The White House's National Science Foundation FY 2027 Proposed Budget Cuts Will Lead to $16.9 Billion in Economic Losses, Nearly 90,000 Lost Jobs, and 130,000 Fewer Students and Teachers Who Engage with STEM Programs in Communities Nationwide

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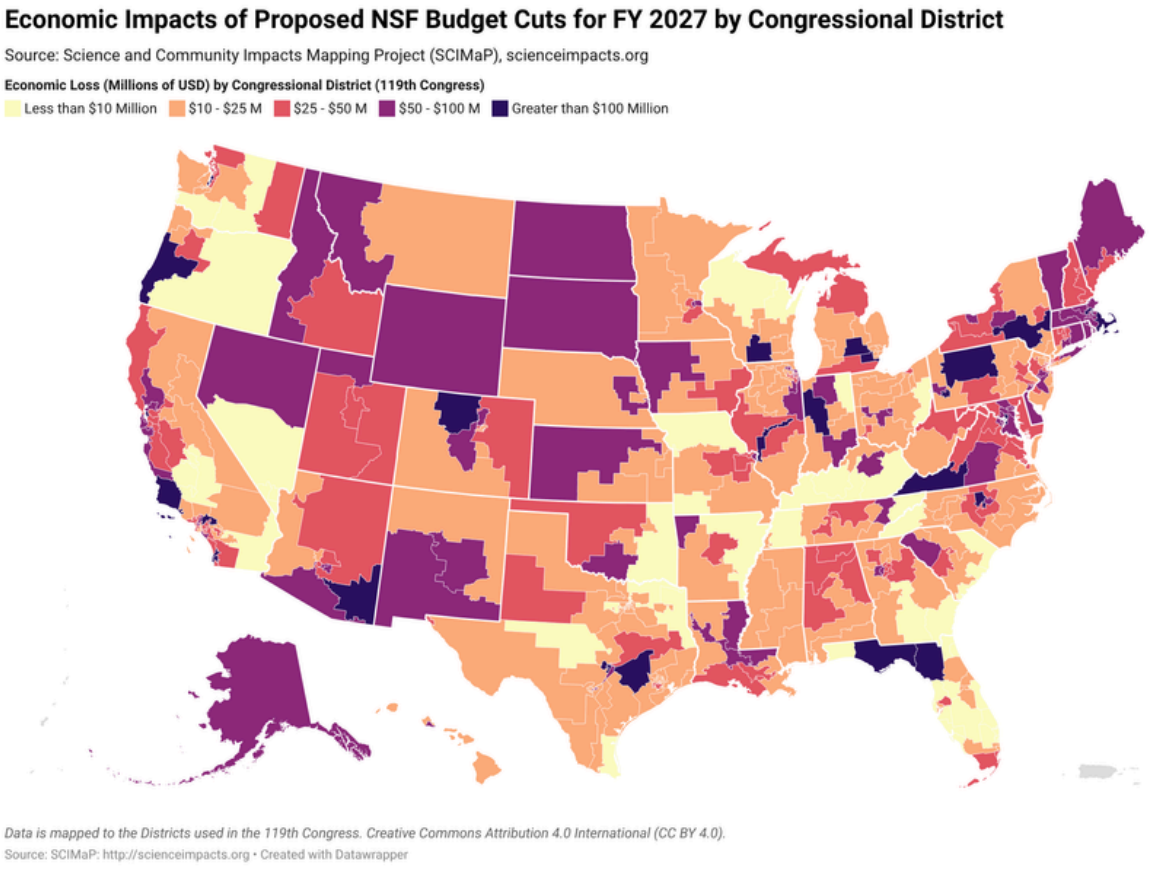
Summary: The White House FY 2027 budget proposal cuts funding to the National Science Foundation (NSF) by more than half, reducing NSF's budget across key research areas by more than $6B compared to inflation-adjusted norms. NSF advances the progress of science through the assessment and distribution of competitively awarded research projects in communities nationwide with local, regional, national, and global impacts. As a baseline, the NSF's inflation adjusted research budget from FY2020-FY2024 was $9.5 billion. A literature review from the Evaluation and Assessment Capability of the National Science Foundation found that each $1 spent on R&D generates $2.64 in median economic activity. Leveraging these findings, SCIMaP estimates an economic loss of ~$16.9 billion and nearly 90,000 lost jobs when compared to inflation-adjusted NSF support from FY 2020-2024. In addition, the White House projects its FY 2027 budget would result in 130,000 fewer students and teachers who engage with STEM programs. Analysis of the geographic distribution of NSF grants suggests that 39 states and Washington, D.C. will incur more than $100 million in economic losses, and nearly 90% of U.S. congressional districts will incur more than $10M in economic losses. The map below estimates the economic losses by congressional district based on the White House FY 2027 budget proposal.



Key Findings - SCIMaP analysis of the White House FY 2027 NSF budget proposal

Expected Widespread Impacts: The White House's proposed reduction in the NSF FY 2027 budget is estimated to lead to over $16.9 billion in lost economic activity, given findings that $1 invested in federal nondefense R&D funding returns ~$2.64 in economic activity. These cuts include significant decreases to specific NSF directorates when accounting for inflation-adjusted support, e.g., a 71% cut to Computer and Information Science, a 82% cut to Engineering, and a 76% cut to Biology. The White House FY 2027 NSF budget would reduce funding for STEM Education from a historical, inflation-adjusted average of over $1.2 billion to $419 million, removing opportunities for training, STEM engagement, and job preparation from K-12 through college. The budget also proposes to unilaterally dissolve the Social, Behavioral, and Economic (SBE) Directorate, reducing its budget from the historical average of $330M to $0; multiple, recent US recipients of the Nobel Prize in Economic Sciences have received long-standing NSF support.

NSF Cuts will Impact Local Economies: Economic losses will be widespread and SCIMaP estimates that most states face over $100 million in economic losses. Decreased support for science will impact local communities when jobs and projects are eliminated or move abroad. When accounting for the patterns of commuting using publicly available U.S. census data, we estimate that every congressional district will experience some economic loss under the proposed White House NSF FY 2027 budget, and 387 districts face economic losses exceeding $10 million on an annual basis.

Reduced Investment in Areas of Significant Technological Need: The White House budget proposal cuts research supported by NSF in areas spanning computing, engineering, physics, life sciences, social, behavioral and economic sciences, policy, and STEM engagement. If implemented, the majority of research grants would be reduced or eliminated. The proposed FY 2027 cuts include significant reductions in areas identified as national research priorities, including a 70% cut to Advanced Manufacturing, a 59% cut to Advanced Wireless, a 40% cut to Biotechnology, a 32% cut to Artificial Intelligence, a 37% cut to Quantum Information Science, and a 68% cut to Nanotechnology. These cuts undermine the pipeline of basic and translational research discoveries - and reflect an across-the-board reduction in every major area of 'crosscutting' research topics listed as administration priorities.

NSF Cuts Will Lead to Significant Job Losses: The administration's detailed budget analysis shows that proposed cuts would substantially reduce the basic and translational scientific workforce. NSF grants support early career and experienced researchers; a reduction of over $6B would lead to job losses, halted projects, and lost innovation. The White House projects its FY 2027 budget would support 33,000 fewer senior researchers, 5,000 fewer professionals working to enable research (e.g., engineers and technicians), and 30,000 fewer PhD students and postdoctoral scientists at the start of their research careers. When accounting for the catalytic impact of R&D, we estimate total job losses will be close to 90,000. Short-circuiting career pathways will lead to near- and long-term harm and derail the training and development of the next generation of researchers. The NSF FY 2027 budget also reduces support for the premier graduate fellowship research program (NSF GRFP) by $186M and caps the total number of fellows at 1,500, a reduction of more than 1,000 positions from the program in 2026.

Methods Summary: Analysis of economic impacts of NSF funded research includes all eight NSF directorates, the Office of Integrative Activities, and the Office of International Science and Engineering within the Office of the Director. We compare the White House's proposed NSF FY 2027 budget to the average inflation-adjusted FY2020 - FY2024 budgets by Office/Directorate to estimate the proportion of funding lost. The proportion of funding lost from the Office of Polar Programming is estimated separately from the rest of the Geosciences Directorate, given that these are disaggregated in budget tables. Although a proposed reorganization would remove the National Center for Science and Engineering Statistics (NCSES) from the Directorate for Social, Behavioral and Economic Sciences (SBE) and otherwise eliminate that directorate in FY 2027, we count the budget for NCSES as part of SBE for FY 2027 to enable comparison to prior years. We calculate averages for the Directorate for Technology, Innovation and Partnerships beginning in FY 2022, the first year that it received funding.

We assume that cuts will be distributed evenly across regions and research topics. To establish a historic baseline of the geographic distribution of NIH funding, we download awards from the NSF website for FY2020 - FY2024 (excluding FY2025 due to disruptions to funding in the form of grant freezes and terminations). Organizations are geolocated to census tracts based on provided street addresses using ArcGIS Pro. We redistribute losses across from tracts to regions based on commuter flows provided by the US Census (version LODES8). We use data for all job types for the year 2016, as more recent data are not available for several states. The economic impact of cuts is estimated by multiplying each $1 in cuts by a factor of 2.64 (representing the median of estimated economic activity generated due to investment in federal R&D per the Evaluation and Assessment Capability of the NSF). Job losses are derived by dividing the total budget cuts by $72,000, as per findings of the same report. Our numbers may diverge from other estimates because we adjust for inflation, compare to a multi-year historic baseline, and focus on research funding across core research directorates and offices. Data is distributed publicly through the Open Science Framework and available via scienceimpacts.org.

About SCIMaP: *The Science and Community Impacts Mapping Project analyzes the economic effects of federal policy changes to science and medical research funding on U.S. communities. Based in College Park, Maryland, SCIMaP was launched in March 2025 and brings together an interdisciplinary team of researchers from the University of Maryland, University of Pennsylvania, Georgia Tech, University of Utah, and University of Oregon, supported, in part, by grants from Coefficient Giving and the Burroughs Wellcome Fund.*