



\$50M GREENHOUSE COMPLEX INFRASTRUCTURE INVESTMENT

"If we're really going to do the kind of work that we need to do, which is to understand the impact of climate change and weather variability on crop production, we need to have the facilities needed to simulate those scenarios."

Doug Buhler, MSU AgBioResearch
Director and Assistant Vice President
of Research and Innovation
(Politico; 3-26-21)

As a leader in plant sciences since its founding in 1855, MSU has maintained a stronghold in agriculture and has consistently worked to enhance its teaching, research and outreach efforts. This has helped farmers worldwide become more resilient, more productive and more profitable while feeding a hungry world.

That pioneering journey, however, is in jeopardy.

While the MSU greenhouse and controlled environment complexes have met our needs for decades, they are no longer of the quality and quantity to deliver adequately on our mission. The world of plant sciences has changed and we need improved, unique simulated environments to continue to forge ahead and remain competitive.

Producing more food to meet the demands of an increasing worldwide population in light of climate change is no small feat. Much of that begins long before the field. Frequently it starts in greenhouses and growth chambers—the controlled environments where trial and error drive the future of food production by providing vital information on disease and pest control, temperature variability, soil balance and nutritional content among others.

Our facilities do not meet the demands of our world-class plant scientists. There isn't enough space and the space we have is outdated.

We are in the business of delivering agriculture research and outreach to where folks live. That requires controlling temperatures to simulate different geographical climates and high containment facilities

continued



The complex serves over **60 faculty researchers** and nearly **400 students** and **research staff from 8 departments** across MSU



\$1.26B annual economic impact of Michigan nursery and landscape



energy savings with the installation of light-emitting diode (**LED**) fixtures to replace high-pressure sodium (HPS) fixtures



of **MSU greenhouses** were built between 1955-1978 and **lack modern energy efficiency design**



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for studies of newly emerging plant pests and pathogens to ultimately provide farmers with best practices. In Michigan alone that is extremely complex, given our many different microclimates.

MSU greenhouse and growth chamber facilities are no longer sufficiently equipped, they're obsolete and lack the capacity to meet the demands of modern research. They're impeding progress and preventing advancements for the second largest economic driver in our state.

In addition to agriculture, advancements in the nursery and landscape are also impacted.

\$50M state-of-the-science greenhouse improvements will significantly increase research capability and dramatically reduce our environmental footprint.

Maintaining global food security in the face of climate change requires crops that are regionally adaptive and resilient to future environmental conditions, including numerous stressors and greater variations in weather. Reliable, modern and energy-efficient greenhouse and growth chamber facilities are a must to meet these critical needs.

Together, we will improve our GREENhouses.

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To learn more about MSU greenhouses and the advancement of plant research, visit:

canr.msu.edu/research/plant-science-greenhouse-expansion-renovation



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