

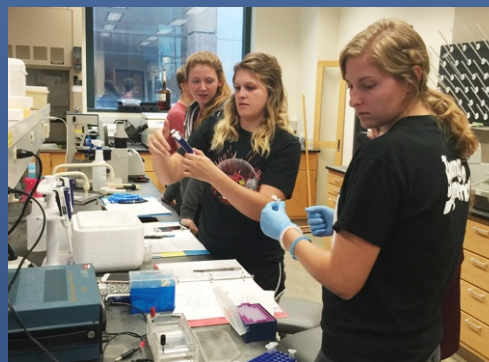
SCHOOL OF
**BIOLOGICAL
SCIENCES**
Illinois State University

Undergraduate Major in Molecular & Cellular Biology (MCB)

More information about our
programs can be found at:
biology.illinoisstate.edu/undergrad

The baccalaureate degree in **Molecular & Cellular Biology (MCB)** trains students in the fundamental organization and dynamics of living systems, from the atomic level to cells, tissues, and organisms. Students further learn to apply that knowledge to address problems of interest throughout biology.

Our successful graduates have gone on to join professional programs such as M.D., Veterinary, and Ph.D., find rewarding jobs in government or industry, and become researchers in a variety of academic settings. Graduates have gone on to Stanford University, U.C. Berkeley, U. Oregon, U. Wisconsin-Madison, U. of Illinois, Purdue U., Indiana U., Baylor College of Med., and many more!

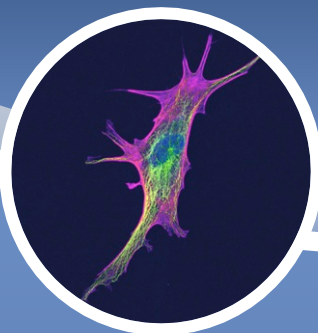
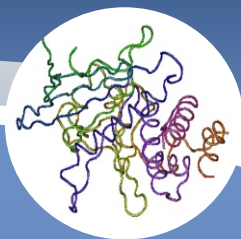
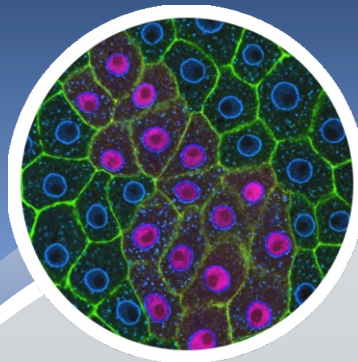


What can you do with the MCB degree?

Successful MCB majors can pursue careers or further training in diverse research and biomedical fields, including:

- Medical School
- Physician Assistant School
- Veterinary School
- Genetic counseling programs
- Pharmacy programs
- Ph.D. programs
- Biotechnology industry
- Pharmaceutical industry
- Life Sciences sales/support
- Governmental agencies

For more information contact
Kevin Edwards, Assoc. Prof.
kaedward@ilstu.edu



MCB Faculty & research interests:

Dr. Kevin Edwards; *cell & developmental biol*

Dr. Paul Garris; *neuroscience*

Dr. Craig Gatto; *biophysics, physiology*

Dr. Tom Hammond; *genetics, molecular biol*

Dr. Viktor Kirik; *cell biology*

Dr. Cynthia Moore; *science education*

Dr. Alysia Mortimer; *genetics, cell biology*

Dr. Nathan Mortimer; *genetics, immunology*

Dr. Wade Nichols; *microbiology*

Dr. Ryan Paitz; *endocrinology*

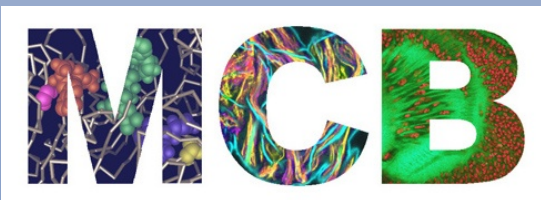
Dr. John Sedbrook; *genetics; bioenergy*

Dr. Wolfgang Stein; *neuroscience*

Dr. Andres Vidal-Gadea; *behavioral genetics*

Dr. Laura Vogel; *immunology*

See School of Biological Sciences website
for additional faculty interests:
biology.illinoisstate.edu



Overview of the program: MCB includes chemistry training from general chemistry through the organic chemistry series and then to CHE 342 *General Biochemistry I*. Together with Calculus and Physics requirements, this provides a solid background in the math and basic sciences underpinning biology.

Biological Sciences coursework includes BSC 196 *Biological Diversity*, BSC 197 *Molecular & Cellular Basis of Life*, BSC 203 *Cell Biology* and BSC 260 *Microbiology*, creating the framework for understanding the breadth of biology from the molecular to the ecosystem level.

BSC 219 *Genetics* and BSC 350 *Molecular Biology* train in problem solving and critical thinking while preparing the student for the rapidly advancing world of genome-based medicine and research.

Two 300-level (Jr/Sr) electives are chosen from a list of 12 courses (next page); these allow the student to customize the MCB degree to suit individual goals and interests.

Students can further opt to conduct original research under the mentorship of one of the faculty in Biological Sciences, providing invaluable experience in laboratory sciences.

MCB Curriculum

Math and Science Requirements:

MAT 145 *Calculus I*

MAT 146 *Calculus II OR Statistics*

PHY 108-109* (110-111) *Intro. Physics*

CHE 140-141* *Freshman Chemistry Series*

CHE 230-1*, 232-3* *Organic Chemistry I, II* and labs

CHE 342 *Biochemistry I*

BSC 196-197* *Freshman Biology Series*

BSC 203 *Cell Biology*

BSC 204 *Biological Investigations* (1 cr hr)

BSC 219 *Genetics*

BSC 260* *Microbiology*

BSC 350 *Molecular Biology*

and two MCB electives (below)

Two or more of these courses are required:

BSC 329 *Human Genetics*

BSC 343 *Intro. Neurobiology*

BSC 345 *Intro. Endocrinology*

BSC 346 *Developmental Biol.*

BSC 351 *Cell Signaling & Regulation*

BSC 353* *Biotech Lab I (DNA & RNA)*

BSC 354* *Biotech Lab II (Cells & proteins)*

BSC 355 *Genomics & Bioinformatics*

BSC 361* *Microbial Pathogens*

BSC 365 *Bioenergy*

BSC 367* *Immunology*

BSC 370 *Topics in Molec. & Cellular Biol.*

* has a lab component

Please consult ISU Course Catalog for complete requirements