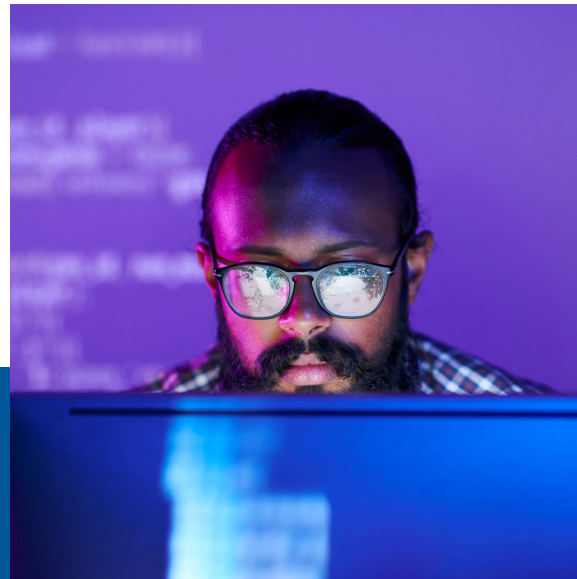


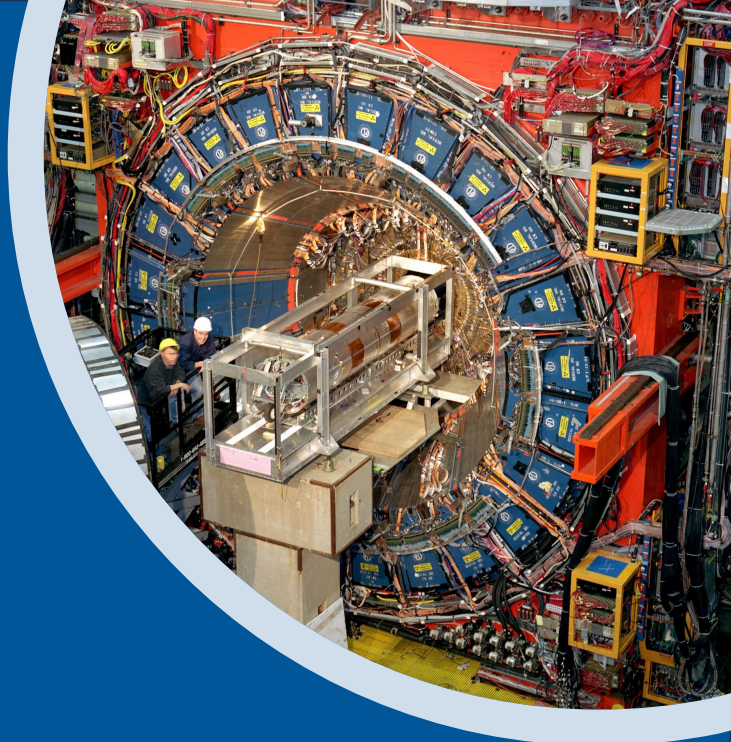
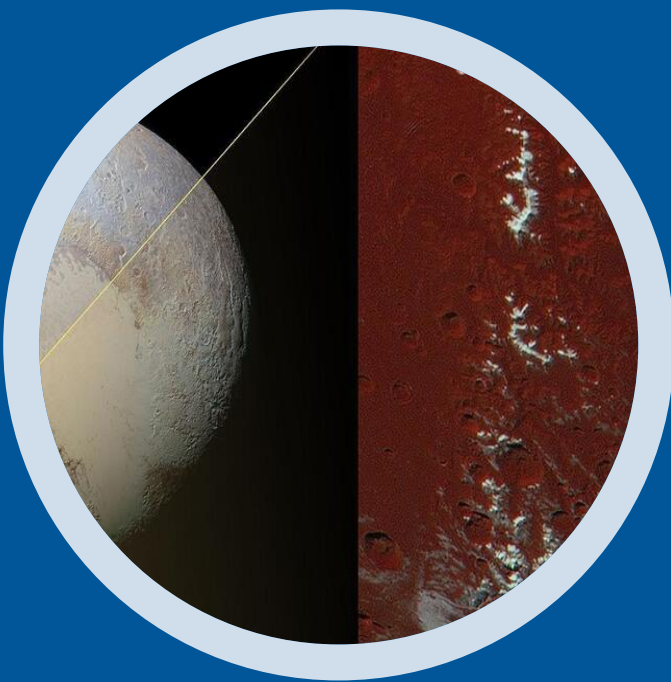
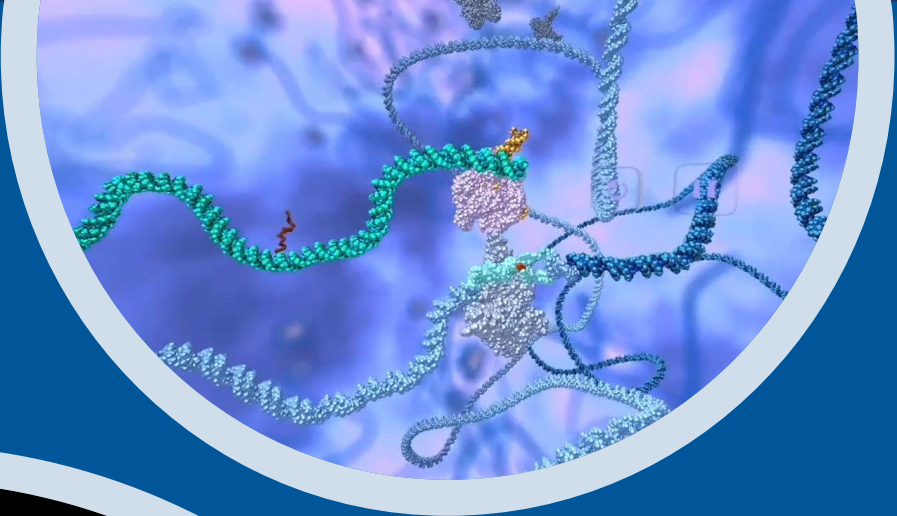
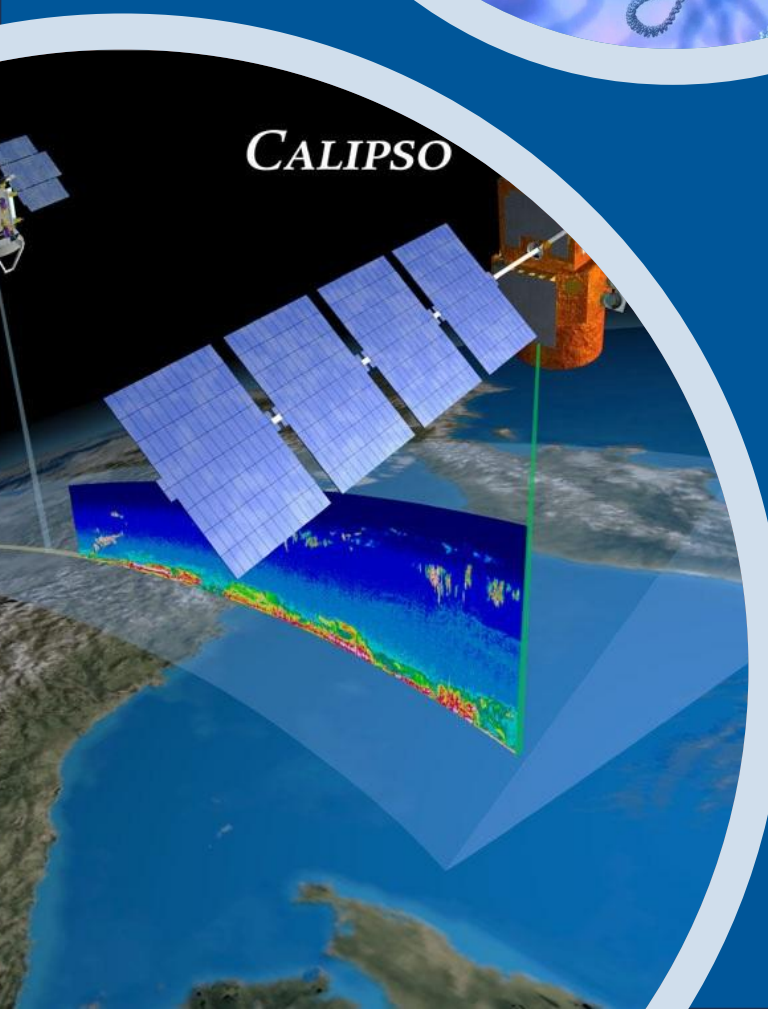


Going Beyond Eloquent Words to Grow the US STEM Workforce

March 4, 2024



CALIPSO



We live in
wondrous times

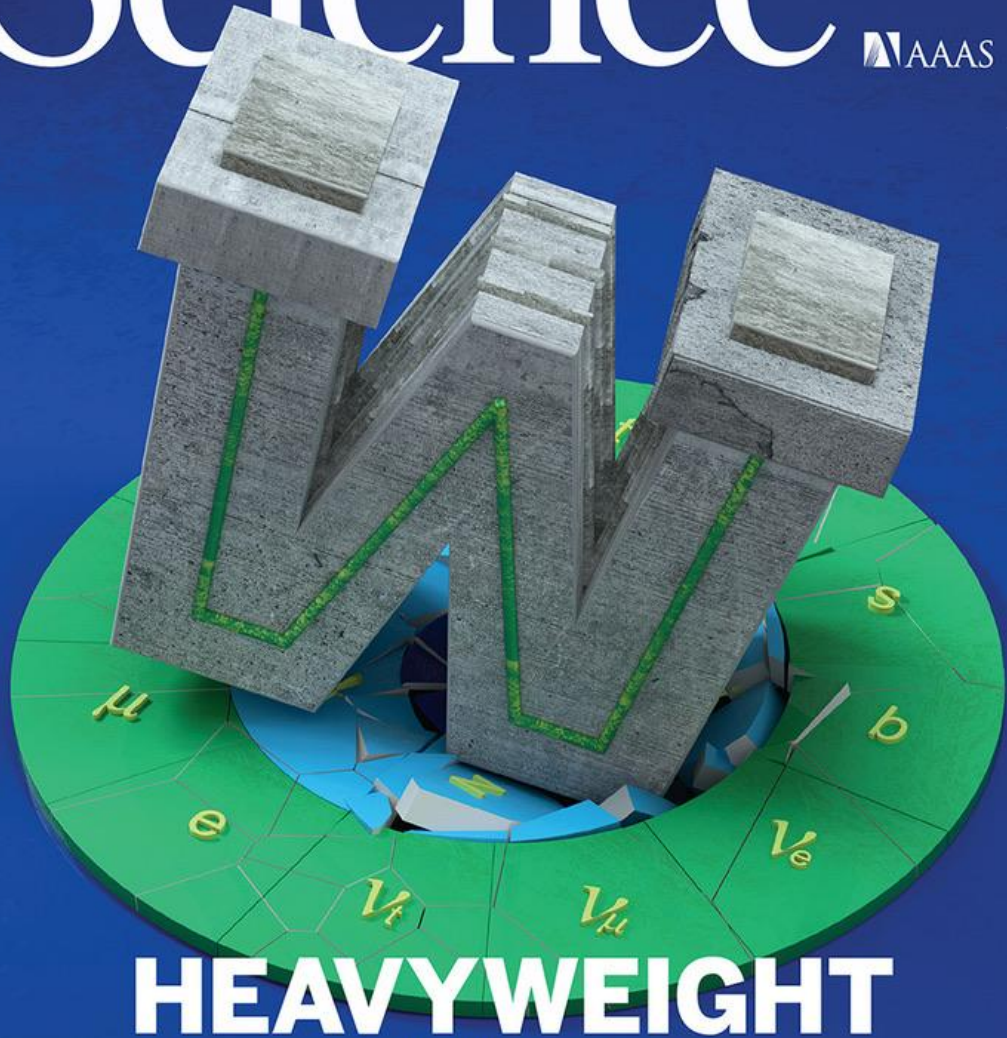




Science

\$15
8 APRIL 2022
science.org

AAAS



HEAVYWEIGHT

W boson mass measures higher than expected pp. 125, 136, & 170

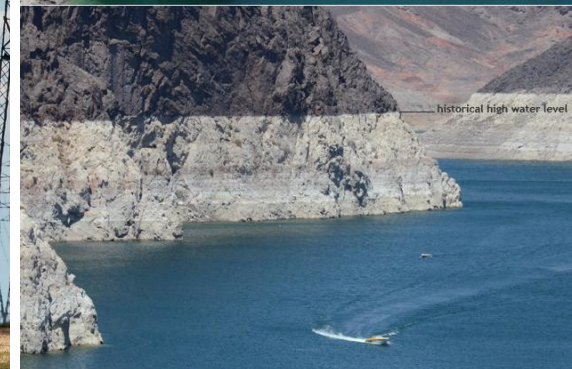
”

*Why, sir, there is every probability
that you will soon be able to tax it!*

MICHAEL FARADAY



We live in uncertain times





We live in uncertain times

WE LIVE IN UNCERTAIN TIMES

Climate Change

Energy Storage and Transmission

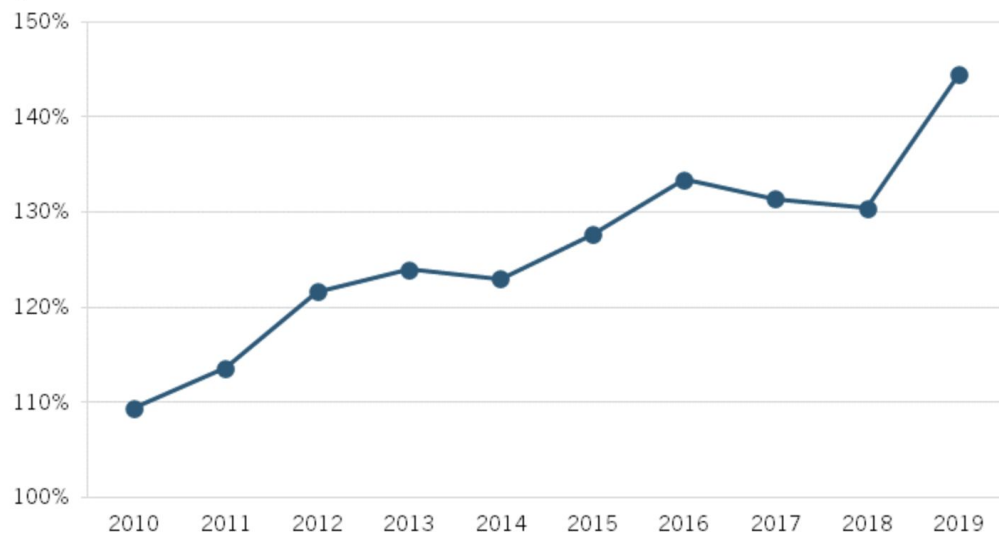
Global Competition & Economic Prosperity

Public Health & Health Care

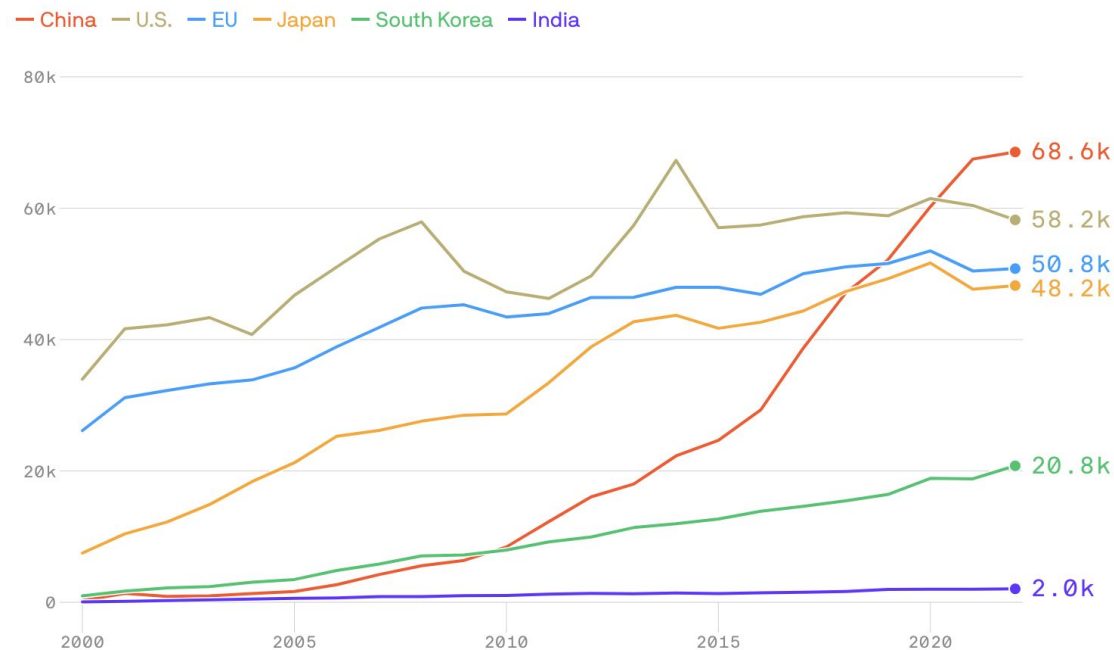
Food & Water Insecurity



Figure 12: Number of researchers in China relative to the number in the United States⁵⁴

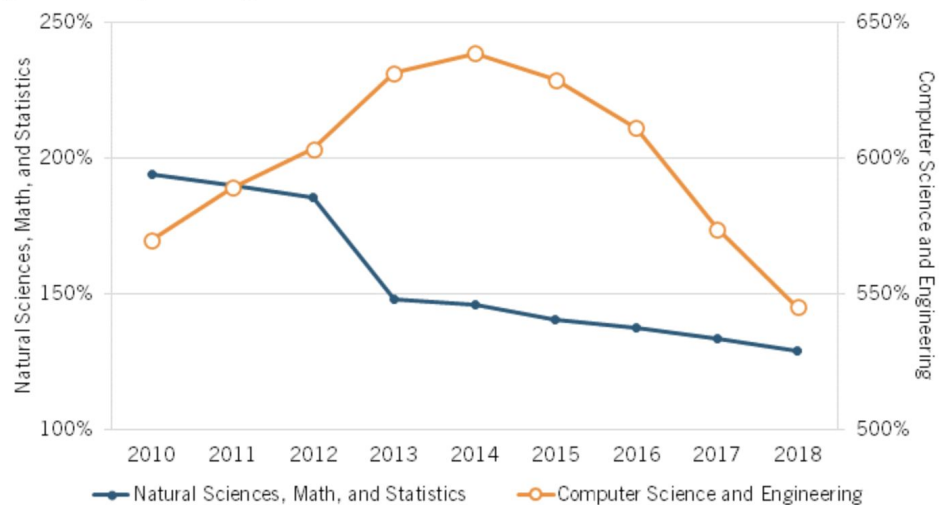


Annual Patent Cooperation Treaty applications for selected regions, 2000–2022



Data: Invention, Knowledge Transfer, and Innovation report from the National Center for Science and Engineering Statistics; Chart: Axios Visuals

Figure 15: Undergraduate degrees awarded in China relative to the United States⁵⁹



”

Diversity of thought derived from diversity of experience gives America a critical advantage in the global competitive landscape...Without the innovative boost from a diverse population, the United States will be hard-pressed to compete on sheer numbers of scientists and engineers.

We are in two existential races

A race to solve the challenges facing society before they pull us apart

A race for global competitiveness with nations that are friendly and not

We are at an *critical juncture* in...

HISTORY

U.S. SCIENTIFIC LEADERSHIP

TRUST IN SCIENCE

Our collective challenge

What will it take to build the STEMM
workforce of the future to meet
demand and address complex societal
challenges?

”

To develop treatments and vaccines for COVID-19, cure cancers, go to Mars, understand the fundamental laws of the universe and human behavior, develop artificial intelligence, and build a better future, we need the brain power of the descendants of Native Americans, Pilgrims, Founding Mothers and Fathers, Enslaved People, Ellis Island arrivals, and immigrants from everywhere.

I'm an optimist born of evidence

Immigration and Nationality Act of 1965



Lyndon Johnson signing the Immigration and Nationality Act of 1965 on Liberty Island in New York Harbor. Corbis, via Getty Images

Smallpox Vaccine



AAAS 2023-2024 Board Officers



SESAME Research Center



Synchrotron-Light Experimental Science and Applications in the Middle East (SESAME), a tangible output of science diplomacy

Evolution and revolution are required for relevance and leadership

87 scientists founded AAAS at the Academy of Natural Sciences in Philadelphia



Arden House: The first time AAAS updated its governance structure



The Double Bind:
The Price of Being
a Minority Woman
in Science

Shirley Mahaley Malcom
Paula Quick Hall
Janet Welsh Brown

New frontiers in
science diplomacy

Navigating the changing balance of power
January 2010



1848

1874



First class of AAAS
Honorary Fellows

1900

1923



First award
established

1951



1973

Science & Technology
Policy Fellowships

First class

1975

2010



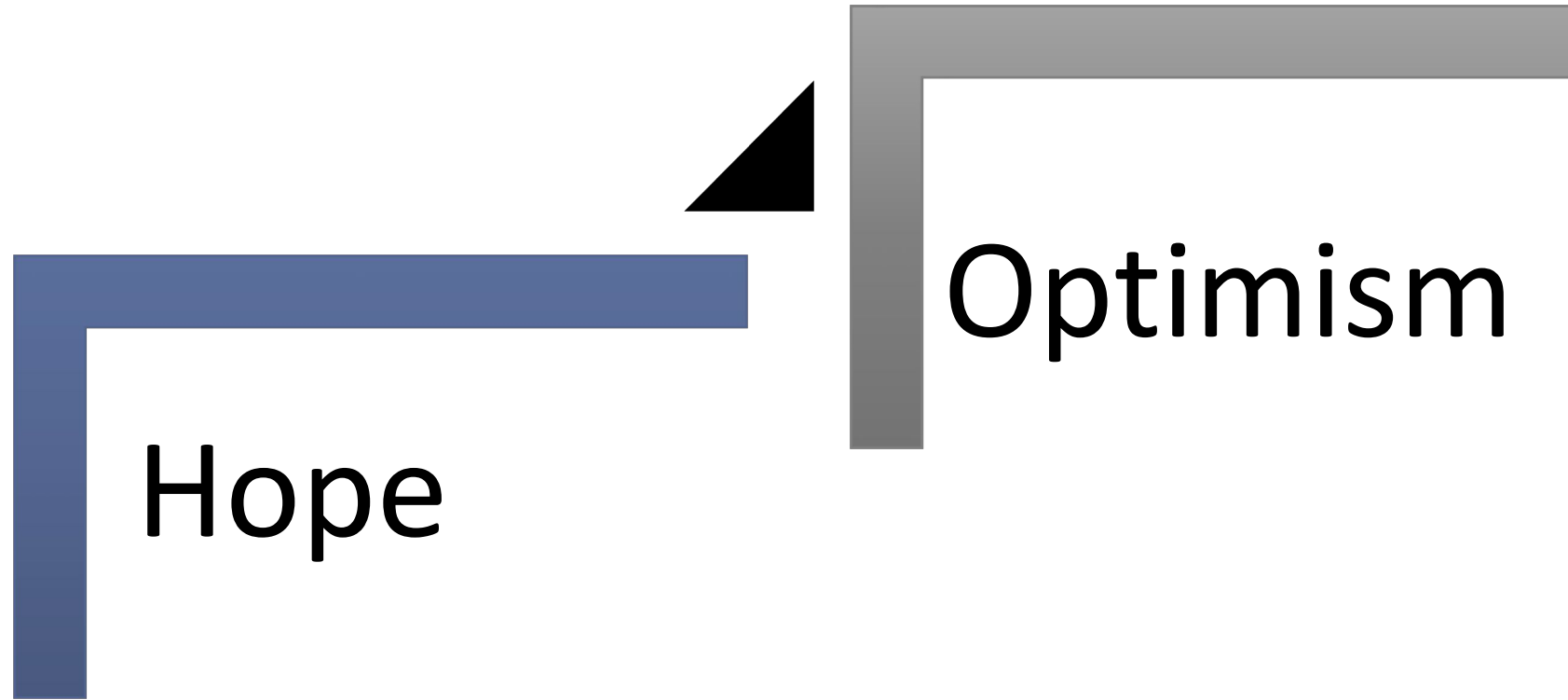
2022



2023



But hope and optimism are not enough. We need a plan.



Our Plan: AAAS Strategic Vision and Goals

A boldly inclusive, mobilized, and global scientific community that ignites, enables, and celebrates scientific excellence and science-informed decisions and actions.

ADVANCE SCIENTIFIC EXCELLENCE AND ACHIEVEMENT

AAAS recognizes, inspires, and enables a robust research ecosystem that drives discovery and innovation and prepares future scientists and engineers

FOSTER EQUITY AND INCLUSION FOR SCIENTIFIC EXCELLENCE

AAAS fosters the diverse, equitable, open, and inclusive scientific enterprise that is essential for scientific excellence

BUILD TRUST AMONG SCIENTISTS AND COMMUNITIES

AAAS builds trust among scientists and engineers and broader communities and is a valued source of accurate scientific information that is foundational to countering misinformation

CATALYZE PROGRESS WHERE SCIENCE MEETS POLICY

AAAS provides actionable evidence for public policy that serves society and promotes policies that enable quality science

Our Plan: AAAS Strategic Vision and Goals

A boldly inclusive, mobilized, and global scientific community that ignites, enables, and celebrates scientific excellence and science-informed decisions and actions.

ADVANCE SCIENTIFIC EXCELLENCE AND ACHIEVEMENT

AAAS recognizes, inspires, and enables a robust research ecosystem that drives discovery and innovation and prepares future scientists and engineers

FOSTER EQUITY AND INCLUSION FOR SCIENTIFIC EXCELLENCE

AAAS fosters the diverse, equitable, open, and inclusive scientific enterprise that is essential for scientific excellence

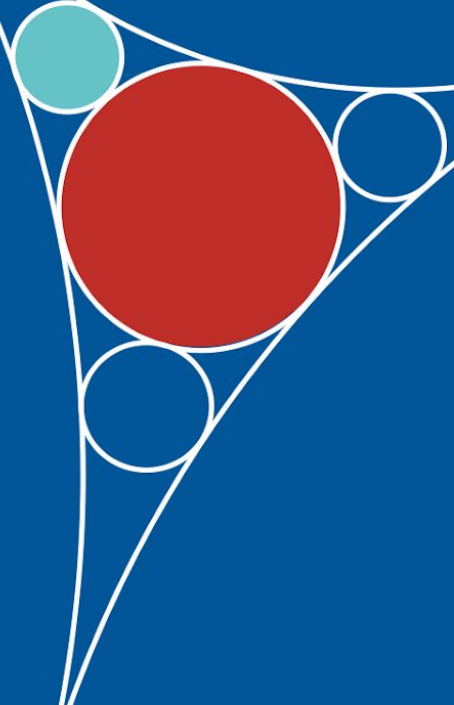
BUILD TRUST AMONG SCIENTISTS AND COMMUNITIES

AAAS builds trust among scientists and engineers and broader communities and is a valued source of accurate scientific information that is foundational to countering misinformation

CATALYZE PROGRESS WHERE SCIENCE MEETS POLICY

AAAS provides actionable evidence for public policy that serves society and promotes policies that enable quality science

What is AAAS doing?



Going beyond eloquent words – We must not be performative

EDITORIAL

Going beyond eloquent words

As the United States steadies itself, recovering from COVID-19 and preparing for future crises, it must draw upon what Eric Lander, the nominee for director of the Office of Science and Technology Policy (OSTP), called “America’s greatest asset...our unrivaled diversity.” To achieve this goal, OSTP must have the resources and authority to go beyond eloquent words and deliver solid accomplishments for the nation and world. Diversity is a double-edged sword. When complementary talents and perspectives come together, leaps in understanding are more likely and disruptive technologies are born. But there is also a vulnerability. When seized upon to divide (with talk of quotas in a zero-sum game), diversity can be used to generate fear and stoke division in ways that increase inequities and stifle substantive debate. In the scientific enterprise, explicit acts of racism and sexism still exist and cause harm. However, it is often the less obvious factors—divisive rhetoric, obsolete policies (such as overreliance on standardized tests), and willful blindness to inequitable treatment (such as smaller startup budgets for female academics)—that cement many of the injustices that have sprung from the nation’s segregated history. These opaque forces are so ingrained that we scarcely realize their implications for minorities and women in science.

Over the past year, the American Association for the Advancement of Science (of which I am the chief executive officer; AAAS is the publisher of *Science*) has held a mirror up to its own functions. We have listened carefully to scientists, consulted with experts, and analyzed existing data. Chief among what we have discovered are stark demographic contrasts between programs and awards that are applicant-based and those that are nomination-based. We fall short when it comes to recognizing the contributions of underrepresented members of the scientific community. Transparently sharing these data enables accountability. AAAS and other institutions must be held responsible by the community for meaningful change.

Insisting on inclusion of underrepresented groups neither sacrifices scientific excellence nor diminishes the accomplishments of those who have historically dominated the sciences. Highlighting the previously ignored does not invalidate the already admired. But this change requires that the scientific community in-

crease attention and support for those who have been disadvantaged. I have received letters from scientists attacking AAAS’s focus on diversity, stating that race has no scientific basis and scientists should ignore it. But race and patriarchy are powerful social constructs with societal consequences that cannot be overlooked. Alondra Nelson, OSTP deputy director for science and society and former AAAS Board member, stated that “science at its core is a social phenomenon. When we provide inputs to the algorithm, when we program the device, when we design, test and research, we are making human choices...It matters who makes those choices, it matters who they’re thinking about when they do.” Avoiding these conversations amounts to advocating the status quo—and the United States would be weaker for it.

Institutions also must push for policies that enable diversity across the enterprise. Often, these policies do not seem directly related to diversity, equity, or inclusion. But increasing pay for graduate students and postdocs and providing them with employee-like benefits and protections; achieving open access publishing policies that do not place the financial burden of publishing on authors; improving training and standards for mentorship, and providing safe and supportive workplace cultures—these policies do affect the retention of diverse scientists without sacrificing scientific excellence.

The reasons for ensuring the diversity of science transcend the obvious moral imperative. Diversity of thought derived from diversity of experience gives America a critical advantage in the global competitive landscape. This is key to making the discoveries that will improve everyone’s health, inventing the technologies that will grow the economy, and meeting the formidable challenges of this era. Without the innovative boost from a diverse population, the United States will be hard-pressed to compete on sheer numbers of scientists and engineers.

The new OSTP leadership will need the resources and clout to go beyond symbolic gestures. Dr. Lander and Dr. Nelson must receive bipartisan support, funding, and authority to create a national science and technology strategy that ensures a scientific workforce capable of building on the exceptional diversity that is the country’s greatest asset.

—Sudip Parikh



Sudip Parikh is the chief executive officer of the American Association for the Advancement of Science (AAAS) and executive publisher of the *Science* journals. sparikh@aaas.org

Downloaded from <https://www.science.org at American Association for the Advancement of Science on April 13, 2023>

“Diversity of thought... gives America a critical advantage...”

PHOTO: ILLUSTRATION

10.1126/science.abg7406

SCIENCE sciencemag.org

29 JANUARY 2021 • VOL 371 ISSUE 6528 443

Published by AAAS

Hold institutions accountable for making meaningful change

Push for policies that enable diversity across the scientific enterprise

Increase attention and support for those who have been disadvantaged and have tough conversations about the status quo

Set a national strategy to build a more diverse STEM workforce

STEMM Opportunity Alliance driving equity and excellence by 2050



STEMM Opportunity Alliance Moving to Implementation Phase

Where We Are Now...



Launched

SOA at White House Summit on STEMM Equity & Excellence



Co-Constructed

with SOA Partners and the STEMM Community a National Strategy

Where We Are Headed...



Garner

New and Updated Commitments from SOA Partners to Implement National Strategy



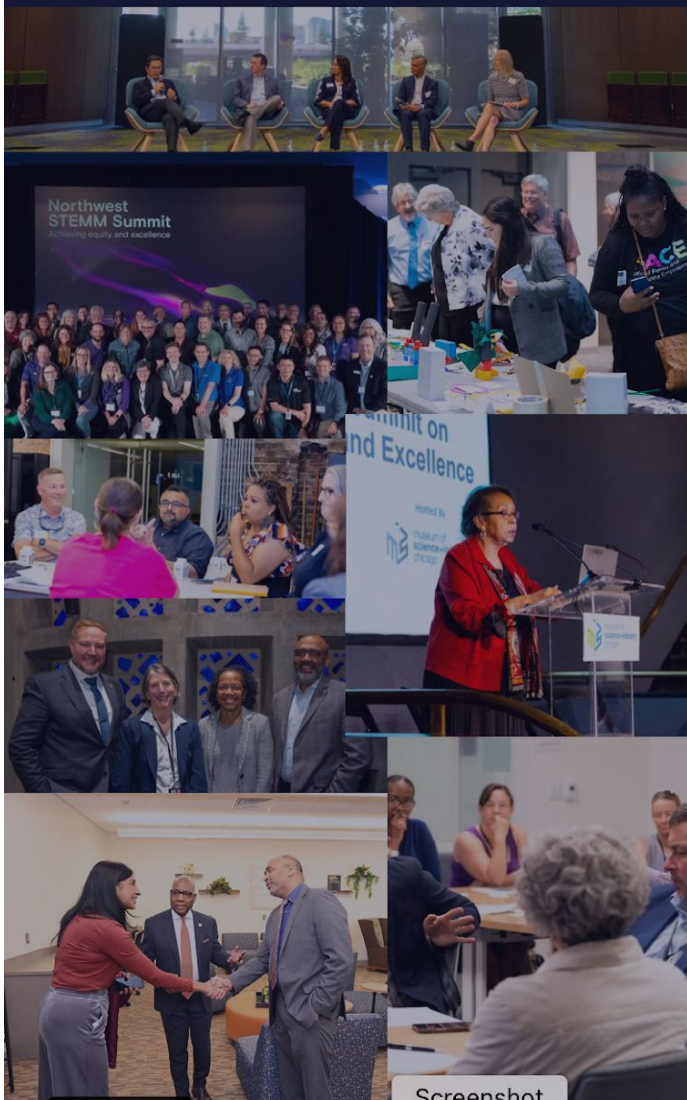
Announce

National Strategy and Highlight New Commitments at 2024 White House Summit



Convene

Nation-wide Pillar-focused Summits in 2024/25



PROGRESS TO-DATE

Garnering Partner Commitments

- Brought in **176+ partners** representing civil society, private sector, and more.
- Garnered over **\$1.8 billion committed** towards STEM equity goals.
- Grew the SOA listserv to **4,000 contacts**, up from 400 in 2022

Developing a National Strategy

- Engaged more than **1,500 leaders** to inform strategy development.
- Held **12 events** across the country in partnership with local leaders, **5 town halls** for virtual engagement, and a **public comment period** on an interim draft.

Building Alignment with Gov't

- Deepened engagement and coordination with OSTP through 2023, including to **advise on the development of government's 5 year STEM strategic plan.**
- **Second WH summit in spring 2024**, with public-private implementation planning.

Further details can be found in the 2023 SOA Annual Report.

EQUITY UNDER FIRE: THE CASE FOR SOA

Need for a better coordinated movement is only stronger as landscape becomes more uncertain.

2023 Supreme Court Decision

- **The 2023 Supreme Court decision to narrow the consideration of race/ethnicity in admissions** has forced educational institutions to rethink how they ensure equitable access. Even new approaches are facing litigation.
- **Ripple effects in other sectors, such as changes in hiring practices** that are not governed by the decision.

Anti-DEI Movement

- Anti-‘woke’ movement has put **DEI efforts in the political and cultural cross-hairs**, acting as a chilling effect for leaders across sectors who are increasingly concerned about risk, and ultimately more conservative in approach.
- **Anti-DEI legislation passed in 12 states**, creating legal questions and uncertainty, while also restricting funding.

Election Year Uncertainties

- New congress/administration may be more hostile to STEMM equity work. **Policy environment could shift** as result.
- While SOA is designed to withstand the test of time across administrations, the uniqueness of the current political climate will put this to the test in 2024. **Strategic questions about how to remain bold, while striking balance.**

THE ROAD AHEAD



In 2024, SOA will release the National Strategy and launch implementation, including by:



Launching anchor partners and working groups to drive coordination and action against key goals and foster cross-sector partnerships.



Mapping activities aligned to the National Strategy and highlighting key initiatives and partnerships.



Expanding and deepening the movement by bringing more partners and commitments to the table.



Developing and tracking progress metrics to create systems for accountability and transparency against goals laid out in the National Strategy.

SOA National Strategy Snapshot and Anchor Partners



Focal Area:
Foundation
Accountability and
Partnership: Groundwork
for Collaborative Action

Pillar 1:
Engagement: Nurturing
Curiosity in Every Child

Pillar 2:
Inspiration: Developing
Skilled and Diverse
Educators

Pillar 3:
Discovery: Creating
Opportunity for All in
Higher Education

Pillar 4:
Innovation: Leveraging
Diverse Minds in R&D

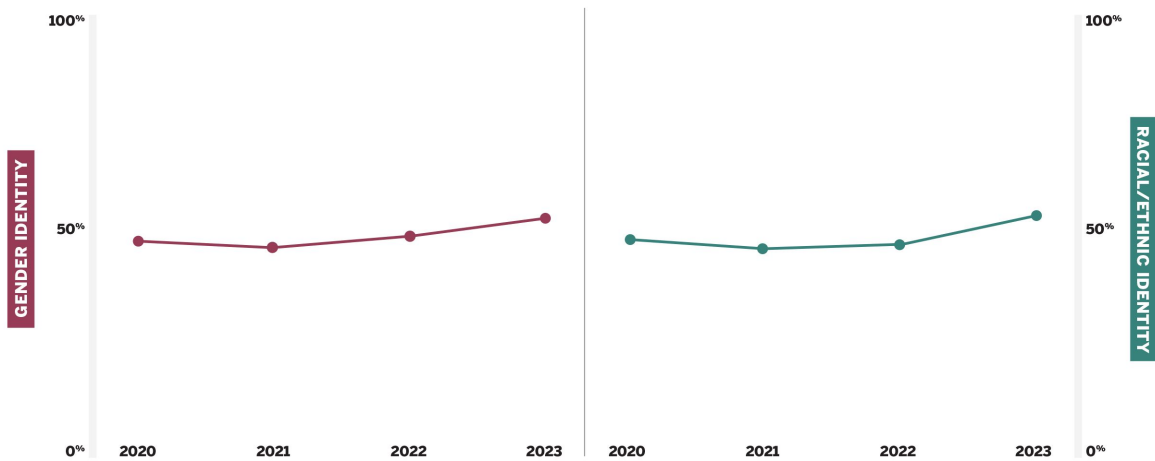
Pillar 5:
Opportunity: Ensuring All
Workers Thrive

Capstone:
Strategic
Communications:
Narrative Change



We are looking in the mirror

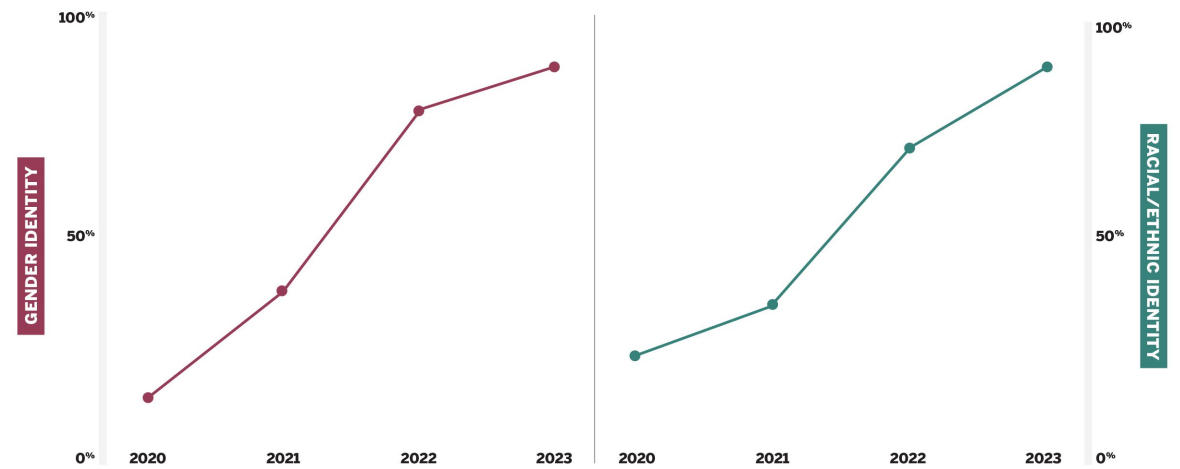
TRENDS IN DATA COVERAGE ACROSS ALL AAAS/SCIENCE FUNCTIONS



Across all AAAS/Science Functions, data coverage increased 14% (from 49% in 2022 to 56% in 2023) for gender identity and 27% (from 45% in 2022 to 57% in 2023) for racial/ethnic identity.

Percentages may not sum to 100 due to rounding

TRENDS IN DATA COVERAGE ACROSS ALL SCIENCE FAMILY OF JOURNALS AUTHORS AND REVIEWERS



For Science Family Authors and Reviewers, data coverage increased 13% (from 79% in 2022 to 89% in 2023) for gender identity and increased 27% (from 70% in 2022 to 89% in 2023) for racial/ethnic identity.

Percentages may not sum to 100 due to rounding

Data Coverage Grows When It's a Priority

AAAS/SCIENCE FUNCTIONS

**DATA COVERAGE
REACHED OR EXCEEDED**

80%

for several AAAS/*Science*
functions and *Science* Family
Authors and Reviewers

**GENDER IDENTITY
COVERAGE INCREASED**

14%

**RACIAL/ETHNIC IDENTITY
COVERAGE INCREASED**

27%

SCIENCE FAMILY OF JOURNALS AUTHORS AND REVIEWERS

**GENDER IDENTITY
COVERAGE INCREASED**

13%

**RACIAL/ETHNIC IDENTITY
COVERAGE INCREASED**

27%

We must move beyond interventions to systemic challenges

A few examples from AAAS

- Publishing
- Career Ladders and Salaries
- Governance

We look at open access through the lens of our 120,000 scientist and engineer members – the scientific enterprise

- Open and accessible data are essential
- Preprints are good for the scientific enterprise (caveats on science communication)
- Open access to scientific information is important
- Open access to useful information is critically important
- Communication of accurate understandable science with every audience is paramount
- Some current models of open access are fatally flawed

APC model of open access freezes inequities into place

Senior Scientists

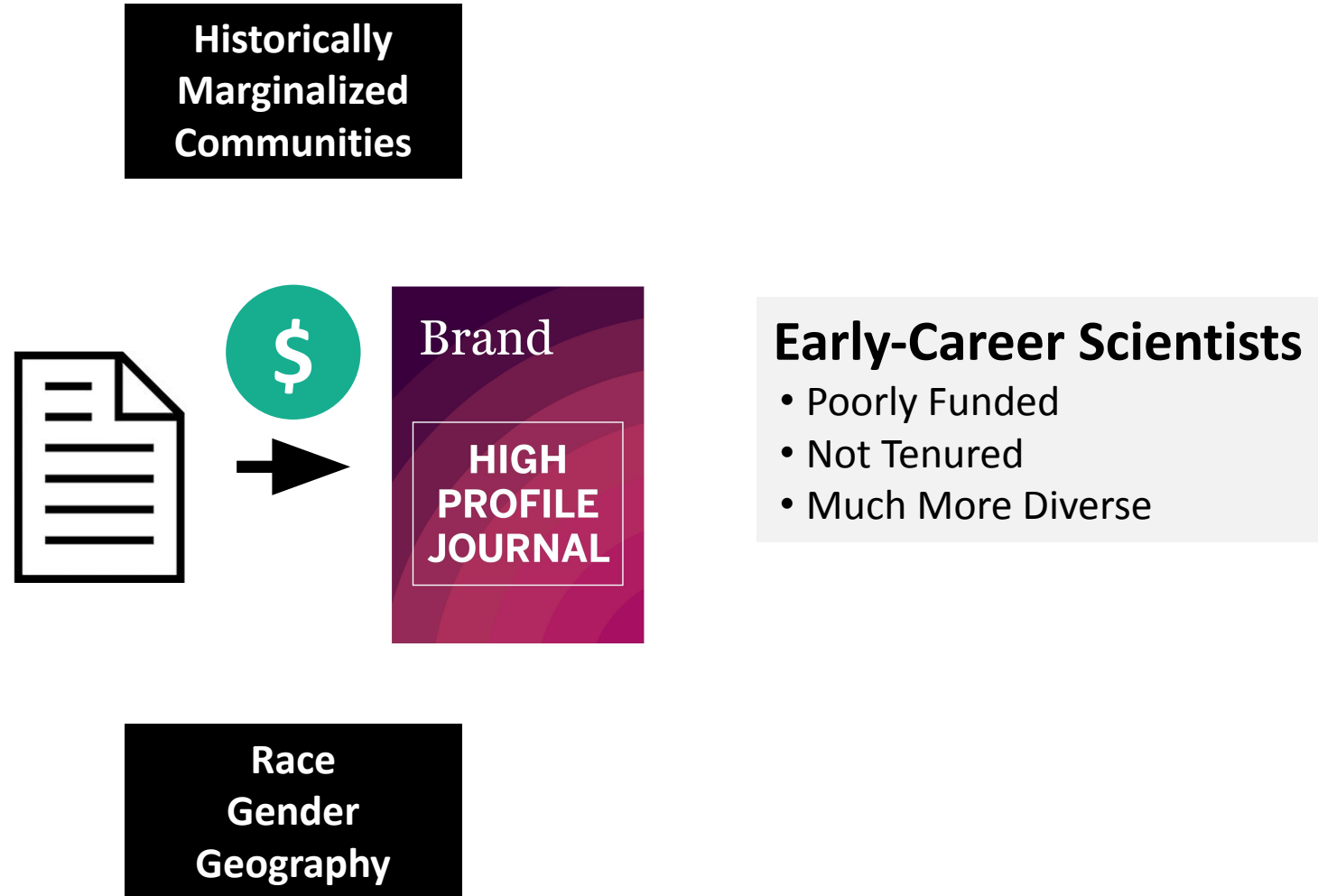
- Already Well-funded
- Tenured
- Overwhelmingly Male and White



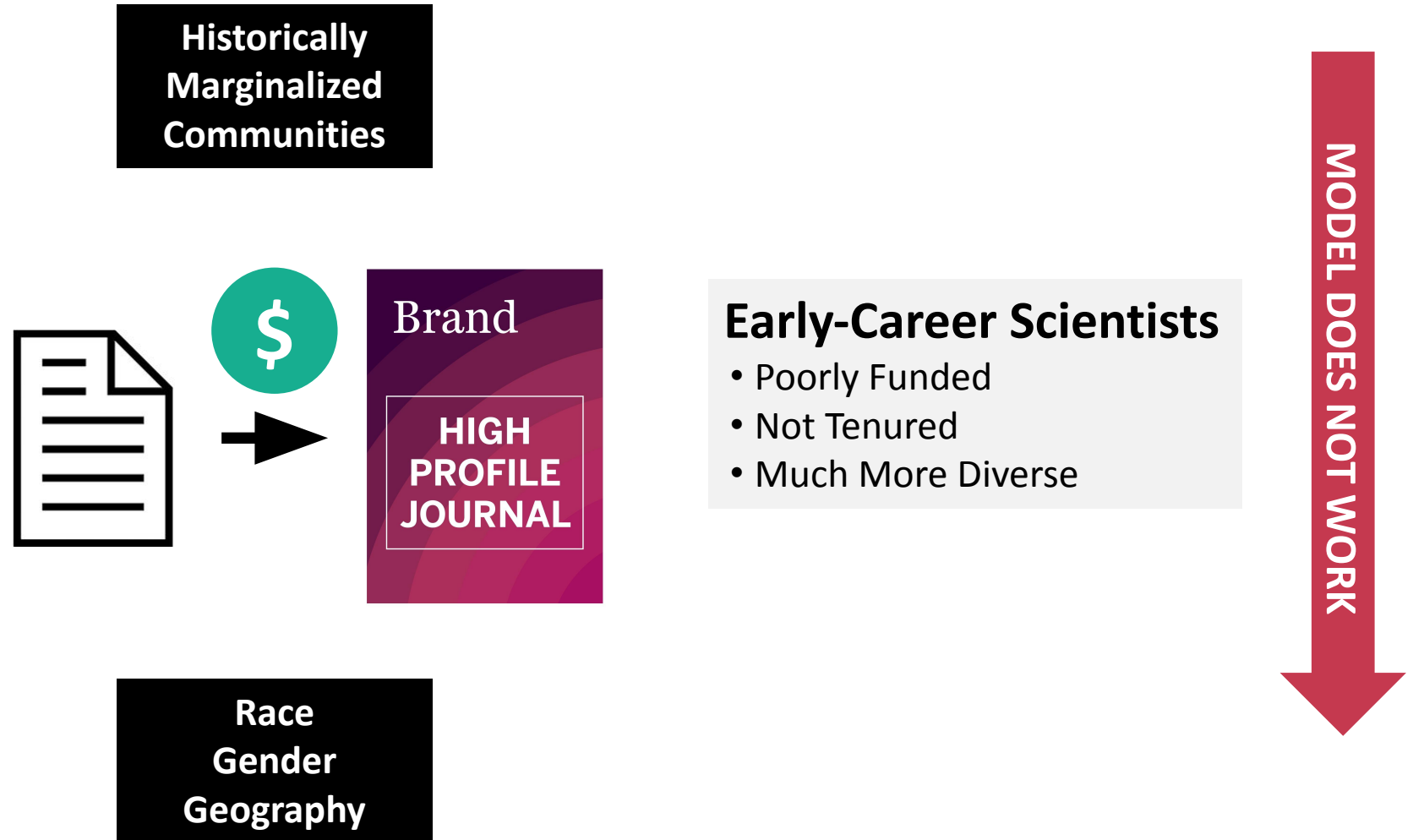
APC model of open access freezes inequities into place



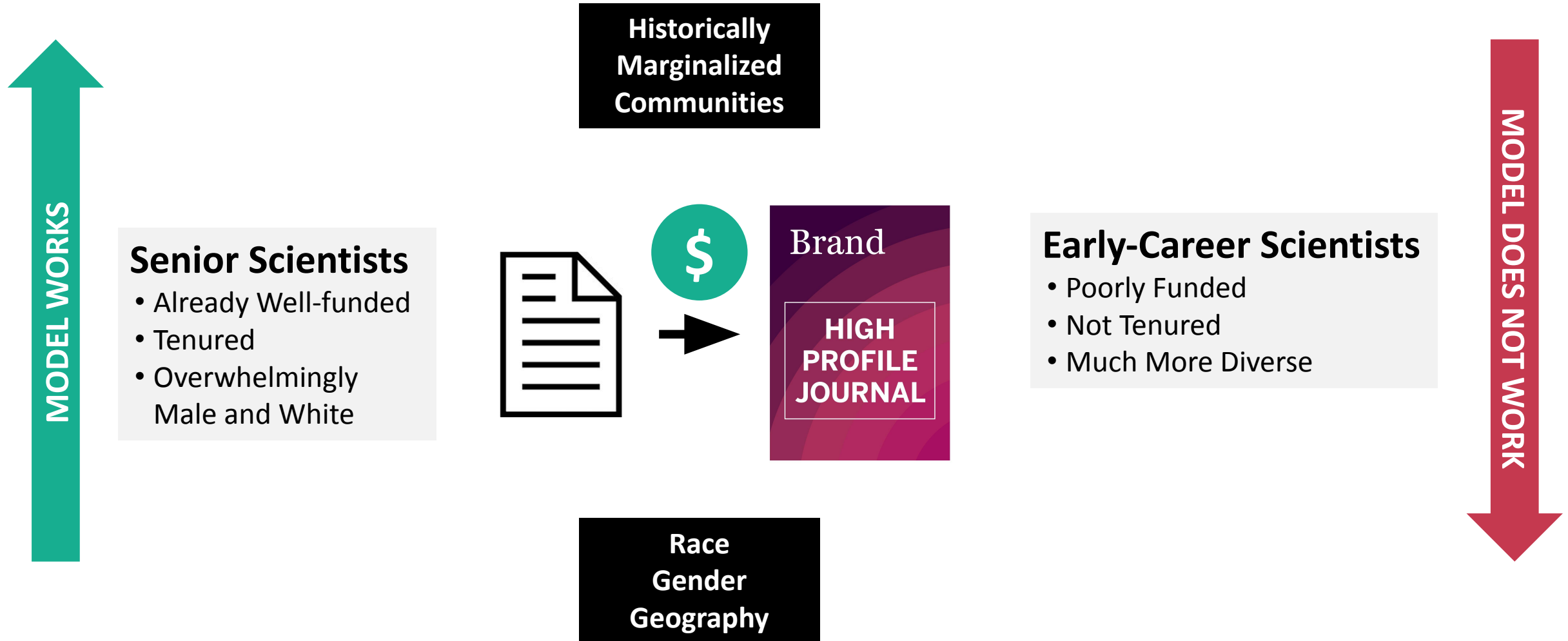
APC model of open access freezes inequities into place



APC model of open access freezes inequities into place



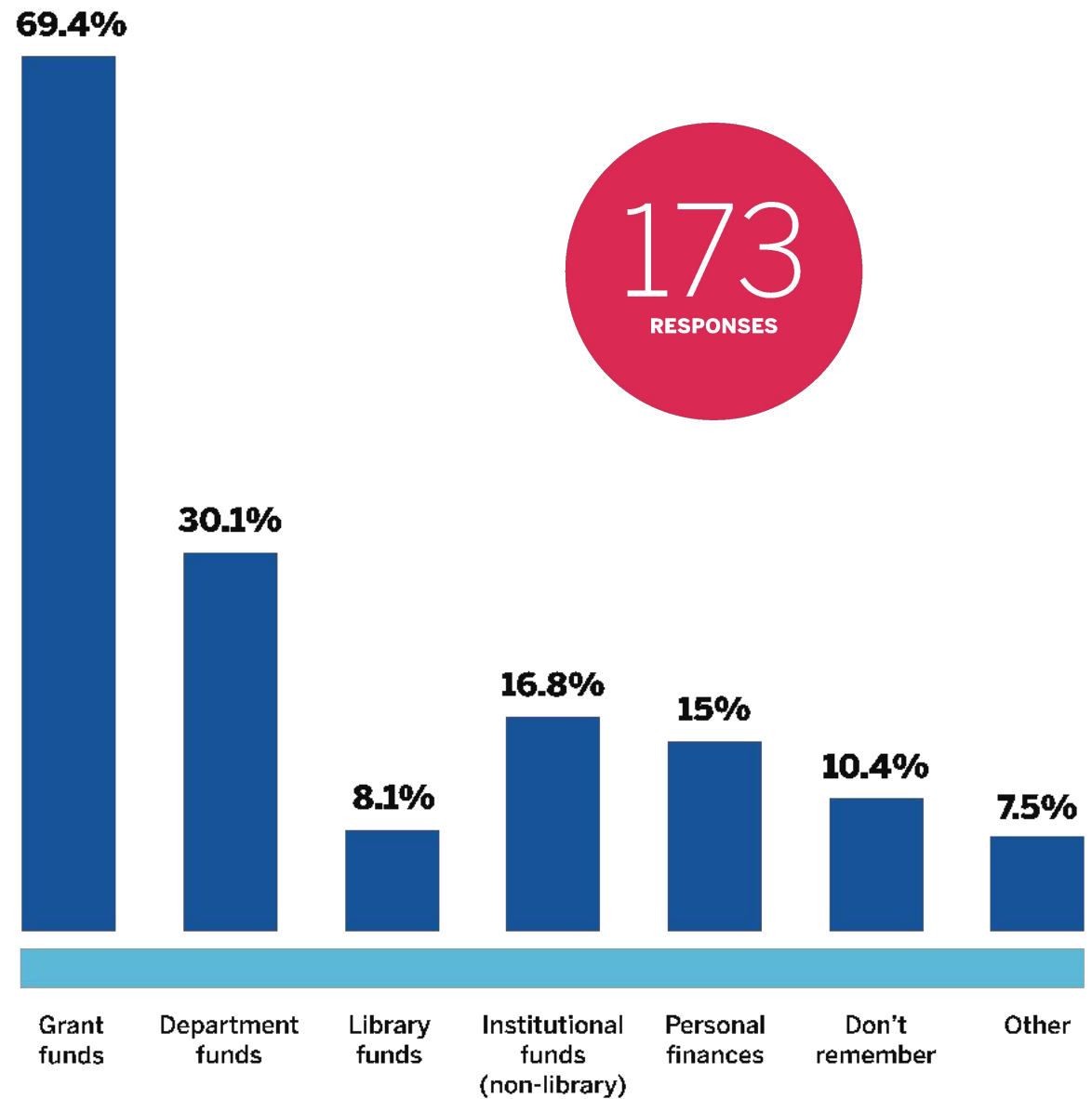
APC model of open access freezes inequities into place



Most researchers are using grant funds to pay APCs – and women are more likely to use grant funds than men

Women were **nearly three times** as likely as men to have paid APCs using grant funds ($p < 0.05$).

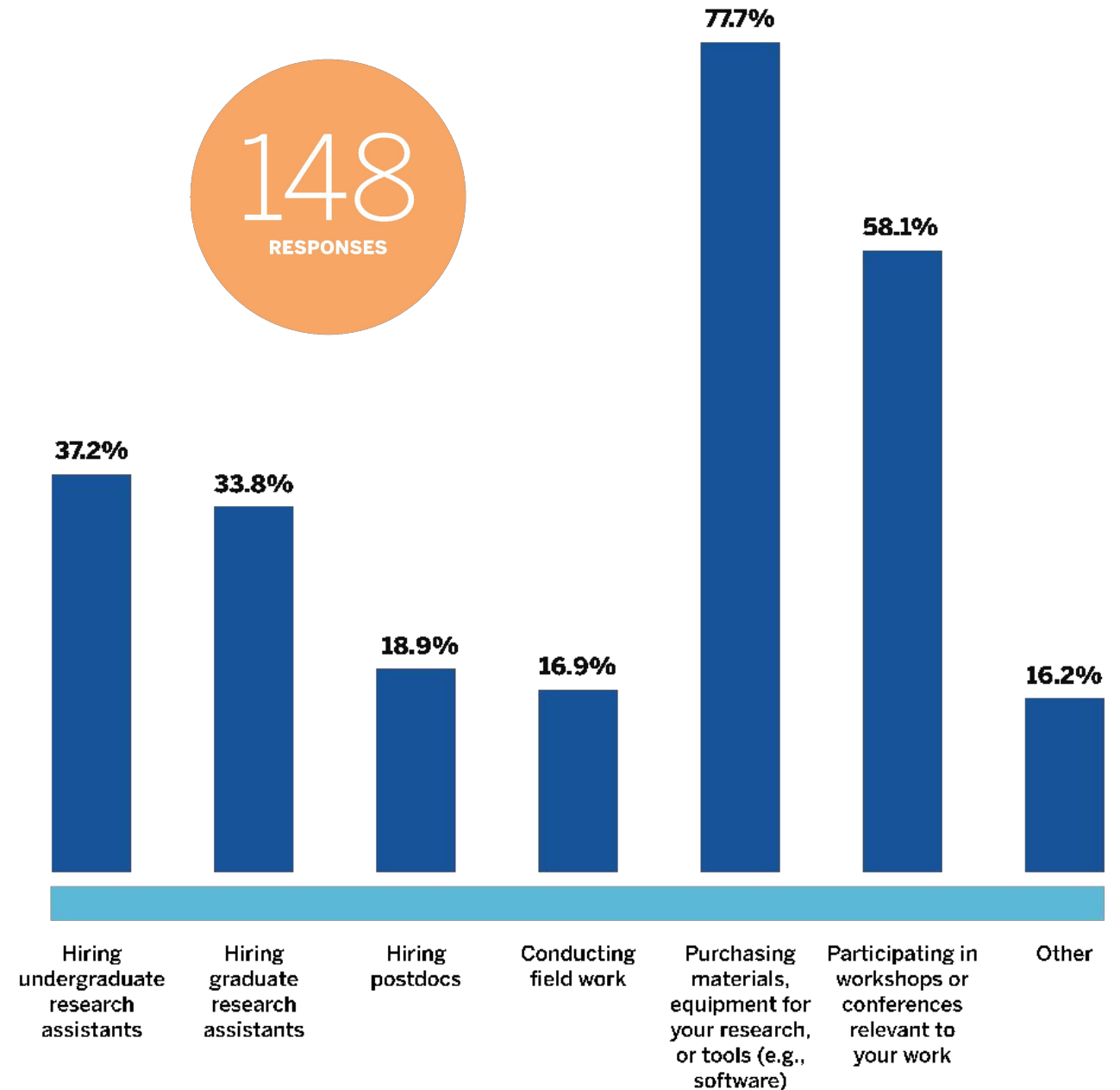
*Adjusting for race, length of time conducting research, and institution size



APCs create significant tradeoffs – and women appear to make tradeoffs more frequently than men

Compared with men, women were more than **2.5 times** as likely not to attend workshops and conferences so that they could pay APCs ($p < 0.05$).

*Adjusting for race, length of time conducting research, and institution size



AAAS became a fully open access publisher in 2023

EDITORIAL

Public access is not equal access

On 25 August, the White House Office of Science and Technology Policy provided guidance for scientific publishing aimed at making publications and their supporting data—the products of federally funded research—publicly available without an embargo by the end of 2025. The American Association for the Advancement of Science (AAAS, the publisher of *Science* and the *Science* family of journals) strongly supports this guidance. As written, several paths to public access remain possible. It will matter greatly to the scientific enterprise which become predominant.

As a scientific membership organization, AAAS looks at public access through the lens of scientists and engineers. We have experimented with various public access models over the past decade. The *Science* family has five subscription journals that libraries pay for access to content, and one journal for which authors pay an “article processing charge” to make the version of record of their paper freely available [“gold open access (OA)”]. All six journals publish excellent science and influential analyses, but their sustainability models differ. Each model supports the high quality that authors, readers, librarians, and funders expect us to provide through rigorous peer review shepherded by professional editors, careful editing, access to all relevant data, striking and informative visuals, and an engaging website. Importantly, we put substantial post-publication resources into preventing misinformation by informing accurate coverage of research through mainstream and social media.

From our experience, open and accessible data are essential to scientific integrity and reproducibility, and we require this accessibility immediately upon publication. Public access to trusted scientific information is also important, and situationally appropriate communication of accurate and understandable science with every audience is paramount. When any reader is unable to separate wheat from chaff, we must help by providing expertise to sift well-done from poorly done science.

Public access should foster a diverse universe of authors and readers regardless of their economic circumstances. This drives scientific excellence and public understanding. Some models for public access are bad for inclusivity. Gold OA journals, for which authors pay publication charges, work for senior scientists who are well-funded, tenured, and overwhelmingly male and white, but not so much for early-career scientists who may be poorly funded, not yet tenured, and much more diverse. Also disadvantaged are scientists at smaller schools, including historically Black colleges and universities, and in underfunded disciplines like math and the social sciences. Although it enables “open access” to readers, this model can be inequitable for many scientists and institutions.

Gold OA damages the scientific enterprise when it incentivizes a volume business model in which every paper is a quantum of revenue that must be published somewhere in a publisher’s ecosystem. The perverse incentive for publishers is to accept more papers, which furthers academia’s publish-or-perish mindset, makes predatory publishing more enticing, and dilutes the scientific literature. As a publisher of a gold OA journal, we’ve made the costly decision to maintain editorial quality and not accept papers just to meet financial targets—but we understand the temptation.

As a scientific membership society, AAAS seeks the best path forward for the enterprise. It serves. We are actively seeking to balance the tensions between equitable access for readers and equitable access to publishing. As such, *Science* is made available through progressively priced licenses whereby larger, more research-intensive institutions pay more. We will soon provide immediate public access to all taxpayer-funded research through a policy called “green OA-zero day,” which allows *Science* authors to post their “author accepted manuscripts” (a fully peer-reviewed and revised version), without delay or incurring additional fees, in a public repository of their choice. This approach allows immediate public access without requiring authors to pay a publication charge, while maintaining the ability of *Science* to fulfill its mission of communicating groundbreaking research discoveries and illuminating the impact of research on society.

AAAS recognizes that its approach is not perfect and may not work for all journals, so we continue to explore other ideas. We are eager to work with the White House, funding agencies, and anyone else to implement policies that optimize equity for authors and readers. In the meantime, our approach ensures that world-changing science is published and placed into the public realm regardless of a scientist’s geographic location, institutional affiliation, academic rank, or identity. We must not sew more structural inequity into the very fabric of the enterprise we seek to improve.

—Sudip Parikh, Shirley M. Malcom, Bill Moran

“Public access should foster a diverse universe of authors and readers...”

Sudip Parikh is the chief executive officer of the American Association for the Advancement of Science (AAAS) and executive publisher of the *Science* journals. sparikh@aaas.org

Shirley M. Malcom is senior advisor and director of SEA Change at AAAS. smaicom@aaas.org

Bill Moran is the publisher of the *Science* journals at AAAS. bmoran@aaas.org

Downloaded from <https://www.science.org> on December 07, 2023

Published online 9 September 2022; 10.1126/science.ade9028

SCIENCE science.org 23 SEPTEMBER 2023 • VOL 377 ISSUE 6415 1361

Science Magazine @ScienceMagazine

Amid continued discussion about ensuring public access to scientific research, the Science family of journals and @AAAS are pleased to announce an expansion of our 2-decades-long support for green open access—by which authors can achieve public access with no charge. (THREAD)



12:29 PM · Feb 21, 2023 · 240.6K Views

3 110 277 19

EurekAlert! has a Role to Play in Fostering Inclusiveness

An NSF-funded study by researchers at the Haas School of Business at UC Berkeley has some important preliminary findings related to EurekAlert! From their summary:

- “
- EurekAlert! plays a democratizing role in the world of science
 - While the platform benefits all scientific endeavors, the impact is more pronounced for early career researchers and outputs from mid-ranked universities and mid-ranked journals
 - Essentially, EurekAlert! is proficient at spotlighting high-quality science that might otherwise remain under the radar because it's not associated with top-scientist/top-university
 - We think this has important implication for the inequalities in rewards and recognition in science
- ”



Multidisciplinary Working Groups *Purpose*

Leverage the **multidisciplinary strength**, advisory perspective, and knowledge of AAAS to address a **timely and high-impact issue**, with the goal of developing actionable steps to **enact** real and perceived **change** in the STEMM enterprise



Empowering Career Pathways in STEMM

Overarching Themes

Encourage data-based approaches

Broadly disseminate information on career best practices

Invest in those who teach, guide, inspire, empower, and support

End exclusionary practices



There are no alternative careers!

- Basic research
- Applied research
- Clinical research
- Policy
- Industry
- Philanthropy
- Finance
- Academia
- Politics
- Diplomacy
- Teaching
- Manufacturing

We need them all.

AAAS is helping the STEM community get there.

Students and postdocs deserve more

EDITORIAL

Students and postdocs deserve more

A slow-motion crisis is underway among graduate students and postdocs in the United States who comprise today's indispensable research and teaching workforce and tomorrow's scientific leaders. Low pay, lack of benefits, and sometimes toxic research environments have persisted for years. Frustrated graduate students, postdocs, and nontenured faculty are protesting and pursuing unionization to address worsening conditions. A few senior leaders are starting to recognize that today's research environment is much more challenging than that of their sepia-toned memories. In response, some universities have offered salary and benefits relief. Unionization and overdue adjustments are incomplete and temporary responses to deeply embedded problems—with long-term implications that everyone may regret. So where do solutions lie?

For the past 70 years, universities in the United States have supported fundamental research, operating under the premise that research and education should be integrated. How that integration is carried out must be reformed because over the course of seven decades, the research ecosystem has been optimized to flawed incentives.

In the current system, a student or scholar will "apprentice" to a more senior scientist, with training exchanged for low wages. But how low is too low? The model works when there are mentoring, a supportive research environment, and growth opportunities that lead to rewarding, independent careers. Unfortunately, such provision of this contract is strained. Training times are longer than necessary. Mentoring is not rewarded. Tenure track positions are limited, and other career options are not spotlighted. Senior scientists and administrators who want to do the right thing are constrained by the incentives of the system itself. Sadly, when some senior scientists take advantage of the huge differences in power, there may be exploitation, harassment, or worse. Not enough safeguards are in place to prevent these abuses of power that are built into the system itself.

It is understandable that every actor in this training system seeks to advance their own position. Unfortunately, the disadvantages inevitably flow to the graduate students and postdocs. Getting the maximum research for the dollar too often devolves to more students and postdocs receiving less than they need and less than

the value they bring to the enterprise. As it is, the federal government does not pay the full cost of research. University presidents and provosts are rewarded for securing shiny new buildings and research centers while squeezing the most work possible out of trainees and contingent faculty. It is hard to expect money to come from inside this broken system to supplement low salaries and stipends.

Compounding the financial obstacles, graduate students and postdocs need more skills and knowledge than ever, often leading to longer preparation times before they are viewed as "independent" and capable of striking out on their own. Their careers are in the hands of one or two senior scientists whose incentives generally are to produce the most possible research rather than the best experience and prospects for their students.

To survive this prolonged apprenticeship, many students must take out loans for living expenses, disproportionately discouraging students of color and those from low-income households. Without a safety net, many must leave academia for a salary sufficient to support their own families. Careers outside academia are valuable and rewarding, but society also needs a diverse and talented academy.

Solutions will not come without changing the incentives that led to such deeply engrained problems. Only federal funding agencies, including the National Institutes of Health, National Science Foundation, and Department of Energy, have the influence to align incentives for administrators, researchers, and others toward a healthier environment. Determining the metrics of a healthy research environment, and supporting and rewarding scientists and institutions that optimize these metrics, would be a start. Many may not like the consequences, such as fewer but bigger grants or smaller labs, but doing nothing is unsustainable. American writer James Baldwin famously said, "Not everything that is fixed can be changed, but nothing can be changed until it is faced." It is past time for those who lead the scientific enterprise to face up to the fact that the student and postdoctoral experience is not how it might be remembered. Otherwise, everyone will bear witness to a system that is crumbling under its own weight.

—Shirley M. Malcom and Sudip Parikh

Shirley M. Malcom is a senior advisor and director of the STEM Equity Achievement (SEA) Change program at the American Association for the Advancement of Science (AAAS, the publisher of *Science*), Washington, DC. s.malcom@aaas.org

Sudip Parikh is the chief executive officer of AAAS and executive publisher of *Science*. sudip@aaas.org

Downloaded from <https://www.sciencemag.org> on April 06, 2023

10.1126/science.adh0336

SCIENCE | sciencemag.org

10 FEBRUARY 2023 • VOL. 370 ISSUE 5382 • 519

Change incentives that have led to such deeply engrained problems (e.g., low pay, lack of benefits, and sometimes toxic research environments)

Advocate for higher salaries to equate to living wages, employee-like benefits, good mentorship, and transparent career paths

Only federal funding agencies have the influence to align incentives for administrators, researchers, and others toward a healthier environment

Determine the metrics of a healthy research environment, and support and reward scientists and institutions that optimize these metrics

Evolution and revolution are required for relevance and leadership

87 scientists founded AAAS at the Academy of Natural Sciences in Philadelphia



Arden House: The first time AAAS updated its governance structure



The Double Bind:
The Price of Being
a Minority Woman
in Science

Shirley Mahaley Malcom
Paula Quick Hall
Janet Welsh Brown

New frontiers in
science diplomacy

Navigating the changing balance of power

January 2010



1848

1874



First class of AAAS
Honorary Fellows

1900

1923



First award
established

1951



1973

Science & Technology
Policy Fellowships

1975

First class

2010



2022



2023



Our Plan: AAAS Strategic Vision and Goals

A boldly inclusive, mobilized, and global scientific community that ignites, enables, and celebrates scientific excellence and science-informed decisions and actions.

ADVANCE SCIENTIFIC EXCELLENCE AND ACHIEVEMENT

AAAS recognizes, inspires, and enables a robust research ecosystem that drives discovery and innovation and prepares future scientists and engineers

FOSTER EQUITY AND INCLUSION FOR SCIENTIFIC EXCELLENCE

AAAS fosters the diverse, equitable, open, and inclusive scientific enterprise that is essential for scientific excellence

BUILD TRUST AMONG SCIENTISTS AND COMMUNITIES

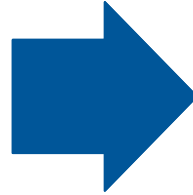
AAAS builds trust among scientists and engineers and broader communities and is a valued source of accurate scientific information that is foundational to countering misinformation

CATALYZE PROGRESS WHERE SCIENCE MEETS POLICY

AAAS provides actionable evidence for public policy that serves society and promotes policies that enable quality science

Imagine a world where...

Advancing scientific excellence and achievement



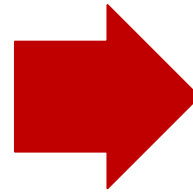
Ethical and transparent scientific collaboration help to heal the sick, feed the hungry, and protect the planet

Fostering equity and inclusion for scientific excellence



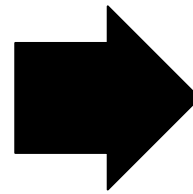
One day, any child anywhere will consider it their birthright, have the support structures, and feel the sense of belonging needed to pursue opportunities in STEM

Building trust among scientists and communities



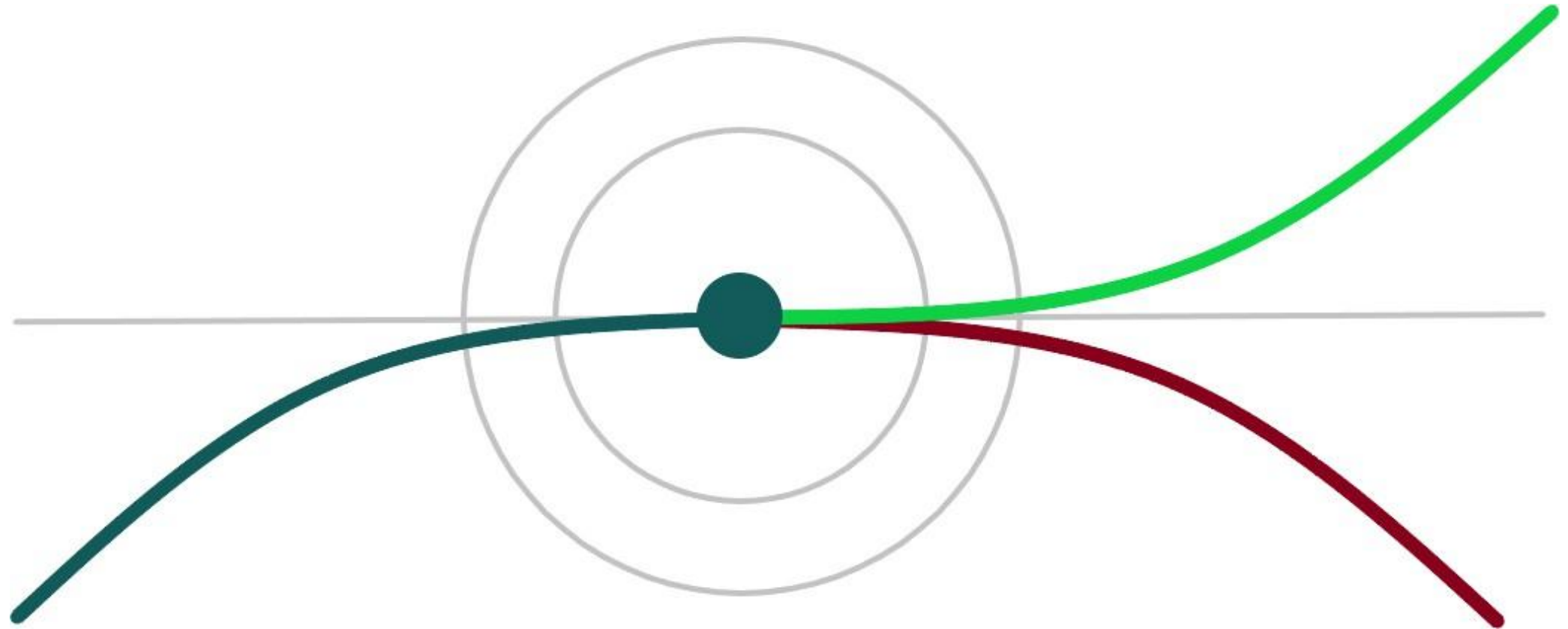
Scientists and engineers will have strong trusted relationships in their communities before the next crisis arises

Catalyzing progress where science meets policy



Policy decisions are made with guidance and input from trusted scientists and engineers

Two paths for our future are possible, but neither is inevitable





Conversation?

“

Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it's the only thing that ever has.

MARGARET MEAD
AAAS PRESIDENT, 1975