

STRATEGIC FEDERAL INVESTMENT IN EXTRAMURAL AGRICULTURAL RESEARCH FACILITIES ACROSS AMERICA

REQUEST: APLU PROPOSES AN AGRICULTURAL RESEARCH INFRASTRUCTURE FUND AT NIFA OF \$11.5 BILLION

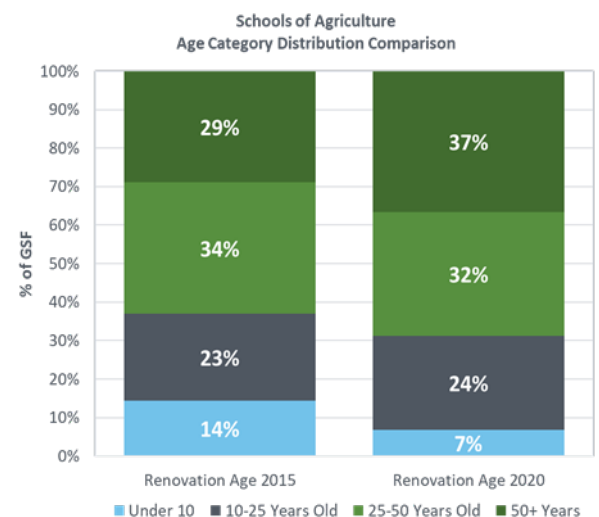
Our land-grant university (LGU) system serves the nation by fostering excellence in research innovation while providing avenues to train future global leaders in agriculture and food systems. The public extramural research enterprise accelerates technology adoption, growth of the agricultural and food marketplace, entrepreneurship, and public-private partnerships.

However, the land-grant university system faces unprecedented infrastructure challenges. More than 69% of research and education facilities at LGU colleges of agriculture are at the end of their life cycles. U.S. researchers and educators are being asked to perform 21st century science in facilities constructed in the 1950s and 1960s.ⁱ

THE PROBLEM

Failing Infrastructure at U.S. Colleges of Agriculture

Modern agricultural research and education facilities serve as the backbone of cutting-edge research and applied science solutions that address climate change, agricultural profitability, food safety, zoonotic disease preparedness, personalized nutrition, biosecurity, new biobased packaging and energy innovations, and advanced market analysis. Gordian, a firm with 30+ yrs. of experience analyzing cost data and planning services for buildings, evaluated current facilities at U.S. schools of agriculture for research, teaching, and Extension. In 2020, Gordian assessed the state of facilities at the colleges or schools of agriculture, reporting that 69% of the buildings are at the end of their useful life. Gordian reports that the cost of upgrading deferred maintenance in 2021 is \$11.5 billion, with a replacement value of \$38.1 billion.



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THE SOLUTION

APLU requests that Congress and the Biden administration support an agricultural research infrastructure investment of \$11.5 billion at U.S. colleges of agriculture in any federal infrastructure initiatives. 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. APLU seeks to ensure the Secretary of Agriculture has 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.

BENEFITS OF THE SOLUTION

Robust Research Infrastructure to Solve Climate, Food, and Nutrition Challenges

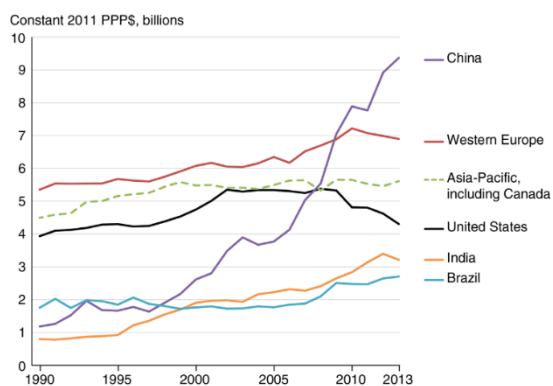
As a result of public investment in the LGU system, the United States has a rich tradition of food and farm entrepreneurship. Agriculture and food innovation are the foundation of U.S. global strategic advantage and national security. Within the next decade, our scientists must ensure the resilience of the agricultural enterprise and food supply by:

- Mitigating climate impacts on food production and developing sinks for greenhouse gas emissions;
- Providing innovations that ensure food safety;
- Identifying biosecurity technologies to prepare for disease and pest outbreaks;
- Increasing agricultural production efficiency;
- Eliminating nutrition-based human disease and addressing obesity; and
- Developing biodegradable biomaterials and biofuels for a sustainable economy.

AGRICULTURAL RESEARCH INFRASTRUCTURE AS A LONG-TERM ECONOMIC DRIVER

The COVID-19 pandemic stresses have impacted farmers, food processors, the construction sector, universities, global science talent pools, and global food markets. Our competitors around the globe continue to make strides to outpace us by surpassing our domestic investment in basic and applied agricultural research.ⁱⁱ As a result, we are at a hazardous crossroads, and the U.S. is losing ground as the global leader in agricultural science. To reposition, the nation needs the foundation of an advanced agricultural research infrastructure with facilities that enable work in emerging areas of science, including artificial intelligence, big data analytics, and sensor-based observation systems at geographically relevant locations across the nation.ⁱⁱⁱ

U.S. public sector funding for agricultural R&D falls as spending by China and India rises



PPP = purchasing power parity.
Source: USDA, Economic Research Service and Agricultural Science and Technology Indicators (ASTI), Organisation for Economic Cooperation and Development.

THE WORKFORCE OF THE FUTURE: INCLUSIVE, DIVERSE, AND TECHNICALLY SKILLED GLOBAL LEADERS

Purdue University estimated that 59,400 new U.S. graduates with agricultural expertise are needed per year. State-of-the-art facilities will allow the U.S. to recruit the best talent to solve problems at our nation's public universities. Modern facilities promote STEM skill development, while also providing interactive and collaborative environments in which non-technical skills can be learned. Our vision includes integrating advanced technologies, observational and collaborative research capabilities, and multi-functional research and teaching facilities through federal-state and public-private partnerships. It's also critical to continue to promote the science-based agricultural entrepreneurship that supports U.S. food innovation. Modern facilities will allow the agricultural, food, and biobased sciences to recruit a diversity of talent, including women and minority scientists, into the agricultural innovation enterprise.

For more information, please contact Caron Gala, APLU Director of Governmental Affairs, Agriculture and International Development, at cgala@aplu.org.

ⁱ Hopkinson, 2017, <https://www.politico.com/agenda/story/2017/07/06/how-innovation-dies-000471/>

ⁱⁱ Clancy, et al., 2016, <https://www.ers.usda.gov/amber-waves/2016/november/u-s-agricultural-r-d-in-an-era-of-falling-public-funding/>.

ⁱⁱⁱ Committee on Science Breakthroughs 2030, 2019, <https://www.nationalacademies.org/our-work/science-breakthroughs-2030-a-strategy-for-food-and-agricultural-research>.