

Department of  
**Biology**



**University of Wisconsin-Stevens Point**  
College of Letters & Science

## ***Mission Statement***

*The Biology Department's mission is to prepare its students with a challenging, broad, solid base of molecular, cellular, and organismal biology that underpins its newest branches, and to provide personal guidance to student success. The faculty does this by developing new courses, by offering a rich variety of student-faculty research experiences and global collaborations, and by experimenting with new methods for teaching, mentoring, and training future biologists. As a corollary to this mission, the Department strongly supports Biology faculty scholarship initiatives, so that faculty may stay current with, and be significant contributors to, their fields of study.*



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# UWSP Department of Biology

Biology is the study of life. From simple, single-celled bacteria to complex, multicellular plants, animals, and fungi, biologists study how life works. Genetics, physiology, ecology, evolution, behavior, and anatomy of organisms fall within the work of the biologist as does the study of populations and communities of organisms.

## *Introduction*

The UWSP Department of Biology emphasizes a broad-based program of study for its majors and students can select from a wide variety of disciplines. To ensure that students will gain the highest quality education possible within their area of interest, most courses offered are taught by full-time PhD faculty members.

Biology majors at UWSP experience individualized instruction, excellent facilities, hands-on learning, and exceptional placement into careers or postgraduate school. In collaboration with other departments in the college, the Department of Biology offers minors in Aquaculture, Ethnobotany, and Museum Techniques; many biology majors also obtain minors or second majors in Chemistry, Natural Resources, or Conservation Biology.



## *Why Study Biology at UWSP?*

In addition to experiencing one of the most comprehensive offerings of biological sciences in the Midwest, UWSP students benefit from the exceptional diversity of faculty specialties within the UWSP Department of Biology. Our full-time faculty members are continuously adding new, cutting-edge courses across the biology curriculum and are teaching those courses in person to UWSP students.



## *High School Preparation*

Completion of four years of English as well as upper-level mathematics classes (calculus in particular), general or higher biology classes, and at least one year of chemistry and physics will help students prepare for their required courses in biology. High school physics is especially recommended for students who aspire to attend medical, dental, chiropractic, or veterinary school, or to enter graduate degree programs in the future.

## Biology Major

All biology majors at UWSP begin by exploring the fundamentals of plant and animal biology, and learning the principles of genetics and ecology. Students then select a course in physiology (animal, human, plant or cell), and are encouraged to follow their own interests when selecting biology electives from at least two of three upper-division subject groups. Courses in chemistry and math round out the basic requirements for the major.



### *Areas of Emphasis*

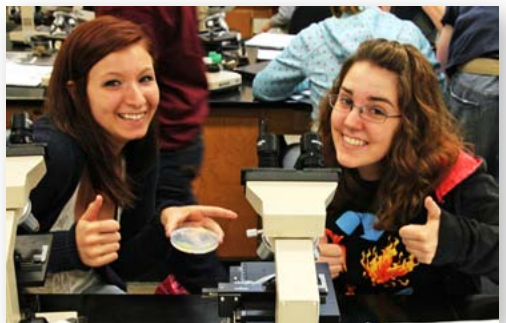
Each biology student at UWSP has the opportunity to tailor the major to emphasize their individual interests and career aspirations. Students work with their advisors to personalize their choice of required core curricular elements, collateral courses and electives to best fit their particular goals.



Common areas of emphasis within the biology major include: aquatic biology, biobusiness, biotechnology, botany, ecology/environmental, education, graduate work/research, horticulture, microbiology, natural history, pharmaceutical and biomedical sales, zoos and aquaria, and zoology.

After completing the requirements for a biology major at UWSP, most students will be well equipped to enter a profession upon graduation. Those looking to advance in their profession after employment or enter graduate school, medical school, or veterinary medicine should consult their advisor about additional math, physics, and chemistry coursework.

Students should keep in mind that employers are looking for things other than coursework when evaluating applicants for a job in the biological sciences or post-graduate training. The three most important things besides coursework are: communication skills, leadership skills, and in-field experience. Check with your advisor to find out how you might enhance these three areas.



# Biology Major: Four Year Sequence Sample

Each student will take a different path through the Biology major. This illustrates a typical plan to complete the major within the traditional four year timeframe.

## *Year One* —

### **Fall Semester**

Biology 130 Introduction to Plant Biology.....	5 credits
Chemistry 105 or 117.....	5 credits
English 101 or 150.....	3 credits
Wellness.....	1 credit

14 total

### **Spring Semester**

Biology 160 Introduction to Animal Biology.....	5 credits
Chemistry 106.....	5 credits
English 102 or 150.....	3 credits
Wellness.....	2 credits

15 total

## *Year Two* —

### **Fall Semester**

Biology 210 Principles of Genetics.....	3 credits
Math.....	3 credits
General Education or electives.....	9 credits

15 total

### **Spring Semester**

Biology 281/285/314/351 (Physiology) or Biology Elective.....	4 credits
General Education or electives.....	12 credits

16 total

## *Year Three* —

### **Fall Semester**

Biology 281/285/314/351 (Physiology) or Biology Elective.....	4 credits
Biology 305/306 General Ecology/ Ecological Methods.....	4 credits
General Education or electives.....	6 credits

14 total

### **Spring Semester**

Math.....	4 credits
Biology electives.....	7 credits
General Education or electives.....	6 credits

17 total

## *Year Four* —

### **Fall Semester**

Biology 490 Senior Seminar.....	1 credit
Biology Elective.....	3-4 credits
General Education or electives.....	10-12 credits

14-17 total

### **Spring Semester**

Electives.....	12-15 credits
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12-15 total

## Biochemistry Major

This interdisciplinary major has a chemistry-based curriculum coupled with a significant biology component. The role of a biochemist is to work for understanding of organismal function and diversity in the principles and concepts of chemistry and physics, as well as in the structure, mechanisms and chemical processes that are common to all organisms. The biochemistry major links biological sciences like molecular biology and genetics to physical sciences like chemistry and physics. In addition the biochemistry major combines the interdisciplinary foundation inherent to biochemistry with all the advantages of a liberal arts education.



*For more information about the Biochemistry major at UWSP, contact:*

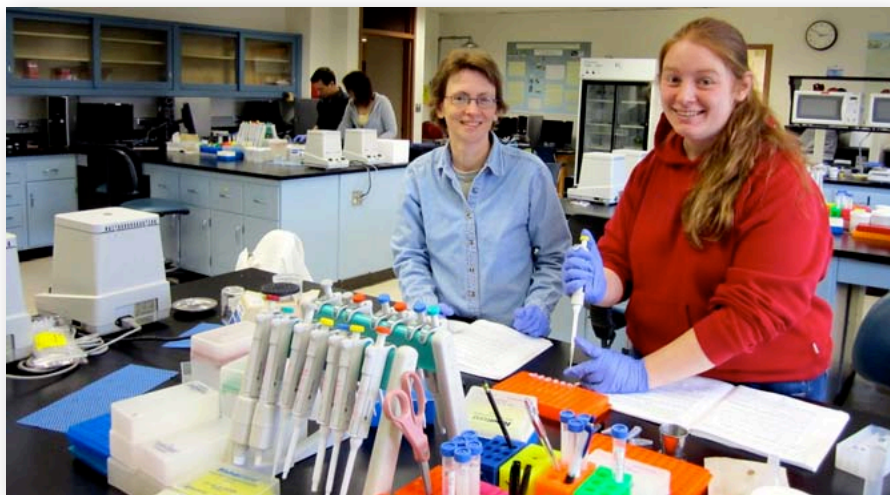
James G. Brummer, Chair of Chemistry Department

Room D129A, Science Building

Phone: 715-346-2888

E-mail: [chemistry@uwsp.edu](mailto:chemistry@uwsp.edu)

Web: [www.uwsp.edu/chemistry](http://www.uwsp.edu/chemistry)



***“ I have 9 employees from a variety of public and private colleges in the Midwest and your graduate stands out in nearly every aspect of biological preparation and scientific thinking, that’s why she is now in charge of the lab. ”***

— Response from Employer Survey

# Biochemistry Major: Four Year Sequence Sample

## Year One —

### Fall Semester

Biology 130 Introduction to Plant Biology.....	5 credits
Chemistry 105 or 117.....	5 credits
English 101 or 150.....	3 credits
Wellness.....	1 credit
	<hr/>

14 total

### Spring Semester

Biology 160 Introduction to Animal Biology.....	5 credits
Chemistry 106.....	5 credits
English 102 or 150.....	3 credits
Communication 101.....	2 credits
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15 total

## Year Two —

### Fall Semester

Biology 210 Principles of Genetics.....	3 credits
Chemistry 325 Organic Chemistry.....	4 credits
Math 120 Analytic Geometry and Calculus I.....	3 credits
General Education or elective.....	4 credits
	<hr/>

15 total

### Spring Semester

Biology 281 or 285 (Physiology).....	4 credits
Chemistry 326 Organic Chemistry.....	4 credits
Math 355 Elementary Statistical Methods.....	4 credits
General Education or elective.....	3 credits
	<hr/>

15 total

## Year Three —

### Fall Semester

Biology 314 Cell Biology.....	4 credits
Chemistry 248 Quantitative Analysis.....	4 credits
Physics 203 College Physics I.....	5 credits
General Education or elective.....	3 credits
	<hr/>

16 total

### Spring Semester

Biochem/Chem 365 Biochemistry.....	4 credits
Physics 204 College Physics II.....	5 credits
Biology/Chemistry/Math elective.....	3+ credits
General Education or elective.....	3 credits
	<hr/>

15+ total

## Year Four —

### Fall Semester

Biochemistry/Biology 318 Principles of Molecular Biology.....	3 credits
Biochemistry/Biology 319 Techniques in Molecular Biology.....	2 credits
Biochemistry/Biology 490 Senior Seminar.....	1 credit
Biology/Chemistry/Math elective.....	3+ credits
General Education or elective.....	6 credits
	<hr/>

15+ total

### Spring Semester

Biochemistry/Chemistry 333 Biophysical Chemistry.....	3 credits
Biology/Chemistry/Math elective.....	2+ credits
General Education or elective.....	10 credits
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15+ total



### ***Aquaculture/Fish Culture Minor***

Aquaculture is the discipline that studies the culture of finfish, methods of production, environmental and ecological manipulation and assessment, selective breeding, nutrition, diseases, processing, marketing and operating of culture facilities. The aquaculture minor has been designed so that students interested in commercial fish farming, aquarium trade, or state, federal, & tribal hatchery programs can select from a cluster of elective courses to specialize the minor for their interests.

### ***Ethnobotany Minor***

The Ethnobotany minor is an interdisciplinary program focused on understanding the biological and cultural relationships between plants and humans. Ethnobotany is also concerned with the ethical and political aspects of global plant consumption, usage and ownership and the relationships between western ideals of conservationism and environmentalism and non-western cultures and practices.



### ***Museum Techniques Minor***

The Museum Techniques minor is unique in Wisconsin, preparing students with related majors (Biology, Geology, Natural Resources, History, Art, etc.) for work in museums, nature centers, and zoos. Teachers, as well as amateur scientists and taxidermists, benefit from this training. Individuals possessing the skills acquired in Museum Techniques will enjoy a distinct advantage in a competitive job market.



### ***Pre-professional studies***

Many students who plan to enter a professional school, such as Education or Engineering, as undergraduates or who intend to pursue graduate studies in a professional school such as Medicine, Dentistry, Veterinary Science, Chiropractic, Optometry, or Nursing, often follow a program of study specifically designed for that career path. UWSP offers a wide variety of pre-professional programs, and our graduates have an excellent record of acceptance by graduate and professional



schools. Although not required, we advise students in all pre-professional areas to get a bachelor of science degree before entering a professional school. If you would like more specific information or advisement, the Department of Biology will assist you in finding an advisor to help you plan your program.

## ***Graduate Program***

UW-Stevens Point offers a Master of Science in Teaching (MST) in Biology. The primary purpose of this program is to meet the educational needs of teachers who have already completed the teacher certification process. As a secondary school teacher, the MST-Biology program will give you the opportunity for advanced study, experimentation, research, and involvement in professional activities.

If you are interested in a Master of Science (MS) degree, examine the Master of Science in Natural Resources. Most biology faculty have joint appointments in the College of Natural Resources and can serve as major advisors for that degree. You may also consider the Master of Science in Education. A science education faculty member may serve as your advisor.

## ***Education***

If you seek a certificate to teach at the secondary school level, with a major offered in the College of Letters & Science, you may either complete your general requirements for your B.A. or B.S. degree in the College of Professional Studies or the College of Letters & Science. If you have not yet determined the subjects you would like to teach, talk with your advisor or the advising office in the School of Education. See the Education section in the UWSP catalog for complete information on your education requirements.

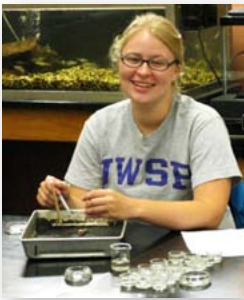


***“ I am taking a cell biology class in graduate school and it has absolutely nothing on UWSP’s cell biology. The graduate class is relevant and meaningful, but not nearly as engaging or well planned as the course offered at UWSP. Additionally, I am studying for the MCAT and I feel really well equipped for the biology section as a result of the wonderful teachers and courses I was exposed to at UWSP. ”***

— Ashley Freyre, Class of 2008

## Course Listing

The Department of Biology places a strong emphasis on introductory biology courses, including non-majors courses. One of the great attractors of students to the Department of Biology is that nearly all lectures and labs are taught by tenure-track faculty rather than academic staff or graduate students, and classes are small enough to allow close personal interaction between students and their professors. Additionally, our faculty members are encouraged to develop and teach courses in their areas of specialization. The result is a uniquely rich offering of upper level courses that reflects cutting-edge developments in the field of biology and caters to the interests and demands of our students. Also unique among Wisconsin universities is the Department's diversity of field biology courses. These courses thrive on the critical mass of UWSP students who are dedicated to the environment and natural history, and on the field-trained faculty, sites, facilities and transportation that support them.



**BIOL 100. Biological Principles and the Human Environment.** 3 cr.

**BIOL 101. General Biology.** 5 cr.

**BIOL 130. Introduction to Plant Biology.** 5 cr.

**BIOL 160. Introduction to Animal Biology.** 5 cr.

**BIOL 202. Human Reproduction.** 3 cr.

**BIOL 210. Principles of Genetics.** 3 cr.

**BIOL 281. Animal Physiology.** 4 cr.

**BIOL 285. Human Physiology.** 4 cr.

**BIOL 305. General Ecology.** 3 cr.

**BIOL 306. Ecological Methods.** 1 cr.

**BIOL 309/509. Field Biology.** 3 cr.

**BIOL 310/510. Plant Genetics.** 3 cr.

**BIOL 311/511. Principles of Evolution.** 3 cr.

**BIOL 312/512. Human Genetics.** 3 cr.

**BIOL 314/514. Cell Biology.** 4 cr.

**BIOL 317/517. Developmental Biology.** 4 cr.

**BIOL 318/518. Principles of Molecular Biology.** 3 cr.

**BIOL 319/519. Techniques in Molecular Biology.** 1 cr.

**BIOL 322/522. Museum Methods.** 3 cr.

**BIOL 323/523. Paleontology Collecting Field Trip.** 3 cr.

**BIOL 326/526. Electron Microscope Techniques.** 3 cr.

**BIOL 330/530. Plant Morphology.** 4 cr.

**BIOL 331/531. Plant Anatomy.** 4 cr.

**BIOL 333/533. General Microbiology.** 4 cr.



**BIOL 335/535. Mycology.** 4 cr.  
**BIOL 337/537. Plant Pathology.** 3 cr.  
**BIOL 338/538. Phycology.** 4 cr.  
**BIOL 342/542. Vascular Plant Taxonomy.** 4 cr.  
**BIOL 345/545. Agrostology.** 2 cr.  
**BIOL 347/547. Aquatic Vascular Plants.** 2 cr.  
**BIOL 350. Tree Physiology.** 3 cr.  
**BIOL 351/551. Plant Physiology.** 4 cr.  
**BIOL 353/553. Ethnobotany.** 3 cr.  
**BIOL 355/555. Plant Ecology.** 4 cr.  
**BIOL 361/561. Aquatic Invertebrate Zoology.** 3 cr.  
**BIOL 362/562. Animal Parasitology.** 4 cr.  
**BIOL 367. General Entomology.** 4 cr.  
**BIOL 370/570. Comparative Vertebrate Anatomy.** 4 cr.  
**BIOL 373/573. Comparative Vertebrate Histology.** 4 cr.  
**BIOL 374/574. Ichthyology.** 4 cr.  
**BIOL 375/575. Fisheries Ecology.** 3 cr.  
**BIOL 376/576. Herpetology.** 3 cr.  
**BIOL 377/577. Ornithology.** 3 cr.  
**BIOL 378/578. Mammalogy.** 3 cr.  
**BIOL 382/582. Endocrinology of Mammals.** 3 cr.  
**BIOL 383/583. Biology of Reproduction.** 3 cr.  
**BIOL 386/586. Aquaculture/Fish Culture.** 3 cr.  
**BIOL 387/587. Human Anatomy.** 4 cr.  
**BIOL 399/599. Independent Studies.** 1 or 2 cr.  
**BIOL 415/615. Advanced Microbiology.** 3 cr.  
**BIOL 490/690. Senior Seminar in Biology.** 1 cr.  
**BIOL 498/698. Selected Topics in Biology.** 1-3 cr.  
**BIOL 499. Biology Internship.** 1-4 cr.



## Faculty

The Biology faculty at UWSP consistently receives excellent teaching evaluations, and was the first Biology Department in the UW system to receive an Excellence in Teaching Award from the UW Board of Regents. Our faculty are also among the most productive scholars on campus, with an impressive record of professional publications, presentations, and grant support.

**Dr. Terese Barta, Associate Professor, Ph.D. University of Wisconsin**

Teaches: General Botany, Mycology, Plant Pathology.

Research Interests: Resistance of potato to late blight diseases, airborne fungi in indoor environments, antimicrobial efficacy.

**Dr. Robert Bell, Professor, Ph.D. Arizona State University**

Teaches: General Botany, Phycology

Research Interests: Algal and Plant Physiological and Community Ecology; Ultrastructural Phylogeny of the Algae.

**Dr. Karin Bodensteiner, Associate Professor, Ph.D. Colorado State University**

Teaches: General Zoology, Genetics, Developmental Biology.

Research interests: Female Reproduction, Ovarian Folliculogenesis, Reproductive Toxicology & the Impact of Hormones on Memory & Behavior.

**Dr. Diane Caporale, Professor, Ph.D. University of New Hampshire**

Teaches: General Zoology, Molecular Biology, Genetics, Human Genetics, Techniques in Molecular Biology.

Research Interests: Genetic Variation and Evolution of Tick-borne Pathogens.

**Dr. Joseph Covi, Assistant Professor, Ph.D. Louisiana State University**

Teaches: Animal Physiology.

Research Interests: Cryptobiosis and the Disruption of Development in Crustaceans.

**Dr. Richard Crowther, Associate Professor, Ph.D. New Mexico State University**

Teaches: Microbiology, Advanced Microbiology, Industrial Microbiology, Immunology.

Research Interests: Viral Hemorrhagic Septicemia Virus.

**Dr. Tracy S. Feldman, Assistant Professor, Ph.D. Duke University**

Teaches: General Biology, Ecology, Plant Ecology.

Research Interests: Ecology of plant-insect and plant-fungal interactions.

**Dr. Virginia Freire, Associate Professor, Ph.D. Southern Illinois University**

Teaches: General Botany, Plant Morphology, Ethnobotany, Bryology.

Research Interests: Morphology and taxonomy of liverworts, inventory of liverworts from Wisconsin and Guatemala/Belize and Ethnobotany (useful plants from Guatemala and Wisconsin).

**Dr. C. Edward Gasque, Professor, Ph.D. West Virginia University**

Teaches: Biological Principles, Plant Biology, Cell Biology, Protein Purification.

Research Interests: Development of Cell & Molecular Biology Experiments for Undergraduates.

**Dr. Christopher Hartleb, Professor and Co-Director Northern Aquaculture Demonstration Facility, Ph.D. University of Maine**

Teaches: Fisheries Ecology, Aquaculture, Ecological Methods.

Research Interests: Fish Ecology, Aquaculture, Aquatic Community Interactions.

**Dr. Jamee Hubbard, Assistant Professor, Ph. D. University of Kentucky**

Teaches: General Zoology, Entomology.

Research Interests: Applied Insect Ecology, Plant-Insect Interactions, Insect Management.

**Dr. Todd Huspeni, Associate Professor, Ph.D. University of California-Santa Barbara**

Teaches: General Zoology, Parasitology.

Research Interests: Parasitology, Wetland Habitats, General and Applied Parasite Ecology.

**Dr. Emmet Judziewicz, Associate Professor, Ph.D. University of Wisconsin – Madison**

Teaches: Plant Taxonomy, Agrostology.

Research Interests: Taxonomy, Anatomy, Morphology, Evolution of Tropical Grasses Especially Bamboos. Rare Vascular Plant Inventories.

**Dr. Robert Rosenfield, Professor, Ph.D. North Dakota State Univ.**

Teaches: General Zoology, Ecology, Ornithology.

Research Interests: Avian Ecology.

**Dr. Devinder Sandhu, Associate Professor, Ph.D. University of Nebraska-Lincoln**

Teaches: General Botany, Principles of Genetics, Plant Genetics.

Research Interests: Plant Genetics, Plant Pathogen Interactions, Structural and Functional Organizations of Plant Genomes.

**Dr. Robert Schmitz, Associate Professor, Ph.D. Medical University of S.C.**

Teaches: Human Anatomy, Electron Microscopy, Histology.

Research Interests: Functional and Evolutionary Morphology of Vertebrates.

**Dr. Meredith Seiler, Assistant Professor, Ph.D. Idaho State University**

Teaches: Introductory Biology for Education Majors, Biology Teaching Methods.

Research Interests: Morphological Variation and Evolution of Freshwater Fishes.

**Dr. Sol Sepsenwol, Professor, Ph.D. University of Chicago**

Teaches: Human Physiology, Electron Microscopy, Endocrinology of Mammals, Applied Immunology, Biology of Reproduction.

Research Interests: Cell biology of amoeboid motility (how cells crawl); reproductive biology.

**Dr. Eric Singsaas, Associate Professor, Ph.D. Univ. of Wisconsin – Madison**

Teaches: Plant Physiology, Introductory Biology.

Research Interests: Plant Hydrocarbon Emissions, Climate Change Biology.

**Dr. Justin Sipiorski, Assistant Professor, Ph.D. Southern Illinois University**

Teaches: General Zoology, Ichthyology.

Research Interests: Gar Species Boundaries and Phylogeography.

**Dr. Edward Stern, Professor, Ph.D. Louisiana State University**

Teaches: General Zoology, Human Reproduction, Aquatic Invertebrate Zoology, Bioethics.

Research Interests: Terrestrial and Freshwater Mollusks.

**Dr. Qiang Sun , Assistant Professor, Ph.D. Tohoku University, Japan**

Teaches: Introductory Biology, General Botany, Plant Anatomy.

Research Interests: Physiological & Pathological Xylem Anatomy, Plant Ecophysiology and Plant Photomorphogenesis.

**Dr. Mary Trainor, Lecturer, General Biology Coordinator, Ph.D. University of California – Berkeley**

Teaches: General Biology.

Research Interests: Plant Ecology, Investigative Ecological Research, Inquiry Methods for Teaching Biology.

**Dr. Erik Wild, Professor, Ph.D. University of Kansas**

Teaches: Evolutionary Biology, Herpetology, General Zoology, Scientific Illustration, Museum Methods.

Research Interests: Evolution, Ontogeny and Phylogeny of Frogs, Herpetology.

**Dr. Christopher Yahnke, Associate Professor and Department Chair, Ph.D. Northern Illinois University**

Teaches: Mammalogy, Comparative Anatomy, Introductory Biology.

Research Interests: Community Ecology, Medical Ecology, Systematics of Mammals.



“

*Having someone to look up to who really has their ‘stuff’ together makes me want to do better in school. My family is excited and they often ask about my work in the lab. Although I am not yet an expert, I tell them that their daughter is a scientist.*

”

— Amanda Ney, UWSP Biology student

## Undergraduate Research Opportunities

Learning in Biology is not confined to coursework. One of the hallmarks of the department is our commitment to faculty-mentored undergraduate research. A high percentage of our students participate in research projects with Biology faculty mentors. Research experiences include research projects with faculty, field research projects, as well as summer undergraduate-research experiences at institutions including the UW-Madison, Marshfield Medical Research Foundation and the Mayo Clinic. Three Wisconsin research stations also offer UWSP undergraduate research and learning opportunities: Pigeon Lake Field Station, Kemp Natural Resources Station, and the Northern Aquaculture/Fish Culture Demonstration Facility.



As part of their research experience, our students learn how to present their results professionally. This has resulted in a large number of poster presentations and talks at local, national and international symposia, and numerous publications with student co-authors in refereed scientific journals.

### *Internship Opportunities*

There are many well-established internship programs for our students in a variety of areas that give them real-world experience. An example: the UWSP Biology Department offers its Winter Preceptorship program, in which 15 premedical or pre-PA students spend two weeks, full-time, on-site at one of four regional Wisconsin medical centers, mentored by up to 10 physicians and/or PA's.



### *Student Awards and Scholarships*

Since 1997, UWSP Biology students have won seven prestigious national Goldwater Fellowship Scholarships. Our graduates collectively hold the most Albertson Medallions of any major in the UWSP. The Albertson Medallion is conferred on the top 1% of graduates as based on student academic and leadership achievement. In addition, the Department presents a large number student awards and several thousand dollars in scholarships each year at our Awards Banquet.



### *Student Organizations*

With nearly 200 student organizations, UWSP students can choose to join groups relating to a wide variety of interests and careers. Five organizations have their “home” in the Department of Biology:

- Beta Beta Beta Biological Honor Society
- Chiropractic Club
- Pre-Medical & Allied Health Society
- Pre-Veterinary Medicine Society
- UWSP Herpetology Society

### *Field Courses and International Study*

Field ecology courses take students off-campus to the Pacific Coast and Great Basin Desert and to the Chihuahuan Desert of New Mexico and Texas. These intense camping, hiking and learning experiences provide a hands-on, living lab where students apply and gain a greater understanding of ecological principles. Students have also recently accompanied faculty on research trips to Peru, Greenland, Costa Rica, New Zealand, Belize, Guatemala, France, and Great Britain.



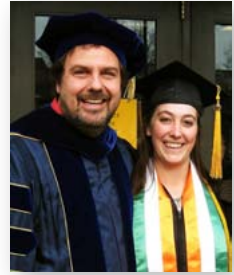
### *Student Employment*

The Department of Biology employs a large number of students who provide essential support and assistance in all parts of the department. Student workers gain valuable experience working with faculty and staff in laboratories, the stockroom, plant or animal care, and many other activities. Many faculty members also hire students to work in their research labs.



### *Postgraduate outcomes*

Perhaps the most important measure of the success of an academic program is how its graduates perform after matriculating. In post-graduate surveys, over 85% of our graduates find employment or further education in biological sciences. Our graduates have created our excellent reputation with graduate schools, professional programs (medicine, PA programs, veterinary medicine, dentistry), and with employers allied to the biological sciences. The UWSP Department of Biology ranks among the top Master's-only universities in graduating students



### *Careers in Biology*

A bachelor's degree in biology with appropriately selected coursework can prepare graduates for these careers and many others:

- **Animal Science**
- **Aquatic Biology**
- **Biology education**
- **Biobusiness**
  - Horticulture,
  - Biomedical and
  - Pharmaceutical sales
- **Biotechnology**
- **Ecology/Environmental fields**
- **Microbiology**
- **Natural History**
- **Plant Science**
- **Zoos and Aquaria**

who go on to complete a doctorate in the biological sciences. According to the "Survey of Earned Doctorates" UWSP was second in the nation (out of 579 schools) from 1989-2004 for the number of graduates that went on to complete a Ph.D. in life science (over 70 in that period). We attribute this, in part, to the strong emphasis we place on student research in our department. We get continuous feedback from graduate mentors, professional schools, state and federal agencies about how well prepared our students are. After the performance of our students at Baylor College of Medicine's premier cell-biology program, an admissions officer put it this way: "Send us more!"

### *Career Opportunities*

The field of biology offers many diverse and interesting careers. About 50% of our majors work directly with their bachelor's degree, about 15% go on to professional schools, and about 25% continue their education in pursuit of M.S. or Ph.D. degrees. Many of our graduates move on to work in research,

medicine, secondary and higher education, conservation, animal training and keeping, bio-sales and a host of other biology-related occupations.

*"Few of my employees over the years have displayed as thorough and wide-ranging biological and scientific knowledge as the three UWSP biology students I've employed over the 27 year history of my business."*

— Response from Employer Survey

## Facilities



The UWSP Department of Biology maintains a wide variety of specialized teaching and research laboratories. Teaching labs are well equipped with high quality microscopes, audio/visual teaching tools and other specialized equipment. Most faculty members also maintain labs where they work with students on original research.

Students can also gain valuable, hands-on experience through a wide variety of off-campus research and field opportunities at

the Pigeon Lake Field Station and Kemp Natural Resources Station. In addition, our students and faculty have access to extensive tracts of private, county and state land near campus, which provide a great diversity of habitats for scientific investigation.

### *Schmeckle Reserve*

UWSP is fortunate to have a 275 acre nature reserve at the north edge of campus. The rich mosaic of habitats in the Schmeckle Reserve provides unique learning and research opportunities, and serves as a field laboratory for many classes.



### *Electron Microscope Lab*

The UWSP Department of Biology has state-of-the-art scanning and transmission electron microscopes used by faculty and students for teaching and research.

### *Genetic Analysis Service*

This Service is available for UWSP faculty and students for teaching and research purposes. The system can determine the DNA sequence of any part of any genome, from viruses to humans, and can generate DNA fingerprints from any organism.

### *Museum Collections*

The Museum of Natural History provides an opportunity for greater public understanding and appreciation for the world in which we live through exhibitions, education, research and public service.

The Museum of Natural History is also home for our outstanding research and teaching collections of preserved fish, reptiles, amphibians, birds, mammals, insects, plants, and fossils.



## ***Vivarium***

The vivarium is the centerpiece of the TNR building. Run by students, it currently houses a variety of reptiles, amphibians and plants in a naturalistic setting that includes a waterfall and pond. An American alligator named 'Al' is currently the most conspicuous resident.

## ***Robert W. Freckmann Herbarium***

With more than 200,000 specimens, the Freckmann Herbarium documents the flora of Wisconsin and is used as a source of data for books and scientific papers on plant phylogeny, distribution and identification, and for teaching. Be sure to visit the Wisconsin Plants website, which features photos, maps, and descriptions of Wisconsin vascular plants, bryophytes, and plant communities. <http://wisplants.uwsp.edu/>

## ***Greenhouses***

Two greenhouse facilities provide our students and faculty with access to an extensive variety of living plants from around the world. The greenhouses are also used for many different class and research projects.



## ***Animal Care Facilities***

These include a secure animal research facility and an Aquatic Lab that is home to living fish, reptiles and amphibians. Students gain hands-on experience caring for a wide variety of animals for use in classes, research, and public education programs.



## ***Northern Aquaculture Demonstration Facility***

The NADF provides education, outreach, extension, and applied research to foster the development and growth of a sustainable aquaculture industry in Wisconsin and other northern US climates.

## ***Wisconsin Institute for Sustainable Technology***

The Wisconsin Institute for Sustainable Technology provides research, education and services to improve Wisconsin's long-term environment and economy through collaboration of educators, students and researchers.

## ***College of Natural Resources***

The UWSP College of Natural Resources is the nation's premier undergraduate institution for natural resources and environmental management. This provides extensive opportunities for collaboration between Biology and Natural Resources students and faculty. Many students choose to pursue a double major in Biology and one of the Natural Resources disciplines.

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