

# BIOLOGY

RWU biology majors study living organisms and the interconnected systems and processes that shape life around us. Biology majors study nature in the field, through the microscope and at the molecular biology lab bench, positioning them for careers in a wide range of interdisciplinary sciences such as cell and molecular biology, virology, microbiology, animal behavior, botany and ecology.

## STUDENT EXPERIENCE

### Learn and Do More at RWU

With a focus on experiential learning at RWU, biology majors can:

- Work as scientists from day one. You will start research projects in your first year courses. Students can perform independent research in the laboratory or in the field, learn to write proposals, compete for grant funding, and complete a senior thesis.
- Conduct basic and applied research that helps improve society. A distinctive aspect of the program is the focus on how scientists' work can positively impact the public. For example, our students test new anti-amoebic drug candidates, explore animal microbiomes, study evolution of photosynthesis in plants, and identify genes involved in aging, among others.
- Study abroad in Belize during the winter intersession focusing on Tropical Ecology, study off-campus during the summer carrying out field work in the Yellowstone ecosystem of the Rocky Mountains, or perform community health outreach over winter or spring break.
- Explore biodiversity using the microscopes and molecular instrumentation in the MNS laboratories.



- + Are you curious how species adapt and evolve to changes in the environment and interact with one another?
- + Do you think like a scientist, wondering how the internal functions of an organism influence the way it lives?
- + Are you interested in a career in biotechnology, biomedicine or health care?

## CAREER OUTLOOK

RWU **biology** grads are working in the following careers:

- Research scientist
- Industry professional
- Conservation biologist
- Veterinarian
- Science educator
- Physician assistant
- Physical therapist
- Nurse
- Pharmacist

## ALUMNI SPOTLIGHT

### Alexandra Brown '15

Biology  
Veterinarian at Germantown Parkway Animal Hospital. Graduated from Mississippi State Vet School. Performed research in the Aquatic Diagnostic Lab. Four-year tennis player, All-CCC senior scholar and first team (2014).

### Kiserian Jackson '18

Biology, National Science Foundation STEM Scholar  
Pursuing a Ph.D. in molecular and cell biology at UMass-Amherst.

## CURRICULUM

The School of Social and Natural Sciences offers the choice of a Bachelor of Science degree or Bachelor of Arts degree in Biology. Through interdisciplinary courses and labs, independent research, and internships, you will be equipped with the critical thinking, problem solving, and collaborative skills to prepare you for both graduate study and a career in the sciences or health professions.

### Upper Level Coursework

Students also choose from a number of special courses, including:

- Molecular Cell Biology
- Virology
- Conservation Biology
- Field Ecology of the Rockies
- Biotechnology
- Soil Ecology

### Laboratories and Technology

The MNS building is equipped with advanced laboratory research space along with an Aquatic Diagnostic Laboratory and a greenhouse. The facilities house advanced research instruments including real-time PCR machines, fluorescence and confocal microscopes, cell culture facilities and a flow cytometer. Our researchers utilize model organisms in the study of biological systems including bacteria, yeast, round worms, fruit flies, amoeba and zebrafish.

### Research Opportunities

Undergraduate research is integrated into the biology curriculum, with opportunities for students to earn credit for their work. RWU offers students summer research experiences while living on campus with other summer scholars. RWU students regularly present their research at regional, national and international conferences. Funding opportunities are available to students to aid in their travel to scientific meetings. These are just some of their research areas:

- Genetics and evolution of marine viruses
- Biotechnology of anti-amebic drugs
- Ecotoxicology of heavy metals
- Developmental genetics
- Molecular genetics of aging and longevity
- Evolution of Photosynthetic pathways in plants
- CRISPR gene editing
- Soil invertebrates

### Get a Great Internship

As a biology major, you'll gain real-world experience through an internship, which often leads to full-time employment. Our students have interned at:

- Pfizer, Inc.
- Amgen
- Rhode Island Department of Health
- Save the Bay
- Center for Disease Control
- Audubon Education Center

### Prepare for Graduate and Medical Studies

Many students continue their studies in graduate school. Students interested in a career in the health professions develop an academic and experiential roadmap with guidance from our faculty health profession advisors.

### Earn a Pharm.D. in 7 Years

Instead of taking eight years to get a Pharm.D., the 3+4 Biology-Pharm.D. dual degree program enables students to earn a B.S. in biology at RWU and a Pharm.D. from the Albany College of Pharmacy and Health Sciences in only seven years.

**OVER 80% OF  
RWU STUDENTS  
GRADUATE WITH  
MORE THAN JUST  
A SINGLE MAJOR**

RWU students have paired **biology** with:

- Public Health
- Chemistry
- Applied Mathematics
- Sustainability studies
- Biotechnology Certificate
- Environmental Science
- Psychology
- Communication/Writing