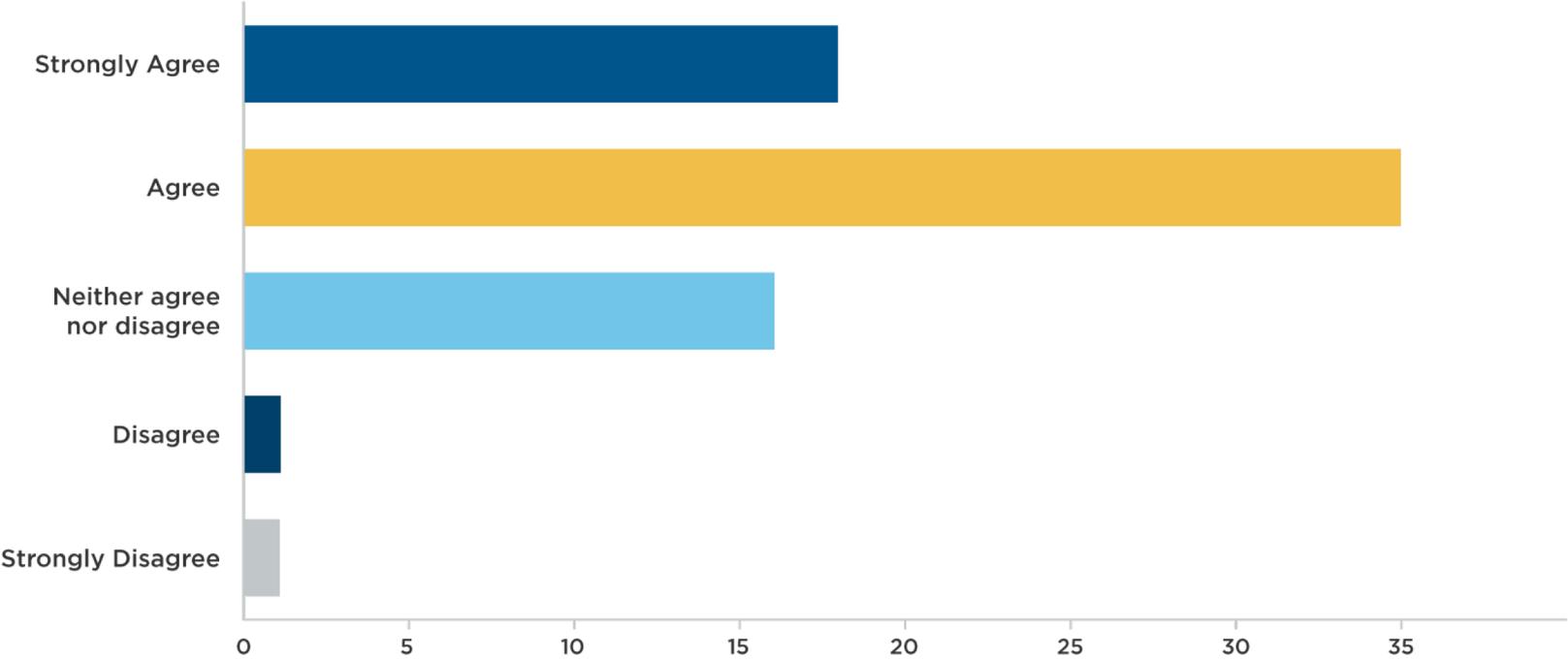


Polling Question – Researcher Burden

How will researcher burden change at your organization in the next five years?



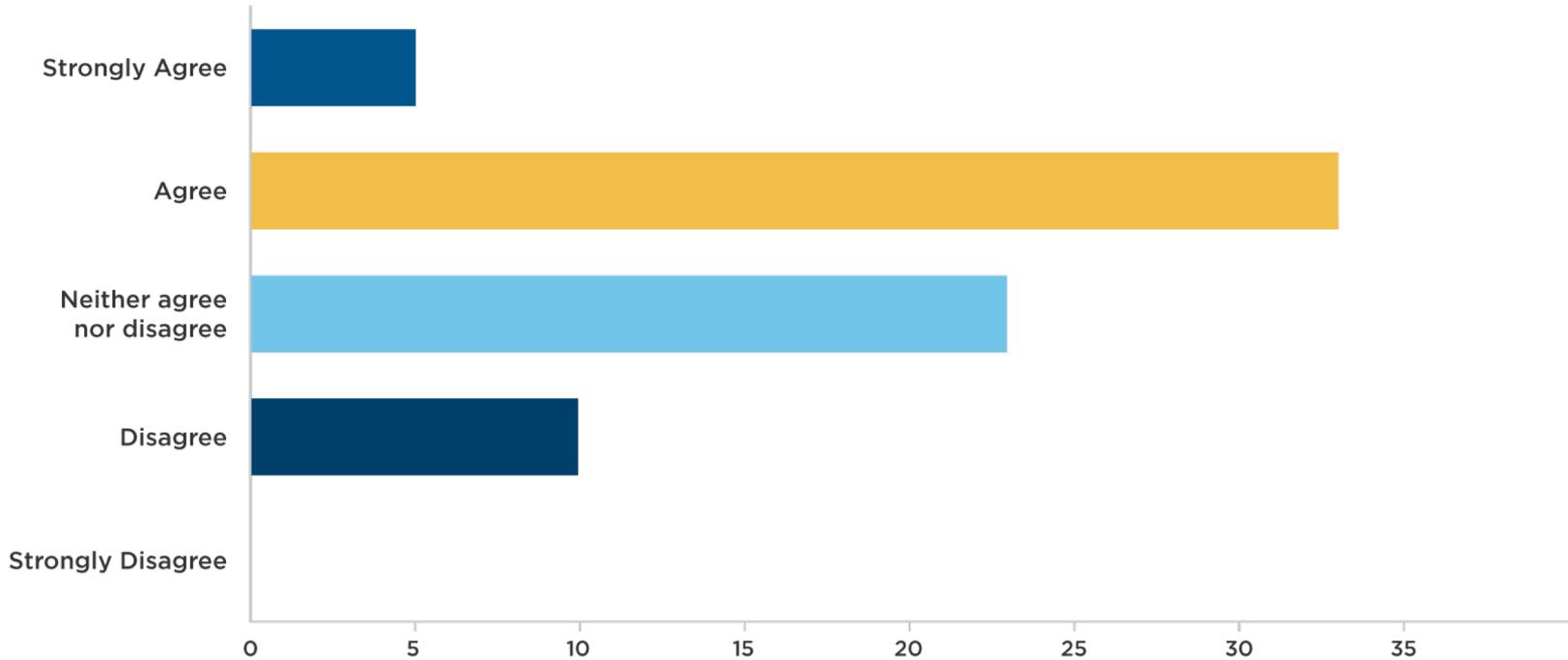
Over the next seven years, the biggest breakthroughs will come from cross-disciplinary research



3

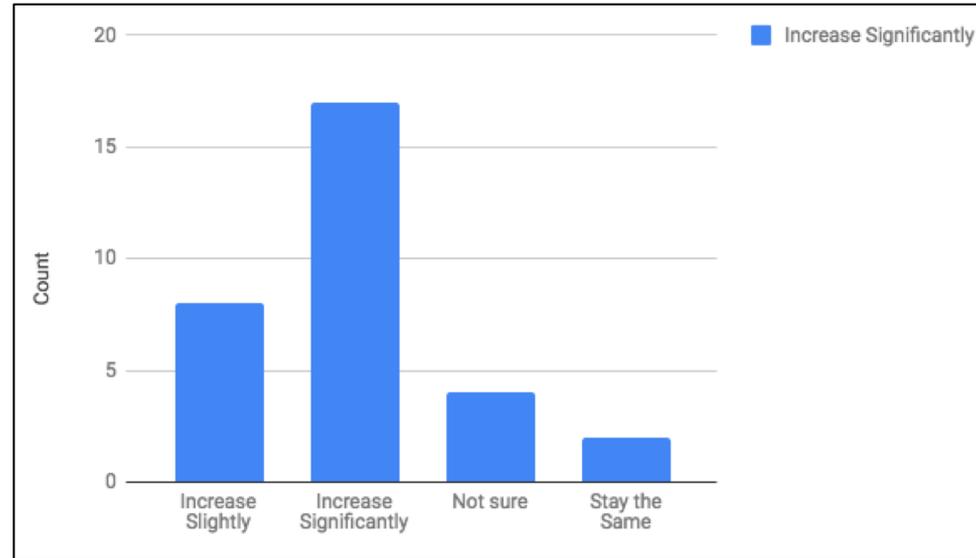
SURVEY RESULTS TECHNOLOGY

By 2025, less than half of research institutions will manage their own data centers

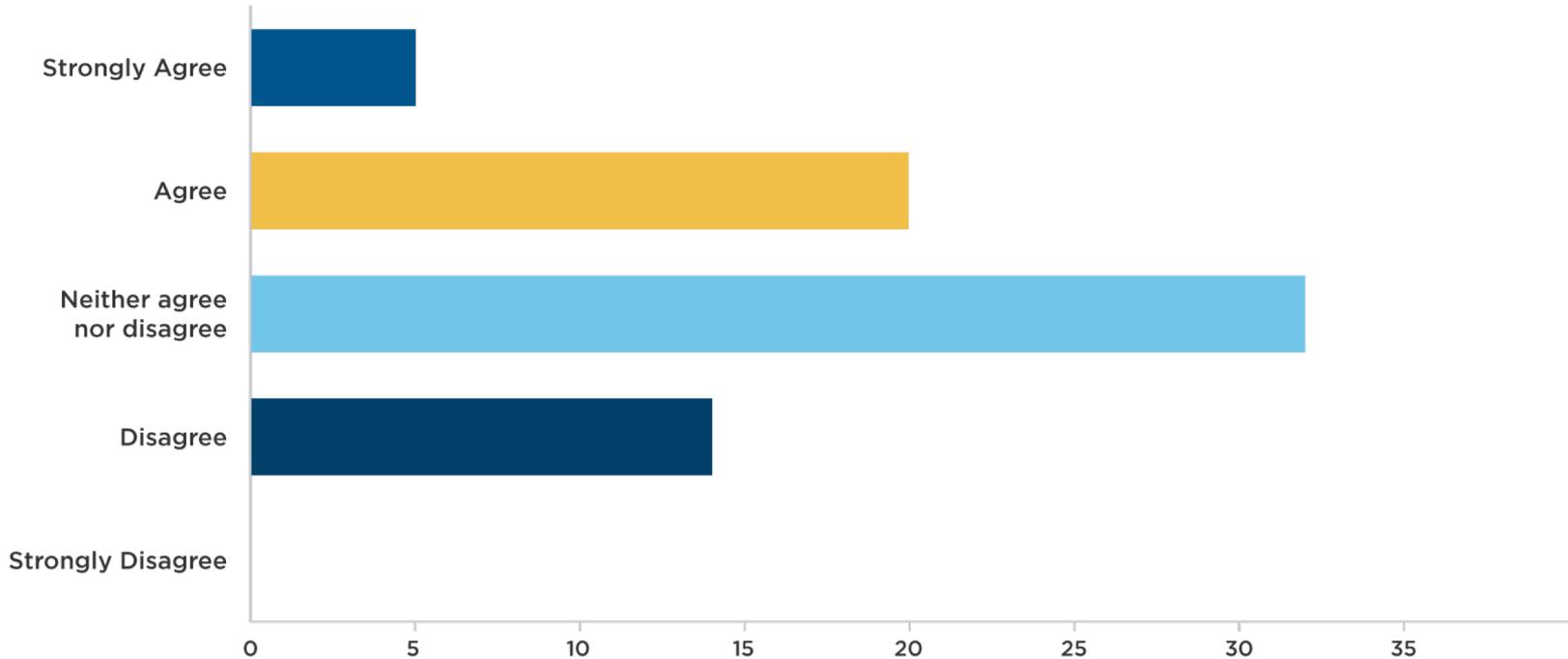


Polling Question – Cloud Technology

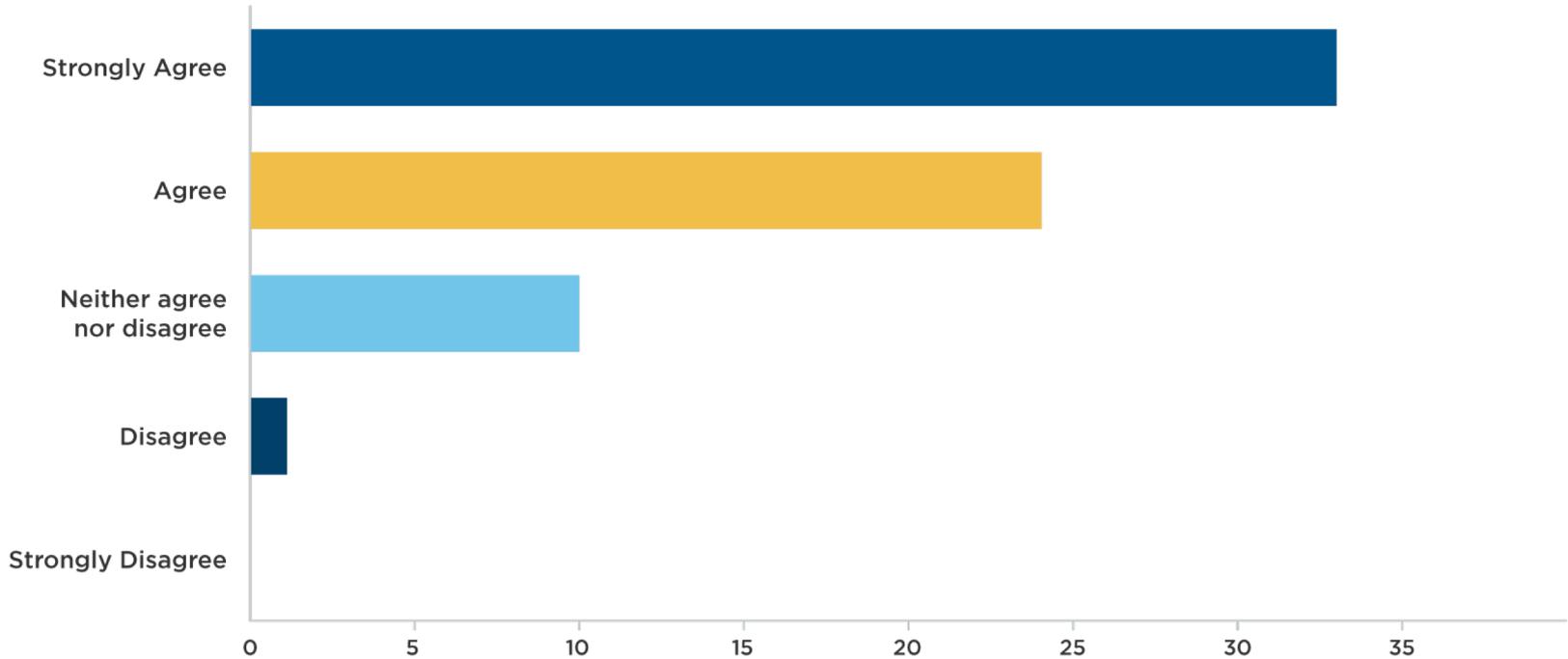
How will your organizations use of cloud technology change in the next five years?



2025, big data will transform both scientific discovery and research administration



By 2025, data security will still be the top concern for CIOs

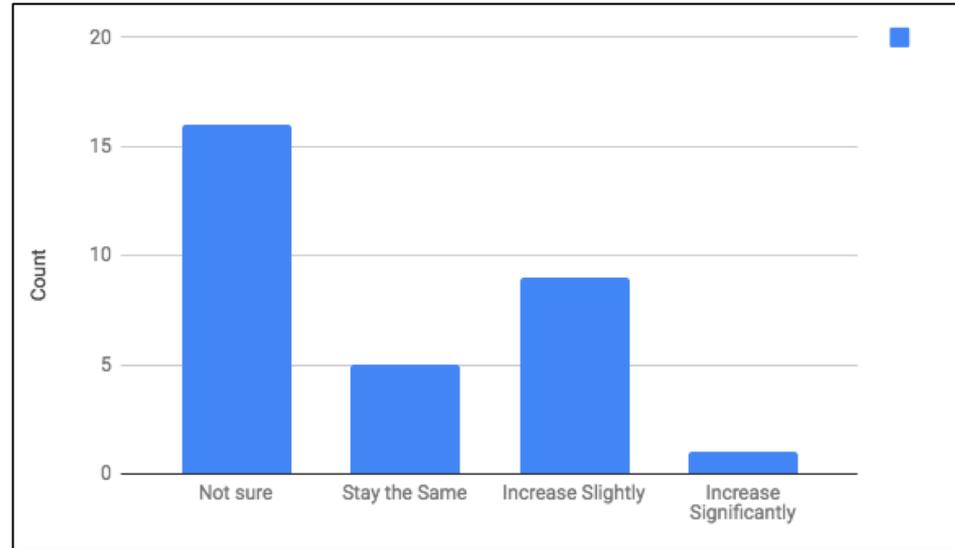


Other Potential Trends

- Artificial Intelligence (AI)
 - Funding will increase
 - AI assisted research
- Reduced Animal-Based Research
- Personalized Medicine
- Global Collaboration
- Private Funding of Research Will Increase
- Stronger Emphasis on Reproducibility

Polling Question – Artificial Intelligence

How will your organization's use of AI change in the next five years?



Polling Question – Other Trends

Which of these trends will have the biggest impact on your organization in the next five years?

1. Reduced Animal-Based Research
2. Personalized Medicine
3. Global Collaboration
4. Private Funding of Research Will Increase
5. Stronger Emphasis on Reproducibility
6. Other or not sure

A blue-tinted night photograph of a suspension bridge and a city skyline. The bridge's towers and cables are visible on the left, and the city lights are in the background. The word "QUESTIONS" is overlaid in large white letters.

QUESTIONS

The logo icon for Huron, consisting of a stylized 'H' inside a square frame.

HURON

Contact Us



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