The Ohio State University Department of Molecular Genetics is comprised of a diverse group of researchers and faculty that utilize genetics, genomics, molecular biology, and model organisms to address fundamental issues in 21st century biology.

BY THE NUMBERS

FACULTY
• 30 full time; many have joint appointments in other areas

UNDERGRADUATE MAJORS
• 250 (80 in Honors)

GRADUATE STUDENTS
• 40 PhD students

OPPORTUNITIES FOR UNDERGRADUATES
Undergraduate research is highly encouraged; students are matched with faculty mentors.

DEGREE PROGRAMS
Undergraduate: BS
Graduate: MS, PhD

AREAS OF RESEARCH SPECIALIZATION
• Fungal organisms
• Invertebrates
• Plants
• Vertebrates
• Molecular Biology
• Cell Biology
• Developmental Biology
• RNA Biology
• Genomics and Systems Biology
• Cancer Genetics

SUMMER RESEARCH EXPERIENCE FOR UNDERGRADUATES (REU)

Molecular geneticist Susan Cole and biochemist Jane Jackman co-direct the National Science Foundation’s 10-week summer program, Research Experience for Undergraduates (REU), partnering with biochemistry.

REU is an opportunity for science majors from smaller institutions to do intellectually demanding research in leading-edge labs, giving them better preparation for graduate or professional school.

The fruit fly (Drosophila melanogaster) ovary viewed with fluorescent microscopy to highlight nuclei (red) and cytoplasm (green).
DNA FINGERPRINTING WORKSHOPS

In 2000, Professor Amanda Simcox and her undergraduate students field-tested an idea to get high school biology students interested and excited about science. The DNA Fingerprinting Workshops consist of two components: first, a session that gives the students hands-on-experience with state-of-the-art equipment and molecular-biology techniques. The second part involves setting up a crime scene scenario that students can solve using the DNA fingerprinting techniques they have learned. Undergraduate students take a class with Simcox and learn how to go into the schools to mentor and teach the high school students. This service learning experience is still going strong after 17 years and now under the direction of Professor Amanda Bird.

BASIC RESEARCH RELATED TO REAL-WORLD PROBLEMS

The basic research that goes on in our laboratories has broad and important implications for citizens of Ohio and the world. Some examples include:

Anita Hopper's work on tRNAs in yeast reveal previously unappreciated complexities about this fundamental molecule essential for gene expression.

Stephen Osmani's research on how the cell cycle is regulated during mitosis should provide insights about how cancer develops and can be treated.

Wayne Miles studies how RNA-binding proteins modulate the transcriptome and proteome in cancerous cells.

Dave Somers's research on molecular mechanisms of the circadian clock in plants has implications for crop production as well as human health.

Christin Burd's lab is working on mouse models of melanoma.

The Bisaro, Hollick, and Slotkin labs all study various aspects of epigenetic gene regulation with profound implications for human disease and crop production.

GRADUATE STUDENT SYMPOSIUM

Annual Falkenthal Spring Symposium: A departmental event that showcases graduate student research presentations. In addition, an alumnus/ alumna is invited each year to be the keynote speaker at this event, connecting our past with the future.

“We have a significant opportunity here to increase the scientific literacy and competency of our students and to reach out and attract and nurture the next generations of scientists.”

(Anita Hopper, Professor, Department of Molecular Genetics)