

# Discovery, knowledge, solutions

Michigan State University | **Department of Entomology**



**MSU entomologists** make discoveries, transmit knowledge, and solve critical problems from local to global in scale.

Our alumni hold positions at leading academic institutions, research institutes, NGOs and industries around the globe. Our work positively influences the environment, livelihood, health and well-being of millions of the world's citizens on a daily basis.

## **Securing the world's food, fuel and fiber**

MSU entomologists collaborate with other scientists to develop sustainable systems that maximize crop yields, conserve beneficial insects, and minimize pesticide use. We also conduct pollinator research, teaching and extension programs to help maximize the quantity and quality of crops pollinated by honeybees and other wild pollinators.

## **Improving human health**

Mosquitoes transmit malaria, West Nile Virus, dengue and other human diseases. MSU entomologists are exploring multiple approaches to addressing this global problem. These include determining how mosquitoes behave when confronted with different insecticides, understanding the environmental factors associated with mosquito populations, and how bacteria affect mosquito development and survival.

## **Supporting natural resources and biodiversity**

MSU entomologists examine interactions in nature, from microbes that mediate insect fitness and community dynamics to how landscape design affects insect populations. Questions such as how human and natural disturbances impact ecosystem dynamics and biodiversity are central to our research, teaching and outreach programs.

## **Bridging fundamental and applied research**

Fundamental research is the basis for high-impact discoveries and is a source of new products, services, and knowledge. MSU entomologists have long been recognized for our ability to seamlessly integrate fundamental and applied programs, such as exploiting mosquito physiology to increase insecticide effectiveness, and understanding flies' life cycles to determine a person's time of death for legal purposes.

## **Developing new knowledge for global use**

Science and education are essential to improving and sustaining the human condition globally, and an international perspective is critical to our future. MSU Entomology introduces an international element into all of its programs, and almost a quarter of our graduate students come from outside the U.S. Our faculty, students and staff collaborate with scientists on a global scale, and our graduates take important positions in universities, organizations, government agencies and companies around the world.



The **Michigan State University Department of Entomology** excels in research, extension and teaching to address the issues that confront the people of Michigan, our nation and the world.

MSU's entomologists look for systemic solutions across disciplines to address critical issues related to health, natural resources, food production and more.

## People

**275** faculty, staff, students



**9**

MSU Distinguished faculty

## Teaching

**1,400**



undergrads take an entomology course each year

Students from

**15 countries**



since 2009

## Research

### Multi-year grants

with continuous funding (years = length of commitment):

- 15 years National Institutes of Health
- 10 years Bill/Melinda Gates Foundation
- 9 years National Science Foundation
- 10 years U.S. Agency for International Development
- 8 years U.S. Department of Energy
- Continuous funding from USDA including 5 year SCRI

**\$10 million** annual research expenditures



## Outreach & Extension



**5,000**

visitors to the Bug House each year

**\$1.4 million**

increased Michigan fruit sales for growers using MSU Enviro-weather's online pest/crop decision tools

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Entomology

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*Proud to be a part of: AgBioResearch, MSU Extension, the College of Agriculture and Natural Resources, the College of Natural Science.*