

# Biology

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## Degrees Offered

- Master of Science
- Doctor of Philosophy

## Nature of the Program

The Department of Biology's graduate program is dedicated to scholarship in academics and research. The objectives of the program are to empower students through the following:

1. Recognize important biological problems
2. Design, execute, and analyze experiments aimed at solving important problems
3. Communicate their findings in oral and written form
4. Foster an awareness of the social and political issues of the day related to biology
5. Create a desire to continue independent study after graduation

The Department of Biology offers graduate courses and research that lead to M.S. and Ph.D. degrees in biology. The focal areas of research in the graduate program are: plant sciences, biochemistry and molecular biology, bioinformatics, genetics, genomics and evolutionary biology, cell and developmental biology, ecology, forensic biology, neuroanatomy and neurophysiology and behavioral neurobiology.

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## FACULTY

### CHAIRPERSON

- Jennifer Hawkins - Ph.D. (Iowa State University)

### ASSOCIATE CHAIRS

- Edward Brzostek - Ph.D. (Boston University)  
Associate Chair of Graduate Studies; Regular Graduate Faculty, Forest ecology, ecosystem modeling
- Nisan Hubbard - Ph.D. (Northwestern University)  
Associate Chair for Undergraduate Advising, Recruitment, and Retention
- Dana Huebert Lima - Ph.D. (University of Wisconsin-Madison)  
Associate Chair for Undergraduate Studies

### PROFESSORS

- Ashok Bidwai - Ph.D. (Utah State University)  
Biochemical and molecular genetic analysis of protein kinases
- Andrew M. Dacks - Ph.D. (University of Arizona)  
Neuromodulation, nervous system evolution
- Kevin C. Daly - Ph.D. (University of Arizona)  
Sensory motor integration and behavior
- Donna Ford-Werntz - Ph.D. (Washington University, St. Louis)  
Service Professor; Plant systematics
- Jennifer Hawkins - Ph.D. (Iowa State University)  
Plant comparative genomics, molecular evolution
- William Peterjohn - Ph.D. (Duke University)
- Rita V.M. Rio - Ph.D. (Yale University)  
Evolution of symbiosis
- Richard B. Thomas - Ph.D. (Clemson University)  
Physiological plant ecology, global environmental change
- Jennifer Stueckle - Ph.D. (West Virginia University)  
Associate Graduate Faculty, Aquatic toxicology

### ASSOCIATE PROFESSORS

- Craig Barrett - Ph.D. (Ohio State University)  
Plant evolutionary biology

- Sadie Bergeron - Ph.D. (University of Massachusetts - Amherst)  
Developmental Neuroscience
- Edward Brzostek - Ph.D. (Boston University)  
Forest ecology, ecosystem modeling
- Timothy Driscoll - Ph.D. (Virginia Tech)  
Bioinformatics, microbial genomics
- Sarah M. Farris - Ph.D. (University of Illinois)  
Nervous system evolution and development, entomology
- Zachariah Fowler - Ph.D. (Washington University, St. Louis)  
Service Associate Professor; Forest ecology
- Jennifer Gallagher - Ph.D. (Yale University)  
Yeast genetics, stress response, systems biology
- Dana Huebert Lima - Ph.D. (University of Wisconsin-Madison)  
Cellular and Molecular Biology, Epigenetics, Science Communication
- Gary Marsat - Ph.D. (McGill University)  
Sensory processing of communication signals, systems neuroscience, computational neuroscience
- Ember Morrissey - Ph.D. (Virginia Commonwealth University)  
Soil microbial ecology
- John Navaratnam - Ph.D. (West Virginia University)  
Wetland Biogeochemistry
- Stephanie T. Young - Ph.D. (West Virginia University)  
Molecular and Forensic biology

## **ASSISTANT PROFESSORS**

- Chris Arnold - Ph.D. (Stanford University)  
Development, regeneration, and asexual reproduction
- Kevin Barry - Ph.D. (University of Maryland)  
Conservation ecology
- Becca Coltogirone - Ph.D. (West Virginia University)  
Developmental Neuroscience and Molecular Biology
- Amaris Guardiola - Ph.D. (Duke University)
- Eric Horstick - Ph.D. (University of Michigan)  
Developmental genetics, neuroscience, behavioral genetics
- Nisan Hubbard - Ph.D. (Northwestern University)  
Reproductive Biology and Physiology
- Steve Kannenberg - Ph.D. (Indiana University)  
Eco-physiology, ecosystem ecology, and global change
- Justin Mathias - Ph.D. (West Virginia University)  
Forest biogeochemistry and ecophysiology
- Grace Savoy-Burke - Ph.D. (University of Delaware)  
Entomology

## **Admissions for 2025-2026**

### **THE M.S. AND PH.D. IN BIOLOGY**

The Biology program admits students either to the master's or directly to the doctoral degree programs. In addition to WVU's general admission requirements (<http://catalog.wvu.edu/graduate/graduateeducationatwestvirginiauniversity/#classificationstext>), applicants for graduate studies in biology must have a bachelor's degree in biology or a related field, and should possess an adequate background in science and mathematics. Forms and policies for Department of Biology Graduate Program can be found here (<https://biology.wvu.edu/students/graduate-students/forms-and-policies/>).

### **M.S. IN BIOLOGY**

The M.S. in Biology is appropriate for students who wish to pursue a career in teaching or conducting directed research.

### **PH.D. IN BIOLOGY**

The Ph.D. in Biology is appropriate for students who wish to pursue a career in teaching or conducting independent research. Applicants should identify and are encouraged to contact at least one or more member(s) of our faculty who could act as their prospective advisor. If after reviewing all the application materials there is no faculty member willing to serve as the applicant's academic advisor, then the potential student will not be accepted.

into the program. Therefore, we recommend that applicants identify a member of our faculty who can provide them with the research training they seek and communicate with them directly to determine if they are taking any new students and whether they might be interested in serving as the applicant's advisor.

#### List of Admission Requirements for Masters and PhD:

- See the steps to apply for admissions and access the application here (<https://graduateadmissions.wvu.edu/how-to-apply/>).
- Applicants must submit transcripts from all institutions attended.
- Three letters of recommendation, written by people (typically faculty) in a position to evaluate your academic strengths and abilities.
- A curriculum vitae or resume (no more than two pages) that lists work experience, research experience, volunteer activities, internships, academic degrees and honors, and other accomplishments the admissions committee should take into account in reviewing an application.
- A statement of purpose (no more than two pages) that demonstrates a strong interest in scientific research; describes what the applicant hopes to gain from the Biology program, explains why WVU offers the best opportunity for achieving the applicant's future professional goals, and addresses the match between the stated research interests and those of specific faculty in our department who may serve as their academic mentors. Information regarding faculty and their research interest can be found here.
- GRE Scores are not required for the application or admission to the WVU Biology graduate programs, but will be considered if they are provided.

#### International Applicants:

- See the steps to apply for admissions and access the application here (<https://graduateadmissions.wvu.edu/how-to-apply/>).
- International applicants should view additional requirements here (<http://catalog.wvu.edu/graduate/graduateeducationatwestvirginiauniversity/#internationaltext>) and here (<https://graduateadmissions.wvu.edu/information-for/international-students/>).
- Language proficiency is required in order to hold a graduate teaching assistantship; Ph.D. students are required to serve as teaching assistants for two semesters. See here (<https://elli.wvu.edu/testing-resources/english-proficiency-gtas/>).

#### Application Deadlines:

- The Biology graduate programs admit students to the Fall, Spring, or Summer terms.
- The priority review deadline for all application materials is January 1<sup>st</sup> for Summer or Fall admission.
- The priority review deadline for all application materials is August 15<sup>th</sup> for Spring admission.
- All applications received by the deadlines will be considered for financial support in the form of a graduate teaching assistantship (GTA).
- Application materials submitted after the deadlines may be considered on a space-available basis and may also be considered for financial support in the form of a graduate teaching assistantship (GTA).
- Exceptional Ph.D. applicants may be nominated by the Biology program for competitive University Fellowships. Applicants who wish to be considered should submit a completed application no later than December 1st. Qualified applicants will be notified if they are nominated. More information on WVU fellowships can be found here (<https://graduateeducation.wvu.edu/finances/fellowships/>).

#### Assistantships

All applicants will be considered for financial support in the form of graduate teaching assistantships (GTAs) and Graduate Research Assistantships (GRAs). Graduate research assistantships are sometimes available through funded faculty member research. Students who qualify for available research assistantships will be contacted by the relevant faculty member with details.

Certain application requirements may be waived based on a preliminary review of an application by the program.

For additional questions, please contact [wvu.biology.gradprogram@mail.wvu.edu](mailto:wvu.biology.gradprogram@mail.wvu.edu)

M.S. and Ph.D. Major Code: 1436

#### For specific information on the following program, please see the link to the right:

- Biology, M.S.

#### For specific information on the following program, please see the link to the right:

- Biology, Ph.D.

## Degree Progress

All graduate students enrolled in at least one credit hour during the academic year must be provided with a written evaluation from their program following the end of each spring term. This requirement may be waived for students in good standing who are expected to graduate in spring or summer. Specific processes and timelines for each program's evaluation can be found in the graduate handbook. Annual evaluation may result in probation for students either not making adequate degree progress or failing to uphold professional standards.

## **MASTER'S BENCHMARKS**

- Year 1: Form a committee and present the program of study.
- Year 3+: Defend and submit written thesis.

## **DOCTORAL BENCHMARKS**

- Year 1: Form a committee and present the program of study.
- Year 2: Complete the Comprehensive
- Year 3: Complete the Proposal Examination.
- Year 5+: Defend and submit written dissertation.

## **PROBATION**

There are several reasons why a student may need to be placed on probation. These may include:

- 1) A documented violation of the student code of conduct (<https://studentresponsibility.wvu.edu/campus-student-code/>). Depending on the nature of the violation, either probation or dismissal without a probationary period may be appropriate.
- 2) Receiving an "Unsatisfactory" in Biology 797 ("Independent Research") due to the failure to meet expectations established in the semester student workload plan.