ASEE AMERICAN SOCIETY FOR ENGINEERING EDUCATION

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July 27, 2022

The Honorable Charles Schumer
Senate Majority Leader
322 Hart Senate Office Building
Washington, DC, 20510

The Honorable Nancy Pelosi
Speaker of the House of Representatives
1236 Longworth House Office Building
Washington, DC, 20515

The Honorable Mitch McConnell
Senate Minority Leader
317 Russell Senate Office Building
Washington, DC, 20510

The Honorable Kevin McCarthy
House Minority Leader
2468 Rayburn House Office Building
Washington, DC, 20515

Dear Majority Leader Schumer, Minority Leader McConnell, Speaker Pelosi, and Minority Leader McCarthy,

The American Society for Engineering Education (ASEE) is dedicated to advancing engineering education and research and is the only society representing the country's schools and colleges of engineering. Membership additionally includes over 12,000 individuals hailing from all disciplines of engineering and engineering technology and comprising of engineering educators, researchers, and students as well as industry and government representatives.

We deeply appreciate Congress' work on the conferenced competitiveness and innovation bill, *CHIPS+* and endorse its swift passage by both the House and Senate. This package addresses many issues of importance to the National Science Foundation (NSF), our broader engineering and STEM ecosystem, and the United States' competitiveness. Increasing the United States' investment in NSF, regional technology development, and STEM education is essential to our global competitiveness, innovation, and national security. As you know, NSF is the premier federal agency for funding basic research and supporting engineers nationwide. Many of the proposed provisions in *CHIPS+* will require new or changed activities at NSF, and we ask that Congress provides increased appropriations to allow NSF to carry out the activities authorized by the final competitiveness package.

The best counter to undue foreign influence on U.S. research capabilities is to reinforce U.S. global competitiveness through enhanced investment in research, infrastructure, and workforce for critical technology areas that are under threat and broadening participation in the domestic STEM workforce. That is why we are glad Congress was able to strike a balance in this package between legislating policies to help ensure research security and providing increased funding for the critical technology areas of the United States.

There are many strong provisions in *CHIPS+* and we are very happy that full authorizations for NSF, the Department of Energy (DOE), the National Institute of Standards and Technology (NIST), the National Aeronautics and Space Administration (NASA) and the bioeconomy were included and the legislation authorizes strong growth in funding for both new and existing activities. ASEE was disappointed to see that critical work-authorization cap exemption for non-citizens with advanced STEM degrees that was included in the *America COMPETES Act*, are not in the *CHIPS+* bill.

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This provision was key to ensuring the United States' leadership science and technology, as it would have helped the brightest scientists from around the globe to stay in the United States upon the completion of their studies and strengthen the nation's research capabilities. We hope that Congress can reconsider this provision in future legislation.

We strongly support the *CHIPS+* bill and below we highlight critical provisions that were included in the final legislation.

Broadening Participation Provisions: ASEE knows that engineering, STEM, and the United States will not reach its full potential until all our nation's underrepresented and diverse populations are able to pursue and want to remain in engineering careers. Because of this, ASEE supports the many broadening participation provisions included in *CHIPS+,* including:

- Section 10329: Inclusion of this provision related to underrepresented minority faculty development was ASEE's top conference priority, and we are thrilled to see its inclusion in the CHIPS+ bill. This provision will authorize a new NSF program focused on the recruitment, retention, and advancement of underrepresented minority faculty. ASEE believes a program building off the successful model NSF has used to transform recruitment, retention, and advancement of women faculty could be transformational in regard to broadening participation of diverse faculty in STEM and we look forward to NSF implementing this provision.
- Sec. 10325 (c) and Sec. 10330: Capacity Building Programs: ASEE is dedicated to increasing research capacity at Minority-Serving Institutions and supports the final conferenced provision that would authorize funding and direct NSF to provide mentorship, targeted outreach, and technical assistance to institutions of higher education, including HBCUs, MSIs, and Tribal Colleges and Universities (TCUs) to support STEM capacity building and competitiveness for federal research programs.
- Sec. 10322: Robert Noyce Teacher Scholarship Program: ASEE is supportive of the requirement to require outreach to Historically Black Colleges and Universities (HBCUs) and other Minority-Serving Institutions (MSIs). Increasing the diversity of our nation's teachers is essential to bringing more diverse populations into engineering and other STEM fields.
- Sec. 10323: Eddie Bernice Johnson NSF INCLUDES Initiative: ASEE is supportive of the codification of the NSF INCLUDES program and is encouraged that CHIPS+ directs NSF to continue awarding grants through it. We appreciate that this program has been named after NSF and broadening participation champion Chairwoman Eddie Bernice Johnson (D-TX).
- Sec. 103325 (b): Fostering STEM Research Diversity and Capacity Program: The CHIPS+ bill establishes an NSF grant program to provide support to institutions of higher education that are not, on average, within the top 100 institutions in federal R&D expenditures to develop and implement strategies to recruit and retain diverse students in STEM. ASEE is supportive of this program and believes it could be an important step to help emerging research institutions build capacity.

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- Sec. 10523 and 10524*: MSI STEM Achievement Act*:
  ASEE supports the inclusion of the *MSI STEM Achievement Act*, which would authorize NSF to make grants to institutions of higher education to conduct research on the contribution of MSIs in the provision of STEM education to underrepresented students, fund up to five MSI Centers of Innovation, and provide support for building research capacity at MSIs.
- Subtitle A, Title V: *The STEM Opportunities Act*: ASEE is glad to see provisions in CHIPS+ that direct the Office of Science and Technology Policy (OSTP) to provide guidance to federal agencies on how to provide grant flexibility to principle investigators with caregiving responsibilities. ASEE is also supportive of the requirement for federal agencies to regularly assess and update policies to remove barriers limiting the participation of underrepresented groups, as well as the bill's requirement to develop and disseminate best practices on increasing participation of the underrepresented in STEM.
- Title V Subtitle D: Combatting Sexual Harassment: ASEE is encouraged to see the *Combatting Sexual Harassment in Science Act* included in the *CHIPS+* bill. Sexual harassment creates hostile workplace environments that drive talented individuals out of meaningful careers. It should not be tolerated in engineering or any part of the STEM workforce and we are glad to see this provision included in *CHIPS+.*

STEM ED Provisions: *CHIPS+* includes several provisions supportive of STEM Education at all levels that ASEE is supportive of, including:

- Sec. 10312: Undergraduate Education:
  - ASEE supports the establishment of a new NSF program to provide grants to institutions of higher education to study the current and future STEM workforce needs, ways to increase collaboration between institutions of higher education and industry, ways to expand the diversity of the STEM workforce, and methods to increase the adoption of effective STEM education practices.
- Sec. 10313: Graduate Education:
  - ASEE is supportive of the provision that expands the requirement for NSF funding proposals to include a mentoring plan for graduate students, the support for activities to facilitate graduate student career exploration, supplemental professional development funding for graduate students, and funds for research on the graduate education system.
  - ASEE supports the updates to the Graduate Research Fellowship Program included in *CHIPS+*, including the call for NSF to conduct outreach for the program across critical STEM fields and with underrepresented populations and the consistent authorization growth for both the Graduate Research Fellowship Program and the NSF Research Traineeship (NRT).
  - ASEE also encouraged to see the inclusion of the provision that establishes a study on the impact of various funding mechanisms on graduate student experiences and outcomes. Such a study is necessary to understand the most effective and impactful graduate funding mechanisms.

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        - **Sec. 10321 and Sec. 10393: Support for Traineeships:** ASEE recognizes the importance that traineeships can play in a postsecondary students' career path and is supportive of the provisions included in *CHIPS+* that encourage the NSF Director to offer traineeships to help broaden participation in STEM and grow the United States' domestic critical technology workforce.
    - Sec. 10311, PreK-12 Education:
        - ASEE supports the provision that establishes a decadal survey to be carried out by the National Academies to identify research priorities in PreK-12 STEM education and an additional study on barriers to the widespread implementation of STEM education innovations.
        - **National Science Corps:** Engineering educators are essential to the continuation of the field. ASEE supports the establishment of the National Science Corps in CHIPS+, which would identify outstanding STEM teachers and create career pathways for STEM educators.
- **Section 10395, TIP Subtitle**:
    - ASEE is supportive of the creation of the new Technology, Innovation, and Partnerships Directorate and its balance between a focus on technology development and solving national, social, and geopolitical challenges.
    - ASEE is supportive of the provision to fund multidisciplinary research and translation centers to scale STEM education innovations in both formal and informal learning settings.
- **Division B, Title I**: ASEE is glad to see the inclusion of the *Department of Energy Science for the Future Act* in the *CHIPS+* legislation. We are appreciative that this title addresses workforce needs for DOE.
- **Sec. 28: Regional Technology Hubs:** We are happy to see Regional Technology Hubs included in *CHIPS+,* which will establish nationwide regional innovation clusters that would stimulate multi-partner engagement to forge transformative sector-based economic growth. Funding will support new and innovative workforce development systems that could be tailored to meet each region's strengths and priorities. Engineers can contribute substantially to promotion of regional innovation, and ASEE is glad to see regional technology hubs included in *CHIPS+*.
- **Title V Subtitle B: *Rural STEM Education Act*:** ASEE supports the *Rural STEM Education Act* and is glad to see its inclusion in *CHIPS+.* Its inclusion in the conference legislation will authorize funding to provide grants to institutions of higher education for research on high-quality STEM instruction in rural schools and for grants to study barriers that rural students face in accessing quality STEM education.
- **Title IV: Bioeconomy Research and Development:** We are thankful that the *Bioeconomy Research and Development Act* was included in the CHIPS+ bill.

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Thank you again for your hard work on conferencing competitiveness legislation and the demonstrated dedication to increasing the competitiveness of the United States. ASEE knows engineers have a large role to play in realizing the goals set forth in the competitiveness bills. Please do not hesitate to reach out to me at N.Fortenberry@asee.org if ASEE can serve as a resource moving forward.

Sincerely,

Norman L. Fortenberry, Sc.D.
Executive Director
American Society for Engineering Education