

Biology

Guilford's Department of Biology offers a wide variety of curriculum options for students interested in the biological sciences. The Biology major is recommended for students interested in graduate school in any area of biology, or in medical, dental, or veterinary school, as well as other health professions. Most biology courses involve hands-on laboratory experience including fieldwork, off-campus field trips and laboratory research methods. Expanded study and research opportunities are available with faculty in the Department of Biology and through partnered universities and summer undergraduate research opportunities. Several biology courses are also included as options for the Environmental Studies major. Students in the department are encouraged to include study abroad as part of their academic plan. Summer or semester-long field courses offered through the School for Field Studies provide students with the opportunity to study abroad in some of the most biologically-rich field sites in the world while earning course credit toward the major. The University of Dundee in Scotland offers a classic lecture/laboratory experience with the ease of European travel and multiculturalism.

Why Guilford College?

Consistently rated nationally by *The Princeton Review* as well as being one of the 40 colleges in *Colleges that Change Lives* by Loren Pope, Guilford College inspires each student to achieve excellence through an engaging community, rooted in Quaker values, which nurtures creativity and social responsibility.

What can a Guilford education offer you?

- An urban setting near other colleges & universities with an area student population of over 27,000 students
- A consortium agreement with University of North Carolina at Greensboro, Greensboro College, Bennett College, North Carolina A&T State University, Elon University and High Point University provides students with access to courses free of charge
- A college mission statement & core values based on, and consistent with, Quaker testimonies. Guilford's core values are: Community, Diversity, Equality, Excellence, Integrity, Justice & Stewardship.
- A challenging academic program which emphasizes not only academic tracks and the learning process, but also the interconnection between curricular and co-curricular pursuits
- A diverse student population providing a stimulating peer environment
- Excellent study abroad programs in China, England, France, Germany, Ghana, Ireland, Italy, Japan, Mexico, Netherlands, Scotland, Spain, and Wales

The academic program in Biology

The Bachelor of Science and Bachelor of Arts degrees are offered in Biology.

Minors are offered in Field Biology, Integrated Science, Forensic Science, and coming soon a General Biology minor.

Required courses for the Bachelor of Science Biology major

A major in Biology (Bachelor of Science) consists of 14 four-credit courses (56 credit hours), including

- BIOL 111: Integrative Biology - Molecules and Cells
- BIOL 112: Integrative Biology - Organisms, Ecology and Evolution
- BIOL 291: Introduction to Scientific Inquiry
- Five additional biology courses are chosen by student in consultation with adviser
- CHEM 111: Chemical Principles I
- CHEM 112: Chemical Principles II
- PHYS 121: Classical and Modern Physics I, or PHYS 211: College Physics I
- PHYS 122: Classical and Modern Physics II, or PHYS 212: College Physics II
- Two courses in mathematics
 - Recommended for majors:
 - MATH 121: Calculus I and MATH 122: Calculus II OR MATH 112: Elementary Statistics and MATH 121: Calculus I OR MATH 112: Elementary Statistics and MATH 115: Elementary Functions

This major will prepare students for a variety of post-baccalaureate opportunities including: professional and graduate schools, research assistants, internships and positions in industry or government.

For additional information about Biology at Guilford College visit: www.guilford.edu/academics

Required courses for the Bachelor of Arts Biology major

The Biology major (Bachelor of Arts) consists of ten courses (40 credit hours):

- BIOL 111: Integrative Biology - Molecules and Cells
- BIOL 112: integrative Biology - Organisms, Ecology and Evolution
- BIOL 291: Introduction to Scientific Inquiry
- Five additional biology courses are chosen by student in consultation with adviser
- CHEM 111: Chemical Principles I
- CHEM 112: Chemical Principles II

The goal of this major is to provide students with a sufficient background in biology to prepare them for a career as an environmental lawyer, environmental/field research scientist, environmental educator, sales or marketing person for pharmaceuticals or scientific equipment, national or state park naturalist, medical illustrator, laboratory/research technician, medical support person or careers that do not require undergraduate work in physics and calculus. After completing the three required biology courses, students will be thoroughly grounded in the fundamental areas of biology & will be able to select a track within the major appropriate to their career goals. Students must then take five additional biology courses & two chemistry courses.

Special Features

- Our well-equipped laboratories occupy the first floor and lower level of the Frank Family Science Center, which was completed in the summer of 2000.
- All of the laboratories make extensive use of the latest research equipment, computer technology and specimen collections for the study of cell biology, microbiology, genetics, anatomy and physiology, biochemistry, forensic science and organismal biology.
- Two specially-designed research labs for mentored laboratory research.
- For labs in ecology, ornithology and other field courses, a 240-acre forested tract known as the College Woods on the Guilford College campus serves as a “living laboratory.”
- Guilford is an affiliated institution with the School for Field Studies, which offers five study abroad programs in the areas of ecology and field biology.

Internships

Many Biology majors choose to accent their coursework with an internship in their area of interest. Recent students have completed internships at the following locations: Carnivore Preservation Trust, North Carolina Zoological Park, Moses Cone Hospital, various small animal veterinary hospitals, neo-natal unit—Women’s Hospital, Pathology Department and Pediatric Oncology—Wake Forest University School of Medicine.

Independent Study

The independent study option provides students with an opportunity to pursue in-depth research on a topic of their choice. Students work closely with a faculty member to plan and conduct their study. Two laboratories in the department are reserved exclusively for students doing independent studies and senior thesis research.

Recent Graduates

Guilford biology graduates have chosen many different career paths. Examples of choices of a few recent graduates include: graduate program in Forensic Science, George Washington University; medical school, Wake Forest University; pharmacy school, University of North Carolina—Chapel Hill; investigator, Charlotte/Mecklenburg Medical Examiner’s Office; dental school, Howard University; outreach specialist, Piedmont Land Conservatory; dental school, University of North Carolina—Chapel Hill; medical school, University of North Carolina—Chapel Hill; research assistant in tumor biology, Wake Forest University Medical Center; MD-PhD Neurobiology, University of West Virginia; PhD Pharmacology, University of Pennsylvania.

Research

Students are encouraged to participate in mentored laboratory or field research projects either within the department, at partnered universities and institutions, during summer research programs or as part of their School for Field Study experience.

Faculty

Melanie Lee-Brown, Assistant Professor, Chair; mleebro@guilford.edu
Frank P. Keegan, Raymond Binford Professor of Biology
Lynn J. Moseley, Charles A. Dana Professor of Biology
Charles G. Smith, Professor
Bryan W. Brendley, Assistant Professor
Michele Malotky, Assistant Professor
Thomas R. Tucker, Assistant Professor

