LSA COLLEGE OF LITERATURE, SCIENCE, AND THE ARTS
UNIVERSITY OF MICHIGAN

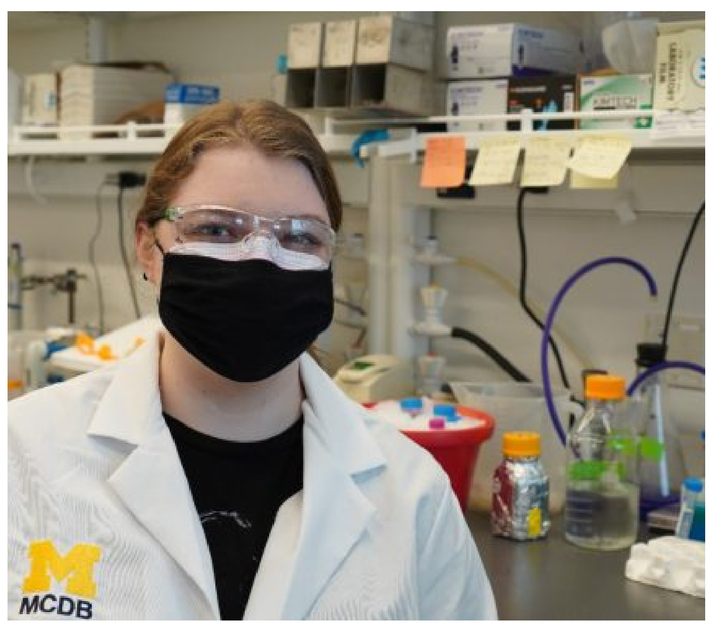
MOLECULAR, CELLULAR, AND DEVELOPMENTAL BIOLOGY

Educating the next generation of doctors, scientists, and researchers

The Department of Molecular, Cellular, and Developmental Biology (MCDB) strives to develop new knowledge through basic research about the function of living organisms with focus on the molecular and cellular levels of all branches of life—bacteria, plants, and animals. A unique department among its peers, MCDB utilizes model organisms, small, easily manipulated bacteria, insects, and other organisms to approach study in a way that combines genetic, biochemical, developmental, molecular, and cell biological methods. Our faculty research strengths are animal physiology and neurobiology, biochemistry, cell biology, developmental biology, microbiology and plant molecular biology. Our graduate training programs are recognized for their excellence. In the recent U.S. National Research Council (NRC) analysis, our program ranked 3rd among all MCDB departments, and 17th among the more general category of cell and developmental biology.

Because of our research accomplishments and commitment to education, MCDB is responsible for educating most of the University of Michigan undergraduates who will become the next generation of physicians, biomedical and plant researchers, and scientists. Undergraduates have the option of concentrating their study in a variety of areas, including cellular and molecular biology, neuroscience, microbiology, and plant biology. By providing our students with a curriculum that exposes them to the newest ideas of world-class scientists, and lets them participate in the research experience to make their own discoveries, we prepare them for positions of leadership in their professions. Our undergraduates are equipped for positions in medical, industrial, and government laboratories, or in teaching or health professions. Others pursue graduate study in microbiology, biochemistry, agricultural science, genetics, brain research, food science, and medicine. As advances in the life sciences set the stage for extraordinary new discoveries about the molecular basis of life and its application to medicine, agriculture, and wildlife conservation, the endeavors of our faculty and students have never been more significant.

To ensure that important basic research thrives at the University of Michigan, MCDB seeks support to create a Laboratory for Biological Imaging. In addition, gifts are needed to provide undergraduates with opportunities for hands-on research, and to encourage diversity in the biological sciences by helping qualified students receive the support they need to become successful scholars and researchers. These initiatives and more will ensure that MCDB remains a leader in the discipline contributing to the field at large.



BIOLOGY: FROM MOLECULES TO ORGANISMS

In partnership with the Museum of Natural History, we plan to develop a 21st century public outreach program for MCDB. This initiative would interface with and support NSF-funded research of MCDB faculty and would enhance recruitment of undergraduate students from underserved areas of Michigan into biology. Contributions of $10,000 to $50,000 annually would fund this important outreach program.

UNDERGRADUATE SUMMER RESEARCH FELLOWSHIPS

One distinction of an LSA undergraduate education is the opportunity to gain scientific research experience working with teams of faculty and graduate students. The success of the Undergraduate Research Opportunities Program (UROP) has been amply validated, but it is limited to first- and second-year students. MCDB faculty also provide research experiences for juniors and seniors. Gifts of $50,000 annually to provide summer research fellowships for undergraduate students ($5,000 per student) working on research projects in MCDB laboratories will enable many more to benefit from this active learning experience.

“I went into this experience so happy to finally be able to work at a bench and do research in-person, but I found out that a lot of the fun also comes from sitting at a table with lab mates bouncing ideas off of each other and getting to be creative with planning projects and future ideas. I can’t get enough of the creativity involved in being a researcher.”

—Lily Kalcec, LSA Class of ’24, MCDB Horizons Summer Intern

RESEARCH INNOVATION FUND FOR 21ST CENTURY BIOLOGICAL SCIENCE

Faculty who have innovative ideas and new hypotheses need a reliable source of internal research funding to generate preliminary data that can be used to develop grant proposals. The Research Innovation Fund will support pilot funding to launch new research projects, including stipend support for graduate students and postdoctoral fellows. A $1M to $5M endowed investment is needed to support our faculty in this endeavor.

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LABORATORY FOR BIOLOGICAL IMAGING

The study of life at the molecular and cellular levels has been revolutionized by recent developments in imaging technologies that allow for unprecedented resolution at microscopic scale in living organisms, which is essential to understand how genomes create cells, how cells constitute organisms and how errant cells cause disease. MCDB plans to build a core facility with modern instrumentation to support research to visualize and understand four-dimensional molecular and cellular functions in living organisms. Funding for this initiative will enhance significantly our technical capability for cutting-edge research in neuroscience, cell and developmental biology, and genetics. The Laboratory for Biological Imaging will provide currently unavailable capabilities for imaging live organisms and will enhance the research infrastructure of the University of Michigan. A gift of $4.5M would enable a donor to name the laboratory.

To Launch:

- New imaging equipment and upgrades to existing equipment: $2.5M expendable

Additional Requirements for Laboratory:

- Senior technical staff: $50,000 annually / $1M endowed
- Trainee support for graduate and undergraduate students: $50,000 annually / $1M endowed

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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