DOCTOR OF PHILOSOPHY IN THE FIELD OF BIOLOGICAL SCIENCES (STEM)

Our departmental graduate program is highly interactive in which students move easily among disciplines within the department and interact with other programs and institutions. Graduate research is generally in one of two areas 1) cell and molecular biology, and 2) systematics, evolution, and ecology. Students in the program often take advantage of other researchers, faculty, and facilities at GW and elsewhere in the Washington area. These include the National Institutes of Health (NIH) and the Smithsonian Institution's National Museum of Natural History.

A strong background in cell and molecular biology is essential for many competitive careers. Graduate students in this area conduct research on both well-studied model systems and non-model organisms, and often use comparative approaches. Common research themes among department faculty include cell signaling processes, and the genetic and cellular mechanisms governing virulence, behavior, immune responses, neurobiology, development, and the phenotypic expression of a variety of morphological traits. Students are trained in both experimental and comparative approaches and use a diverse array of modern research methods, ranging from precision imaging to gene editing to the assembly and analysis of genomes/proteomes/metabolomes.

Amid increasing concern about global change and biodiversity decline, expertise in systematics and ecology is more important than ever. GW's Systematics, Evolution, and Ecology (SEE) program is one of the few in the world specializing in the principles and methods of phylogenetic analysis and comparative biology, putting the university at the forefront of biodiversity studies. Departmental research in evolution and ecology spans a wide array of taxa and study systems, including both vertebrate (amphibians, reptiles, fishes) and invertebrate (social and non-social insects, arachnids, oysters) animals, plants, fungi, and bacteria. In addition to systematics, students can join labs conducting research on behavioral, ecosystem, community, and population ecology as well as ecomorphology and biomechanics.

To complement their classroom education, students can get involved in ongoing field research at both terrestrial and aquatic field sites around the world. Recent graduate students have studied termites and wood decomposition in Australian rainforests, collected ants in Brazilian savannas, discovered new reptiles and amphibians in Sri Lanka, and unearthed rare dinosaur fossils in the Gobi Desert of China.

The department regularly supports graduate student attendance at graduate short courses offered around the US and abroad, including those available through our membership in the Organization for Tropical Studies (OTS) as well as regularly offered short courses at Friday Harbor, Southwestern Research Station, and Woods Hole.

This is a STEM designated program.

Visit the program website (https://biology.columbian.gwu.edu/phd-biology/) for additional information.

ADMISSIONS

Visit the Columbian College of Arts and Sciences website for application requirements (https://columbian.gwu.edu/application-requirements/).

Supporting documents not submitted online should be mailed to:

Columbian College of Arts and Sciences, Office of Graduate Studies
The George Washington University
801 22nd Street NW, Phillips Hall 107
Washington DC 20052

For additional information about the admissions process visit the Columbian College of Arts and Sciences Frequently Asked Questions (https://columbian.gwu.edu/graduate-admissions-faq/) page.

Contact for questions:

askccas@gwu.edu
202-994-6210 (phone)
Hours: 9:00 am to 5:00 pm, Monday through Friday

REQUIREMENTS

The following requirements must be fulfilled:

The general requirements stated under Columbian College of Arts and Sciences, Graduate Programs (https://bulletin.gwu.edu/arts-sciences/#regulationsgraduatetext).

72 credits, including one-3-credit required course and 6 to 27 credits in thesis research.To advance to candidacy, successful completion of at least 45 credits of approved graduate-level coursework and completion of a general examination, comprising both written and oral examinations, are required. Students entering the program with a master's degree may be allowed to transfer up to 30 credits of graduate-level coursework into the program.

Code	Title	Credits
Required courses		
BISC 6205	Foundations in Cell and Molecular Biology	
or BISC 6238	Foundations of Ecology	
or BISC 6276	Foundations in Evolution	
BISC 8999	Dissertation Research (taken for at least 6 but no more than 27 total credits)	

Students can choose to focus on one of two research areas: Cellular and molecular biology, or systemics, evolution, and ecology. Coursework is designed to prepare each student for a general examination in three specific fields of study relevant to their chosen

research area. These fields of study are determined in consultation with an advisory committee appointed for the candidate.

Following the field examinations, students undertake dissertation research under the guidance of a dissertation director. The final examination is an oral defense of the dissertation.