

Graduate Studies College of Arts and Sciences

www.jcu.edu/graduate



BIOLOGY Master of Science and Master of Arts

Why Choose JCU for Graduate Study in Biology?

JCU's Biology faculty are strongly committed to providing a supportive, mentoring environment for master's-level graduate students. The two-year program has a high rate of degree completion. Faculty and students work in a collaborative environment in the classroom and in research labs. Facilities in the department are located in the recently built Dolan Center for Science and Technology.

The graduate program in biology offers courses of study leading to either a Master of Science or a Master of Arts degree. Throughout the program, the faculty mentor M.A. and M.S. students through the scientific process, emphasizing the importance of critical thinking and writing skills; the ability to develop sound, testable hypotheses; and the ability to communicate scientific ideas effectively.

The M.S. degree is distinguished by a guided, research experience that includes the writing and presentation of a formal research proposal; the design, execution, and analysis of a research project; and the writing and defense of a formal thesis. Students interested in the M.S. program must identify a research advisor, during the application process, who is willing to mentor them through their thesis. The M.A. degree is designed for students interested in pursuing an in-depth course study beyond the undergraduate level. The capstone for the M.A. degree program is a comprehensive exam.

Admission Requirements

- Completed online application.
- Official transcripts from all universities attended.
- The equivalent of a Bachelor of Science with a major in Biology. Completion of related majors (environmental science, cell and molecular biology, etc) will be considered on a case-by-case basis.
- Two letters of academic evaluation from former professors .
- The minimum requirements for full acceptance are a 3.0 GPA in biology courses and a 3.0 overall GPA. In some cases, conditional acceptance may be granted to students with a GPA as low as a 2.5 in their biology courses and an overall GPA as low as 2.5. Students granted conditional acceptance must obtain a 3.0 GPA in their first two biology courses at John Carroll.

Program Coordinator

Christopher A. Sheil, Ph.D.

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Program Outcomes

Graduates of our program have gone on to successful careers in clinical laboratory research, museum work, academia, high school teaching, community outreach, and resource management. Our graduates also have a high acceptance rate to top-caliber doctoral and professional schools, with recent graduates matriculating at Penn State, the University of Minnesota, the University of California, among others.

Program Requirements

For the **Master of Science**, requirements for the degree are 30 semester hours, consisting of 24 hours of course credit, at least half of which must be courses numbered above 499, a master's thesis proposal (BL598, 1 credit hour), and a research thesis (BL599, 5 credit hours). A comprehensive examination consisting of questions that reflect the student's educational experience and thesis and that seek to integrate knowledge across those areas is also required.

For the **Master of Arts**, requirements for the degree are 30 hours of class credit, at least half of which must be courses numbered above 499. Completion requires a comprehensive examination that reflects the student's educational experience and integrates knowledge across that coursework.

Financial Assistance

- Licensed teachers qualify for a 33% tuition reduction scholarship.
- Some graduate assistantships are available. Graduate assistants are given a tuition waiver for 15-18 credit hours per year, plus a stipend. Graduate assistants must be full-time students who can work 20 hours per week during the day. Graduate assistants help faculty and the department with research and acquire valuable teaching experience.
- The University's Office of Admissions and Financial Aid offers assistance on student loans.

Faculty and Research Interests

Carl D. Anthony, Ph.D.
(University of Louisiana at Lafayette)
Behavioral ecology, evolution, herpetology

Rebecca E. Drenovsky, Ph.D.
(University of California, Davis)
Plant physiology and ecology, with an emphasis on plant-soil interactions

Jeffrey R. Johansen, Ph.D.
(Brigham Young University)
Phycological research, including diatoms as water quality indicators, cyanobacterial systematics, and floristics of terrestrial algae

Erin E. Johnson, Ph.D.
(Medical College of Ohio)
Regulation of iron metabolism and infectious disease

James L. Lissemore, Ph.D.
(University of Wisconsin-Madison)
Molecular genetics, genetics

Michael Martin, Ph.D.
(University of Wisconsin-Madison)
Regulation of transcription and protein-DNA interactions

Ralph A. Saporito, Ph.D.
(Florida International University)
Chemical ecology, aposematism, herpetology, predator-prey interactions, tropical ecology

Christopher A. Sheil, Ph.D.
(University of Kansas)
Systematic herpetology, skeletal morphology, and evolutionary development

Pamela J. Vanderzalm, Ph.D.
(University of California, Berkeley)
Developmental biology with an emphasis on the genetic control of growth

Cyrilla H. Wideman, Ph.D.
(Illinois Institute of Technology)
Physiology, endocrinology, neuroscience

