Faculty and students in the School of Molecular and Cellular Biology (MCB) investigate fundamental questions about how organisms work and how they evolve. Research spans from the molecular to the systems levels, and the discoveries that are made enable scientists to address important questions relevant to life, health, and disease. Our world-renowned researchers and educators share a culture rich in intellectual collaboration, and their discoveries contribute to local, state, national, and international objectives.

The MCB undergraduate curriculum is designed to impart both the core principles of modern biology and the conceptual and analytical skills necessary for a successful scientific career. Focused educational and practical training in molecular and cellular biology prepares students for professional and graduate school, careers in teaching, work in the biotechnological and pharmaceutical industries, and many other exciting career paths.

The MCB Ph.D. degree program is among the finest in the nation, and it attracts the very highest-achieving applicants. Our large community of Ph.D. students brings energy, productivity, and diversity to our research enterprise. Current students are distributed among dozens of laboratories that tackle cutting-edge problems across a broad spectrum of biological sciences. Multi-investigator and cross-disciplinary teams address the complex biological issues that confront today’s world, and MCB scientists enhance their collaborative efforts through close interactions with national laboratories and membership in specialized campus institutes and centers of excellence.
Highlights

- The School of Molecular and Cellular Biology is the largest research and instructional unit in the College of Liberal Arts & Sciences (LAS), with the greatest enrollment.

- The School of MCB faculty comprises 64 research, assistant, associate, and full professors. Of these, 12 have appointments in the College of Medicine.

- Faculty members advance education and fundamental research in the molecular, cellular, and integrative aspects of how organisms work.

- Our faculty legacy includes recipients of the Crafoord Prize, members of the National Academy of Sciences and the American Academy of Arts and Sciences, a MacArthur Fellow, Howard Hughes Medical Investigators, and other distinguished honorees.

- The MCB undergraduate program consistently attracts exceptionally qualified undergraduates: Our students have the highest entrance scores in the College.

- To effectively accommodate 15,000 yearly class enrollments and over 1800 majors, the MCB undergraduate instructional program has developed innovative and highly effective methods of instructional delivery.
About MCB

Departments, Centers, & Programs
• Department of Biochemistry
• Department of Cell & Developmental Biology
• Department of Microbiology
• Department of Molecular and Integrative Physiology
• Center for Biophysics and Computational Biology
• Medical Scholars Program
• Neuroscience Program

Faculty (2011-2012)
• Professors 31
• Associate Professors 18
• Assistant Professors 15

Students (2011-2012)
• Undergraduate Students (total): 1816
  • Undergraduate Resident Status
    ° 91% Illinois
    ° 4% Out-of-state
    ° 5% International
• Graduate Students
  ° 365 M.S., Ph.D., or combined Ph.D./M.D.
    • 66 in Department of Biochemistry
    • 40 in Department of Cell & Developmental Biology
    • 60 in Department of Microbiology
    • 31 in Department of Molecular and Integrative Physiology
    • 70 in the Center for Biophysics and Computational Biology
    • 60 in the Neuroscience Program
    • 38 who have not yet selected a department
• Total Enrollment in MCB Classes: 15,196

Degrees Awarded (2011-2012)
• Bachelors 383
• Masters 12
• Doctorate 40

Funded Research—Total Research Support (2012)
• Training Grants $1,467,635
• NIH $16,181,448
• NSF $984,812
• DARPA $1,195,886
• DOE $1,065,850
• NASA $190,641
• Private $2,594,310

TOTAL $23,680,582
The research portfolio for the School of Molecular and Cellular Biology spans the full range of modern biological science—from the atomic structures of proteins and the molecular mechanisms of cell signaling to the processes of tissue development and the interactions of complex networks. Much of this work has direct medical relevance, including ongoing investigations into neurological disorders such as Alzheimer’s disease, epilepsy, sleep disorders, and mental retardation; the study of infectious diseases, including salmonella, anthrax, and herpes infections; research focused upon tumorigenesis, including the involvement of estrogen in breast cancer; and studies of cardiovascular function.

In addition to the overall advancement of biological science, the MCB research mission strongly supports our instructional efforts and contributes in important ways to the development of useful products for industry and for human health.
University and MCB Research Facilities

Roy J. Carver Biotechnology Center
Provides advanced facilities for molecular biology research, including DNA and protein sequencing and oligonucleotide and peptide synthesis.

William Keck Center for Comparative and Functional Genomics
Conducts research on the comparative genetic organization, evolution, and function of plant, animal, and microbial genomes, and provides sequencing and oligonucleotide synthesis, DNA microarray facilities, and bioinformatics specialists.

Protein Sciences Facility
Aids researchers in protein sequence analysis, peptide synthesis, and 2D gel electrophoresis.

Immunological Resources Center
Includes the creation, purification, and immunochemical labeling of antibodies.

Flow Cytometry Facility
Maintains several satellite flow cytometry machines throughout campus.

Metabolomics Center
Facilitates identification and quantification of small molecules (metabolites) from various resources including plants, animals, and human beings.

Imaging Facility
Features state-of-the-art instrumentation for optical imaging including live cells and sub-diffraction limit resolution.
Candidates interested in one or more of the departmental programs in MCB (Biochemistry, Cell and Developmental Biology, Microbiology, or Molecular and Integrative Physiology) should apply directly to the School of MCB. Admission to the MCB Ph.D. program requires a bachelor’s degree in biological or physical sciences. Students are admitted only in the fall semester.

MCB is also affiliated with three robust interdisciplinary graduate-degree programs: the Center for Biophysics and Computational Biology, the Neuroscience Program, and the Medical Scholars Program (MSP). The MSP leads to an M.D./Ph.D. through the most degree-diverse program in the nation. All three programs have significant MCB faculty participation. Prospective students should apply directly to these programs, some of which offer training grant funding.

Additional information regarding application to an MCB graduate degree program can be obtained at our web site (mcb.illinois.edu)—select “Graduate Studies” then “Prospective Grad Students.” Or contact us at the following address:

MCB Graduate Studies
B103 Chemical and Life Sciences Laboratory (CLSL),
MC-110
601 South Goodwin Avenue
Urbana, IL 61801

phone: (217) 333-1737
fax: (217) 244-6697
email: gradinfo@mcb.illinois.edu
The MCB undergraduate curriculum is focused on the fundamental structures, functions, and mechanisms of living organisms.

Students who major in MCB or our Specialized Curriculum in Biochemistry receive a solid foundation in biochemistry, cell and developmental biology, microbiology, molecular genetics, physiology, and structural biology. This program prepares students for a wide range of biomedical careers and for medical, dental and graduate schools.

If you are considering MCB as a major, the MCB Advising Program offers tours of laboratories and classrooms, and opportunities to meet one-on-one with MCB faculty and instructors. Please contact the MCB Advising Program at (217) 333-6774 or advising@mcb.illinois.edu to schedule a tour and meetings.

Undergraduate Admissions

Incoming freshmen should apply for admission to the College of LAS with a major in Biology via the undergraduate admissions web site at http://admissions.illinois.edu/apply/index.html. Students can declare Molecular and Cellular Biology as a major just before sophomore year. For specific information about the MCB degree requirements visit http://provost.illinois.edu/ProgramsOfStudy/2012/fall/programs/undergrad/las/molecular_cell_bio.html or contact:

**MCB Undergraduate Instructional Program**  
School of Molecular and Cellular Biology  
393 Morrill Hall, MC-119  
505 South Goodwin Avenue  
Urbana, IL 61801-3709  
Phone: (217) 244-6239  
Email: undergrad@mcb.illinois.edu
Enrichment Opportunities

The MCB Honors Concentration
Designed for exceptional MCB majors who wish to explore a fuller complement of experiences in biology during their undergraduate training.

Undergraduate Research
Offers the excitement of cutting-edge science and the opportunity to hone skills in analytical thinking and scientific communication. Many students who conduct undergraduate research also write senior theses that allow them to graduate with distinction.

The MCB Merit Program
Designed for academically high-achieving students who are either from small schools or from groups that are traditionally underrepresented in the sciences.

The MCB Access and Achievement Program
Academic service program for students in the College of LAS Educational Opportunities Program or the President’s Award Program. Designed to provide a supportive learning environment, promote self-advocacy, and promote students’ academic success. This program connects students with University resources that will complement their academic talents and will help shape their academic paths and ambitions. Our goal is to prepare students for academic success, graduation, and a productive life.

Study Abroad
Pre-Med and Pre-Dentistry students interested in a truly unique experience may study biomedical sciences at the University of Newcastle in England. This program offers students the opportunity to experience coursework and service tightly aligned with their academic discipline and their vocational goals.

The MCB Learning Center
Assistance with course material and writing is available at the Learning Center. In addition, the Learning Center houses a thirty-station computer lab.

Discovery Courses
Established in 1994, the Discovery Program helps Illinois students enhance their education through greater interaction with faculty in small classes. These courses also enable faculty to share their research in a particular area with students. It is intended for first-time freshmen only.
Administration

The School of MCB comprises four departments and three additional graduate degree-granting units.

School of MCB

- Director
  Stephen G. Sligar

- Executive Associate Director of Operations and Strategic Planning
  Daniel G. Ozier

- Associate Director for Administration and Business Affairs
  Ann C. Zielinski

- Associate Director for Graduate Affairs
  James A. Imlay

- Associate Director of Undergraduate Education
  Michel Bellini

Departments

- Department of Biochemistry
  Susan A. Martinis, Head

- Department of Cell and Developmental Biology
  Andrew S. Belmont, Head

- Department of Microbiology
  John E. Cronan, Head

- Department of Molecular and Integrative Physiology
  Milan K. Bagchi, Head

Centers and Programs

- Center for Biophysics and Computational Biology
  Robert M. Clegg, Director

- Medical Scholars Program
  James M. Slauch, Director

- Neuroscience Program
  Neal J. Cohen, Director
Contact Information

School of Molecular and Cellular Biology

- Administrative Offices
  phone: (217) 333-3166
  fax: (217) 265-0927

- Undergraduate Instruction
  phone: (217) 244-6239
  fax: (217) 244-8202
  email: undergrad@mcb.illinois.edu

- Graduate Studies
  phone: (217) 333-1737
  fax: (217) 244-6697
  email: gradinfo@mcb.illinois.edu

Department of Biochemistry

  phone: (217) 333-2013
  fax: (217) 244-5858
  web: http://mcb.illinois.edu/departments/biochemistry/

Department of Cell and Developmental Biology

  phone: (217) 244-8116
  fax: (217) 244-1648
  web: http://mcb.illinois.edu/departments/cdb/

Department of Microbiology

  phone: (217) 333-1736
  fax: (217) 244-6697
  web: http://mcb.illinois.edu/departments/microbiology/

Department of Molecular and Integrative Physiology

  phone: (217) 333-1734
  fax: (217) 333-1133
  web: http://mcb.illinois.edu/departments/mip/

Photos: Nick Burchell, Jason Lindsey, L. Brian Stauffer
Brochure: William Gillespie, MCB Communications Office