

BIOLOGICAL SCIENCES

Genetics and Cellular Biology



College of Arts and Sciences • Department of Biological Sciences

Degrees Available at SIUE

- B.A., B.S., Biological Sciences

Why Genetics and Cellular Biology?

Genetic engineering appeals to those interested in the direct manipulation of genes to alter specific characteristics. Today's genetic engineers are in demand to help map all of the genes in the human body or to prevent devastating diseases in crops or illnesses in animals. Their research identifies potential biological mechanisms through which new medicines can be manufactured. The field is growing rapidly, notably in food and agriculture industries in addition to core biological sciences professions.

Genetics and Cellular Biology at SIUE

SIUE's Department of Biological Sciences is equipped with modern genetic and cell biology analytical tools. Dedicated research and teaching space is focused on genetic sequencing and confocal and electron microscopy. Preparative ultracentrifuges, fraction collectors, automated DNA sequencers are examples of the advanced equipment available to facilitate research. The Department also operates a greenhouse and maintains a substantial collection of insects, fish, amphibians, reptiles, birds, mammals and plants. Add to that the ability to observe and conduct research throughout the SIUE campus, which encompasses woodlands, grasslands, and water environments. Faculty have a variety of interests in plant and animal cell biology, developmental biology, viruses and other pathogens, neurobiology and endocrinology, and are ideally suited to mentor students throughout their undergraduate program.

Career Outlook

Today's specialists in genetics and cellular biology are in demand in numerous career fields, including food and agriculture industries. It is one of the fastest-growing fields in biology, with career opportunities both in academic settings and research facilities.

Admission Requirements

Students admitted to programs offered in the Department of Biological Sciences shall have met the University admission requirements and the following additional Department requirements:

- completion of all Academic Development courses required by the University
- completion of any courses required to address Department of Biological Sciences high school deficiencies
- maintenance of a cumulative grade point average of at least 2.0 in all courses
- application to a major and acceptance by the department

Exit Requirements

Satisfactory completion of all university, program and departmental requirements as outlined in the undergraduate catalog.

Other Biology Programs at SIUE

Ecology, Evolution & Environment, Integrative Biology, Medical Sciences, Medical Technology, Secondary Education Certification, Combined Bachelor of Science and Doctor of Dental Medicine Program

Faculty

Professors

Ralph W. Axtell, Ph.D.

1958, University of Texas – Austin

Richard B. Brugam, Ph.D.

1975, Yale University

Paul W. Ferguson (Provost), Ph.D.

1981, University of California – Davis

Dennis J. Kitz, Ph.D.

1980, University of Iowa

Kevin G. Krajniak, Ph.D.

1990, University of Florida

Steven A. McCommas, Ph.D.

1982, University of Houston

Aldemaro Romero (Dean), Ph.D.

1984, University of Miami

Kurt E. Schulz, Ph.D.

1991, University of Wisconsin - Madison

Paul E. Wanda, Ph.D.

1978, Pennsylvania State University

Associate Professors

Elaine M. AbuSharbain, Ph.D.

1992, Southern Illinois University Carbondale

Paul E. Brunkow, Ph.D.

1996, Arizona State University

David D. Duvernell, Ph.D.

1998, Virginia Tech

Elizabeth J. Esselman, Ph.D.

1996, The Ohio State University

LuciAnn P. Kohn, Ph.D.

1989, University of Wisconsin

Zhi-Qing Lin, Ph.D.

1996, McGill University

Peter R. Minchin, Ph.D.

1984, University of Tasmania

William A. Retzlaff, Ph.D.

1987, Clemson University

Christopher W. Theodorakis, Ph.D.

1994, University of Tennessee

Assistant Professors

Kelly J. Barry, Ph.D.

1992, University of Hawaii

Richard L. Essner, Jr., Ph.D.

2003, The Ohio State University

Thomas J. Fowler, Ph.D.

1993, The Ohio State University

David H. Jennings, Ph.D.

1997, University of Colorado

Faith L.W. Liebl, Ph.D.

2005, University of Illinois at Chicago

Darron R. Luesse, Ph.D.

2006, Indiana University, Bloomington

Vance J. McCracken, Ph.D.

2001, University of Illinois at Urbana-Champaign

Jason Williams, Ph.D.

2005, Miami University

SOUTHERN ILLINOIS UNIVERSITY
EDWARDSVILLE

COLLEGE OF ARTS & SCIENCES

Continued ...

Sample Four-Year Curriculum - BS

	FALL	SPRING
YEAR 1	CHEM 121A General Chemistry I (INSM) (4) CHEM 125A General Chemistry Lab I (1) ENG 101 English Composition I (3) MATH 150 Calculus I (INSM) (5) SPC 103 or 105 Speech Communication* (3) Total 16	BIOL 150 Biology I (4) CHEM 121B General Chemistry II (DNSM) (4) CHEM 125B General Chemistry Lab II (1) ENG 102 English Composition II (3) STAT 244 Statistics (4) Total 16
YEAR 2	BIOL 151 Biology II (4) CHEM 241A Organic Chemistry I (3) PHIL 106 Critical Thinking or MATH 106 Deductive Reasoning* (3) Introductory Social Sciences (ISS) (3) Introductory Fine Arts & Humanities (IFAH) (3) Total 16	BIOL 220 Genetics (4) CHEM 241B Organic Chemistry II (3) CHEM 245 Organic Chemistry Lab (2) Intro Fine Arts & Humanities (IFAH) or Social Science (ISS) (3) Elective (3) Total 15
YEAR 3	BIOL 319 Cell & Molecular Biology (3) BIOL Elective (300-400 Level) (3) CHEM 451A Biochemistry I (3) PHYS 131A or PHYS 151, 151L (5) Total 14	CHEM 451B Biochemistry II (3) PHYS 131B or PHYS 152, 152L (5) Intergroup Relations (IGR) (3) Elective (4) Total 15
YEAR 4	BIOL 418A Recombinant DNA (3) BIOL 492C Colloquium in Cell & Molecular Biology (1) BIOL 452 Molecular Genetics (3) Interdisciplinary Studies (IS) (3) Distribution Fine Arts & Humanities (DFAH) (3) Elective (3) Total 16	BIOL 418B – Recombinant DNA Lab (3) BIOL 492D – Colloquium in Cell & Molecular Biology (1)0 Distribution Social Sciences (DSS) (3) International Issues, International Culture (II, IC) (3) Elective (3) Elective (3) Total 16

* Students pursuing a bachelor of arts degree will complete one year of foreign language in lieu of SPC 103/104/105 and PHIL 106/MATH 106 Year 4

TRANSFER STUDENTS Maximize your transfer experience - complete the **bolded** courses/requirements pre-transfer **AND** satisfy the Illinois Articulation Initiative (IAI) General Ed Core or receive an AA, AS, or AAT (early childhood, special ed, or math) degree from an IAI community college. If 'Minor' requirements are shown, discuss careful course selection with the academic advising contact listed. Transfer Credit Equivalency Guides are located at siue.edu/transfer/

BA degree requires two semesters of same foreign language.

Academic Advising Information

College of Arts and Sciences Undergraduate Advising
 Southern Illinois University Edwardsville
 Campus Box 1609, Edwardsville, IL 62026-1609
 618.650.5525
 bhinter@siue.edu

Contact Info

Department of Biological Sciences
 College of Arts and Sciences
 Southern Illinois University Edwardsville
 Campus Box 1651, Edwardsville, IL 62026
 618.650.3927

