



LSA

ECOLOGY AND
EVOLUTIONARY BIOLOGY
UNIVERSITY OF MICHIGAN



Department of Ecology and Evolutionary Biology

THE POWER

The Department of Ecology and Evolutionary Biology (EEB) at the University of Michigan is among the top ten EEB departments in the country, and our associated museums—University of Michigan Museum of Zoology and University Herbarium—are in the top three university collections nationwide. The department focuses on research and education in the biological principles and processes that account for the origin, diversity, and complexity of life on earth. Our distinguished faculty includes many of the best-known researchers in their fields who have received multiple honors and awards. Many hold positions as editors of prestigious journals and/or as officers of national and international professional societies.



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THE OPPORTUNITIES

The department encompasses education and research in its mission to investigate and teach about phenomena across many levels of organization and spatial scales ranging from evolution at the molecular level to the ecology of the global biosphere. We play a unique role within the life sciences on campus through our expertise on diverse organisms from bacteria to elephants, and because of our focus on biological interactions in the context of heterogeneous natural environments. Thus, we are a pivotal unit in the study of ecosystem sustainability, including effects of humans on food production, invasions by exotic species, habitat quality, and many other processes that, in turn, have large impacts on human societies. Our undergraduate majors are well prepared to pursue careers in business, government, teaching, health care, research and consulting, as well as to earn advanced degrees at leading institutions. Our graduate students go on to positions at academic and governmental institutions, businesses, and NGOs around the world.

THE IMPACT

With our great strengths in areas such as ecology and evolution of infectious disease, molecular evolution, theoretical ecology and phylogenetics—and thanks to our extensive facilities, including the University's research museums and field stations—we are already one of the top ten departments in the United States for research and graduate education in the biodiversity sciences. Our goal is to further enhance our programs to make the University of Michigan the premier institution in this discipline for undergraduate education, graduate training, and faculty research.

Frontiers Master's Program

\$75,000 annually per student

The Frontiers Master's Program in Ecology and Evolutionary Biology prepares students to be competitive for top-ranked Ph.D. programs in ecology and evolution. This program is designed to enhance the diversity of the discipline by providing students who are part of underrepresented groups in the field with opportunities to learn about the full range of subjects in ecology and evolution. Students start the program with a summer at the U-M Biological Station, where they take a field course, conduct research, and participate in professional development workshops. Over the next two years, students then take a course in laboratory methods and other areas, complete a focused research project and thesis with a research mentor, develop teaching skills and experience, and receive mentoring and advice from the faculty, program director, and staff.

M-STEM Academies

\$1.2M annually for 5 years

The M-STEM (Michigan-Science, Technology, Engineering, Mathematics) Academies provide an integrated, holistic co-curricular support system for students who have been admitted to U-M with high ability and potential in science, mathematics, or engineering. Students are invited to apply who come from a wide diversity of backgrounds that suggest they are uniquely suited to collaborate across differences. M-STEM is a cross-university collaboration between LSA and the College of Engineering. Currently LSA students in M-STEM focus their study in the biological sciences, but the college plans to expand the program to cover all the natural sciences in LSA, including physics, biophysics, chemistry, astronomy, earth and environmental sciences, and mathematics. M-STEM Scholars participate in a pre-freshman year residential summer program with the dual goals of preparing them for the new expectations and requirements of rigorous college science and mathematics courses and establishing the social and academic support networks essential for their success. They also engage in research beginning in their first or second semester. Many participate in a paid research or internship experience during the summer between their first and second years. Scholarship support for the academic year, summer bridge program, and summer research experience is essential to allow M-STEM Scholars to fully invest their time and effort in academic pursuits. M-STEM Academies was awarded a grant for seed funding from the National Science Foundation, which covered costs for course development and initial staffing and student support. Private funding is critical to enable the M-STEM Academies to continue and expand to include students in all of the natural sciences. Costs for the program include:

- Scholarship support for students in first-year summer program including tuition, room and board, books and expenses: **\$600,000 annually at \$7,500 per student for full 80 student cohort**
- Research stipend for students in second summer program: **\$400,000 annually at \$5,000 per student for full 80 student cohort**
- Programming costs for academic year: **\$10,000 annually for field trips, workshops, and speakers**
- Programming and staffing costs for the first-year residential summer program: **\$75,000 annually for peer advisors, residential staff, and summer programming**
- Academic coaches for summer and academic year for 80 students per cohort: **\$40,000 annually**
- Program director: **\$100,000 annually**

Undergraduate Summer Research Fellowships

\$50,000 annually / \$5,000 per student

Fellowships provide an opportunity for undergraduate students to conduct research with faculty during the summer, whether in Ann Arbor laboratories or at field sites around the world. These immersive experiences often help to shape an undergraduate's future career aspirations and help them be competitive for graduate school and research positions. While many students work in EEB faculty labs during the academic year, funding is often lacking to support students conducting independent research during the summer. Such funding is especially important for the students who need to earn money for college during the summer and could not gain this important experience without a stipend.

Graduate Student Fellowships

\$1M endowed / \$50,000 annually

The study of ecology and evolution at U-M has long attracted outstanding graduate students who go on to fill key faculty positions nationally and internationally, as well as make important contributions as scientists in government agencies and non-profit environmental organizations. We need to provide fellowships, which include stipend, health benefits and tuition, to continue to attract the very best graduate students to study at Michigan.

BioKIDS Project

\$25,000 annually

The BioKIDS Project is engaged in educational research to improve science learning in high-poverty, urban classrooms, with particular focus on the Detroit Public Schools. The work centers on the fourth through eighth grades, a period when the performance of American students in science falls behind that of students in other countries. The focus is on curricular units and associated technologies that promote students' deep understandings of current science topics. Students participate in eight-week life science programs collecting data on animal distribution in their schoolyards using iPhones or iPads and software originally used by African Animal Trackers. An electronic discussion board and the creation of their own web-based biodiversity maps allow students to compare and share their findings with other students and researchers around the world. They learn about science and scientific reasoning by asking and answering questions about species distributions, interdependence, human influence on diversity, and many other related concepts. Students learn to create species accounts with the maps, narratives and predictions they have generated, which are available for future reference and use by other students. Gifts would provide the resources needed to send U-M graduate students to Detroit classrooms to help students work on their projects, to bring Detroit students to Ann Arbor for a symposium where they present the results of their work, and for Detroit students to take a field trip with U-M faculty and students to a local nature area to actually see the organisms they've been investigating.

Early Career Scientists Symposium in Ecology and Evolutionary Biology

\$20,000 annually

This prestigious international symposium, which focuses on a different topic each year, draws to campus exceptional senior keynote speakers and junior scientists from many U-M departments and regional institutions, as well as from institutions across the nation and around the globe. A unique and popular feature of this symposium is the opportunity it provides for junior scientists to interact with each other and with top scientists, and to present their work to the nearly 200 professors, postdoctoral fellows and graduate students who attend. The symposium also helps the department recruit new faculty from among the rising stars in the field, allows our graduate students to network with the outstanding speakers, and showcases the intellectual vitality of our students and faculty.

Undergraduate Field Research Immersion Experiences

\$5,000 to 10,000 per course

A crucial part of the educational mission of EEB involves getting students to field sites where they can see and work with organisms and ecosystems in their natural context. While many of our students can take courses at the U-M Biological Station up north during the summer, this extended residential experience is not an option for all students. We envision developing a series of shorter field courses, typically one to two weeks, which would provide a similar immersion experience of living, studying, and conducting research together. These could use the E.S. George Reserve, less than one hour from campus, or involve traveling to a variety of field sites. Funding is required for student support, travel expenses, instructional supplies, and equipment.

Strategic fund

\$10,000 to \$50,000 annually

Each year, expendable funds are a vital means of addressing urgent needs for the department, providing key resources, and increasing our ability to take advantage of opportunities as they arise. Gifts to the strategic fund are therefore critical to our ongoing development. Our priorities include:

- Resources are needed to develop a new course or enhance an existing course and could include purchase of new equipment, faculty release time to develop new curricula and laboratory or field exercises, or training for faculty in methods based on recent pedagogical research.
- New technology for the life sciences is being developed at an extraordinary rate and our faculty need to have access to these resources to keep their teaching and research at the leading edge.
- Costs associated with recruiting, hosting special guest lecturers, piloting new programs, enabling students and faculty to take advantage of time-sensitive research and educational opportunities.



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Graduate Research Support

\$5,000 annually per student

Support is also needed to enable our graduate students to carry out research at the cutting-edge of the biodiversity disciplines. This support ranges from purchasing laboratory or field equipment and supplies to traveling to other laboratories or remote field sites.

WAYS TO FUND YOUR GIFT

Your gifts of cash, pledges, or appreciated securities change lives. Wills, estate, and planned gifts allow you to create a lasting legacy that will enable the best and brightest minds to experience a liberal arts education, solve problems in a changing world, and yield ideas and innovations that will make a difference in Michigan and around the globe.

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