



Support Statement for the [CHIPS and Science Act of 2022](#)  
August 9, 2022

The Society for Science at User Research Facilities applauds the bipartisan “CHIPS and Science Act” signed today by President Joe Biden. This pragmatic and visionary legislation provides for an urgent and historic level of investment across our country’s scientific research agencies. The Act’s directives and goals are inspiring and compelling, while also demonstrating a profound recognition of scientific research as crucial to our national security and global leadership role. The need for this investment in our most fundamental scientific resources cannot be overstated.

We are grateful for the tremendous effort by our elected Senators, Representatives and their staff to negotiate the hundreds of details for more than a year that culminated in this historic Act. This one of the largest investments in science, technology, and advanced manufacturing in decades; the scope of the Act will have necessary and urgent impacts to bolster American manufacturing, fight the climate crisis, promote brilliant discoveries in our nation’s energy paradigm, and ensure our STEM workforce reflects the diversity of our country.

We enthusiastically support the President’s signature on this visionary legislation to revitalize support for our premier research institutions within the U.S. Departments of Energy (DOE), the National Science Foundation (NSF) and the National Institute of Standards and Technology (NIST). The User Facilities within these agencies will be empowered to nurture curiosity and discovery at levels not seen since the space race of the 1960s.

The Act includes significant increases over the next five years to budgets for federal research we strongly endorse: \$69 billion for DOE (\$30 billion over baseline funding); \$81 billion for the NSF (\$36 billion over baseline funding) and \$10 billion for NIST (\$5 billion over baseline funding).

---

*This Act will] establish the National Science Foundation Tech directorate and provide funding to the Department of Energy to achieve new breakthroughs in technologies like AI, Quantum Computing, cybersecurity, renewable energy, 5G, biotechnology, and other discoveries yet unknown. I believe that this legislation will enable the United States to out-innovate, out-produce, and out-compete the world in the industries of the future.”*

- Senator Majority Leader Chuck Schumer

---

We do highlight this is an authorization bill, which does not mandate these budgets. The stated funding increases for science agencies is technically only guidance and we strongly endorse the approval of full budget appropriations by Congress this fall and in the years ahead.

Society for Science at User Research Facilities  
2770 Arapahoe Rd, Suite 132-1085, Lafayette, CO 80026  
[ideas@ssurf.org](mailto:ideas@ssurf.org) <https://www.ssurf.org>

Highlights of the CHIPS and Science Act we wish to spotlight:

- Authorizes \$14.7 billion for infrastructure, equipment, and instrumentation across 17 DOE National Laboratories.
- Provides a 6% annual increase for each of the DOE Office of Science's core research programs, with \$16.5 billion in new or above baseline authorizations for research in the 10 technology areas across the Office of Science and DOE's applied R&D offices in advanced energy and industrial efficiency technologies, artificial intelligence and machine learning, advanced manufacturing, cybersecurity, biotechnology, high performance computing, advanced materials, and quantum information science.
- Ensures Office of Science construction projects and upgrades of major scientific user facilities have the resources they need to be completed on time and on budget, while incorporating COVID-19 related impacts. This includes mechanisms for enabling the construction and maintenance of general purpose infrastructure at DOE's National Laboratories, such as alternative financing arrangements that can significantly accelerate the completion and reduce the total cost of projects.
- Provides support for upgrades and related improvements to multiple user facilities, including: the Advanced Photon Source; the Spallation Neutron Source; the Advanced Light Source; the Linac Coherent Light Source II; the Cryomodule Repair and Maintenance Facility; the Nanoscale Science Research Center; and the National Synchrotron Light Source II.
- Authorizes \$550 million per year for FY 2023 through FY 2027 for the Office of Science's Science Laboratory Infrastructure Program.
- Revitalizes nanoscience centers and bolsters support and guidance for research in emerging areas, including quantum information science and artificial intelligence
- Authorizes an upgrade to the Energy Sciences Network (ESNet) and establishes targeted initiatives in next-generation, heterogeneous, and energy-efficient computing systems, and sustains activities that will maximize the scientific returns of the forthcoming exascale computing systems within the Advanced Scientific Computing Research program.
- Authorizes the establishment and support of up to six bioenergy research centers to conduct fundamental research in plant and microbial systems biology, biological imaging analysis, and genomics.
- Authorizations for new and expanded fusion energy research activities including support for alternative and enabling concepts, inertial fusion energy, a milestone-based public-private partnership program, and the support required to maintain the schedule for the U.S. contribution to the ITER international fusion project.
- Directs the Energy Secretary to develop and maintain tools and processes to manage and mitigate research security risks with associated with any research, development, demonstration, or deployment activities authorized under this Act

Additional thematic directives in the CHIPS and Science Act that demonstrate the comprehensive framework to guide our country’s research enterprise include:

- The Act formally recognizes that our federal research agencies carry out vital basic and applied research, and that increasing research and technology transfer investments will enhance the competitiveness of the United States. The nation benefits from building diverse geographic research capacity, utilizing the nation’s full talent, remaining open to diverse perspectives, and maintaining bipartisan consensus on science funding.
- Authorizes the Secretary of Energy to coordinate the activities of the Office of Science with other offices of the Department and other federal agencies—for the purpose of enabling development of mission-relevant technologies.

The Act also includes a section SSURF supported meant to address sexual harassment in science: It authorizes \$32 million for the National Science Foundation to:

- fund studies of sexual harassment in science
- update the National Academies’ report “On Being a Scientist: A Guide to Responsible Conduct in Research”
- create an interagency working group; and
- initiate two new studies on the issue through the National Academies and the Government Accountability Office (GAO)

The explicit goal of this section is to “increase understanding of the causes and consequences of sex-based and sexual harassment...and to advance evidence-based approaches to reduce the prevalence and negative impact of such harassment.”

We are heartened to see the spectrum of investment meant to enable scientists, researchers and students at User Facilities to seek new discoveries and innovations to address our most pressing challenges, from climate change to energy provision to public health, while further expanding our understanding of physics, chemistry, quantum mechanics and the expanses of the universe.

We will continue our efforts to spotlight the benefits of the research across the network of User Facilities to the elected officials, civic leaders and economic development experts who are crucial to our mission to ensure scientific discoveries are applied to help solve our country’s and the world’s most pressing challenges.

We look forward to the formalization of necessary appropriations the Act envisions across the federal research agencies. SSURF offers to be a resource to share ideas, best practices and research opportunities among the User Facility ecosystem to leverage this historic scientific investment in America.

Dan Powers, Executive Director  
Jason Benedict, Chair of the Board of Directors  
The Society for Science at User Research Facilities  
See more about SSURF at [www.ssurf.org](http://www.ssurf.org)

**Background of the CHIPS and Science Act (*Excerpted from Summary B of the Act*):**

Scientific research and development (R&D) is critical to economic development, public health, and national defense, with as much as 85 percent of U.S. productivity growth in the first half of the 20th century resulting from technological advances. Partnerships and technology hand-offs between the Federal Government and the private sector have contributed to this success. For instance, Federally-funded, curiosity-driven research created the knowledge underlying the global positioning system (GPS), atomic clocks, cancer drugs, web browsers, barcodes, speech recognition technology, and 3D printing. Use-inspired and translational research, often prioritized at agencies such as the Defense Advanced Research Projects Agency (DARPA) and National Aeronautics and Space Association (NASA) but also practiced at agencies such as the National Science Foundation (NSF) and Department of Energy (DOE) have also delivered technology-based solutions to national, societal, or geostrategic challenges. Increasing global technology competition, however, has surfaced economic and national security concerns, with other nations announcing plans to assume global leadership in key economic and national security technologies such as artificial intelligence and microelectronics.

Meanwhile, U.S. Federal R&D spending as a percentage of GDP is near its lowest point in over 60 years and total U.S. R&D spending as a percentage of GDP has fallen from 4th place in the 1990s to 9th place today, behind advanced economies like South Korea, Japan, and Germany. To reverse these trends, the [Act] would authorize, in dollar terms, the largest five-year investment in public R&D in the nation’s history. This investment would grow both curiosity-driven and translational research, ensuring both the creation of new ideas and the ability of those ideas to create new innovations, products, companies, and jobs in the United States. Aside from dramatically increasing research funding, the Act would build new technology hubs across the country, increasing the participation of underrepresented populations and geographies in innovation, and combat the illicit foreign absorption or theft of U.S. research products. These represent critical steps to regaining U.S. strength and reducing long-term supply chain vulnerabilities in critical areas such as advanced manufacturing, next-generation communications, computer hardware, and pharmaceuticals.

**About SSURF:**

The Society for Science at User Research Facilities is a 501(c)3 non-profit with a mission is to provide a consolidated voice and be a unique resource for best practices and support to those who are engaged in research at one or more of our nation’s federal research laboratory User Facilities. SSURF member research facilities are located throughout the U.S. and include laboratories of the Dept. of Energy, Dept. of Commerce and National Science Foundation-funded entities, with a combine network of more than 100,000 scientists & researchers (“users”).

SSURF’s primary efforts are:

- 1) Supporting federal User Facility communities and research networks by sharing best practices and facilitating professional development, and
- 2) Promoting public awareness about the benefits and significance of User Facility research.

See more about SSURF at [www.ssurf.org](http://www.ssurf.org)