

BIOLOGY

ACADEMIC PROGRAM INFORMATION



"As a biology major at Centre, I've explored the depths of Kentucky's Hidden River Cave and the ecology of New Zealand, completed a human anatomy cadaver lab at Glasgow University, and assisted with research on antibiotic resistance. Applying to veterinary school would have been more difficult without the support and guidance of my professors."

GENTRY BROWN
Centre Class of 2018
Biology Major

BIOLOGY TAUGHT IN THE CONTEXT OF A LIBERAL ARTS EDUCATION AT A SMALL, SELECTIVE COLLEGE IS DISTINCTIVE IN MANY WAYS. THROUGH A DIVERSE SET OF CLASSES, LAB AND FIELD WORK, AND OFF-CAMPUS STUDY OPPORTUNITIES, THE BIOLOGY PROGRAM AT CENTRE IS DEDICATED TO FOSTERING IN STUDENTS THE ABILITY TO UNDERSTAND AND APPRECIATE THE BIOLOGICAL WORLD AT ALL LEVELS, FROM THE SUBCELLULAR TO THE ECOSYSTEM. IN ADDITION, THE FACULTY OF THE BIOLOGY PROGRAM PLACE A STRONG EMPHASIS ON COLLABORATIVE RESEARCH WITH UNDERGRADUATES, AND MANY OPPORTUNITIES FOR INTERNSHIP EXPERIENCES IN BIOLOGY ARE AVAILABLE.

THE BIOLOGY MAJOR

The discipline of biology encompasses many subject areas ranging from the study of molecular and cellular functions to the ecological interactions among organisms. As biology majors, students gain a solid background in the discipline while also gaining the ability to apply biological principles to our world. Students planning on majoring in biology prepare for the major with appropriate courses in mathematics, chemistry, and physics. In their first two years, students are introduced to the breadth of the discipline in three core courses that provide a foundation in biological diversity, ecology, evolution, genetics, and cell biology. Students build upon this foundation by choosing one course from each of the following areas: ecology and evolution, cell and molecular biology, and organismal biology. Three additional elective courses from

these areas or from a select number of courses in other major programs allow the student to craft a major reflecting his or her personal interests. As seniors, our majors enroll in the capstone seminar course in which students hone their oral and written communication skills as well as their ability to analyze and discuss primary literature in biology.

INTERNSHIPS AND COLLABORATIVE RESEARCH

The biology program offers both internship and collaborative research opportunities during the academic year as well as in the summer months. The biology faculty actively engages Centre students in a wide range of collaborative research projects; in addition, many biology majors are also successful at gaining acceptance into prestigious summer research programs in outstanding university labs throughout the country. Students pursuing independent research projects often present the results of their research at state and national meetings of professional scientific societies. The biology program also works closely with the Center for Career & Professional Development to sponsor a variety of internships which provide majors with valuable real-life experiences.

THE FACILITIES

Centre has one of the best-equipped facilities for learning biology of any college its size in the country. The recent expansion of Young Hall contains large, newly equipped labs. Centre was also fortunate to have received major funding from the Kresge Foundation that has facilitated a major upgrade and improvement of science instrumentation. Examples include the microscopy laboratories providing students with access to state-of-the-art instrumentation for tissue culture, fluorescence microscopy, digital image analysis and scanning-

electron microscopy; an aquatic research laboratory that enables intensive investigations of both marine and freshwater organisms; and the greenhouse and botany lab for plant-related studies. The nearby Central Kentucky Wildlife Refuge is used regularly by classes, and is an ideal place for independent study projects.

SPECIAL FEATURES

What makes the biology program at Centre unique? First, there is the biology faculty itself — as enthusiastically committed to their respective disciplines as they are to the philosophy of a liberal arts education. The small class sizes here mean individual attention from the professors.

They are also committed to hands-on training in biology through laboratory and field experiences offered both in conjunction with the curriculum and also through research collaboration. Students routinely collaborate with biology faculty on independent research projects.

OFF-CAMPUS OPPORTUNITIES

The science faculty members at Centre are especially committed to bringing science education into the field through off-campus opportunities. Biology students have engaged in primate research in Barbados, studied invasive species in New Zealand, and ecology and conservation in Borneo. CentreTerm makes these intensive field experiences possible with minimum interruption to the normal sequence of courses required.

WHAT CAN YOU DO WITH A BIOLOGY DEGREE?

The undergraduate experience in biology at Centre is designed to provide the best possible introduction to the breadth and depth of contemporary biology. Many graduates continue their studies in the top graduate programs in the country.

Biologists find employment as teachers and researchers as well as in the private and government sectors. The biology major is excellent preparation for medical, dental, veterinary school, and other health professions. The qualifications of our graduates are reflected by the high number who gain admission to these programs.

THE FACULTY AND STAFF

STEVE ASMUS (B.S., Cleveland State University; Ph.D., University of Michigan) teaches biology, histology, biochemistry and cell biology, cell biology, and neurobiology.

RACHEL BRIESE (B.S., Centre College; M.S.N., University of Tennessee) teaches human anatomy and physiology.

STEPHANIE DEW (B.A., Centre College; Ph.D., Vanderbilt University) teaches biochemistry and cell biology, immunology, macromolecules, metabolism, and biology.

STEPHANIE FABRITIUS (B.S., Pepperdine University; Ph.D., Purdue University) teaches biology and avian biology.

AMANDA FALK (B.S., Lake Superior State University; M.S., Ph.D., University of Kansas) teaches biology, paleontology, vertebrate morphology, and comparative vertebrate physiology.

LYNNE FOLEY (B.S., SUNY-Fredonia), supervises care of plants and animals for biology and behavioral neuroscience as well as lab prep for biochemistry and cell biology.

MARK L. GALATOWITSCH (B.S., Allegheny College; M.S., University of Georgia; Ph.D., University of Canterbury) teaches biology, entomology, freshwater biology, and ecology.

MATT KLOOSTER (B.S., Xavier University; Ph.D., University of Cincinnati) teaches biology, genetics, and conservation biology.

ANNE LUBBERS (B.S., University of Wisconsin-Green Bay; Ph.D., Duke University) teaches biology, plant biology, ecology, environmental studies, and plant-herbivore interactions.

MARIE NYDAM (B.S., University of California-Davis; Ph.D., Cornell University) teaches biology, genetics, invertebrate biology, and macroevolution.

KELLY O'QUIN (B.S., Louisiana State University; Ph.D., University of Maryland) teaches biology, genetics, biostatistics, and genomics.

MARGARET RICHEY (B.S., M.S., Ph.D., University of Kentucky) teaches biology, biochemistry and cell biology, microbiology, molecular genetics, biology of viruses, and nutrition.

ROSE-MARIE ROESSLER (B.S., University of Kentucky; M.S., Eastern Kentucky University) is the coordinator and instructor for laboratories in biology.

FOR FURTHER INFORMATION ABOUT THE BIOLOGY PROGRAM AT CENTRE, CONTACT:

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TO COMMUNICATE DIRECTLY WITH A CENTRE STUDENT MAJORING IN BIOLOGY, CONTACT:

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BIOLOGY WEB PAGE

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