

An (Incomplete) Overview of Science Policy in the U.S.

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I am solely responsible for the content of this presentation, which does not necessarily represent the views of the National Academies of Sciences, Engineering, and Medicine.

Caveat

A lot has changed since January 2025, but it's still useful to know how things worked before.

(also I am very space-biased and again, views expressed are not of my employer)

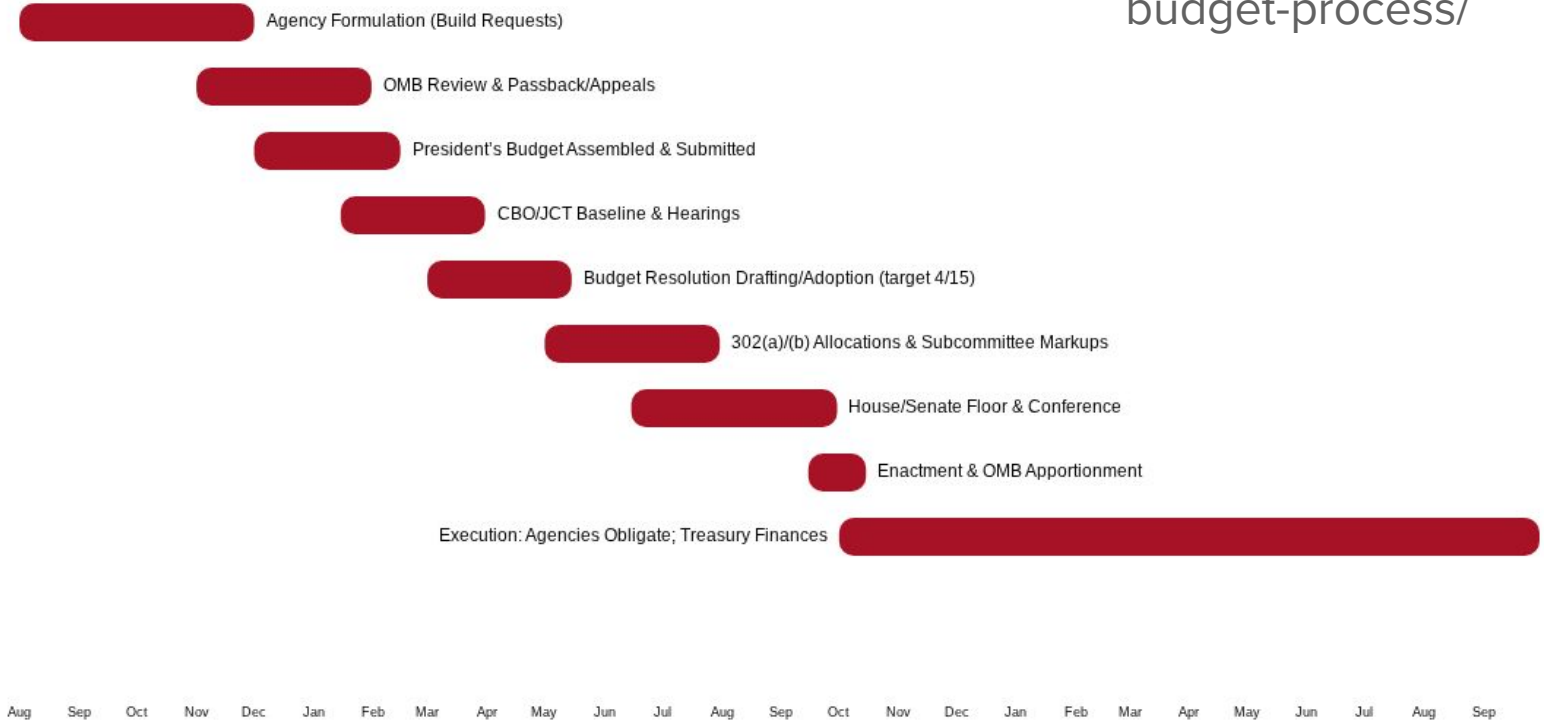
- How the US government funds scientific research
- The role of the National Academies
- How I got into policy
- TIME SENSITIVE The new OMB rule



A brief explanation of federal budget cycle

Annual Budget Cycle: Sample

<https://taxproject.org/budget-process/>



A brief explanation of federal budget cycle

Annual Budget Cycle: Sample



A brief explanation of federal budget cycle

Agencies and the Office of Management and Budget (OMB) iterate to create the President's Budget Request (PBR) for next year

PBR is released (usually around Feb-Mar)

Congress begins developing the budget; appropriations committees handle discretionary funding (science lives here)

House and Senate develop their own funding bills and reconcile them

Bill is sent to President to be signed or vetoed (hopefully before Oct 1)

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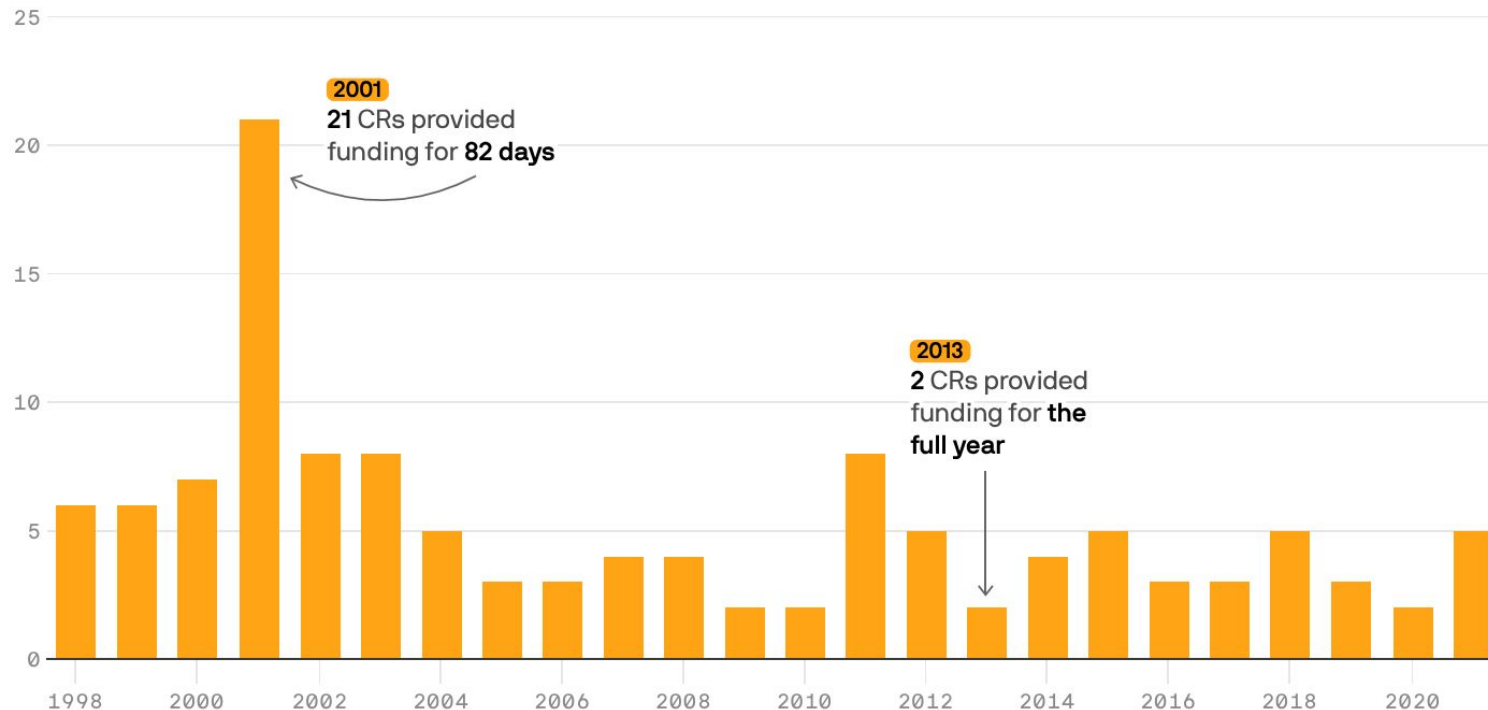
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But what if a new budget isn't passed by October?

Number of continuing resolutions passed per fiscal year

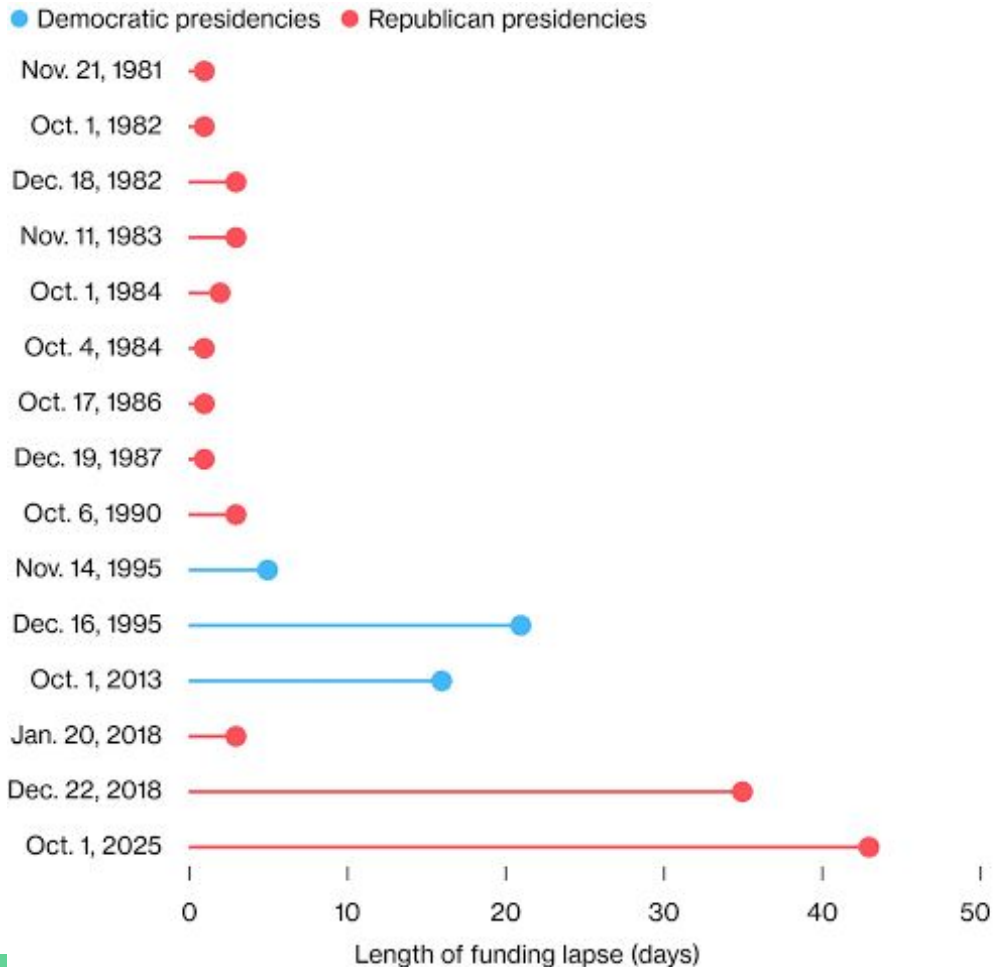
FY 1998 to FY 2021



But what if a new budget isn't passed by October?

“2025 Shutdown Was the Longest in History

Length of lapses in congressional appropriations leading to a government shutdown of one day or longer.”



Source: Office of the Historian, US House of Representatives
Note: Includes lapses in appropriations that did not lead to office closures or furloughs, often because they happened over a weekend

Bloomberg

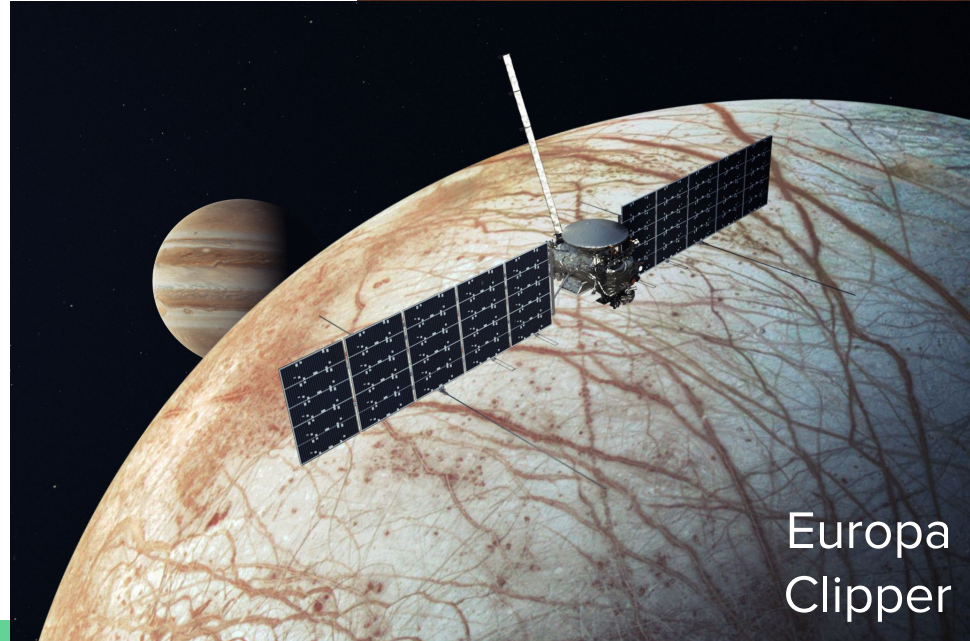
Where does science policy generally happen in the government itself?

Executive:

- Office of Science and Technology Policy (OSTP)
- Agencies

Congress:

- Senate Committee on Commerce, Science, & Transportation
- House Committee on Science, Space, and Technology
- Member offices



So where do the National Academies come in?

The background of the slide is a detailed, colorful mosaic of the ceiling of the United States Capitol dome. It features various allegorical figures, symbols, and Latin inscriptions. Visible text includes "UNIVERSITY", "PILOT OF INDUSTRY", "TO TRUTH", and "TO SCIENCE".

Where Dedication Meets Expertise

The National Academies provide independent, trustworthy advice and facilitate solutions to complex challenges by mobilizing expertise, practice, and knowledge in science, engineering, and medicine. We envision a nation and world that rely on scientific evidence to make decisions that benefit humanity. At the core of our work is an unwavering commitment to objectivity, scientific rigor, and truth.



National Academy of Sciences (NAS) founded on March 3, 1863
through a Congressional charter signed by Abraham Lincoln

The National Academies

The National
Academy of
Sciences

The National
Academy of
Engineering

The National
Academy of
Medicine

Program Offices and Centers

- Center for Advancing Science & Technology
- Center for Health, People, & Places
- Gulf Research Program
- Transportation Research Board
- Office of International Networks, Cooperation, and Security
- Organizational Initiatives

The National Academies

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Program Offices and Centers

Center for Advancing Science
& Technology

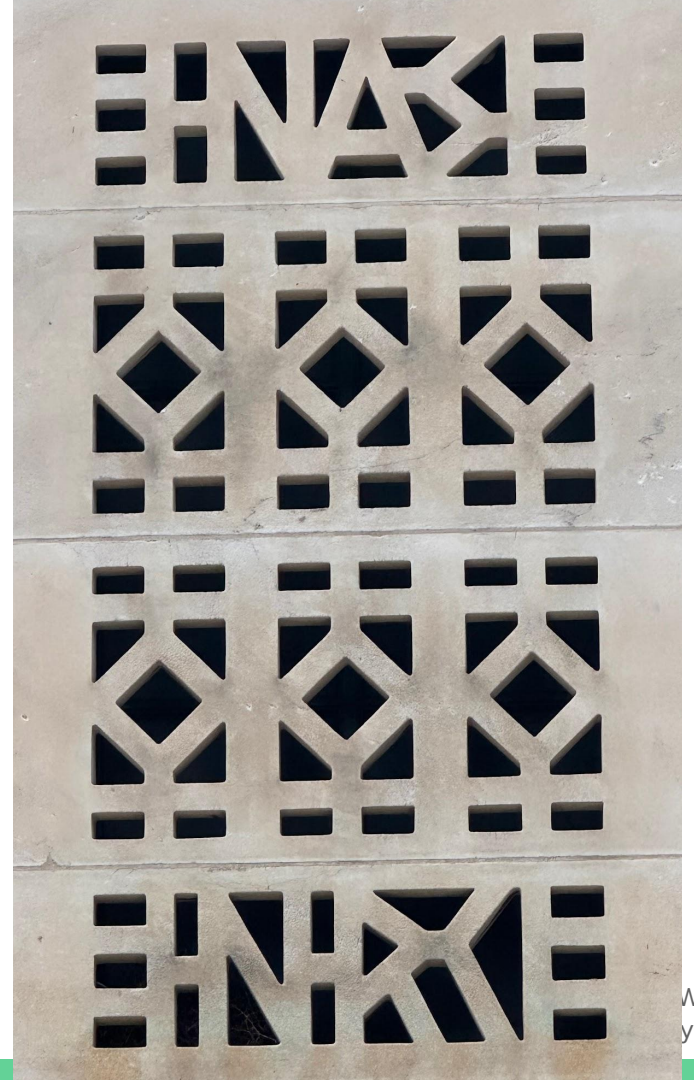
- **Aeronautics, Space, and Astronomy ← me!**
- Computing Research, Technologies, and Systems
- Physical Sciences, Systems, and Infrastructure
- Science and Engineering Education and Workforce
- Science and Technology Policy and Law

Center for Health, People, & Places

- Biomedical and Health Sciences
- Earth Systems and Resources
- Food, Nutrition, and Agriculture
- Health Care and Public Health
- Life Sciences and Biotechnology
- Social and Economic Systems

National Academies Activities

- Consensus & advisory activities
- Convening activities
- Fellowships, grants, and awards
- Lectures and educational and outreach activities



National Academies Activities

- **Consensus & advisory activities**
- **Convening activities**
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My current portfolio

- Decadal Survey for Earth Science and Applications from Space 2028-2037 (ESAS 2028)
- Committee on Biological & Physical Sciences in Space (CBPSS)
- Space Technology Industry-Government-University Roundtable (STIGUR)
- Assessment of Technical and Scientific Capabilities at NASA Goddard Space Flight Center — *support staff*

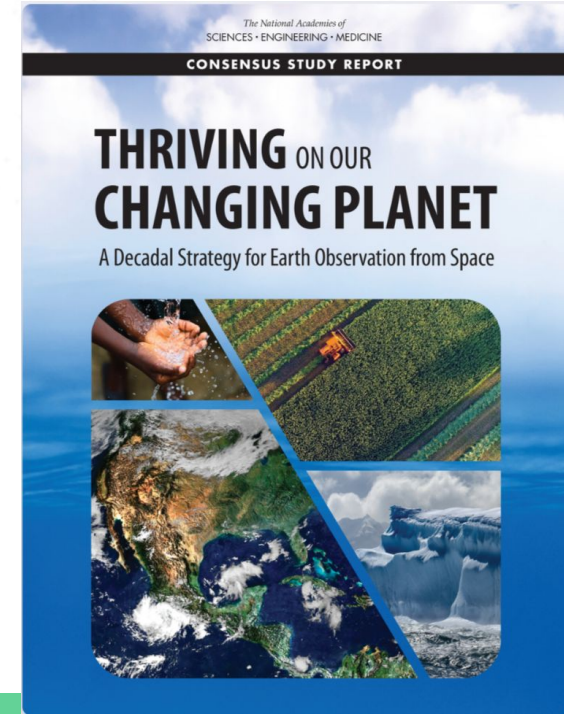
Past projects include Elementary Particle Physics: Progress and Promise (EPP)

ESAS 2028 and Decadal Surveys

- Congressionally mandated — Congress directs NASA to enter agreements with us to carry out the decadal surveys and their midterm assessments
- Gathers experts to define a community-wide scientific vision for the next decade
- Factored into science-related funding decisions in Congress

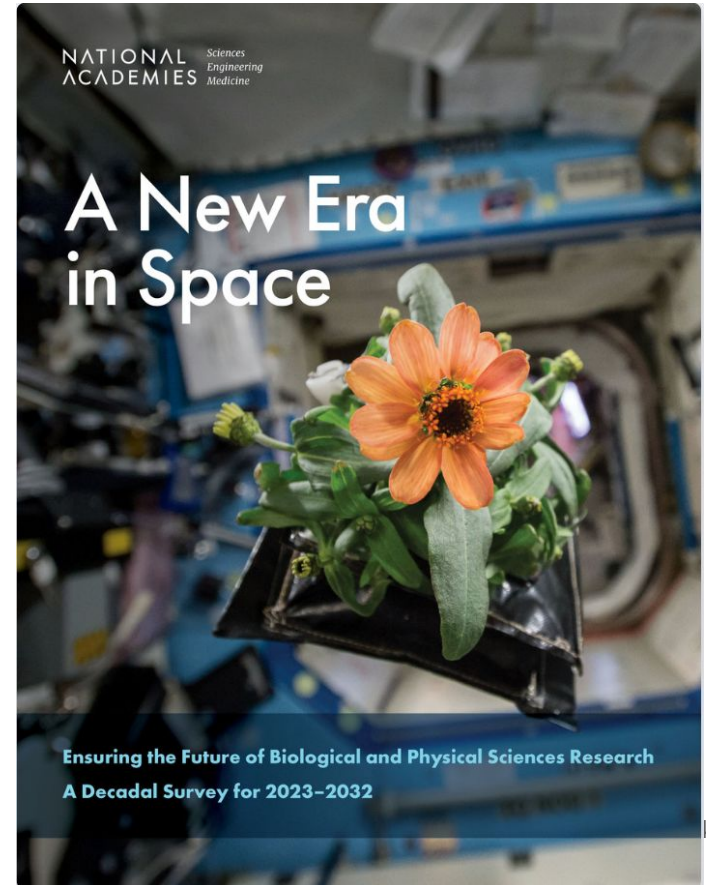
GROUND-BASED ASTRONOMY A TEN-YEAR PROGRAM

1964 (reprint 1966, new appendices)



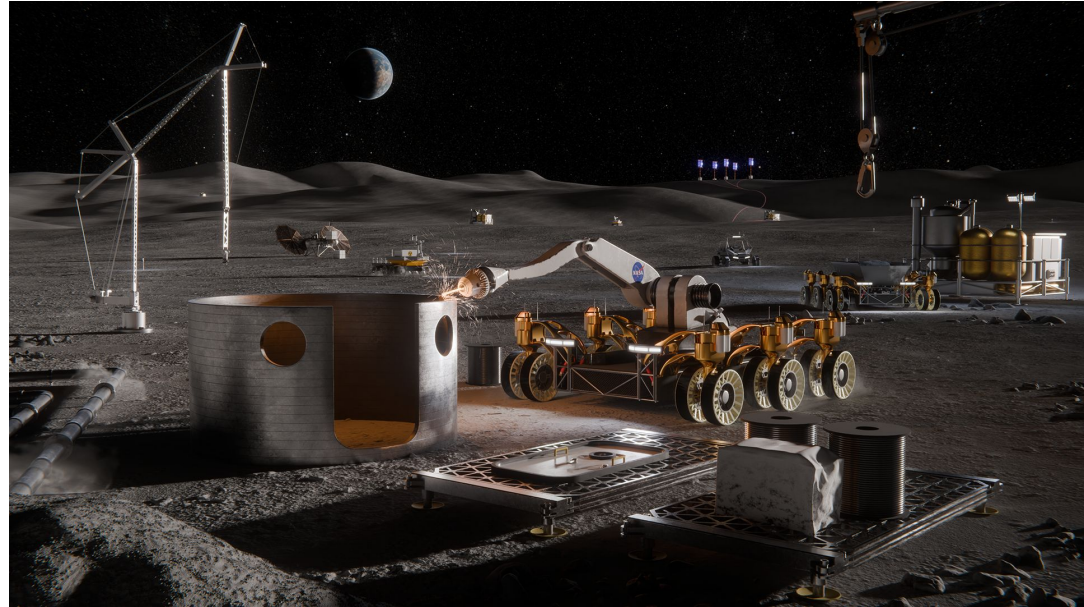
Committee on Biological & Physical Sciences in Space

- Requested by NASA's Science Mission Directorate (SMD)
- Comprised of ~15 experts who meet twice a year to discuss topics relevant to SMD's Biological and Physical Sciences Division
- Monitor progress towards the Biological and Physical Sciences decadal survey
- Occasionally write advisory documents on request by division



Space Technology Industry-Government-University Roundtable

- Requested by NASA's Space Technology Mission Directorate
- Also comprised on ~15 experts who meet twice a year
- Goal is to foster dialogue and strengthen ties between stakeholders in space technology



Assessment of Technical and Scientific Capabilities at NASA Goddard Space Flight Center

- Congressionally mandated, fast track study to assess Goddard
 - Began in April 2026, report due November 2026
- Collaboration with Physical Sciences and Infrastructure
- Goal is to recommend actions that Congress and NASA can take to ensure Goddard's long term success



Outcomes of National Academies Activities

- Decadal surveys
 - Hubble Space Telescope
 - James Webb Space Telescope
 - New Horizons
- Other reports
 - Recommending astronauts over robotic missions for Hubble servicing, against stated preference of the NASA administrator
 - Prioritized science goals and mission formats for the first human missions to Mars



How we recruit experts for activities

- Expertise
- Perspective
- Objectivity
- Background
- Academy Membership
- Potential conflicts of interest, including financial ones
- Independence from sponsors

NATIONAL
ACADEMIES

*Sciences
Engineering
Medicine*

**Policy on Composition and Balance, Conflicts of Interest,
and Independence for Committees Used in the Development
of Findings, Conclusions, and Recommendations**

Guidelines for the Review of Products of the National Academies of Sciences, Engineering, and Medicine

Any product by the National Academies of Sciences, Engineering, and Medicine must be reviewed by a diverse group of experts other than its authors prior to release. This independent, rigorous review is a hallmark that distinguishes the National Academies from other organizations offering scientific and technical advice on issues of national importance.

Also consider public feedback after committees are posted

Day to Day Work

- A LOT of project management
- Organizing meetings in collaboration with committees and sponsors
- Identifying potential new members and speakers
- If developing an advisory document, support document development as necessary:
 - Information gathering through meetings and research
 - Writing and editing
 - Directing independent peer review
 - Public distribution of report
 - Sponsor briefings



How I got into policy

- Came into grad school set on academia
- Selected for a Congressional Visits Day through the American Astronomical Society
- Considered science communication but settled on policy
- Interned at the National Academies before graduating



What helped me get into policy

- Learning about PhD-trained scientists who worked in policy spaces — Congress, agencies, think tanks, the National Academies, state governments
- A supportive advisor — goal was for me to graduate with the expertise I needed, not publish like an academic
- Opportunities for science policy experiences — internships, Congressional visits, courses in other parts of my institution
 - Earned a certificate in public management alongside my PhD

The new OMB rule

The Office of Management and Budget “oversees the implementation of the president’s vision across the executive branch. It develops the president’s annual budget proposal, manages agency processes, reviews significant agency regulations, and supports presidential actions, including executive orders.”

[Emerging Tech Policy Careers](#)



Budget of the
U.S. Government

Office of Management and Budget
Fiscal Year 2027

The new OMB rule

- Congress holds the “power of the purse” — only it can control public spending
- The Impoundment Control Act of 1974 is the only way for the President to delay or withhold funds (but not cancel them)
- Congressional/other concerns on administration withholding funds

Institute of Museum and Library Services—Applicability of the Impoundment Control Act to Reduction of Agency Functions

B-337375

Jun 16, 2025

POLITICO PRO

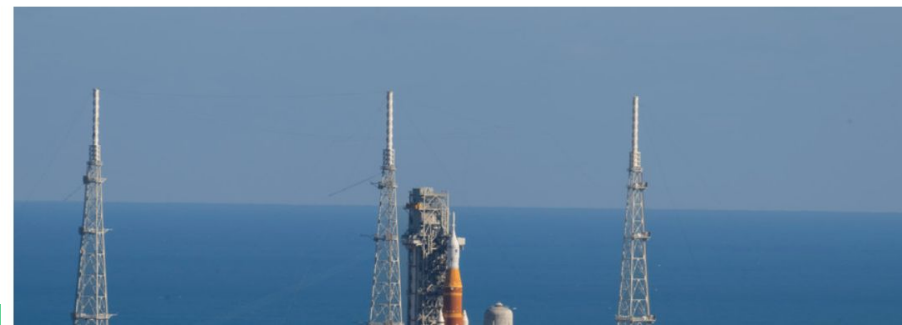
FEDERAL

White House withholds NASA science funds

The administration did not say why it had done so.



BY: AUDREY DECKER | 02/11/2026 12:56 PM EST | UPDATED 02/11/2026 05:11 PM EST



The new OMB rule

- On May 29, OMB released a rule for public comment
- The rule's stated goal is to "revise the Guidance for Federal Financial Assistance to improve government-wide policies and requirements related to the management of grants, cooperative agreements, and other forms of assistance."

THE FEDERATION OF AMERICAN SCIENTISTS PRESENTS

**this rule could
change american
science forever**



FEDERAL REGISTER

The Daily Journal of the United States Government



Proposed Rule

Regulation for Federal Financial Assistance

**i read it so you
don't have to**

Last week the Office of Management and Budget (OMB) dropped a 108 page proposal to ~~rule in my weekend~~ "revise the Guidance for Federal Financial Assistance" aka "change the way the federal government funds scientific research"

Here's what you need to know.

\$200.205

Section 200.205—Federal Agency Review of Merit of Proposals

OMB proposes to revise § 200.205 to strengthen requirements for agency merit review and to establish a new pre-issuance review process consistent with Executive Order 14332. Under the proposed requirements for pre-issuance review, as part of the broader merit review process, agencies must ensure that proposals selected for funding are consistent with applicable law, Federal agency priorities, and the national interest. Consistent with the Executive order, senior appointees must conduct these reviews and apply specific principles when evaluating proposals. These principles include ensuring that discretionary awards advance the President's policy priorities, prohibit the use of funds for discriminatory or otherwise impermissible purposes, and emphasize ensuring compliance with applicable law. Additionally, the proposed revisions encourage agencies

applicable law. Additionally, the proposed revisions encourage agencies to broaden the range of recipients, prioritize institutions demonstrating rigorous and reproducible scholarship, incorporate benchmarks for measuring performance of "Gold Standard Science," and direct agencies to weigh institutional commitment to research integrity when making award decisions. Proposed revisions in this section also clarify that peer review remains advisory and does not replace agency discretion. Finally, the proposed revisions clarify that agencies are not required to issue awards solely as a result of issuing a NOFO. These proposed updates are intended to enhance consistency across agencies, accountability, and alignment of Federal awards with administration priorities, while also reducing the risk of award being made contrary to statutory or policy requirements.

This is the big regulatory change, the one that should make you go "huh???" It formalizes prior guidance for senior appointees – not career scientists, not program officers, not people who know how to do this thing – to review every discretionary grant before it's awarded. Oh, and they are expressly prohibited from deferring to peer review [read: experts] on the matter.

This rule also requires discretionary awards "advance the President's policy priorities" – not national security, or public health, nor foundational science priorities.

\$200.205(d)

award proposals.

(d) *Use of peer review.* Nothing in this part must be construed to discourage or prevent the use of peer review methods to evaluate proposals for discretionary awards or otherwise inform agency decision making, provided that peer review recommendations remain advisory and are not ministerially ratified, routinely deferred to, or otherwise treated as de facto binding by senior appointees or their designees. Further, nothing in this part must be construed to create any rights to any particular level of review or consideration for any funding applicant except as consistent with applicable law.

Legalese for "we can terminate your funding at any time, for any reason". Imagine you are working on a multi-year grant, and POOF, no you aren't.

Typically a termination would require a finding of noncompliance or fraud. This change would allow for arbitrary terminations, just because. It also makes it harder to justify the work of grant applications if they can so easily be terminated.

Since WWII – you know like the movie Oppenheimer – nearly every science agency has emphasized independent expert peer review as THE measure of scientific merit. Even your 8th grade science teacher emphasized this.

Under this change, a political appointee can override the scientific community's judgment just because.

\$200.340(a)(2)

(2) At the discretion of the Federal agency or pass-through entity. The Federal agency or pass-through entity, to the extent permitted by law, may terminate a Federal award in part or its entirety if the Federal agency or pass-through entity determines that a termination is in the interest of the Federal agency or pass-through entity, including if a Federal award does not effectuate program goals, Federal agency priorities, or the national interest as they exist at the time of the termination.

\$200.421

§ 200.421 Advertising and public relations.

(a) *In general.* Except as provided in paragraph (b) of this section, advertising and **public relations costs** (including those related to magazines, newspapers, radio and television, direct mail, exhibits, and electronic or computer transmittals) **are unallowable** under Federal awards and may not be charged directly, indirectly, or through another cost allocation methodology.



\$200.461

§ 200.461 Publication and printing costs.

(a) *In general.* Except as provided in paragraph (b) of this section, **publication costs** (including page charges, article processing charges (APCs), or similar fees such as open access fees for professional journal publications and other peer-reviewed publications) are **unallowable** under Federal awards. Printing costs (including distribution and general handling) are allowable.

\$200.432

§ 200.432 Conferences.

(b) The costs for attending conferences are allowable **only if participation in the conference is expressly approved** by the Federal agency and included in the terms and conditions of the Federal award. See § 200.475.

Nice science you got there, would be a shame if you were unable to use federal funds to communicate your findings to the press and public.

And also you can't submit it to any journals so the public can better understand your publicly funded research (directly conflicting with longstanding federal open access mandates).

And you can't attend conferences either to share your findings.

\$200.220

§ 200.220 Prohibition of using Federal funds for covered foreign collaborations.

(a) *General prohibition.* Except as provided in paragraph (c) of this section, Federal funds **may not be obligated or expended** by a recipient or subrecipient **to support a bilateral or multilateral collaboration, agreement, program, or activity** with a covered foreign country or covered foreign entity.

\$200.202(e)

(e) *Eligibility of entities for research and development awards.* (1) To the extent permitted by law, Federal awards for research and development must be made to entities that are organized under the laws of the United States, a State, or Tribal government. Federal agencies may not issue Federal awards for research and development to foreign entities except where expressly authorized by statute or where a compelling interest exists for the agency's mission, the administration's priorities, and for the United States, as determined by the agency's senior appointee.

What if Chris Tucker and Jackie Chan never linked up for Rush Hour... what if Shakira and Wyclef Jean never collabed on Hips Don't Lie... What if the United States wasn't allowed fruitful, peaceful scientific collaboration with any number of countries (that we are already engaged in multilateral collaboration with).

International cooperation is standard practice across many scientific disciplines. A domestic-first framework that requires case-by-case approval would be detrimental to international public health efforts, where foreign scientists are leading research into treatments and containment.



(remember how we brought a Canadian to the moon with us just a few months ago?!)

§200.206

§ 200.206 Federal agency review of risk posed by applicants.

* * * * *

(b) *Risk assessment*—(1) *In general.* The Federal agency must establish and maintain policies and procedures for

conducting a risk assessment to evaluate the risks posed by applicants before issuing Federal awards. This assessment

this is a
loyalty test



Congress tried this one in 1949 when they tried to sneak in a loyalty test affidavit into the National Science Foundation Bill. We said it in 1949 and we'll say it again:

Its sole justification for inclusion is concession to current fears and hysteria. Totally ineffective in detecting actual enemies of the U.S., it is significant only in its indication of the state of mind of the country – one of unreasoning insecurity and fear. To fail to oppose the provision is to accept this state of mind and permit it to go on to even more dangerous manifestations.

§200.202(a)(iii)

§ 200.202 Program planning and design.

(a) *Elements of program design.* The Federal agency must design a Federal program and create an Assistance Listing before announcing the Notice of Funding Opportunity. A Federal program must be designed:

(1) With clear goals and objectives that:

(i) Aim to achieve meaningful results;
(ii) Are consistent with the public purpose of the program as authorized by law; and

(iii) Align with administration policies and priorities;

oh
okay



Listen. Science funding has always been political. Someone trying to tell you science is some apolitical thing that should be put on a pedestal, has no external influence, and never be questioned is trying to sell you something. Politics and power underscore anything our government chooses to do, and democratic legitimacy matters for the public's investments.

But this is beyond saying the quiet part out loud: there has never been a mandate that grant funding be micromanaged by political whims or strictly align with administration priorities. Federal priorities, sure, but the federal government is a massive institution with a general mandate to do the most good for the most people. An administration – something that comes and goes every four-to-eight years – has narrower, ideological agendas in mind.

“The Administration proposed a sweeping rule that would bar scientists from international collaboration, control what they can tell the public about their research, and give Trump officials complete power over which grants are funded—including authority to stop any grant at any time, for any reason.”

Colette Delawalla, PhD, CEO
Stand Up for Science

The new OMB rule

- OMB is required to receive public comments about the rule and sufficiently respond to them
- Comments must be unique
 - A mass of identical comments can be covered in a single response
 - Comments are used in legal challenges to a proposed rule
- Comments are currently due by July 13 — two days from now!

Comment on Office of Management and Budget proposed rule for federal financial assistance

Make your voice heard on the Office of Management and Budget's proposed federal grant funding changes and defend the scientific community from this existential threat.

Prevent damaging changes to the federal grant process

While the proposed rule is very broad, we are focusing comments on four major categories: (1) grant review and politicization, (2) international collaboration, (3) professional activities and affiliations, and (4) broadening participation/workforce development.

Brief context is provided to help you submit a comment on any/all of these topics.

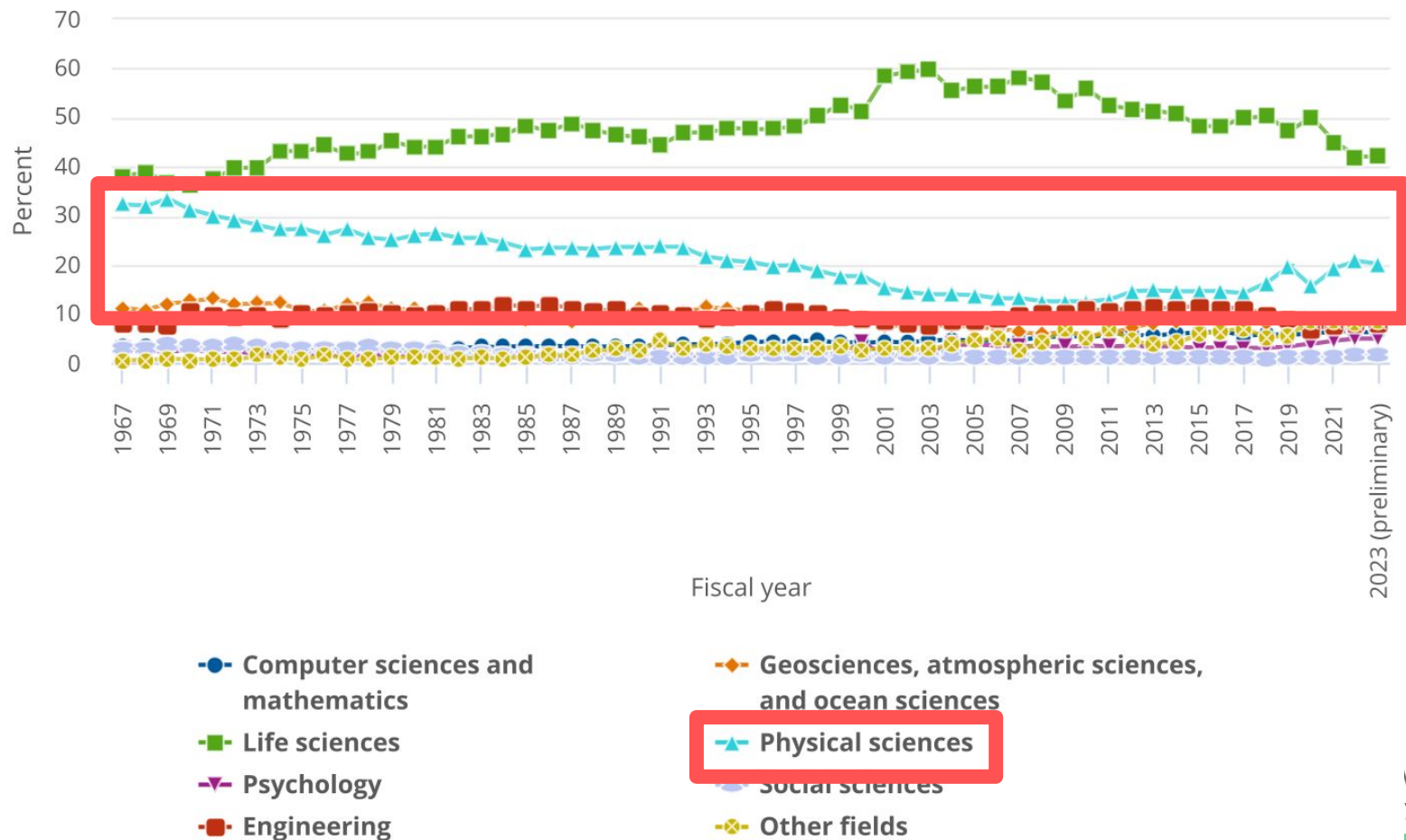


You cannot sustain world-class research outputs, field-leading, creative and free technical thinkers and doers, or continue to inform and in many ways shape the global S&T discourse if every day is a coin flip on whether you'll be funded to do the work.

Questions?

Figure 8

Federal obligations for basic research, by field of R&D: FYs 1967–2023



Comparing PBRs and Enacted Budgets

DOE Office of Science

	FY 2025	FY 2026	FY 2027	FY 2027 President's Budget vs. FY 2026 Enacted	
	Enacted	Enacted	President's Budget	\$	%
18-SC-42, Proton Improvement Plan II (PIP-II), FNAL	125,000	114,000	105,000	-9,000	-7.9%
11-SC-40, Long Baseline Neutrino Facility/Deep Underground Neutrino Experiment	251,000	260,000	305,000	+45,000	+17.3%
Construction - High Energy Physics	376,000	374,000	410,000	+36,000	+9.6%
High Energy Physics	1,224,570	1,235,156	1,120,458	-114,698	-9.3%
Research - Nuclear Physics	715,600	711,141	591,434	-117,707	-16.6%
20-SC-52, Electron Ion Collider, BNL	110,000	155,000	200,000	+45,000	+29.0%
Construction - Nuclear Physics	110,000	155,000	200,000	+45,000	+29.0%
Nuclear Physics	825,600	866,141	791,434	-72,707	-8.4%

National Aeronautics and Space Administration

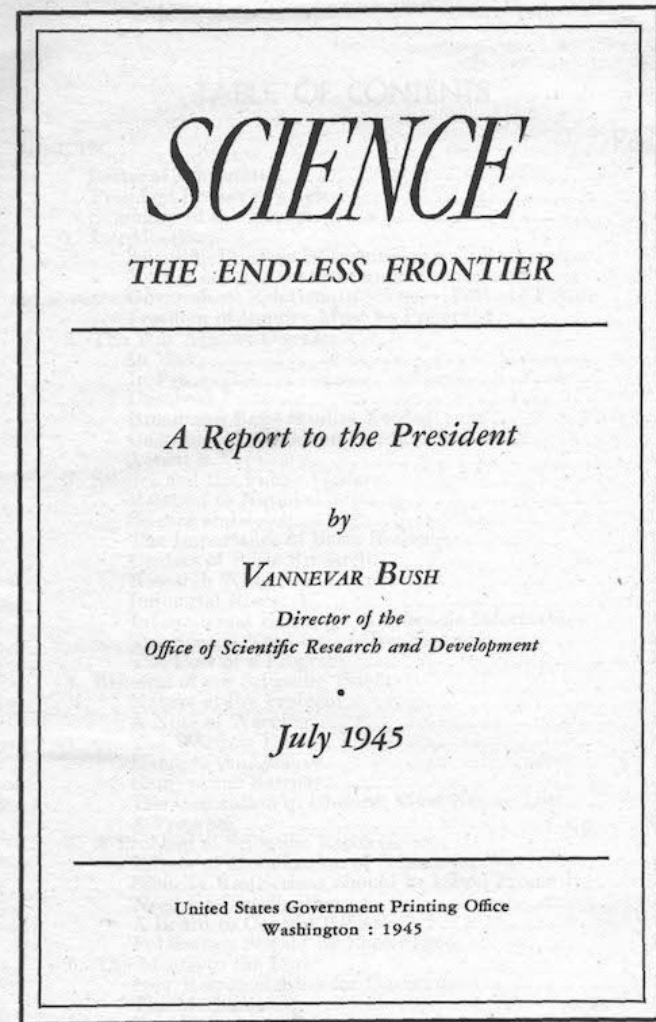
FY 2027 PRESIDENT'S BUDGET REQUEST SUMMARY

Budget Authority (\$ in millions)	Fiscal Year						
	Enacted 2025	Enacted 2026	Request 2027	2028	2029	2030	2031
NASA Total	24,838.3	24,438.3	18,829.1	18,829.1	18,829.1	18,829.1	18,829.1
Exploration	7,666.2	7,783.0	8,513.9	8,493.9	8,173.9	8,153.9	8,133.9
Moon and Mars Transportation System	--	--	4,219.1	3,888.1	3,172.2	3,659.4	3,659.4
Orion Program	--	--	1,221.8	1,001.2	779.3	565.5	--
Crew Vehicle Development	--	--	1,214.3	1,001.2	779.3	565.5	--
Space Launch System	--	--	1,495.3	--	--	--	--
Exploration Ground Systems	--	--	757.9	649.6	579.6	574.7	--
Commercial Moon & Mars	--	--	--	--	--	--	--
Infrastructure & Transportation	--	--	744.1	2,237.3	1,813.3	2,519.2	3,659.4

Science, the Endless Frontier – Vannevar Bush

- Bush
 - PhD research on electrical engineering
 - President of the Carnegie Institution for Science
- Office of Scientific Research and Development
 - Formed during World War II
 - Focused on research for military benefit
 - Began fundamental research for what became the Manhattan Project

**How can the US support
research at public and
private institutions and build
scientific talent in the US?**



Science, the Endless Frontier – Vannevar Bush

“Scientific Progress Is Essential”

“Science Is a Proper Concern of Government”

“Scientific progress on a broad front results from the **free play of free intellects, working on subjects of their own choice**, in the manner dictated by their curiosity for exploration of the unknown.”

Science, the Endless Frontier – Vannevar Bush

“The Government should take an active role in promoting the international flow of scientific information.”

“If **ability, and not the circumstance of family fortune**, is made to determine who shall receive higher education in science, then we shall be assured of constantly improving quality at every level of scientific activity.”



 NEWSLETTER

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