

As the Biden administration and Congress work on legislation to revitalize the U.S. economy and address the nation's outdated and crippled infrastructure, the Association of Public and Land-grant Universities (APLU) urges policymakers to consider public research universities' unique role in fostering economic growth, undertaking cutting-edge research, facilitating upward mobility, and enhancing U.S. competitiveness.

Public universities lay the foundation for long-term economic growth and broadly shared prosperity. Annually, they employ 1.1 million faculty and staff and educate 4.2 million undergraduates and 1.2 million graduate students to be part of the American workforce. Additionally, they conduct \$46.8 billion in university-based research a year, helping to identify cures, develop new technologies, and safeguard the needs of their communities. In many cases, APLU institutions are one of the largest, if not the largest, employers in their states and a primary economic driver for the communities in which they serve and are located. Yet, chronic underfunding at the federal and state levels fails to capitalize on the complete potential of public research universities to extend their full impact to benefit society.

A comprehensive and successful plan to rebuild our economy, and to do so in a way that extends opportunities to Americans historically left behind, must broaden the reach of public higher education.

We urge policymakers to advance the following priorities in infrastructure and recovery legislation.

Double the Maximum Pell Grant

We appreciate that President Biden's American Families Plan includes a \$1400 increase in the maximum Pell Grant as a "down payment" on his commitment to double the maximum award. We urge policymakers to come as close to double as possible within an infrastructure and recovery package.

For more than seven million students, or 40 percent of undergraduates, Pell Grants make the difference between being able to afford college or not. Pell Grants are well-targeted to students with clear financial need: Approximately three-fourths of all Pell Grant dollars are awarded to students with a family income below \$30,000. According to recent NCES data, almost 60 percent of Black students, as well as about 50 percent of American Indian/Alaska Native and Latinx students receive a Pell Grant each year. Additionally, about half of student-parents and first-generation college students, as well as nearly 40 percent of student veterans are Pell recipients.

A robust and growing body of research also shows that additional grant aid, including Pell Grants, increases college enrollment, degree attainment, and post-graduation earnings for recipients.

However, over the years the size of the grant has not kept pace with the costs of attending college. At its peak funding level in 1975-76, the maximum federal Pell Grant award covered more than 78 percent of the cost of attending a public 4-year college. Due to a combination of state disinvestment and insufficient increases to the Pell program, the maximum grant of \$6,495 now covers under 30 percent of the cost of attending a four-year public college.

Doubling the maximum Pell Grant award would help reverse this trend, making college more affordable for low-income students. Today, in-state tuition and fees at a public four-year university after subtracting institutional grant aid is just \$7,190. Still, students must also factor in non-tuition costs such as course materials and fees, housing, transportation, and food, expenses that could be covered by additional grant aid. An analysis released in February 2021 from the Brookings Institution concludes that doubling the maximum Pell Grant “eliminates the affordability gap for students from lower-income families.”

We encourage the Biden administration to work with Congress to double the maximum federal Pell Grant award to \$13,000. As a part of this effort, we also encourage Congress to reinstate and make permanent the mandatory inflation adjustment for Pell Grants, which expired at the end of 2017, and make as much of program funding mandatory as possible.

Invest in Research Infrastructure

As Congress considers national infrastructure needs as a way to stimulate economic recovery and strengthen future prosperity, APLU urges increased support for our nation’s research enterprise through strategic investments in infrastructure and instrumentation programs at the National Science Foundation, National Institutes of Health, Department of Agriculture, and the National Institute of Standards and Technology. Strong federal investments now will pave the way for America to continue to lead the world in higher education and scientific research furthering the development of a globally competitive U.S. workforce. U.S. scientific preeminence is facing greater international competition than any time in recent memory. The \$40 billion for research infrastructure proposed in President’s Biden’s American Jobs Plan should be a starting place.

Access to leading-edge equipment will 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. Laboratory construction projects have both short- and long-term economic benefits from initial construction jobs to long-term technical and research jobs. It is estimated that U.S. universities spend nearly [\\$14 billion](#) annually of direct cost research dollars on goods and services throughout the country, directly supporting local economies.

Any infrastructure investment should also be coupled with initial operating funding for these facilities to support the human resources to properly operate the needed scientific equipment. As our universities continue to reel from the impacts of the COVID-19 pandemic, many are left with limited revenue sources to assist the technical workforce needed to support core facilities.

National Science Foundation (NSF)

We support the expansion of current infrastructure and instrumentation programs at NSF such as the Mid-Scale Research Infrastructure 1 and 2, Major Research Instrumentation, and Historically Black Colleges and Universities Research Infrastructure for Science and Engineering programs. From providing funding for the construction of a state-of-art airborne atmospheric research and education laboratory to the acquisition of high-resolution x-rays and advanced computing capabilities to process big data, these initiatives advance our nation’s capability to produce groundbreaking research in areas such as quantum technology, artificial intelligence, ocean research, and next-generation energy resources. These NSF-funded resources can be widely available for research use and allow for special educational opportunities for students, early career scientists, and K-12 students and teachers in surrounding

communities. Demand for NSF infrastructure programs are high. For example, for the 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.

National Institutes of Health (NIH)

University research supported by NIH holds the promise for critical breakthroughs that advance our nation's health and wellbeing, including to some of the most intractable issues such as COVID-19, diabetes, and Alzheimer's disease. This research cannot be done without the appropriate lab facilities and equipment. APLU supports increased investments in: the C06 program, which funds the expansion, remodeling, renovation, or alteration of existing research facilities or the construction of new research facilities; the S10 program, which supports the purchase of instruments that are typically too expensive to be obtained by an individual investigator; and the Research Centers in Minority Institutions programs, which develops and strengthens the research infrastructure of minority-serving institutions through the expansion of human and physical resources at campuses across the nation. Demand for these programs remains high. For example, in FY2020, NIH received 90 grant applications for the C06 program totaling over \$610 million. NIH could only allocate \$49 million and support seven proposals. In FY2020, NIH received 428 grant applications for the S10 program totaling over \$320 million. However, the agency could only fund 123 proposals totaling \$89 million.

United States Department of Agriculture (USDA)

APLU supports the agricultural research community request of at least [\\$40 billion for research and research infrastructure](#). This is inclusive of APLU's core request of an agricultural research infrastructure investment of [\\$11.5 billion](#) at U.S. colleges of agriculture, which is supported by more than [350 non-academic stakeholder organizations](#). Specifically, APLU urges funding over a five-year period for the [Research Facilities Act](#), administered by the USDA National Institute of Food and Agriculture (NIFA). The Act authorizes an agriculture and food-focused research infrastructure program for facility construction, alteration, acquisition, modernization, renovation, or remodeling. The Secretary of Agriculture should have the authority to waive matching requirements, as well as consider geographic and equity in program administration. Infrastructure investments at 1862, 1890, 1994, and insular land-grant and non-land-grant colleges of agriculture will enable the recruitment of diverse talent into the agricultural innovation enterprise, yield at least 200,000 new jobs nationwide, and allow the U.S. to rebuild its global position as the agricultural science research and education leader. As example of advancements that can be made, U.S. extramural research facilities need to be equipped for emerging areas of science, including artificial intelligence, big data analytics, climate change, and sensor-based observation systems.

Gordian, a firm with more than 30 years of experience analyzing cost data and planning services for buildings, recently [reported](#) that 69 percent of the buildings at nearly 100 institutions with college of agricultures are at the end of their useful life.¹ They state that the cost of upgrading deferred maintenance for these facilities is \$11.5 billion, with a replacement value of \$38.1 billion.

National Institute of Standards and Technology (NIST)

APLU encourages the reestablishment of NIST's Construction Grant Program, which could fund projects at universities and nonprofits to construct new or expand existing research facilities. If this program were restored, research universities across the country could apply for funds to modernize facilities and

¹ <https://www.aplu.org/library/a-national-study-of-capital-infrastructure-at-colleges-and-schools-of-agriculture-an-update/file>

significantly expand opportunities for academic, industry, and government researchers to engage in highly innovative R&D projects.

In 2009, NIST provided \$180 million in funding for new and updated laboratory facilities at institutions of higher education for areas of research such as fundamental physics, nanotechnology, aquaculture, and marine ecology research. To spur economic activity and preserve our global competitiveness across multiple disciplines, we recommend an additional infusion of infrastructure funding at NIST to maintain and significantly upgrade research infrastructure at universities.

Fund Higher Education Infrastructure at Public Universities

APLU urges policymakers to expand the infrastructure policy and funding level proposed in the American Jobs Plan to include public four-year institutions. Specifically, APLU requests \$48 billion to support infrastructure of public four-year universities. According to APPA-Educational Facilities, the total infrastructure backlog needs of the public higher education sector is \$76.1 billion, with \$27.7 billion attributable to needs at two-year institutions.

Congress should provide broad funding to modernize learning environments, boost environmental sustainability and energy efficiency, enhance safety, improve accessibility, and address the substantial and alarming backlog of deferred maintenance at the nation's public colleges and universities. In keeping with the core focus of a recovery package on building a green future, environmental sustainability and energy efficiency should be a significant focus of such funding.

The lack of state funding for public college and university modernization has left a backlog of campus infrastructure needs, including building repairs, renovations, and replacement, as well as technology upgrades. This results in substantial funding devoted to upkeep of outdated facilities that are inadequate to serving today's students.

APLU, the American Association of State Colleges and Universities, and the State Higher Education Executive Officers Association have collaborated to develop a [proposal](#) for investing in infrastructure of public four-year institutions, which compliments the proposal in the American Jobs Plan to support infrastructure of community colleges.

Restore Advance Refunding and Direct Subsidy Bonds

Restoring advance refunding and expanding the use of direct subsidy bonds and ending their exposure to sequestration would immediately free up capital and create more attractive investment options for critical campus infrastructure projects.

Advance refunding provided colleges and universities, along with other municipal bond holders, the one-time option to refinance outstanding municipal bonds to more favorable borrowing rates or terms. This tool allowed colleges and universities to generate savings by reducing the interest payments made to bond owners, freeing up resources to fund new infrastructure projects and other activities. Beginning in 2018, the Tax Cut and Jobs Act (TCJA) prohibited advance refunding of tax-exempt municipal bonds, but there is strong bipartisan support for restoration.

Direct subsidy bonds allowed state and local governments—as well as entities such as public universities—to receive a subsidy from the federal government for the lifetime of the bond to cover a

percentage of interest costs. During the Great Recession, a new direct subsidy bond program, Build America Bonds (BABs), was created to aid with economic recovery. BABs were issued for defined governmental purposes, and bond owners received a subsidy equal to 35 percent of the interest paid for the lifetime of the bond. Public universities have used BABs for environmental upgrades to campus infrastructure, research facilities, and other needed investments. In subsequent years, however, Congress reduced subsidy amounts promised to issuers through the budget sequestration process.

Support Internet Connectivity for Students and Communities

Since the beginning of the pandemic, students, educators and communities have struggled to ensure that the suspension of in-person learning would not mean the end of quality education and scientific research. The pandemic deepened the digital divide for both students and many institutions. And while colleges and universities quickly pivoted to online operations, the ability of students to access their courses was uneven at best.

Congress should address the underlying need that all higher education institutions have for high-quality broadband connections to support learning and research, both now and into the future. In December, Congress took an initial step toward addressing this need by directing additional funding to Historically Black Colleges and Universities (HBCUs) and other Minority Serving Institutions (MSIs) through the Connecting Minority Communities Pilot Program, which will allow them to build out their capacities as community anchor institutions.

Recent analysis has shown that a comprehensive expansion of and upgrade to our nation's research and education networks will provide significant benefits not just to institutions, students, and researchers, but also to their surrounding communities as well. [The Minds We Need](#), a paper released in May by an extensive group of experts in this area, identifies a path to connecting all institutions of higher education to advanced, research-quality broadband at a cost of less than \$5 billion. APLU [supports this community request](#), which represents only a small portion of the overall funding currently proposed for broadband infrastructure, and it will deliver disproportionately large benefits. The proposed investment will greatly expand the range of learning opportunities available to students while allowing the nation to finally leverage all "the minds we need" to innovate and compete in the 21st century.

National Telecommunications Information Administration (NTIA)

To ensure that institutions can provide access and opportunity for all our students that lack the necessary tools to connect, we request the creation of a Higher Education Connectivity Fund at the NTIA, such as the one put forward in the *Supporting Connectivity for Higher Education Students in Need Act*. The Fund would help institutions set up the systems and services needed to support distance learning, and provide students with necessary equipment such as computers, Wi-Fi hotspots, modems, and routers. Funding should also support internet connectivity mechanisms provided by land-grant university Extension offices and facilities, further expanding student connectivity and benefitting surrounding communities throughout the country.

Federal Communications Commission (FCC)

Congress has also begun to address access to high-speed broadband for students in need, providing subsidies for broadband service and devices for households with Pell Grant recipients through the newly established Emergency Broadband Benefit (EBB) Program. Congress should make the EBB Program permanent and expand this benefit to allow students to truly receive the benefits provided by an infrastructure investment.

New Investments in Digital Equity

In addition to these investments to improve broadband infrastructure and access, we strongly encourage robust funding for digital skills and learning programs. APLU applauds the addition of digital equity grant programs in broader broadband legislation introduced in the 117th Congress, such as the *Accessible, Affordable Internet for All Act* and the *Leading Infrastructure for Tomorrow's America Act*. Public and land-grant universities and the USDA's Cooperative Extension System have been engaged in this critical work across the country. The need is great, particularly in communities and populations that continue to have insufficient access to the internet.