Department of Biology Newsletter
State University of New York at Potsdam

Department of Biology

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THIS ISSUE *The panda ant issue* Spring 2025

BOB CERWONKA MEMORIAL SCHOLARSHIP

This year's recipient of the Bob Cerwonka Memorial Scholarship is **Victoria Proulx**. This scholarship is made possible by a generous donation from department alumnus Mr. Robert E. Wagner ('75) and is awarded to a declared Biology major in good academic standing with a demonstrated interest and appreciation of nature and the environment.

Look for an announcement about the next Cerwonka Award in the Fall 2025 newsletter. **Please note:** You must be a matriculated student in the Fall following the award given in January to receive the funds!!

Potsdam
STATE UNIVERSITY OF NEW YORK

Comments or suggestions about the newsletter?
Contact Dr. Glenn Johnson, Newsletter Editor, in Timerman 231, x2710, johnsong@potsdam.edu

REGISTRATION

Advising begins March 17*. The spring schedule will be available online this day*
Registration *begins:*

- ***Seniors – April 10***
- ***Juniors – April 11***
- ***Sophomores – April 14***
- ***Freshmen – April 15***
- ***Transfer Students – April 28***

Students may adjust their schedules on BearPAWS until midnight, Sunday, August 28th, 2022, which is the day before classes begin and before the week of Add/Drop.

Registration instructions can be found at this link:
http://www.potsdam.edu/offices/registrar/registration/index.cfm

Students should consult with their advisor to make sure that they have completed the appropriate prerequisites and cognates before choosing electives. Some course descriptions and B.S. and B.A. checklists are included in this newsletter. **View the Fall 2024 class schedule at:**
http://www.potsdam.edu/offices/registrar/schedules/classschedulebydept

DECLARING BIOLOGY AS YOUR MAJOR OR MINOR

Students are strongly encouraged to declare their biology major as early as possible.

Declaring your major or minor early will help you obtain a biology faculty advisor and help you select the best courses toward your degree. It is our wish to match students with advisors with shared interests within life sciences. To declare biology as your major or minor, go to https://www.potsdam.edu/about/offices/registrar/majorminor-declaration for directions, but we suggest you visit with your Academic Advisor or **Dr. Robert Snyder**, the Department Chair (Stowell 307) first!. **To declare Environmental Science as a minor**, see **Dr. Snyder**. Just fill out one form. The entire process takes less than three minutes, but it can save you a semester or more by ensuring that you receive an advisor who understands our program.

Right: *A group of SUNY Potsdam students at the BFREE Biological station in southern Belize…*
Left: *Humpback whales bubble net feeding on our Cape Cod trip – another cool thing about being a bio major! (Photo: Alex Matte) (Photo: Glenn Johnson)*

TRANSITIONS and NEW DEVELOPENTS

First, please welcome **Dr. Rob Snyder as the new Biology Department Chair!!** Dr. Johnson will be co-Chair with Dr. Snyder for the Spring 2025 semester after which Dr. Snyder will be the sole Chair. Beginning in summer 2025, Dr. Johnson will begin a phased retirement and will fully retire after the Spring 2026 semester.

The biggest change within the Biology Department this past year is the new **Biomedical Sciences** degree program. (See pages 33-34 for course listings)

Biomedical Sciences is our new major and is housed in the Biology department. Therefore, information for BMS will be in the Biology Newsletter. A career in healthcare demands more than just a knowledge of the human body. The BMS major requires that you take a mix of the usual natural sciences courses but adds some human behavior and communications components. The major has six categories of courses taken across many different disciplines. This will require that you develop a multi-semester plan of courses and will make your life both easier and make sure you graduate in the shortest amount of time. If you are interested in this new major, see Prof Ewy, Coordinator of Biomedical Sciences.

One course that is an option for the BMS major is Dram 235 "Acting." Why an acting class? Because you have to listen and respond to others to be an effective actor. Dram 235 will be offered this coming fall, and probably for the last time. So here is your chance to take a course that will help make your application to professional school unique from most others. And you will have fun doing it.

Health Coaches II (Biol 370) will be offered next fall. If you are currently in or previously took Health Coaches I, pencil in Health Coaches II for this fall. It will be on Monday night, 5:30-7:10.

If you will need to take an entrance exam for professional school (MCAT, DAT, GRE, etc.) let Prof Ewy know and a practice exam under standard testing conditions can be arranged. These exams are quite arduous and knowing what to expect is in your best interest.

Prof Ewy will begin having open forums on Health Professions. Send topics that you would like to know about to him at ewyrg@potsdam.edu. Some potential topics will be "how to set up a study schedule for the exam you have to take," what to say in your statement of purpose," and "how do I get a good letter of recommendation?" Time and place to be determined.

Upcoming Biology Seminars (Noon in Stowell 211)!

April 2 **Kelly B. Klingler,** Associate Professor of Wildlife Science Paul Smith's College
Title: Life on the edge: signatures of geographic isolation and a changing genetic landscape for the American pika (*Ochotona princeps*) in the Sierra Nevada.

Apr 16: Brittany Geiler, St. Lawrence Health

Apr 30: Nana Ankrah, SUNY Plattsburgh

Biology Department Award Recipients

Bob Cerwonka Memorial Scholarship

2025 Recipient: **Victoria Proulx**

George R. Iseberg Award for Excellence in Biology and Cognate Sciences: Biology alumni, faculty, colleagues from various departments across campus, family and close friends of the late Dr. George R. Isenberg have contributed toward the establishment of an endowment in his memory. This prestigious award is intended to stimulate high academic achievement in biology and encourage advanced study in chemistry, physics, and mathematics.

2025 Recipient: **Lucas Scalcione**

Jessie J. McNall Award: Miss McNall, who was Professor Emerita of Science, served as Science Department Chair for many years prior to her retirement in 1946. She established an endowed fund with the Potsdam College Foundation in order that awards be made to sophomores for excellence in science, especially if preparing for teaching.

2025 Recipient: **Jane Mattingly**

Dr. Alexander & Genevieve Major Science Scholarship: Recipient must be a full-time undergraduate entering their senior year of study; a declared Biology, Chemistry or Bio-Chem major; possess a passion and drive for the Sciences that sets student apart from the rest of their peers, as determined by the chairs of Biology and Chemistry, or designee(s), in consultation with the departmental faculty; and possess financial need, as determined by the Office of Financial Aid (or designee) using the student's FAFSA.

2025 Recipient: **Alyssa Hervey**

Biology Departmental Award: This award is presented to one or more senior biology students who have demonstrated scholarship, dedication, and leadership in this major.

2025 Recipients: **Gabby Mazzullo**
Chase Bond
Talon Thompson

Departmental Scholars:

2025 Recipients: **Sarah Dauenhauer**
Zavia Jaime
Mikayla Shipley

Congratulations All!!

POTSDAM PATHWAYS

WAYS 101 The Bird That Powers the World– 3 cr

Dr. Sarah Sirsat
TuTh 11:30-12:45

Socrates' last words were about it. Queen Victoria was obsessed with it. Charles Darwin and Louis Pasteur made their scientific breakthroughs using it. Catholic popes, African shamans, Chinese philosophers, and Muslim mystics praised it. But, only recently has the chicken become humanity's most important single source of protein." This course will explore the fascinating saga of the modern chicken and the wicked problems which arose because of its domestication. We will develop critical thinking skills to tackle such moral quandaries as the commercialized meat industry, humanity's role as a preserver of other species, and the emergence of zoonotic diseases, like avian influenza.
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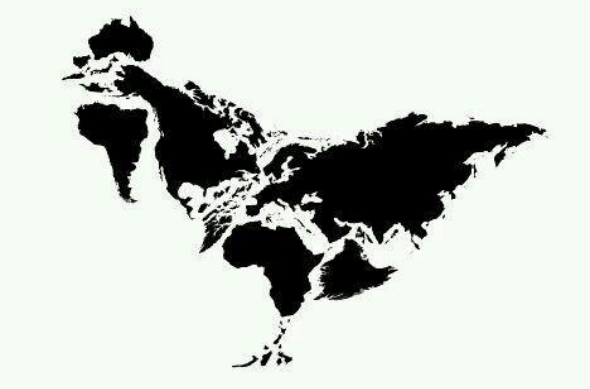


WAYS 101 The Ones Without a Voice: International Conservation of Wildlife – 3 cr

Dr. Bridget Amulike
MWF 11:00– 11:50
In this class we will explore the challenges that hinder our capacity to effectively conserve and manage global wildlife populations and the multitude of strategies to help reverse biodiversity loss.





WAYS 102: Cryptids and Mythids and Monsters! Oh My!– 3 cr

Dr. Sarah Sirsat
MWF 10:00 – 10:50

The Loch Ness Monster, Bigfoot, the Mothman---these are the names of just some of the elusive creatures that stalk through humanity's imagination. The uncanny, the unknown, the misunderstood creatures of myth have fascinated and inspired scientists, artists, and authors alike for centuries. This course will explore the role cryptids and mythical creatures hold in the human consciousness, the similarities that link some of our greatest fears across cultures, and the biology upon which many of these monsters are based. We will develop skills to research, analyze, and construct written arguments about cryptids from a variety of habitats around the world. We will also explore the numerous techniques writers employ to capture ideas and thoughts into organized prose and implement those skills to create written works of our own.

NEW AND IMPROVED COURSES

BIOL 483 – Current Topic – Biology of Cancer - SI

Dr. Laura Rhoads

Wednesday 5:30-8:20 PM

What person is NOT affected in some way by cancer? Why haven't we figured out a cure for all cancers yet? Why do some people die young from cancer, yet others live to a ripe old age cancer-free? Biology of Cancer is a seminar-style class that satisfies upper division elective hours in the biology major. We will be looking at cancer through the lens of cell biology, molecular biology, biochemistry, physiology, and medicine. Using these various aspects of biology and the research literature, we find out what causes cancer, how cancer is treated and the epidemiology of cancer types. Through the course, you will learn how to communicate concepts in cancer biology to your peers, and how to critically evaluate primary literature in the preparation of your presentation and a summary paper. Each student will give a presentation (20 minutes) on a primary research article about cancer, with peer review and self-evaluation.

BIOL 409 – Freshwater Ecology

Dr. Robert Snyder

Lecture MWF 1 – 1:50 Lab Wednesday 2:30-5:20

Freshwater Ecology Lecture-Lab is an ecology course focused on aquatic ecosystems (streams, rivers, and lakes). Lectures will provide an overview of physical, chemical, and biological processes of these ecosystems, while labs will include field experiences to tie the lecture material to the local aquatic ecosystems. This course will also address the relationships between humans and freshwater, as well as the conservation challenges, we face. Because this course is focused on only freshwater biota, habitats, and specific ecological processes, it will not cover the basic ecological concepts or terrestrial ecosystems in as much detail as Ecology (BIOL 300). Thus, Freshwater Ecology is not a replacement for BIOL 300. This course is designed for upper division Biology, Environmental Science, Environmental Studies, and Geology majors.

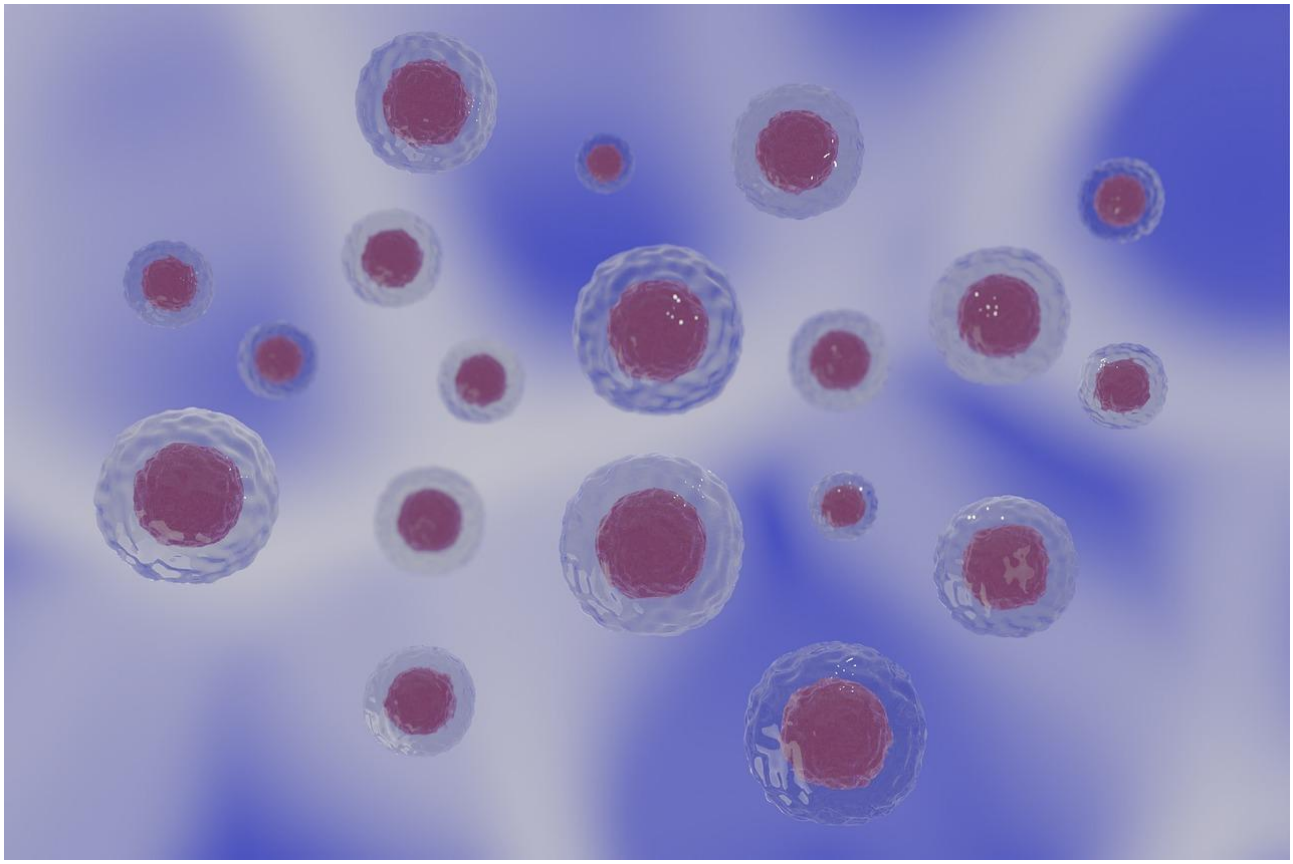
Why take this course? Freshwater ecosystems are complex and play important roles in human health and well-being, not to mention recreation. As such, society requires oversite and management to ensure these resources function as required. This class will help you prepare for a career as a Freshwater ecologist. And Human caused issues with water supply, fisheries, environmental quality, and flood control, will provide plenty of rewarding jobs. Lastly, freshwater ecosystems are awesome.

BIOL 307 – Cell Biology – New for Fall 2025!

Dr. Laura Rhoads

Lecture Tuesday/Thursday 10:00 – 11:15

Cell biology is a broad sub-field in biology, as it contributes to understanding of living processes at the level of the cell. This course will contribute foundational knowledge in biology that expands on the introductory content from BIOL 151/125 and BIOL152. This course will prepare you for upper division courses in genetics, microbiology, physiology, health-related courses, molecular biology and biochemistry. The course will also prepare students in Biomedical Science, Biochemistry, Exercise Science, and Education programs for advanced biology courses.



Don't pay extra! If your required textbook is an "Open Educational Resource" book, you do not need to pay a fee to get it. Last fall, there was a $7 optional fee listed on the College's bookstore website for "Open Stax" Texts (Biol 100, 151, 152, and 403). You do not need to pay this fee. Simply get the URL from the professor teaching your course.

BIOL 401 – Exercise Physiology

Dr. Schreer

Lecture Tues, Thurs 9:30-10:45am, Lab Monday 2:00-4:50pm.

Want a class where you can exercise in lab…and think about exercise in lecture? Getting an education and getting fit at the same time. Who doesn't want that? This course will count towards the biology electives and UD for the general education requirements.

Any questions, please contact Dr. Schreer at schreejf@potsdam.edu.

BIOL 403 – Human Anatomy and Physiology I

Dr. Schreer

Lecture Tues, Thurs 11:00-12:15am, Lab Tuesday or Thursday 2:00-4:50pm.

Most graduate programs in the health fields require a two-term, upper division, human anatomy and physiology course with labs. This, and the second of this course, will count towards the biology electives and UD for the general education requirements. This fall I am offering the first term of this course which includes basic orientation of the human body, chemistry of living cells, cells, tissues, integumentary system, skeletal system, and nervous system. The second term in the spring (Biol 404) will cover the muscular system, cardiovascular system, lymph system, immune system, respiratory system, digestive system, nutrition, metabolism, temperature regulation, urinary system, osmotic balance, and reproductive system. In the lab, we will alternate between the anatomy of a given system and physiological experiments related to that system. This course will be very demanding, but we'll all learn a ton and you'll be thanking me when you take your gross anatomy course in graduate school. And by the way, gross anatomy is a serious weed-out course so the more prepared you are ahead of time, the better.

HLTH 370 – Health Coaches II

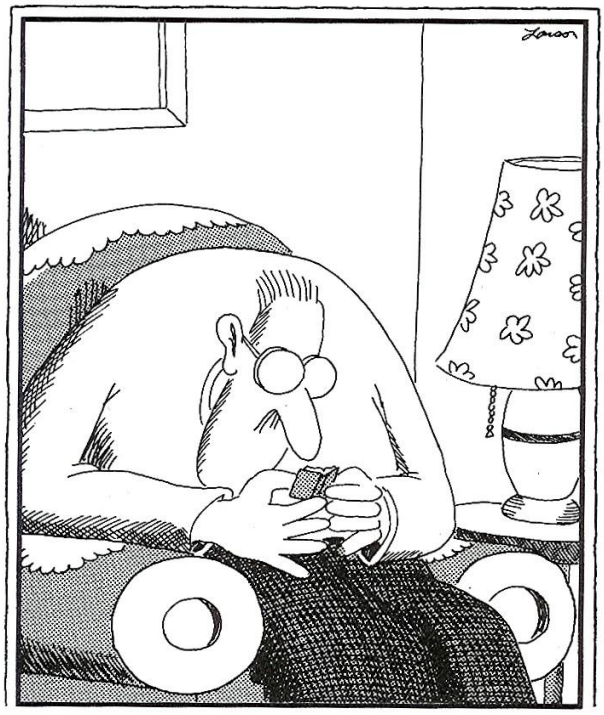
Dr. Robert Ewy

Looking for experience working with patients? SUNY Potsdam has teamed with Canton Potsdam Hospital (CPH) to train students to work with community members who have chronic conditions such as diabetes, COPD, or heart disease. If you have taken Health Coaches I (Biol/Hlth 270) you can enroll in BIOL 370 "Health Coaches II" Students are paired with a community member who has a chronic condition. Together the health coach and patient will work to develop small patient-centered goals to improve quality of health. This kind of experience looks great on an application to a health professions program such as MD, DO, PA, and PT, and will give you valuable experience in working with patients and first-hand insights into our health care system. You will learn more than you can imagine about working with patients! **The course meets Mondays 5:30-7:10 pm.** You can earn 2 hours of either Biol or Hlth credit. See Prof Ewy for more questions.

BIOL 320 – Microbiology

Dr. Gordon Plague
Lecture MWF 10-10:50 Lab Thursday 1-3:50

Microbes may be small, but they rule the world (and they're phenomenally interesting from a biological perspective).



Roger crams for his microbiology midterm.

Call for Teaching Assistants in Microbiology (BIOL 320).

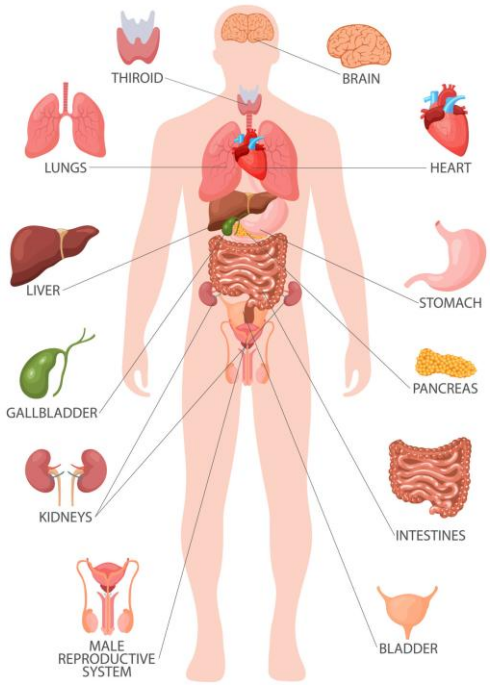
Please contact Dr. Plague (plaguegr@potsdam.edu) if you're interested in being a Microbiology TA. The lab will meet on Thursday afternoons.

BIOL 212 – Introduction to Anatomy and Physiology I

Drs. Sarah Sirsat

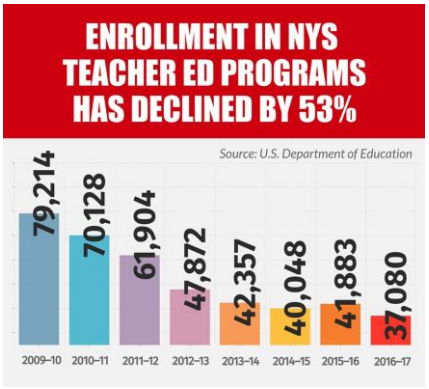
Lecture MWF 9-9:50; Lab Tuesday 1- 2:50

BIOL 212, the first half of a two-semester sequence, introduces students to the systems of the human body and emphasizes the interconnection between those systems that permits our daily activities. This two-course sequence is appropriate for students pursuing careers in physical therapy, occupational therapy, exercise science, community health, athletics, dance therapy and other health-related fields that require a two-semester Anatomy and Physiology sequence.



Love Biology? – Teach it!

The State of New York and the nation are experiencing a massive teacher shortage. Areas of greatest need include all STEM fields. There are many openings for biology, and all of the natural sciences, educators in every school district, and every state. If you love biology, and want to share that passion with others, the teaching profession offers opportunities to positively influence the lives of many. SUNY Potsdam has been a pioneer in teacher education, housing the oldest teacher preparation program in SUNY, and among the first in the nation. Our BA/MST option provides professional certification while preparing students for a lifetime of success in the classroom. If interested, please contact your academic advisor.



BIOL 300 – Ecology

Dr. Bridget Amulike

Lecture Monday/Wednesday/Friday 9:00 am – 9:50 am. Lab options: M or Th 2:00 pm- 4:50 pm

What Is Ecology?

Ecology is the study of the relationships between living organisms, including humans, and their physical environment; it seeks to understand the vital connections between plants and animals and the world around them. Ecology also provides information about the benefits of ecosystems and how we can use Earth's resources in ways that leave the environment healthy for future generations.

Ecologists study these relationships among organisms and habitats of many different sizes, ranging from the study of microscopic bacteria growing in a fish tank, to the complex interactions between the thousands of plant, animal, and other communities found in a desert.

Ecologists also study many kinds of environments. For example, ecologists may study microbes living in the soil under your feet or animals and plants in a rainforest or the ocean.

The Role of Ecology in Our Lives

The many specialties within ecology, such as marine, vegetation, and statistical ecology, provide us with information to better understand the world around us. This information also can help us improve our environment, manage our natural resources, and protect human health.

-Ecological Society of America

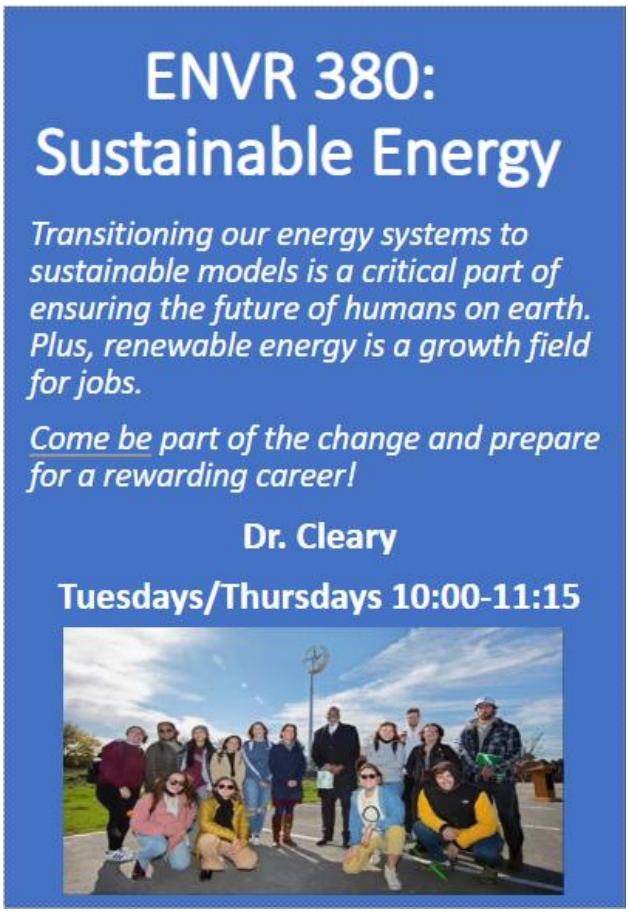
Catalog description: BIOL 300 – Ecology (3-4) Physical environment of terrestrial and fresh-water eco- systems, interspecific and intraspecific relationships, speciation, demography, growth and regulation of populations, energy flow, community organization and development. **Prerequisites: BIOL 151 or 125, and 152. Lab optional*. Gen Ed: WI (writing intensive) lab only.**

***Biology majors have the option to take either Ecology (BIOL 300 lab) or Genetics (BIOL 311) lab. Students should consult with their Biology advisor to determine which option is best. Students can take both labs, with the additional lab counted as Biology Elective credit.**

TA's needed

Ecology Lab: I am looking for 1-2 Ecology TA's. TA's must have taken BIOL 300. TA's will drive College van to field sites, among other duties. You are encouraged to apply even if you cannot drive a van! Please contact Dr. Amulike (amulikbb@potsdam.edu) if interested.

Photos from Lab trip to Cold Brook



NEW!! GIS Microcredential

The first class is being offered in the fall and the second in the spring, so in one year a student can complete it. Here's the actual title and description of the course and the link to the microdential program

https://www.potsdam.edu/academics/programs-study/microcredentials

Spatial Data Analysis with GIS Coming in Fall 2025

This microcredential provides students and professionals with hands-on experience in Geographic Information Systems (GIS), covering essential techniques in cartography, remote sensing, spatial analysis, and data management. The two-course sequence can be completed entirely online or with an in-person introductory course followed by an online applied course. Each course culminates in an individual project to develop real-world GIS skills. Successful completion of this microcredential prepares you for continued study and to apply for positions such as GIS analyst, spatial data specialist, or environmental consultant.

Health Professions

If you are interested in a health profession, enroll in the "Health Professions" Moodle course. You will find information on various careers, how to prepare for such a career, and what exam you may need to prepare for. Send Prof Ewy an email: ewyrg@potsdam.edu and include the following information:

Your name
What career you want to pursue (dental, medicine, veterinary, etc.)
Your year classification (1st, 2nd, 3rd, 4th)

Professional school test prep If you are interested in an on-campus MCAT or other pre-professional test prep tutorial let Prof Ewy know. I want to see if there is enough interest to formalize a "test-prep" courses.

Preparing for MCATs or another exam that will test your Biology knowledge? The best way to really know Biology is to teach it! The Department is looking for TAs to help with Biology 152 labs. This is an excellent way to review your Biology and help out the Intro class.

Committee Letters of Recommendation

Applying to Medical School (or any other program that requires a committee letter) for the upcoming cycle? HPAC interviews will be done in April. Please have your letters of recommendation to Prof Ewy by the end of March. For more information, contact Prof Ewy.

Interested in pursuing a career in a Health Profession? Enroll in the Health Professions Moodle course. There you will find information on all kinds of health-related programs including: MD, DO, PA, PT, Vet, Dental, OT, and Optometry, as well as medical related research programs. You can self-enroll and will receive periodic notices of events both on and off campus that pertain to various health-related careers. Talk to Profs Schreer, Trybula, or Ewy for more information.

Pre-health club

There is a student-run pre-health club on campus. This is another valuable resource for information about various health professional graduate programs. You can talk to students who have taken exams such as the MCAT, GRE, and other exams, as well as what out of class experiences you should be doing to help you get into the program you want. The current contact person is Arantxa Valdez. This link will get you to all the clubs and student organizations: https://getinvolved.potsdam.edu/organizations

SUMMER TRAVEL COURSE

Marine Biology for Summer 2025

SUNY Potsdam offers a field intensive Marine Biology concentration at our affiliate institution, the Gulf Coast Research Laboratory (GCRL) on the ocean in Ocean Springs Mississippi. Many students from our College have traveled to the GCRL to participate in our Marine Biology Program. Representative courses include Marine Biology, Marine Mammals, Shark Biology, Ichthyology, and Marine Ecology. There are also research opportunities. As members of the consortium, Potsdam students only pay instate tuition, room, and board. Students may complete three courses at the laboratory and fulfill their elective requirements, graduating a semester early. With this option, there is no additional cost within a four-year curriculum. For complete details, please visit the GCRL website (http://www.usm.edu/gcrl/) and under "Academics," select ―GCRL Summer Field Program. Interested students should also contact our GCRL advisor, Dr. Conley.

These six Potsdam students enjoyed the facilities and field experiences offered at GCRL, many completing multiple courses. From left to right; Alyssa Navilio, Alison Brown, Megan Jubert, Alex Matte, Dr. Conley, Justin Williams, and Amanda Blackburn.

Marine Biology class of on Santa Rosa Island, Pensacola Florida.

Biology on Facebook, Instagram and TikTok

Did you know that the Biology Department has a Facebook page? Please connect with us online through Facebook. You will find department announcements as well as information about internships, department seminars, and interesting science news.
https://www.facebook.com/SunyPotsdamBiology/

The Panda Ant (*Euspinolia militaris*) is not an ant, but rather a wingless wasp (although males have wings) that is a parasitoid on other wasps and bees. The striking coloration is though to be aposematic, that is, warning potential predators that they can sting!

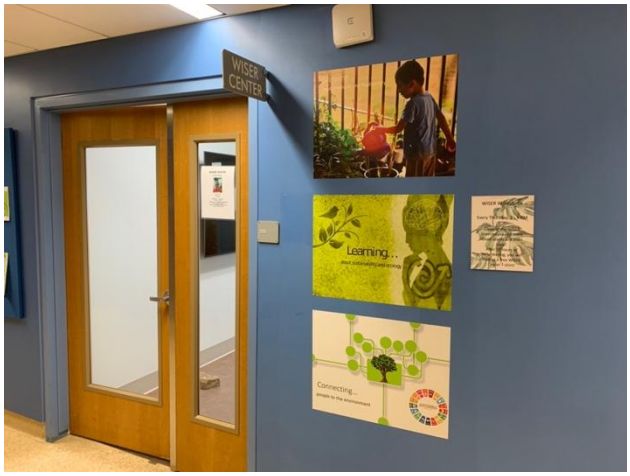
WISER Center Spotlight

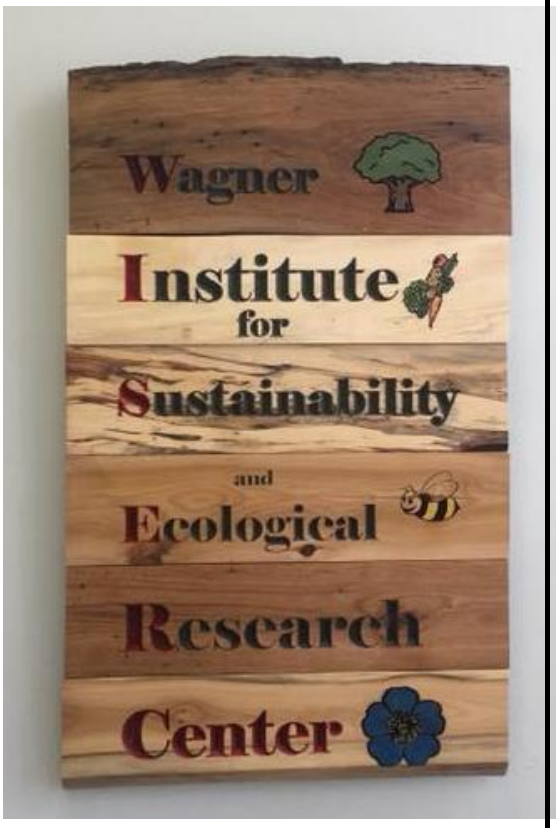
What *is* the WISER Center?

WISER stands for *Wagner Institute for Sustainability and Ecological Research* Center. It's an outreach and research Center run by students!

Where's the WISER Center?

Located at 205 Stowell Hall we are in the Biology Department





What's *in* the WISER Center?

- Computer classroom
- Public greenhouse
- Research and classroom learning greenhouse.
- Tower Garden® aeroponic food garden
- Plants of all kinds!
    - Decorative
    - Herbs
    - Food
    - Medicinal
    - Poisonous

What goes on in the WISER?

The WISER is an institute with spaces on campus outside of the Center where there are…

- **Campus and community events**
    - Hosting school trips
    - WISER Open Houses
    - Yoga in the Greenhouse

Join the WISER Staff?

Please consider becoming a WISER volunteer, intern, or researcher.

- Positions are granted on a semester-by-semester basis.
- A total of 4 volunteers,4 interns, and 6 research positions are available.
- Staff positions are filled according to program needs and the strength of applications for positions.

Even if you aren't a member of our WISER Staff, we hope you will visit the public greenhouse via Stowell 205. When you are here, feel free to ask questions of staff members or else learn more by visiting the WISER Coordinator, Ray Bowdish at Timerman 232, calling 315-267-2276, or emailing wiser@potsdam.edu for more information.

Harper Barrett – Urban Farmer, Spring 2023

Who coordinates the WISER Center?

Ray Bowdish
Hours in the WISER
MONDAY - FRIDAY:
9 AM - 2PM
EMAIL - WISER@POTSDAM.EDU
CALL 315-267-2276

- **Internships* –**
  - Urban Farmer – Grow plants for food in the Tower Gardens and greenhouses.
  - Plant Doctor – Help keep campus plants healthy and handsome.
  - Community Farmer – Farm in campus gardens and greenhouse, for food justice!
  - Campus Beekeeper
  - WISER Wellness coordinator

Toni Wahl and Sydney LaPlant, Campus Beekeepers

- **Student research –**
  - Crop production and protection
  - Biological controls
  - Integrated Pest Management
  - Genomics

- **WISER Workshops** –
  - Join the WISER Staff!
  - Meet **Thursday from 2-4 PM** or arrange for custom volunteer times.
  - Volunteer and **learn horticulture** (how to grow and maintain plants).
  - **Earn a WISER T-shirt** after 5 sessions.
  - Have fun and beautify campus too!!

WISER Volunteer Staff at the WISER Workshop – Every Th. 2-4

WORK STUDY

If you are interested in and eligible for the federal work study program please see either **Rachel Wallace** (wallacrm@potsdam.edu, Phone 267-4814), or the department secretary. Responsibilities include laboratory setup and cleanup and plant and animal care.

TEACHING ASSISTANTSHIPS

See the world from our side. Most professors are looking for motivated students to be teacher assistants for their courses. This is a great way to get some teaching experience and an opportunity to work more closely with one of your Profs. This also counts as a 1 credit upper division bio course. Contact your Profs before the end of the semester if you are interested and see some possibilities below.

Teaching Assistant positions in General Biology labs

If you are interested in becoming a Teaching Assistant in the General Biology labs (BIOL 151 and 152) please contact Drs. Rob Ewy or Rob Snyder before the end of the spring semester. Basic requirements: 1) successful completion of Biology lecture and lab courses (3.0 or better) and 2) a willingness to commit at least 2 hours of time outside your regularly scheduled lab section each week.

As a lab TA you will be helping to prepare and teach the General Biology labs. This is a great way to reinforce your knowledge and to learn how things are done "behind the scenes" of lab. Upon successful completion of a TA position, students earn 1 credit and no monetary compensation. Preparing for MCATs or another exam that will test your Biology knowledge? The best way to really know Biology is to teach it! This is an excellent way to review your Biology and help out the Intro class.

Lecture TA's (General Biology): *1 or 2 students to assist in classroom activities and lead weekly review "Successions". Must be able to attend MWF 11-11:50(Biol 152) lecture. Please contact Dr. Snyder (snyderrl@potsdam.edu) if interested.*

Dr. Ewy is looking for TAs for Biology 100 (non–majors Biology). Bio 100 has a Thursday lab section.See Prof Ewy for more details.

TA's needed Ecology Lab: I am looking for **1-2 Ecology TA's.** TA's must have taken BIOL 300. TA's will drive College van to field sites, among other duties. Please contact Dr. Amulike (amulikbb@potsdam.edu) if interested.

INTERNSHIPS

Biology Department Applied Learning Opportunities

New internship: Laboratory Technician. If you've considered laboratory research or management after graduation, this internship may be for you. Topics and experiences covered include: maintaining a lab notebook; making solutions; model systems; hazardous waste disposal and chemical storage; equipment use, troubleshooting, maintenance and repair; media preparation: antibiotics and additives; molecular biology techniques; field trip to Clarkson to see their facilities; creative problem solving (or, Don't panic: how to fix anything with duct tape and popsicle sticks); and ordering and stocking supplies. Open to one student per semester depending on instructor availability. Contact Rachel Wallace (wallacrm@potsdam.edu) if you're interested in applying or learning more.

Care and Handling of Display Animals in the Biology Department at SUNY Potsdam

MORE INTERNSHIPS & Biology Department Applied Learning Opportunities
Learn how to apply for an internship with this link to the Experiential Education Office (EEO).

Wagner Institute for Sustainability and Agricultural Research (WISER) Internship, in the Biology Department at SUNY Potsdam

You get to:

- Manage the Healthy Plant Initiative (HPI) program
- Grow microgreens for PACES
- Help Develop our campus composting initiative
- Learn horticultural technique
- Practice Integrated Pest Management
- Report your achievements to the campus at the Learning and Research Fair

Off-Campus Internship Opportunity

Study Horticulture from Never Tire Farm

Each spring, Never Tire Farm (Lisbon, NY) seeks motivated students of junior status or higher, for a unique and valuable experience, working in a modern greenhouse operation. Students who qualify for the internship will be actively learning about all aspects of greenhouse production including sowing, transplanting, fertilizing, watering, and propagation of various annuals, perennials, vegetables, and herbs. Interns learn about the business of growing plants and will be exposed to maintenance and labor issues facing modern growers. Qualifying interns should have experience as a WISER intern be trained in Integrated Pest Management (IPM) techniques and participate in the Never Tire Farm's biological control program.

WISER Genomics Kilmer Lab

Rob Snyder & Ray Bowdish

The WISER Center is expanding its research to explore ecological systems using both genomics and traditional sampling methods. Students rotate between greenhouse and laboratory settings, gaining hands-on experience in various research techniques, including pest scouting, DNA isolation, and PCR/QPCR. The current focus is to identify insect pest populations and their natural enemies in the WISER greenhouses, with the goal of optimizing the release timing and strategies for biological control agents.

Interested, self-motivated students are encouraged to contact us at wiser@potsdam.edu.

What can you do with a Biology Degree??

Here's a few web resources!

https://www.monster.com/career-advice/article/best-jobs-biology-majors-0317

https://www.trade-schools.net/articles/biology-careers.asp

https://www.indeed.com/q-Bachelors-Biology-jobs.html

For those interested in Natural Resources, Conservation and Wildlife:

https://wfscjobs.tamu.edu/job-board/

Thinking of Grad School in Biology?:

https://www.gradschools.com/programs/biology

And finally, here are some links to the **Bureau of Labor Statistics Occupational Outlook Handbook** pages. The first is the general page for Life, Physical and Social Sciences

https://www.bls.gov/ooh/life-physical-and-social-science/home.htm

Here is the page specifically for Environmental Scientists

https://www.bls.gov/ooh/life-physical-and-social-science/environmental-scientists-and-specialists.htm

And for Medical Scientists

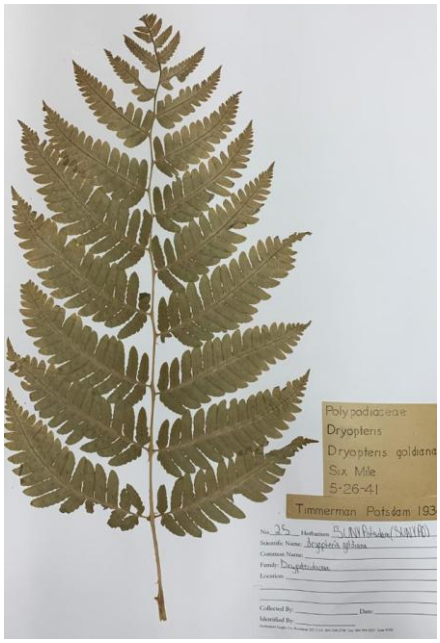
https://www.bls.gov/ooh/life-physical-and-social-science/medical-scientists.htm

BIOLOGY'S HERBARIUM

The SUNY Potsdam Herbarium is shaping up! An herbarium is a library of preserved plant specimens that have been collected or donated over the years. Herbaria provide a permanent record of plant diversity, mark the movement of species in or out of a geographic area, and provide a tangible example of a species' anatomy. Our collection encompasses 1851 specimens in 145 families and 53 orders. They've been organized according to APG (Angiosperm Phylogeny Group) IV classification and linear sequencing as generated by Christenhusz et al. (2011) for our lower vascular and non-vascular plant specimens.

Since 2017 we've been organizing the physical collection, getting STW 111A cleared out and set up to be a facility, databasing the collection, and now we're mounting and repairing the specimens. The end goal is inclusion in a SUNY-wide Herbarium Consortium, with all specimens digitized and fully accessible for classroom and research use.

Dan Marro '20 was hugely instrumental in the initial reorganization of the collection, along with the help of Victoria Saladino '18. In more recent times, Stevie Phelabaum '21 and Sai Barnes '23 have led the charge in repairing and mounting specimens, along with contributions by Diana Marji.



Stevie and Sai completed mounting and repairing the Magnoliids and Monocots last Spring. Sai recently completed non-vascular and vascular lower plants and is steadily working her way through our gymnosperm collection. Next stop is the daunting eudicot collection!

Interested in learning more or getting involved in the SUNY Potsdam Herbarium? Email Rachel Wallace (wallacrm@potsdam.edu) or stop by STW 111A for a visit!

RESEARCH WITH PROFS

Dr. Sarah Sirsat – Physiology

Physiology encompasses all biological levels from molecular to whole organism; as a physiologist I have an interest in the how and why at all of these levels. I am especially fascinated by the interplay of avian biological systems and the role phenotype, the outward manifestation of an organism's genetic makeup, plays in physiological responses. My research explores the relationship of phenotype and physiology using a small, precocial bird known as the Chinese Painted Quail or King Quail. Numerous pattern and color mutations have been developed in captivity for this species. I currently examine physiological differences related to a recessive white pattern that my students and I have successfully developed into a pure-breeding lineage. These spotted white birds show different growth rates, organ masses, and morphological measurements than the wild type color. My research aims to determine the physiological mechanisms behind these differences, such as changes in metabolism and differences in mitochondrial function of various tissue types.

Dr. Sarah Sirsat – Hosta Project

I am currently looking for students to participate in an ongoing disease prevalence study during the summer and fall of 2024. We will be monitoring various plant populations (private garden, public landscaping, commercial sellers) for HVX, a highly infectious virus in the local population of a popular ornamental garden plant, the Hosta. Hostas thrive in the USDA zone 4b climate of Potsdam, NY and are used as ornamentals for commercial and personal landscaping. Numerous local corporate and privately owned nurseries sell hostas imported from around the world, providing an avenue of contamination. This project aims to establish the prevalence of HVX in established hosta plants around the Potsdam community using the HVX ImmunoStrip®: a polyclonal test strip developed as an on-site tool to quickly identify plants infected with Hosta virus X (HVX).

Dr. Jan Trybula – Molecular Ecotoxicology & Population Genetics

My main research is tied molecular ecotoxicology and biodiversity. I'm interested in how environmental toxins affect the genetics of various organisms. Students in my lab examine ways to determine genetic damage caused by a variety of pollutants. My most current work is investigating genetic variants of insect chloride ion molecular pore proteins and the effect those variants may have on susceptibility or resilience to road salt runoff. I'm also interested in the biodiversity of emergent aquatic insects such as dragonflies, mayflies, stoneflies, and caddisflies. Worldwide insect numbers and diversity are in decline and pollutants of various sorts are thought to be one of the greatest contributing factors.

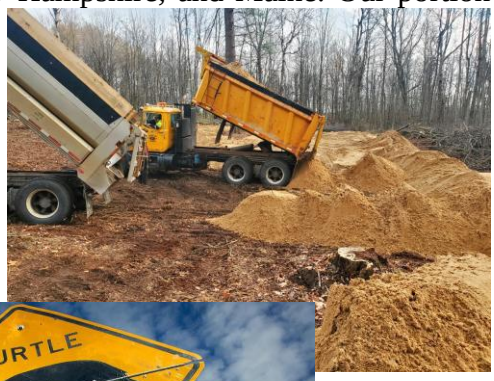
Students in my lab are also working on other genetic-based projects. For example, we are investigating the feasibility of using CRISPR to alter a bacterial genome to change expression of a protein. We hope to create a new Genetics Lab exercise with this work. Also, one of my current students is interested in forensics and we are beginning a study of how quickly hair follicle DNA degrades in differing conditions.

If you're interested in learning more about these projects or other ways to connect with my research group, please contact me: trybulj@potsdam.edu

Dr. Glenn Johnson – Conservation of Threatened Species

231 Timerman Hall, 267-2710, johnsong@potsdam.edu

I am in the latter stages of a funded project on turtle conservation. This involves Blanding's turtles, a Threatened Species over much of its range, and other regional freshwater turtles species. This project is part of a grant from the US Fish and Wildlife Service, and we will be cooperating with conservation biologists in Pennsylvania, Massachusetts, New Hampshire, and Maine. Our portion involves conducting rapid assessments of Blanding's turtle populations across the North Country, establishing several long-term monitoring sites, creating artificial nest sites for this species, and setting up a Turtle Crossing sign network within parts of New York. If interested in learning more, please contact Dr. Johnson.



Dr. Robert Ewy - Research experience: Medicinal Properties of Willows

The two primary projects in my lab are sustainable energy production and herbal medicines, both from shrub willow. Yes, you can get research credit for making energy! Currently, students in my lab are quantifying Salicylic Acid in 16 varieties of willow. This project will continue on in the fall. If you are at all interested in graduate school, research experience during your undergraduate education is becoming a must. But the most important point is that research is fun! I work with all levels of students, from first year students to seniors. The only requirements to work in my lab are curiosity, a willingness to solve problems, and the desire to learn outside of a book. You can earn research credit via Biology 485 **or** an internship.

Dr. Rob Snyder – Genomics/Animal Behavior

My main project is looking at the role of primary gut symbionts, in plant feeding insect speciation. Basically, gut bacteria provide the insect essential amino acids synthesis pathways. Closely related species have different diets and require different pathways. This research is interested in explaining how insects adapt and diverge to new diets, which leads to speciation. To date we have sequenced the genomes of two co-symbionts and are using that information to look for patterns in the amino acid pathways between 9 closely related species.

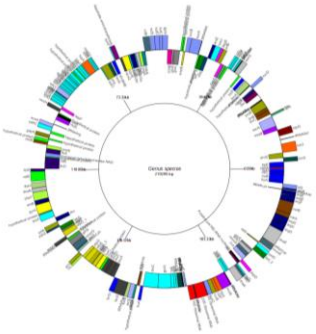


Figure 1: Genome of *Sulcia* sp. The first novel genome sequenced by SUNY Potsdam

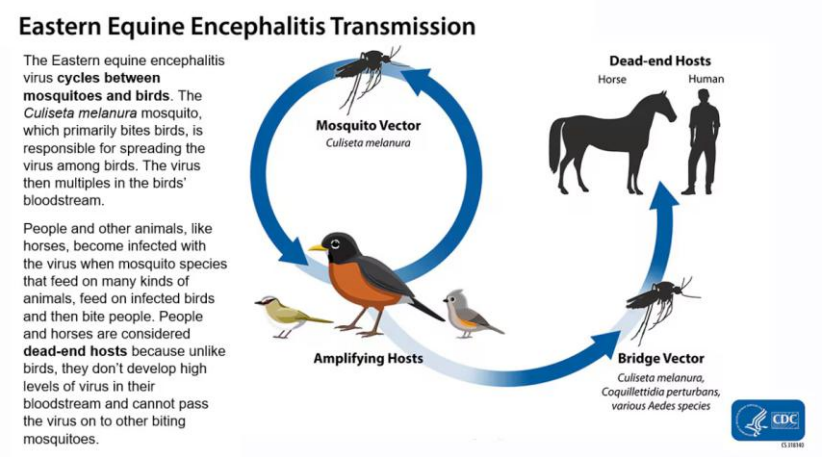
Research Opportunity: I'm looking for two new student researchers, who are interested in building their molecular genetic lab skills. Email me if you are interested. No pay but you can earn BIOL elective credits!

Figure 2: The two-spotted treehopper *Enchenopa binotata*

Drs. Rob Snyder, Kate Cleary and Glenn Johnson – Summer 2025

Internship Monitoring Mosquito-borne Zoonotic Diseases

In collaboration with the St. Lawrence County Health, SUNY ESF and Clarkson University we are establishing a mosquito-borne disease surveillance program in the wooded wetlands of our region. Presently, much is assumed but little known about the diversity of mosquito species found in the region. However, recent increases in the mosquito-vectored disease Eastern Equine Encephalitis (EEE) cases in horses and humans have made it critical to understand the temporal and spatial distribution of disease vectors. This project aims to 1) assist St Lawrence County Public Health Department by identifying hotspots of enzootic EEEV and 2) document the diversity and seasonality of mosquitos inhabiting the wooded wetlands of the St Lawrence Valley to better understand future mosquito-borne viral threats to wildlife and human populations.



Culiseta melanura

Drs. Jessica Pearson/Glenn Johnson-

Biological Control Technician

Summer 2025 - Full Time Summer Biological Control Technician Position with the USDA at SUNY Potsdam
Start Date: Mid May- September. Dates are semi-flexible.
Work Schedule: Full Time (40 Hours/Week)
Salary: $20/hr depending on level of education.

Position Description: This position will require independent fieldwork in upstate New York, St. Lawrence County (Brasher Falls, Waddington, Morristown, and Massena, NY). The employee will be hired by the Research and Sponsored Programs Office at SUNY Potsdam, with funding from the US Department of Agriculture, and overseen by Dr. Jess Pearson and Dr. Glenn Johnson. Most work will take place remotely in upstate New York (Brasher Falls, Waddington, Morristown, and Massena NY). This position is designed to support ongoing scientific research into the biological control of the emerald ash borer. This job involves a balance of both field and laboratory work. It involves releasing small biological control agents that attack emerald ash borer as well as setting up traps to recover adult beetles and the biological control agents. The field portion of the work will be conducted in ash forests and there will be access to the laboratories of the Environment Division of the Saint Regis Mohawk Tribe in Akwesasne, NY to allow the employee access to a laboratory space for beetle trap sample processing. Once during the summer, the employee will collect health data on tagged ash trees. Additional field work to assist with other projects may be required throughout the season. This job will require driving to field sites throughout St. Lawrence County in New York. A valid driver's license and a willingness to drive between sites is essential. Vehicles for field work or mileage reimbursement will be provided. You will be trained in every step of the process. Following training you will then be required to work independently.

This job requires fieldwork that can involve collecting data under adverse weather conditions, as well as laboratory work, which requires good organizational habits. Applicants must be a US citizen.

Application: Please send a short letter of interest and your resume to Dr. Jess Pearson (rogersje@potsdam.edu) Use the email Subject line "Biological Control Technician Position 2025". We will be accepting rolling applications and scheduling interviews as applications are received until the position is filled. If you have any questions, you can contact Dr. Pearson at the email above or call her at 315-267-2522.

SUNY Potsdam
Lambda Xi Chapter
Beta Beta Beta
National Biological Honors Society

Beta Beta Beta (TriBeta) is a society for students, particularly undergraduates, dedicated to improving the understanding and appreciation of biological study and extending boundaries of human knowledge through scientific research. Since its founding in 1922, more than 200,000 persons have been accepted into lifetime membership, and more than 670 chapters have been established throughout the United States and Puerto Rico.

New member candidates are invited to join BBB every year. Invitations are sent out in March and a new member induction ceremony is in late April.

The membership shall be divided into six classes: regular, associate, graduate, honorary, alumna/ us and corporate. Beta Beta Beta is a non-discriminating organization that does not consider age, race, color, creed, sex, national origin or sexual preference.

Regular members shall be:
a) Undergraduate biology majors (BS or BA) at SUNY Potsdam.
b) Shall have completed at least 3 semesters of a four-year curriculum.
c) Shall have completed at least three term courses in biology (BIOL), of which at least one must be upper division (300 or 400 level), with an average 3.25 GPA in those biology courses.
d) Shall have a 3.25 GPA in all courses, and in good academic standing
**Only regular members may hold the constitutionally specified chapter offices, vote on chapter membership nominations and national questions, and represent the chapter or vote at national conventions.

Associate members shall:
a) Shall have completed at least 3 semesters of a four-year curriculum.
b) Shall have completed at least three term courses in biology (BIOL), of which at least one must be upper division (300 or 400 level), with an average 3.25 GPA in those biology courses.
c) Shall have a 3.25 GPA in all courses, and in good academic standing.

New Major in Biomedical Sciences!

The Biomedical Science major at SUNY Potsdam ombines both rigorous academic preparation and the flexibility to customize course content for preparation to any of a number of post-graduate health career programs. Our unique combination of Natural and Social Science courses will prepare students to both understand the disease process and how to effectively relate to patients. Admission to Professional programs in health care require more than just academic mastery in particular subjects. Students need to gain experience with the health care system that is only obtained through Applied Learning opportunities (shadowing, patient, care, etc.). We have included Applied Learning experiences such as Health Coaches and internships as requirements in our major. We also require students to learn how to interact and motivate patients as many health care systems have begun to focus on "Patient-Centered" care. This Patient-centered care requires that health care providers communicate more effectively with patients so that patients can make a more informed decision about their own health care. College students want more choices today, so we have devised a program that allows students to have more choice in the courses they take while maintaining the academic breadth and rigor needed to prepare for intense professional programs. Our major will also provide the flexibility for students who decide to change to career paths part way through their undergraduate education and not require students to take more than four years at SUNY Potsdam. The major has been designed to incorporate both SUNY Potsdam's new Pathways General Education Program and the new SUNY system General Education requirements. Each student in our new major will have a faculty advisor who is familiar with advising pre-health students. Students will meet with their advisor at least once a semester throughout their time at Potsdam.

Core Classes		
	Credits	**Gen Ed**
BIOL 151 General Biology I: Cells and Genetics	4	
BIOL 152 General Biology II	4	
CHEM 105 General Chemistry I	4	NW
CHEM 106 General Chemistry II	4	
BIOL 301 Communicating in Biology	3	CM
MATH 125 or STAT 100 Probability & Statistics	3	TM
CHEM 341 Organic Chemistry OR	4	
BIOL 307 Cell Biology	3	
Core Credits	**25-26**	
Career Specific Cognates		
BIOL 307 Cell Biology (if not selected above)	3	
BIOL 311 Genetics (Lecture and lab)	4	
CHEM 341 Organic Chemistry (If not selected above)	4	
CHEM 342 Organic Chemistry (If not selected above)	4	
CHEM 425 Biochemistry I	4	
PHYS 101 or 103	4	
PHYS 202 or 203	4	
MATH 141 and 142 sequence or Math 151 Calculus	4	TM
PHTH 221 Death and Dying	3	
PHTH 333 Human Nutrition	3	
PHTH 342 Women's Health	3	
PHTH 430 Human Disease: Patterns/Prevn	3	
PHTH 385 Epidemiology and Biostatistics	3	SW
Cognate Courses Credits	**12-16**	
Patient Communication		
BIOL/PHTH 270 Health Coaches I	2	
Medical Spanish (may be taken online)	1	
DRAM 235 Introduction to Acting	3	TA
PHTH 310 Health Disparities	3	
BIOL 479 Issues in Health Care	1	
PHIL 331 Moral Issues in Mental Health	3	TF
Patient Communication Credits	**2-3**	

New Major in Biomedical Sciences! (continued)

Understanding Human Behavior		
PSYC 100 Introduction to Psychology	3	
PSYC 220 Child Development	3	
PSYC 370 Theories of Personalities	3	
PSYC 375 Abnormal Psyc	3	
ANTH 202 Cultural Anthropology	3	GC
Understanding Human Behavior Credits	**6**	
Electives		
Chem 311 Quantitative Analysis (Lec and Lab)	4	
Chem 315 Forensics	3	
BIOL 320 Microbiology (Lec and Lab)	4	
BIOL 403 Human Anatomy and Physiology I (Lec and Lab	4	
BIOL 403 Human Anatomy and Physiology I (Lec and Lab	4	
BIOL 407 Cell Physiology (Lec and Lab)	3-4	
BIOL 410 Human Physiology (Lec and Lab)	3-4	
BIOL 413 Neurophysiology (Lec and Lab)	3-4	
BIOL 415 Virology	3	CT
BIOL 418 Microbial Diseases	3	
BIOL 426 Immunobiology	3	
CHEM 426 Biochemistry II (Lec and Lab)	3-4	
BIOL 431 Developmental Biology	3	
CHEM 444 Advanced Organic Chemistry	3	
BIOL 445 Human Genetic Diseases	3	
CHEM 461 Nanomedicine	3	
EXSC 450 Kinesiology/Movement	3	
Electives Credit Totals	**14**	
At least two courses must have accompaying labs		
Healthcare Experience		
BIOL /PHTH 370 Health Coaches II	2	
Internship Experience	2-4	
Independent Research BIOL 485 or CHEM 497	2-4	
Healthcare Experience Credits	**2-4**	
Total Program Credits	**61-69**	

Biology BS Curricular Changes							
	Current	**Credits**			**Revised**	**Credits**	**Change**
Required	BIOL 151 Lec and lab	4		**Core Courses**	BIOL 151 Lec and lab	4	None
22 credits	BIOL 152 Lec and lab	4		24 Credits	BIOL 152 Lec and lab	4	None
	BIOL 300 Lec	3			BIOL 300 Lec	3	None
	BIOL 311 Lec	3			BIOL 311 Lec	3	None
	BIOL 300 or 311 Lab*	1			BIOL 300 or 311 Lab*	1	None. * If labs are taken in both BIOL 300 and BIOL 311, then the second lab counts toward the elective hours
	BIOL 483	3			BIOL 483		Now an elective
					BIOL 307	3	Addition
					BIOL 319	3	Addition
					BIOL 301 **CM**	3	Addition
	Physiology Component	4			Physiology Component		Removed
Concentration Requirements	At least two electives with labs	17		**Elective Requirements**	At least two electives with labs CT?	17	No change
Required	CHEM 105 Lec and lab	4		**Required**	CHEM 105 Lec and lab	4	No change
Cognates	CHEM 106 Lec and lab	4		**Cognates**	CHEM 106 Lec and lab	4	No change
27-28 credits	CHEM 341 Lec and lab	4		27credits	CHEM 341 Lec and lab	4	No change
	MATH 151 or equivalent**	4			MATH 151 or equivalent**	4	No change
	STAT 100 or MATH 125 or CIS 125 or MATH 152	3 or 4			STAT 100 or MATH 125 or CIS 125	3	Required Note: MATH 152 no longer an option
	PHYS 101 and PHYS 202 Lec and lab	8			PHYS 101 and PHYS 202 Lec and lab	8	Note: College and University Physics now one of three options
	or				**or**		
	PHYS 103 and 104 Lec and lab**	8			PHYS 103 and 104 Lec and lab**	8	**MATH 151 and 152 are corequistes
					or		
					GEOL 101 Lec and Lab	4	New Option
					and		
					GEOL 200 Lec and Lab	4	
					or		
					CIS 201 Lec and Lab	4	New Option
					and		
					CIS 203 Lec and Lab	4	
	** MATH 141 and MATH 142 are equivalent to MATH 151; require 8 credits to complete				** MATH 141 and MATH 142 are equivalent to MATH 151; require 8 credits to complete		
Total Credits Required		**65–66 Credits**				**68 Credits**	

Biology BA Curricular Changes						
	Current	**Credits**		**Revised**	**Credits**	**Change**
Required	BIOL 151 Lec and lab	4	**Core Courses**	BIOL 151 Lec and lab	4	None
22 credits	BIOL 152 Lec and lab	4	24 Credits	BIOL 152 Lec and lab	4	None
	BIOL 300 Lec	3		BIOL 300 Lec	3	None
	BIOL 311 Lec	3		BIOL 311 Lec	3	None
	BIOL 300 or 311 Lab*	1		BIOL 300 or 311 Lab*	1	None * If labs are taken in both BIOL 300 and BIOL 311, then the second lab counts toward the elective hours
	BIOL 483	3		BIOL 483		Now an elective
				BIOL 307	3	Addition
				BIOL 319	3	Addition
				BIOL 301 CM	3	Addition
	Physiology Component	4		Physiology Component		Removed
Elective Requirements	At least two electives with labs	15	**Elective Requirements**	At least two electives with labs	15	None
Required	CHEM 105 Lec and lab	4	**Required**	CHEM 105 Lec and lab	4	No change
Cognates	CHEM 106 Lec and lab	4	**Cognates**	CHEM 106 Lec and lab	4	No change
12 credits	CHEM 341 Lec and lab	4	12 credits	CHEM 341 Lec and lab	4	No change
Total Credits Required		**49 Credits**			**51 Credits**	

BIOLOGY SPECIALIZATION REQUIREMENTS

Biology Required Courses (13 hours)

Biology Electives (6 hours)

Course Number	Title	Hrs.	Grade		Course Number	Title	Hrs	Grade
125 125L	Biological Concepts	3			300	Ecology Lab (Optional Elective)	1	
152	Gen Bio: Organisms and Ecology Lecture	3			311	Genetics Lab (Optional Elective)	1	
152	Gen Bio: Organisms and Ecology Lab	1						
300	Ecology Fall Only	3						
311	Genetics Spring Only	3						

College requirements are 19 hours in the Specialization. All electives after the first-year sequence must be 300 or high