

CHIPS & Science Act and Its Potential Impact



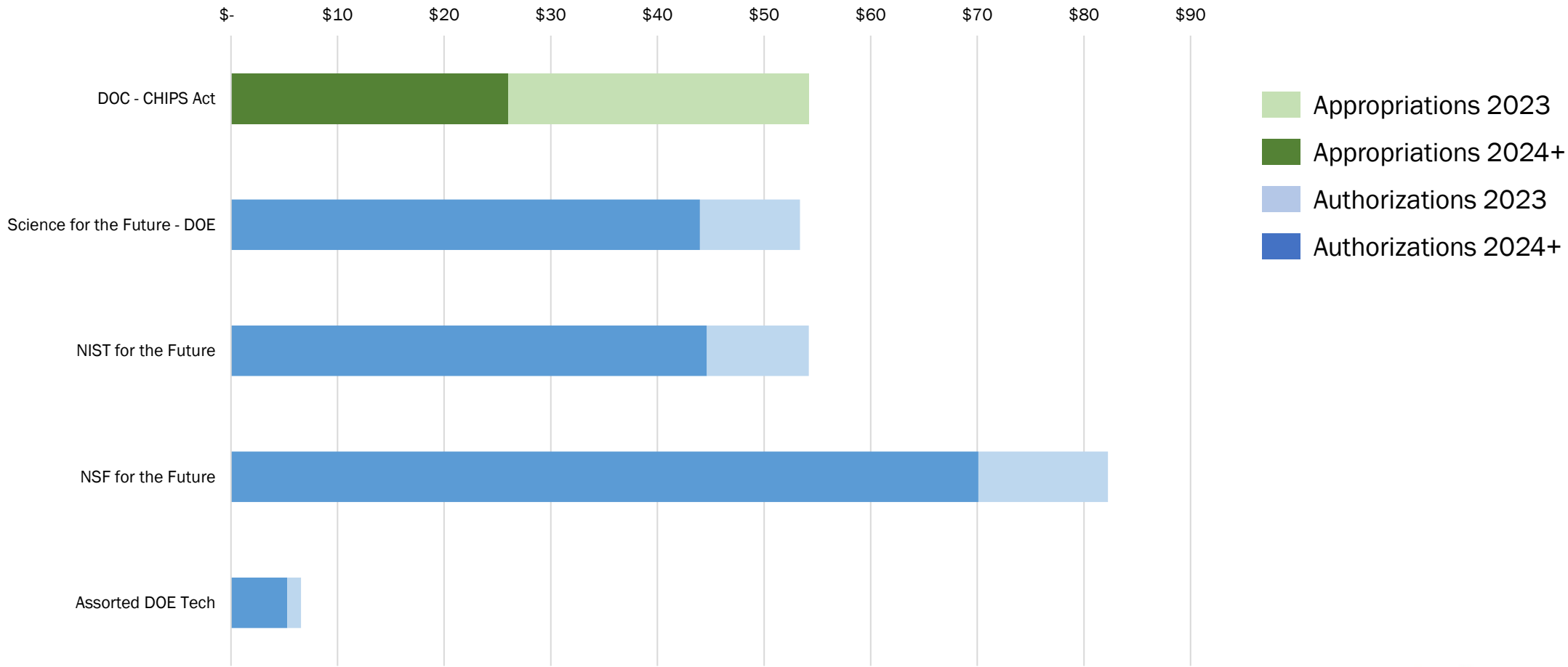
Association
of American
Universities

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CHIPS and Science Act: General Provisions

- \$52 billion appropriation for semiconductor incentives (\$11B for advanced R&D)
- New Investment tax credit for semiconductor manufacturing facilities in U.S.
- Limits on expansion of semiconductor manufacturing capacity in China (prohibits recipients of the CHIPS funding and investment tax credit from expanding semiconductor manufacturing in China for a period of ten years except for manufacturing of legacy chips)
- One unexpected provision that hadn't been in USICA or COMPETES = \$200 million in actual funding for microelectronics workforce development at NSF
- \$170 billion authorization for R&D programs - authorizes funding over five years for research and development initiatives across multiple federal agencies, including NSF, DOE, NIST and other DOC components
 - New NSF Directorate for Technology, Innovation, And Partnerships (TIP)
 - Regional Innovation and Technology Hubs (DOC)

Appropriated vs. Authorized Funding in CHIPS & Science Act



How will this legislation impact physics and astronomy?

- Money: Various funding opportunities authorized – MANY new programs
- Students: Scholarships, fellowships, traineeships, and post-doctoral award support; encourages efforts to align undergraduate STEM education with workforce needs. Also advances training, mentoring and professional development opportunities for graduate and postdoctoral researchers
- Grantees: Increased focus on geographic diversity, broadening participation, and emerging research institutions
- Research: Support for research and analysis (R&A) grants across NASA SMD, NASA Great Observatories, satellite constellation impact research at NSF, Arecibo future
- Compliance: New requirements for institutions and PIs – research security training, reporting, foreign talent programs, and sexual harassment

Authorizations of interest

Infrastructure

- Continues facility operation and maintenance pilot program at NSF, examining sustainable models for major research facilities
- Ramps up midscale instrumentation infrastructure authorizations at both DOE and NSF
- Waives cost-share requirement on NSF's major research instrumentation (MRI) for 5 years
- DOE Science Laboratories Infrastructure Program support
- NSF MREFC awardees must demonstrate commitment to broadening participation in STEM

Authorizations of interest

New TIP Directorate

- Provides set authorization for 5 years for directorate
- Tech translation, Innovation ecosystems, and Partnerships
- Address Key Technology Focus Areas AND Societal / National / Geostrategic Challenges
- “Intentionally different”

NSF Regional Innovation Engines (NSF Engines) –

- *Cultivate new regional innovation ecosystems throughout the U.S.
- *Address major scientific/technological goals while solving societal challenges
- *Balance technical and geographic innovation

Experiential Learning for Emerging and Novel Technologies, or ExLENT -

New workforce development program to help individuals gain valuable work experience in emerging technology areas

Research Security: What is Included

Section Number and Title	Description
<u>Sec. 10114.</u> Research Security at DOE.	Requires the Secretary of Energy to develop and maintain tools and processes to manage and mitigate research security risks.
<u>Sec. 10331-10332.</u> Office of Research Security and Policy and Chief of Research Security.	Requires NSF to maintain a Research Security and Policy Office within the Office of the NSF Director with at least four full-time staff.
<u>Sec. 10336.</u> Authorities.	Authorizes the NSF Office of Research Security and Policy to conduct risk assessments of research and development award applications and disclosure to NSF.
<u>Sec. 10337.</u> Responsible Conduct in Research Training.	Amends Section 7009 of the America COMPETES Act of 2007 on responsible conduct in research training to included research security.
<u>Sec. 10338.</u> Research Security and Integrity Information Sharing Analysis Organization.	Requires NSF to enter into an agreement with an independent organization to establish a Research Security and Integrity Information Sharing and Analysis Organization.
<u>Sec. 10339.</u> Plan with Respect to Controlled Information and Background Screening.	Requires NSF to develop a plan to identify research areas supported by NSF that may involve access to controlled unclassified or classified information.
<u>Sec. 10339A.</u> Foundation Funding to Institutions Hosting or Supporting Confucius Institutes.	Restricts NSF funding to institutions that maintain a contract or agreement with a Confucius Institute unless a waiver is granted.
<u>Sec. 10339B.</u> Institutional Reporting of Foreign Financial Support .	Institutions must annually provide a summary report to NSF regarding current financial support of \$50,000 or more received from sources associated with a foreign country of concern.

What is included (continued)

Section Number and Title	Description
<u>Sec. 10343.</u> Research Ethics.	Requires NSF to revise grant proposal instructions to require that ethical and societal considerations (included future potential societal risks) be included as part of funding proposal.
<u>Sec. 10631.</u> Requirements for Foreign Talent Recruitment Programs.	Requires OSTP, in coordination with the interagency working group (established under Section 1746 of the FY20 NDAA) to distribute a uniform set of guidelines for federal research agencies regarding foreign talent recruitment programs and related disclosure requirements.
<u>Sec. 10632.</u> Malign Foreign Talent Recruitment Program Prohibition.	Requires each federal research agency to establish a policy as part of the research grant proposal process which requires covered individuals to certify they are not a part of a “malign” foreign talent recruitment program.
<u>Sec. 10633.</u> Review of Contracts and Agreements.	Each federal research agency has the authority to require, upon request, that an institution provide supporting documentation, including copies of contracts, grants, or any other agreement specific to foreign appointments, employment with a foreign institution and/or participation in a foreign talent recruitment program, for all covered individuals in a research and development award application.
<u>Sec. 10634.</u> Research Security Training Requirement for Federal Research Award Personnel.	Federal agencies are to establish a requirement that each covered individual listed on an award application completes research security training and that institutions certify that such training has been provided.
<u>Sec. 10636.</u> Person or Entity of Concern Prohibition.	Prohibits persons or entities identified as a concern from receiving or participating in any grant, award, program, support, or other activity for certain programs.
<u>Sec. 10637.</u> Nondiscrimination.	Each federal research agency must ensure that their policies and activities are carried out in a manner that does not target, stigmatize, or discriminate against individuals based on race, ethnicity, or national origin.

Training Requirements

Research Security Training Requirement for Federal Research Award Personnel (Sec. 10634)

- Each federal research agency is to establish a requirement as part of an application for a research and development award that each covered individual listed on the award application certify they have completed (within the last year) research security training.
- Institutions must also certify that each covered individual who is employed by the institution has completed such training.
- The security training modules should be focused on cybersecurity, international collaboration and international travel, foreign interference, and rules for proper use of funds, disclosure, conflict of commitment, and conflict of interest.

Responsible Conduct in Research Training (Sec. 10337)

- Amends Section 7009 of the America COMPETES Act of 2007 on responsible conduct in research training by expanding the requirement to include postdoctoral researchers, faculty, and senior personnel.
- Specifies that programs include mentor training and mentorship, training to raise awareness of potential research security threats, and training on federal export control, disclosure, and reporting requirements.

Research Security: What is NOT included?

- **Committee on Foreign Investment in the United States (CFIUS) Review** – provision would have applied the CFIUS review process to gifts and contracts between universities and foreign entities involving critical technologies
- **Safeguarding American Innovation Act (SAIA)** – legislation put forward by Sen. Portman (R-OH) which included several research security provisions (e.g., fraud, visas restrictions, and new OMB research security council)
- **HEA Section 117 Institutional Reporting** – provision to reduce the institutional reporting threshold in the Higher Education Act (HEA) relating to foreign gifts and contracts (e.g., Senate USICA provision reduced threshold from \$250,000 to \$50,000)
- **HEA Section 124 Faculty Reporting Requirement** – Senate USICA provision would have created a new faculty reporting requirement, with no minimum reporting threshold, for all gifts and contracts between university faculty and staff for all foreign sources. House COMPETES had a \$50,000 threshold

NSPM-33 & CHIPS and Science

- **Standardize federal disclosure requirements**
 - *NSF August 31, 2022 FR notice requesting for comment on common disclosure forms; Comments were due Oct. 31, 2022*
- **Implement research security program requirements focusing on training, travel policies, export controls & cyber security**
 - *Expecting an FR notice with proposed guidance for comment to be released soon*
- **Develop consistent guidelines for determining appropriate consequences for non-compliance**
- **Require that federal agencies implement NSPM-33 in a nondiscriminatory manner**

Q&A