



February 28, 2022

The Honorable Charles Schumer  
Majority Leader  
United States Senate  
Washington, DC 20510

The Honorable Mitch McConnell  
Minority Leader  
United States Senate  
Washington, DC 20510

The Honorable Nancy Pelosi  
Speaker  
U.S. House of Representatives  
Washington, DC 20515

The Honorable Kevin McCarthy  
Minority Leader  
U.S. House of Representatives  
Washington, DC 20515

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

On behalf of the Association of Public and Land-grant Universities (APLU), we applaud both chambers for passage of their respective competitiveness bills, the United States Innovation and Competition Act (S. 1260) and the America COMPETES Act of 2022 (H.R. 4521), and write regarding public research university priorities for conference consideration.

APLU is a research, policy, and advocacy organization dedicated to strengthening and advancing the work of public universities. Annually, its 201 U.S. member campuses enroll 4.2 million undergraduates and 1.2 million graduate students, award 1.2 million degrees, employ 1.1 million faculty and staff, and conduct about \$50 billion in university-based research.

The latest National Science Board Science and Engineering Indicators report shows China's annual increase of R&D spending has averaged 10.6 percent over the last decade, while the United States' annual average increase was only 5.4 percent over the same period. As a result, the United States' share of global R&D has declined significantly. While the U.S. is still the global leader, competitors are catching up. This increasingly competitive global landscape demands greater U.S. investment in science and technology and policy that fosters an environment for innovation and appropriate global collaborations.

S. 1260 and H.R. 4521 hold great promise to help protect and advance U.S. science and technology (S&T) leadership. APLU urges Congress to reach a bipartisan compromise that the nation's public research universities can support. Crucially, a strong authorization bill is no replacement for a plan to deliver on needed funding. We urge Congress to deliver on both.

APLU is pleased to offer key recommendations and fuller comments as the chambers work to reconcile differences between the two measures.

## **Key Recommendations**

- Include robust reauthorizations for the National Science Foundation, the Department of Energy Office of Science, and the National Institute of Standards and Technology.
- Include aspects of both S. 1260 and H.R. 4521 in the creation of a new National Science Foundation Directorate focused on use-inspired research designed to solve practical problems.
- Include the “Capacity Building for Developing Universities” provision to support research capacity building at Historically Black Colleges and Universities and other Minority Serving Institutions. (Similar provision in S. 1260 and H.R. 4521)
- Include the authorization of the NSF Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (INCLUDES) program (H.R. 4521)
- Include provisions found in both bills that recognize the contributions of Cooperative Extension in rural STEM Education and commercial development (S. 1260 and H.R. 4521)
- Provide the highest authorized levels of support for graduate students in STEM fields through improved scholarships, fellowships, and traineeships (S. 1260 or H.R. 4521)
- Increase support for needed scientific infrastructure investments at U.S. universities and National Labs through programs such as the NSF Mid-Scale Research Infrastructure program (H.R. 4521)
- Support directed investment in university technology commercialization efforts (S.1260)
- Recognize the substantial, long-running actions the executive branch is taking on research security and ensure any additional legislative action is consistent, narrowly-tailored, well-targeted, streamlined, and safeguards U.S. taxpayer-supported research without stigmatizing legitimate international scientific collaborations.
  - If Congress expands Higher Education Act Section 117 reporting or adds a new Section 124, adopt the more refined approach passed by the House (H.R. 4521)
  - Reject proposals to add costly, inappropriate, and burdensome review of university research agreements by the Committee on Foreign Investment in the United States (CFIUS) (Sec 3132 of S. 1260)
- Include the College Transparency Act to strengthen higher education outcomes data empowering students and families, policymakers, and colleges and universities with evidence-based information (H.R. 4521)
- Include exemption for doctoral STEM graduates from numerical green card limits and expand the list of eligible STEM programs to include the DHS STEM CIP Code list. (H.R. 4521). Expand eligible institutions to all publics and nonprofits.
- Include reauthorization for Title VI International Education Programs of the Higher Education Act (S. 1260)

## **New NSF Directorate**

As APLU wrote over the summer to Senate Commerce, Science and Transportation and House Science, Space and Technology Committee leadership, to address the long-term U.S. competitiveness, we must continue to invest in curiosity-driven fundamental research that has been a hallmark of our nation’s S&T leadership. The National Science Foundation (NSF) is a vital part of our nation’s S&T ecosystem in supporting fundamental research and the people (researchers and students) that are creating the knowledge that will transform the future. The primary mission of NSF must be protected and robustly funded.

APLU also recognizes the need to advance more research into the marketplace through use-inspired research designed to solve practical problems. Both the House and Senate approaches recognize this need through the creation of a new directorate at the National Science Foundation. APLU supports this exciting vision and believes the new directorate is a natural and essential extension of the “broader impacts” review criteria that NSF has promoted for many years.

It is imperative to give NSF as much flexibility as possible to launch this new directorate. Rigid metrics and predetermined outcomes may prove challenging as NSF is asked to set up a new kind of research entity more focused on technological and market outcomes. It seems likely that the House and Senate can find common ground in focusing some of the key technology focus areas identified in S. 1260 on the societal challenges identified in H.R. 4521.

We appreciate both bills allow NSF the authority to develop and test alternative merit review processes and to encourage new research consortia between academia and industry.

### Institutional Diversity

APLU appreciates the House and Senate’s interest in expanding geographic, demographic, and institutional diversity in the research projects funded by NSF and the new directorate. As the National Science Board noted in their Vision 2030 report, “Talent is the treasure on which America’s S&E enterprise and the nation’s prosperity, health, and security depend. Today, S&E knowledge and skills matter not only for scientists and engineers engaged in R&D, but also for a range of jobs across the economy that historically did not require such skills.” We cannot know what states or size institution our nation’s next research leaders will originate. Failing to provide opportunities for more institutions and researchers to make unique contributions cements lost potential. We urge you to provide NSF maximum flexibility to design new programs and enhance existing opportunities in reaching these goals.

Both bills contain provisions to support research capacity development at Historically Black Colleges and Universities and Minority Serving Institutions. While NSF has current programs in this area, investments in these institutions have been woefully inadequate. We request the retention of “Capacity Building for Developing Universities” provisions in any final agreement.

Both bills also contain provisions to create a pilot program focused on “Emerging Research Institutions” (ERI). The pilot program would require large research institutions to partner with smaller research institutions and dedicate 25 percent of multi-institute collaborations over \$1 million to the ERI for building research capacity and supporting faculty and students. This is a promising model to be explored through a pilot program.

APLU members are working with rural communities across North America to improve educational options, economic vitality, and quality of life. Land-grant universities, for example, deliver trusted, science-based information and educational programs for individuals, families, and communities through their Cooperative Extension efforts. We request the retention of language recognizing Cooperative Extension as a trusted partner in the Rural STEM Education portion of S. 1260 and Commerce Department Regional Technology HUBs in both S. 1260 and H.R. 4521 in any final agreement.

APLU supports the formal authorization of the NSF Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (INCLUDES) program in H.R.

4521. APLU currently co-leads the NSF INCLUDES [Aspire Alliance](#), a multi-institutional collaboration currently involving over 80 community colleges and universities. Working at the individual, institutional, regional, and national levels, the project provides the higher education and research community with promising practices to broaden student participation in STEM programs, foster career pathways toward the professoriate, and tools to effectively recruit, hire, and retain STEM faculty from underrepresented groups. APLU also supports the language in H.R. 4521 instructing the Department of Energy to collaborate with the NSF INCLUDES program to broaden participation in STEM.

### Supporting the Next Generation

APLU supports the strong authorizations for scholarships, fellowships, and traineeships throughout the bills. The provisions in H.R. 4521 to increase stipends for the Graduate Research Fellowship Program and the National Research Traineeship programs at the NSF and the DOE are greatly needed. The new translational research envisioned in the new NSF technology-focused directorate shines a light on the need to better support graduate students through mentoring and professional development. Students from all backgrounds should be encouraged to pursue graduate degrees in STEM fields and have resources to explore both academic and non-academic careers. We also support the House proposal that NSF examines the effects of traineeships, fellowships, and teaching and research assistantships on outcomes for graduate students.

We thank both the House and Senate for provisions to support early-career researchers in both S. 1260 and H.R. 4251. APLU supports the proposed two-year pilot program in both bills to support early-career scientists to conduct research at the institution of their choice.

### Infrastructure

Leading-edge scientific equipment and infrastructure are vitally needed to help our nation's scientists and engineers create new knowledge and innovations to improve human health, address the challenges of climate change, and support our economic and national security.

We support the expansion of current infrastructure programs at NSF, such as the Mid-Scale Research Infrastructure program, as proposed in H.R. 4521. Demand for NSF infrastructure programs is high. For example, for the Midscale Research Infrastructure (RI)-1 grant opportunity, NSF received 247 pre-proposals totaling \$2.6 billion, invited just 42 to make full proposals, and ultimately was only able to fund 10 awards in 2019.

We also appreciate the authorization of investment in testbeds, including fabrication facilities and cyber-infrastructure for advanced technologies called for in S. 1260.

### Technology Commercialization

APLU commends the Senate provisions in S. 1260 to support technology transfer and commercialization through the "Academic Technology Transfer Enhancement Program." The cost of patenting, licensing, and commercializing technology is burdensome for many institutions, especially when filing patents both domestically and internationally. We request the retention of this provision in a final agreement. The creation of collaborative innovative resource centers where institutions with firmly established technology transfer programs can provide advice and guidance to other institutions and start-ups is also

an exciting idea. However, we urge Congress to remove the “supplement not supplant language” added to this section of the bill. No other existing NSF program has such restrictions, and we find federal restrictions on a higher education institution’s own budget highly unusual, inappropriate, and unnecessary.

APLU supports the reauthorization of the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs included in H.R. 4521. These programs are a positive vehicle to help commercialize university research and encourage scientific and technological collaboration between faculty and industry.

### Research Security

Both the House and Senate bills contain provisions focused on safeguarding federally supported research from attempts by foreign governments to steal intellectual property. APLU’s members are deeply committed to safeguarding this research while also engaging in appropriate international scientific collaborations that are a cornerstone of modern scientific practice. APLU also values our university faculty from other countries who provide critical contributions to our U.S. scientific and engineering enterprise and our international students who will be our future contributors.

Congress has already passed new research security provisions into law through both the FY 20 and FY 21 National Defense Authorization Act and in January the Biden administration issued “Guidance for Implementation National Security Presidential Memorandum 33 (NSPM-33) on National Security Strategy for United States Government Supported Research and Development.” The NSPM-33 implementation guidance gave specific guidance and timeline to federal agencies to put in place new funding disclosure regulations and mechanisms.

Congress should support the ongoing interagency activity led by the White House Office of Science and Technology Policy to ensure common requirements across federal agencies and unify reporting systems rather than restarting implementation by creating new requirements and bureaucratic hurdles. If Congress deems it is necessary to enact even more regulations in this space, we urge you to ensure new research security regulations are appropriate in scope, not duplicative, and do not needlessly hamper appropriate international education and scientific partnerships.

As expressed in our [September 7, 2021](#) joint association letter, we remain opposed to the proposed Committee on Foreign Investment in the United States (CFIUS) review of certain foreign gifts and contracts (Sec 3132 of S. 1260). CFIUS is a costly process designed to examine corporate investments, not scientific partnerships. This provision has the potential to discourage and delay a wide range of legitimate international research partnerships.

Both S. 1260 and H.R. 4521 would reduce the reporting threshold in Section 117 of the Higher Education Act for foreign gifts and contracts received by U.S. higher education institutions. APLU and our higher education association partners have several years’ worth of correspondence with the Department of Education attempting to clarify interpretations of Section 117 and to share best practices and standard compliance across our institutions. We strongly support sections in both bills that call on the Department of Education to engage in negotiated rulemaking and work with the higher education community to set common standards and answer long-standing questions. APLU appreciates the

refinements to the reporting levels and exemptions made in H.R. 4521 regarding Sec. 117 and urges Congress to include them in the final agreement.

Both S. 1260 and H.R. 4521 would also add a new Section 124 within the Higher Education Act requiring a large number of higher education institutions to create and maintain searchable databases of all gifts or contracts with a foreign actor or entity received by individual researchers and staff. As expressed in the [September 2021](#) joint association letter, we maintain serious concerns regarding this provision. The proposed Section 124 is duplicative of efforts to unify conflict of interest reporting at federal research agencies and sets up a completely new system before the agencies have time to develop the systems called for in NSPM-33. We appreciate that H.R. 4521 has made refinements to the proposal originated in S.1260. The provision in H.R. 4521 is more narrowly focused and exempts simple, de minimis personal gifts like a coffee mug with the logo of the foreign visitor's home university or a shared meal.

APLU and our partner associations have worked with federal agencies and our members to identify and share effective practices scanning research agreements for foreign engagement, export controls, grant terms and conditions, and the potential receipt or generation of sensitive data or information. Universities have worked with federal research and law enforcement agencies to identify problematic foreign talent programs and discourage participation. S. 1260 contains a blanket prohibition of all foreign talent recruitment programs for researchers seeking U.S. funding. However, H.R. 4521 has a more nuanced prohibition on "Malign Foreign Talent Recruitment Program." It is important for U.S. S&T leadership to maintain positive international science collaborations and the House language ensures that prohibition is properly focused on those programs that do not live up to the U.S. values of openness, transparency, and accountability. APLU urges adoption of the H.R. 4521 language in Section 10306(d)(8).

APLU also urges adoption of H.R. 4521 SEC. 10731 to study the feasibility of establishing an independent, non-profit entity to further protect the United States research enterprise against foreign interference, theft, and espionage. Federal agencies have been working to develop and implement policies and requirements to protect against foreign interference. Yet, with thousands of universities and millions of scientists across the U.S., it is difficult for federal agencies to provide appropriate risk assessments and advice for every international collaboration. A new nonprofit entity could help generate context-specific assessments and guidance tailored to particular circumstances and institutions. This kind of organization could be an important tool to combat threats to the U.S. R&D Enterprise.

### Immigration

U.S. institutions of higher education enroll over 1 million students from all over the world in undergraduate, graduate, and professional degree programs. These students have invented groundbreaking technology and started thriving businesses, yielding an annual estimated economic impact of \$41 billion and supporting over 450,000 American jobs. However, with few green cards available, so many talented graduates from U.S. universities who want to stay here and contribute are instead sent to competitor countries due to the lack of visas. It is long past time to end this self-defeating practice and expand opportunities for talented graduates of U.S. universities.

APLU supports the provisions in H.R. 4251 that exempt doctoral STEM graduates from green card limits and provides for dual intent to streamline the visa process and urges Congress to retain these

provisions in a final measure. We also urge improvements in the language to maximize the impact of the policy on the nation's competitiveness. More specifically, APLU requests an expansion in the definition of STEM, broadening eligibility to more institutions, and a fee exemption for graduates employed by public and nonprofit institutions of higher education.

First, APLU requests an expansion in the definition of eligible STEM programs in Section 80303 by including programs listed on the Department of Homeland Security's (DHS) [STEM Designated Degree Program List](#). This list determines which programs are eligible for participation in the STEM Optional Practical Training (OPT) Extension and DHS is implementing a process to regularly add programs to the list. Expanding Section 80303 to include the STEM Designated Degree Program List would permit the U.S. to retain graduates in additional innovative fields and provide consistency across these crucial programs. APLU has conducted a [review](#) that compares the Section 80303 STEM fields with the DHS STEM list to demonstrate which areas would be excluded.

APLU also requests Congress expand the list of eligible institutions in Section 80303 to include all public and nonprofit institutions. Current eligibility requirements restrict the program to graduates of institutions based on research expenditures or HBCU or MSIs with very high or high levels of research activity as determined by the Carnegie Foundation for the Advancement of Teaching. This definition excludes less-resourced institutions and perhaps unintentionally substantially raises the stakes in determinations of Carnegie research status for institutions of higher education. This exclusionary language would leave out many talented graduates of public research universities as demonstrated by [APLU's analysis](#) of our member institutions that would not be eligible.

Lastly, Section 80303 requires doctoral STEM graduates to pay a \$1,000 supplemental fee to fund STEM scholarships for low-income students alongside their visa processing fees. While APLU appreciates the inclusion of scholarship funding for low-income STEM students, we urge a narrow exemption from the fee for those employed by public and nonprofit institutions of higher education. We are greatly concerned that the expense would be a hardship for many of our graduates beginning a career in which wages may not be very high. For example, a common role for doctoral STEM graduates is postdoctoral researcher, which has a [median starting salary](#) of \$47,500. Given that the federal government funds half of all postdocs, the supplemental fee serves as a tax on federal investment in STEM.

APLU applauds the House for including Section 80401 in H.R. 4521. Section 80401 allows for limited admission of essential scientists and technical experts to promote and protect the national security innovation base. Permitting limited admission to the U.S. of individuals with specific talents to enhance our national security is smart public policy and will enhance U.S. competitiveness in science and technology. APLU requests Congress retain this provision in conference.

### College Transparency Act

APLU strongly urges the inclusion of the College Transparency Act (CTA) in a final measure consistent with H.R. 2541. The legislation would provide much more comprehensive reporting on student outcomes by institution and academic program, empowering students and families as informed decision-makers, supporting evidence-based policymaking, and giving critical tools to colleges and universities to assess their programs and improve. For American industry, CTA will enable employers to strengthen their talent pipeline by using data to find the programs and institutions that are graduating individuals

with the skills they need. Combined with the short-term Pell provisions of the House bill, CTA will streamline data reporting requirements while providing much more robust and useful information.

#### Department of Education Title VI International Education Programs

APLU commends the House and Senate for reauthorizing the Title VI international education programs of the Higher Education Act. Increasing U.S. global science competitiveness requires an ability to understand and interact with diverse cultures and languages, broadly extending global competencies to the next generation of students, and maintaining deep domestic capacity in less commonly taught but strategically important languages and cultures.

As we expressed in a [December 10, 2021](#) joint association letter, we encourage Congress to use the Title VI language found in S. 1260 in the final bill. These provisions require a lower-cost share for institutional participation.

APLU applauds the efforts of both the House and Senate in setting the policy and funding goals needed to secure continued U.S. scientific and economic leadership. Outcompeting our counterparts abroad will require bolstered investment for the long haul. We urge Congress to complete the conference process quickly with a measure that takes into consideration APLU's detailed concerns and then move to properly fund these ambitious goals.

Sincerely,



CC: The Honorable Maria Cantwell, Chair, Senate Committee on Commerce, Science & Transportation  
The Honorable Roger Wicker, Ranking Member  
The Honorable Eddie Bernice Johnson, Chair, House Committee on Science, Space & Technology  
The Honorable Frank Lucas Ranking Member  
The Honorable Patty Murray, Chair, Senate Committee on Health, Education, Labor & Pensions  
The Honorable Richard Burr, Ranking Member  
The Honorable Bobby Scott, Chair, House Committee on Education & Labor  
The Honorable Virginia Foxx, Ranking Member  
The Honorable Joe Manchin, Chair, Senate Committee on Energy & Natural Resources  
The Honorable John Barrasso, Ranking Member  
The Honorable Bob Menendez, Chair, Senate Committee on Foreign Relations  
The Honorable Jim Risch, Ranking Member  
The Honorable Gregory Meeks, Chair, House Committee on Foreign Affairs  
The Honorable Michael McCaul, Ranking Member  
The Honorable Sherrod Brown, Chair, Senate Committee on Banking, Housing & Urban Affairs

The Honorable Pat Toomey, Ranking Member  
The Honorable Maxine Waters, Chair, House Committee on Financial Services  
The Honorable Patrick McHenry, Ranking Member  
The Honorable Dick Durbin, Chair, Senate Committee on the Judiciary  
The Honorable Chuck Grassley, Ranking Member  
The Honorable Jerrold Nadler, Chair, House Judiciary Committee  
The Honorable Jim Jordan, Ranking Member  
The Honorable Gary Peters, Chair, Senate Homeland Security and Governmental Affairs Committee  
The Honorable Rob Portman, Ranking Member  
The Honorable Bennie Thompson, Chair, House Committee on Homeland Security  
The Honorable John Katko, Ranking Member