

# INFRASTRUCTURE INVESTMENT FOR A NEW STATE-OF-THE-ART DAIRY RESEARCH AND TEACHING FACILITY

*“The current dairy teaching and research facility was built over 60 years ago...it has served the Michigan dairy industry well. Many amazing MSU alumni have been trained or conducted research there...but it doesn’t represent the dairy industry standards and constrains our ability to train industry ready graduates and conduct industry ready research.”*

**Barry Bradford**, MSU Meadows Endowed Chair for Dairy Management in the Department of Animal Science



Over the last 60 years, the U.S. dairy industry has evolved to meet the demands of consumers, including significant strides in reducing its environmental footprint. However, today the industry faces major challenges and increasing scrutiny regarding its impact on the planet, animal welfare and land use that requires long-term scientific data collection.

There are great opportunities, however, for research breakthroughs to improve the utilization of resources for milk production and to ultimately improve human health and nutrition.

MSU is a long-time leader in dairy cattle research, education and outreach, including the areas of nutrition, health, genetics and reproduction. We remain competitive, at the moment, in funding from USDA National Institute of Food and Agriculture, Foundation for Food and Agriculture Research, numerous industry organizations and others.

While having the faculty and knowledge base to tackle the complex challenges that face the dairy industry, MSU lacks the infrastructural capacity to deliver on the future needs of the industry, as well as to meet our mission.

**#1** farm gate value in Michigan

**25%** Michigan farm gate receipts

**50+** faculty and staff



Michigan has one of the **most productive and efficient** dairy industries:

**#1** in milk production per cow in the U.S.

**42%** increase in number of cows in MI compared to 2% increase in the U.S. over the past 20 years

**109%** increase in milk output in MI compared to 34% increase in the U.S. over the past 20 years



As temperatures rise, **Michigan will be ideal for dairy cow productivity and health** compared to other states, especially those in the south.

**Access to water** in Michigan is higher than most other dairy states.



The current MSU Dairy Cattle Teaching & Research Center is used by faculty to uncover novel approaches to improve the sustainability of the dairy sector to meet pressing needs created by changing climate, and to train students and professionals for this ever-changing industry.

That land-grant mission, however, is challenged by outdated infrastructure and equipment.

### **A new facility is needed to ensure we can focus on:**



#### **✓ Environmental sustainability**

MSU is a world renowned institution for discovering nutritional strategies for optimal productivity, and is among the very few universities with a commercial-scale methane digester at our dairy facility. However, critical questions about approaches to reducing climate changing emissions from dairy production cannot be answered with the current facilities. We have the potential to integrate animal, manure and field crop management systems for comprehensive investigations into reducing emissions associated with dairy production while promoting economic sustainability. These efforts are critical for addressing climate change and safeguarding our waterways.

#### **✓ Precision management**

Individual animal management provides opportunities to improve animal welfare and production efficiency by addressing nuanced differences between each animal. A new facility will ensure that state-of-the-art precision livestock systems are available for research, teaching and outreach.

Students training to begin their careers in animal agriculture will step into roles where use of technology and data is required from the start. We must provide exposure to these tools—particularly for those unfamiliar with farm operations.

#### **✓ Animal behavior and well-being**

MSU has an exemplary and long-standing animal behavior and welfare group. Our dairy experts, however, have had little opportunity to investigate best practices because our facility does not include commercial-style housing. A new facility is essential to ensuring MSU can address social sustainability of the dairy industry.

#### **✓ Veterinary research**

Animal health is another MSU strength and is critical to a sustainable dairy industry. However many interventions cannot feasibly be tested in a small herd. A new facility equipped to house more animals will enable that strength to continue, with focus on veterinary care, genetics, nutrition and well being. New facilities with enhanced animal monitoring capabilities will enable research on antibiotic stewardship and sustainable livestock production.

#### **✓ Broader inclusion within industry**

Surveys of dairy producers consistently show that labor is among the top concerns for farms. Unfortunately, very few avenues exist to introduce young people to the workings of dairy farms. The industry needs to be creative in attracting new talent. A new facility, designed from the ground-up to be safe and effective for educating young people to work on a dairy farm, will make significant impacts on broadening the base of dairy professionals.

### **A new facility for the oldest land-grant**

More than 160 years ago, Michigan State University pioneered a bold experiment that revolutionized higher education—the **first land grant institution with a mission to discover, teach and serve**. That bold experiment will continue with a new dairy facility to meet the needs of the next generation.

To learn more about the current MSU Dairy Cattle Teaching and Research Center visit:

[canr.msu.edu/scaf/dairy\\_teaching\\_research\\_center](https://canr.msu.edu/scaf/dairy_teaching_research_center)



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