

Role of Federal Funding in Science, Health, and Economy

How Science and Health funding works (Merit Review) – 1% of U.S. budget (Fig. 1):

1. Researcher(s) identifies a certain question/unknown that needs an answer.
2. Researcher then develops a proposal (about 50,000 submitted/yr each to NSF and to NIH).
3. Proposals reviewed by experts in the field (outside reviewers).
4. The highest-ranking proposals are funded (approx. 1/5 get funded by NSF or NIH).
5. For academic researchers, the university has the contract with federal agency and administers the grants.
6. Indirect costs (overhead) in the grant pays for grant administration, facilities, etc. (often contentious item but is necessary). Indirect costs range from around 26% - 60%; NIH has now proposed 15%.
7. A report is submitted after completion (often results are published in scientific peer-reviewed publications).
8. The science enterprise in the U.S. is the largest and most revered in the world.
9. In 2024, California received \$6.2 billion in federal health and science funding, about 10% of total to all states.
10. 90% of CA research funding from Federal government, only 9% from State of California.
11. Annual federal H&S research funding for Bay Area universities: \$3 Billion (\$1.7 NIH, \$0.8 NSF, \$0.5 other)

National Science Foundation (NSF) – trends in funding (Fig.2):

1. Founded in 1950 (75 years ago), current annual budget of \$9.9 billion
2. Supports research in all non-medical fields of science, mathematics, and engineering.
3. NSF also supports education, via grants for research experience for undergraduates and teachers.
4. Attack: Proposed cut 2,000 grants, removal of DEI/climate change funding (esp. STEM, math/chem/physics) – Fig. 3³

National Institutes of Health (NIH) – trends in funding (Fig.2):

1. Founded in 1887 (in Dept of Health and Human Services), current annual budget of \$48 billion.
2. Federal agency conducting and supporting medical, health, and behavioral research.
3. 83% of NIH budget funds extramural research (universities and research institutes), 11% goes to NIH-operated facilities.
4. Attack: Capped indirect costs at 15%, terminated thousands of grants worth \$5 billion, ousted 1,200 employees, proposed cut of NIH budget from \$48 billion to about \$27 billion.^{4,5}

Consequences: Targeted cuts (e.g. DEI, education, vaccine development); decreased research in science/medicine (e.g. declines in health, less understanding of climate change); fewer future trained professionals; long-term impact; and dramatic economic impacts (esp. on targeted states like CA).

References:

¹"Policy biases: Where do our federal tax dollars go?" By Center on Budget and Policy Priorities (28 Jan 2025) <https://www.cbpp.org/research/federal-budget/where-do-our-federal-tax-dollars-go>

²"Historical Trends in Federal R&D" by AAAS (American Association for the Advancement of Science) (2023) <https://www.aaas.org/programs/r-d-budget-and-policy/historical-trends-federal-rd>

³"Trump has cut science funding to its lowest level in decades" by New York Times (2025) <https://www.nytimes.com/interactive/2025/05/22/upshot/nsf-grants-trump-cuts.html>

⁴"Donald Trump's cuts to medical research would be steep, but Hakeem Jeffries exaggerates them" by Louis Jacobsen -PoliticoFact (29 Sept 2025) <https://www.politifact.com/factchecks/2025/sep/29/hakeem-jeffries/trump-medical-research-cuts-nih/>

⁵"National Institutes of Health (NIH) Funding: FY1996-FY2025 by Congress.gov (2024) <https://www.congress.gov/crs-product/R43341>

⁶ Annual Reports from each university Office of Sponsored Programs

Figure 1: (Data from U.S. Office of Management and Budget)

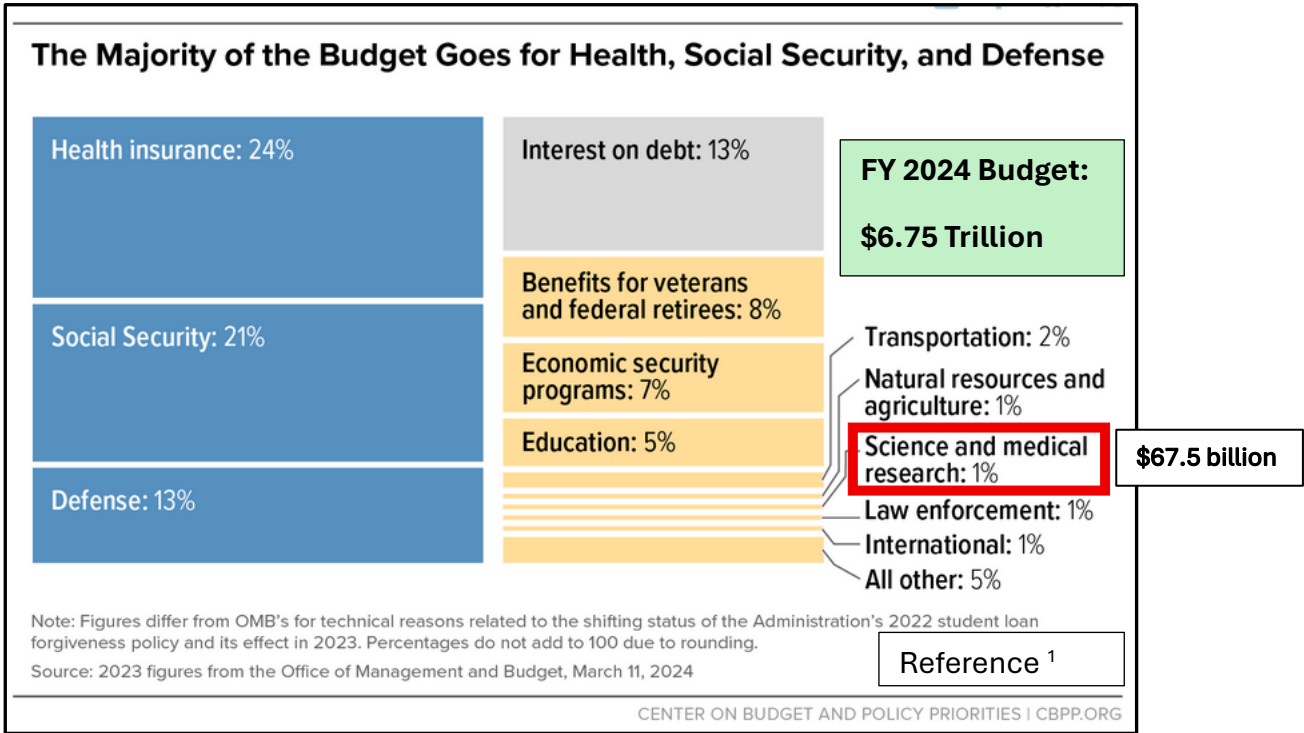


Figure 2: Research and Development funding – developed by Amer. Assoc. for Advancement of Science

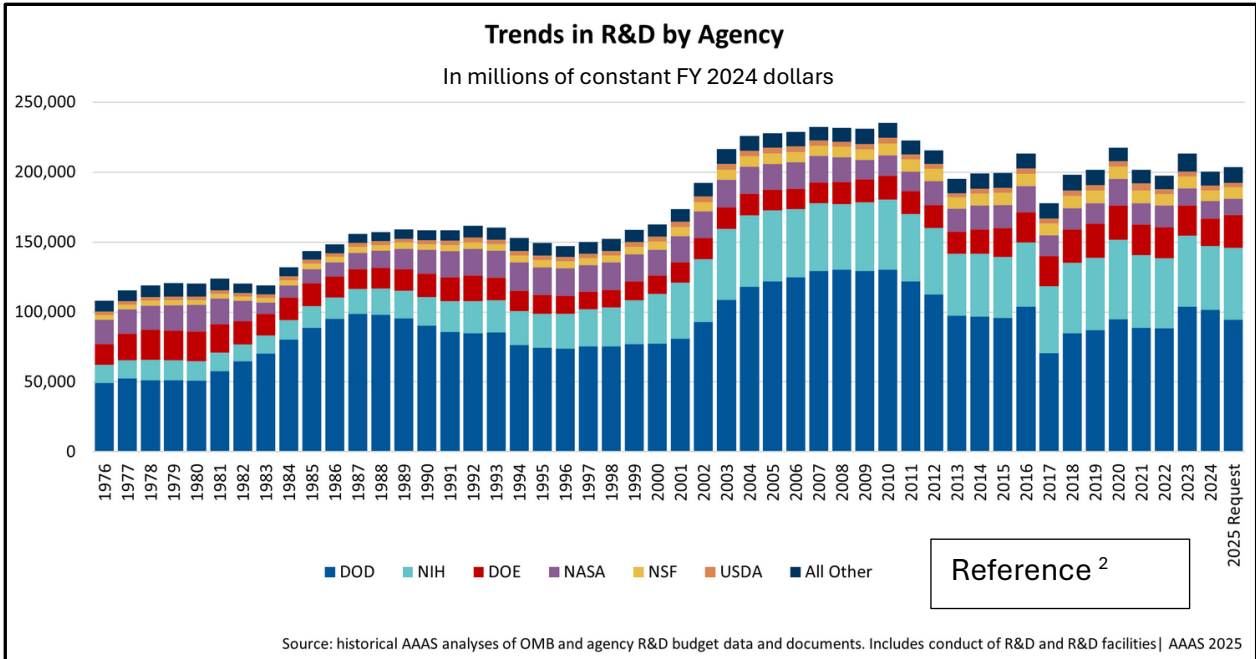


Figure 3: Proposed cuts to NSF funding (source: NY Times)

