As the Biden administration and Congress work on legislation to revitalize the U.S. economy and address the nation’s outdated and crippled infrastructure, the Association of Public and Land-grant Universities (APLU) urges policymakers to consider the public research universities’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 on 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. APLU urges support for doubling the maximum Pell Grant award to help build our nation’s workforce, provide research recovery funding to federal science agencies to sustain our nation’s research workforce and enterprise, advance research infrastructure to create jobs and enhance competitiveness, extend access to low-cost capital through advanced refunding and direct subsidy bonds, and establish a Higher Education Connectivity Fund to equip students with the tools they need to access the internet necessary for learning in the 21st Century.

**Double the Maximum Pell Grant**

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 80 percent of Black students, 70 percent of American Indian/Alaska Native students, and over two-thirds of Latinx students receive a Pell Grant each year. Additionally, three-quarters of student-parents and more than two-thirds of first-generation college students and 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 75 percent of college costs. Due to a combination of state disinvestment and insufficient increases to the Pell program, the maximum grant of $6,495 now covers just 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.

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 requests an agricultural research infrastructure investment of $11.5 billion at U.S. colleges of agriculture. Specifically, APLU urges funding over a five-year period for the Research Facilities Act (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 agriculture are at the end of their useful life. They state that the cost of upgrading deferred maintenance for these facilities is $11.5 billion, with a replacement value of $38.1 billion.

Global competitors continue to out compete the U.S. by surpassing our domestic investment in basic and applied agricultural research. As a result, the U.S. is losing ground as the global research leader in agricultural and food sciences.

**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

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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.

**Provide Research Recovery Funding to Federal Research Agencies**

As the administration and Congress look to mitigate the impacts of the COVID-19 pandemic on our nation’s workforce and economy, APLU urges the inclusion of research recovery funding for federal science agencies consistent with levels in the bipartisan Research Investment to Spark the Economy (RISE) Act, H.R.869/S.289.

The pandemic has caused substantial disruptions to federally-supported researchers and research funded by the National Science Foundation; the Departments of Agriculture, Defense, and Energy; the National Institutes of Health; the National Aeronautics and Space Administration; the National Oceanic and Atmospheric Administration; and other federal research agencies. These disruptions are to the detriment of our nation’s research enterprise, and they are taking an especially significant toll on early-career researchers and researchers raising children or with other caretaker responsibilities. While most federally-supported research has resumed since the initial shutdowns, research output has decreased due to many factors such as laboratory closures, new COVID-19-related health restrictions and laboratory protocols, canceled scientific conferences, curtailed travel to research sites, and other strains on researchers. Consequently, many researchers are unable to complete their research projects as originally proposed in their federal grants and contracts. Funding is needed to ensure that agencies do not have to decide between funding the completion of existing research grants or funding new projects. Emergency relief is also needed to sustain research support personnel and to provide for additional graduate student and postdoc fellowships, traineeships, and research assistantships to enable early career scientists to complete degrees and enter the workforce rather than leaving science and engineering altogether.

**Fund Capital Improvements and Deferred Maintenance**

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.

Every institution of higher education has examples of a troubling backlog of deferred maintenance and lack of directed funding to address the issue. While deferred maintenance is not a topic that often captures headlines until something goes awry, it is crucial to tackle. The longer dilapidated facilities and antiquated energy systems go unaddressed, the more expensive they can become to fix. According to a
report on higher education facilities, the backlog of needed improvements is up nearly 30 percent over the last decade². Yet, funding to take on this growing problem is severely lacking by states.

Because each institution has its list of deferred maintenance, projects are shovel-ready, just waiting on adequate funding. As the problems throughout higher education are massive, Congress could provide funding to institutions through a formula such as used in the Higher Education Emergency Relief Fund of COVID relief bills in combination with competitive funding to enhance environmental sustainability and energy efficiency.

**Restore Advance Refunding and Direct Subsidy Bonds**

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.

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.

**Support Internet Connectivity for Students and Communities**

Throughout the COVID-19 pandemic, many of our institutions have utilized federal pandemic aid and other sources of funding to provide needed internet services and connectivity devices to students and surrounding communities through our Cooperative Extension networks. To ensure that institutions can provide access and opportunity for all our students after the crisis subsides and address significant related societal inequities on connectivity, we request a Higher Education Connectivity Fund be created at the National Telecommunications and Information Administration (NTIA). The Fund would support institutions of higher education in providing broadband internet access service, videoconferencing systems, and services used for distance learning, and equipment such as computers, Wi-Fi hotspots, modems, and routers to enrolled students. Funding through a higher education fund should also support internet connectivity mechanisms provided by land-grant university Extension offices and facilities. This would further expand student connectivity and also benefit surrounding communities throughout the country. We are grateful Congress established the Connecting Minority Communities Pilot Program in December and believe this program, combined with a stable higher education fund

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through NTIA, will best equip institutions to support both students and communities with access to the internet.

Coupled with a connectivity fund, 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 Cooperative Extension System have been doing this work. The need is great, especially in communities and populations that have not had sufficient access to the internet.