



Mary Gardiner

“Working on ecological research in city neighborhoods requires advanced scientific knowledge and excellent people skills. Mary embodies both of these things. Her work has the potential to impact people’s lives in tangible and lasting ways, and to contribute to new ways of thinking about Cleveland.” — Terry Schwarz, director, Cleveland Urban Design Collaborative



Graduate students in Mary Gardiner’s lab survey vacant lots in Cleveland to determine the environmental benefits of different landscape treatments being studied.

Land of opportunity: Cleveland empty lots yield environmental benefits

Decades of population losses have left the city of Cleveland with 3,600 acres of vacant land, while some 1,000 homes are demolished every year.

Currently, Cleveland plants turfgrass on empty lots, but it’s expensive to maintain and offers few benefits. “Alternative plant communities could offer greater environmental benefits such as support of biodiversity and improved storm-water infiltration to reduce flooding,” said Ohio Agricultural Research and Development Center entomologist Mary Gardiner.

Last year, Gardiner started a large-scale, never-before-attempted project that examines the impact of eight different landscape treatments on the biodiversity and ecosystem function of 64 empty lots in eight Cleveland neighborhoods. The five-year project’s main goal is to gather data that will inform future green space design in Cleveland and other cities engaged or interested in vacant-land management.

“With the right combination of plants and increased ecosystem services, urban vacant land can be seen as an asset for community development rather than as an eyesore,” Gardiner said.

More: ale.cfaes.ohio-state.edu/home

Community members and city leaders are partners in this project, providing input about their landscape treatment preferences.

ESSENTIALS

- This project is funded by a highly competitive \$909,200 Faculty Early Career Development Program grant from the National Science Foundation, which promotes the integration of research and education.
- Part of the project includes the development of a high school science curriculum for use by teachers in Cleveland and throughout the state. The lessons focus on insect-predator-prey relationships and teaching students how to collect data and communicate their findings using scientific arguments.
- A related program involves the training of Master Gardener volunteers on issues related to urban farming. These volunteers will then teach Cleveland residents best practices for growing fruits and vegetables on converted vacant land, fostering new economic opportunities and healthier eating.
- Students in Gardiner’s lab are also studying the benefits of rain gardens in the city of Cleveland, including their contributions to pollinators, soil health and storm-water cleanup.

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OARDC: A Leader in Agbioscience

ag·bi·o·sci·ence (ăg'bt'ō-sī'ens) *n.* the integration of scientific disciplines to address critical needs of food security, safety and health; environmental sustainability; and biobased energy, fuel and products



**Food Security, Production,
and Human Health**



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and Sustainability**



**Advanced Bioenergy
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Ohio Agricultural Research and Development Center

As the research arm of The Ohio State University's College of Food, Agricultural, and Environmental Sciences (CFAES), the Ohio Agricultural Research and Development Center (OARDC) employs nearly 650 scientists and staff members throughout the state.

Ohio State's Wooster campus is the largest agbioscience research facility in the U.S. OARDC scientists work closely with researchers in Ohio State's Colleges of Education and Human Ecology, Medicine, Public Health, Veterinary Medicine, Biological Sciences and Engineering.

At any given time, OARDC researchers are engaged in nearly 400 research projects. Primary focus is in three signature areas:

- Advanced Bioenergy and Biobased Products
- Environmental Quality and Sustainability
- Food Security, Production, and Human Health

The Ohio General Assembly established OARDC as the Ohio Agricultural Experiment Station in 1882. It is supported by a line-item appropriation from the Ohio General Assembly, competitive grants, gifts, contracts, federal grants and other sources. OARDC uses these funds to provide direct research support and economic development for Ohio's annual \$100+ billion agbioscience industry. OARDC is not funded by student tuition or any other general funds of The Ohio State University.

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