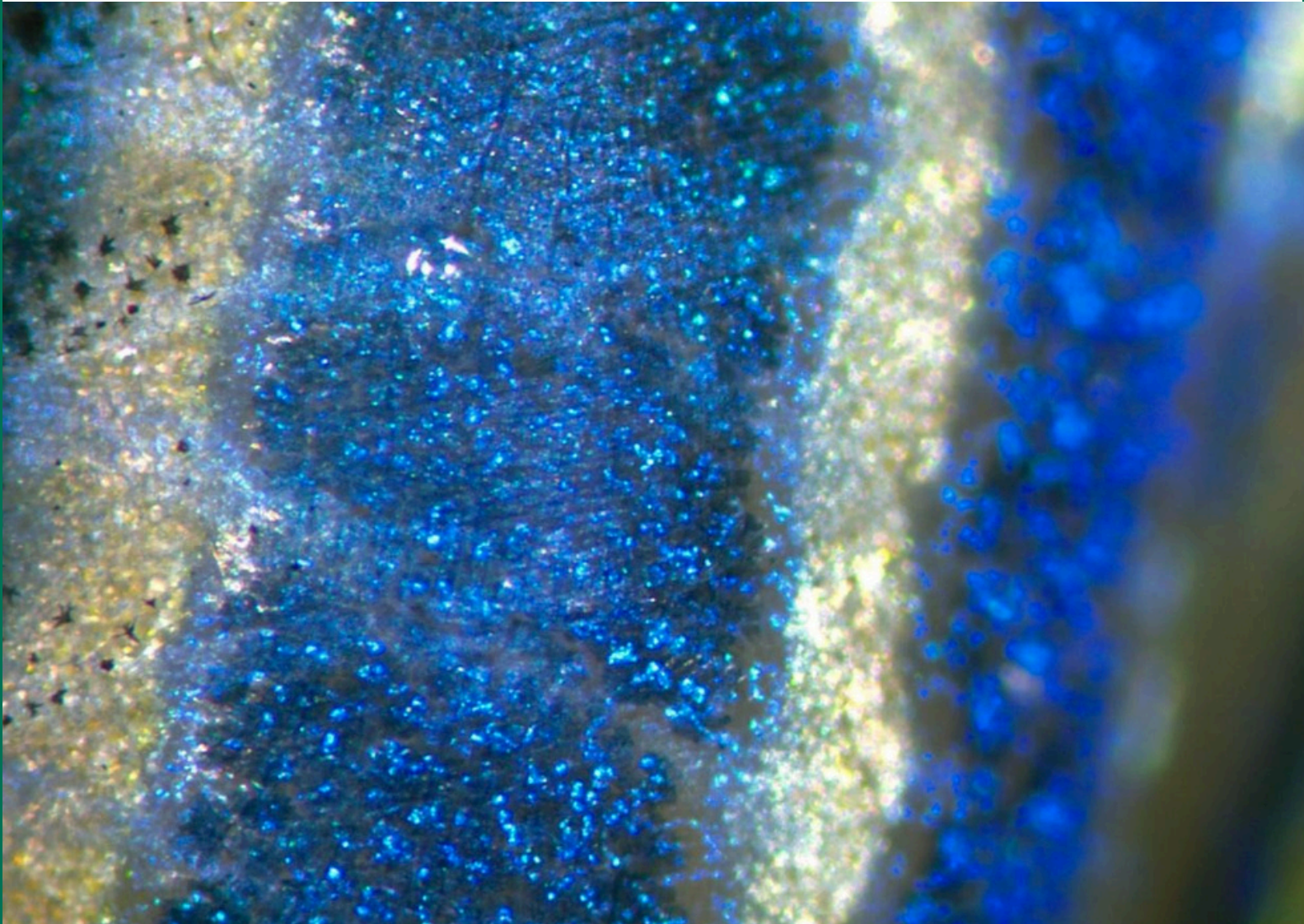


UVM BIOLOGY DEPARTMENT

2025-2026 NEWSLETTER

May, 2026



Winning photo from this year's Art of Biology contest, by Jillian Perry '27

A Letter from the Chair of Biology:

Dear Colleagues, Students, Alumni, and Friends,

I am pleased to share the 2026 UVM Department of Biology Newsletter. This past year was my first serving as Chair, and it has been both exciting and productive, marked by outstanding achievements by our students and faculty.

Five graduate students defended exceptional dissertations spanning a wide range of topics, including the molecular basis of taste, evolutionary adaptation in variable environments, thermal physiology and genetics, biological control of invasive species, and dolphin acoustic communication. Undergraduate students also completed outstanding thesis projects, from insulin signaling pathways to links between food insecurity and mental health. Many students shared their work at conferences and public venues, demonstrating both the rigor and impact of their scholarship.

This newsletter also highlights the breadth of hands-on learning in the department. Undergraduate summer research awardees pursued projects in areas such as zebrafish development, neural cell adhesion, and the effects of artificial sweeteners on feeding behavior. (continued)

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BCOR 1450 Insects

Field-based and experiential opportunities—including the Sky Islands biodiversity course and dolphin research in Panama—provided students with globally relevant scientific experiences.

Our faculty earned numerous prestigious recognitions, including major university awards, promotions, and grants supporting innovative research and inclusive education. These accomplishments reflect their excellence in research, mentorship, and teaching.

We are especially proud to recognize accomplished alumni. Hon. David Potter, BA Zoology '65, exemplifies a lifelong commitment to science, education, and public service. Dr. Vivek K. Vishnudas, PhD Biology '06, is a leader in translational drug discovery, advancing innovative approaches from basic research to clinical application.

I am grateful to be part of such a vibrant community. Special thanks to the Science Communication team—Jackson D'Elia, Sarah von Schneidern, Maya Lin, and Dr. Molly Stanley—for producing this excellent newsletter. I hope you enjoy this snapshot of our shared achievements.

Warm regards,

Brent Lockwood
Chair of Biology



Dr. Lockwood with Biology senior award winners. Photo: Owen Leavy

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Dolphin Project

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SciComm Internship & links for more!



AWARDS & RECOGNITIONS



Melissa Pespeni, PhD

Promotion to Full Professor

CAS Scholar-Teacher Award



Bryan Ballif, PhD

University Scholar Award
Basic & Applied Sciences



Ellen Martinsen, PhD

Career Champion Award
UVM Career Center



Daniel Peipert, PhD

HHMI Inclusive Classrooms Grant
(with Dr. Anacker, PSYS)



AWARDS & RECOGNITIONS



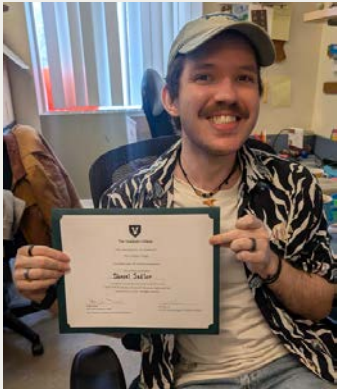
Csenge Petak, PhD
PhD Graduate, Pespeni Lab

Outstanding Doctoral
Dissertation Award



Collin MacLeod
PhD Candidate, Ebert Lab

Rodney L. Parsons Anatomy
and Neurobiology Award



Danny Sadler, PhD
Postdoctoral Fellow, Pespeni Lab

Outstanding Postdoctoral
Research, Lightning Talk



Christian Arntsen
PhD Candidate, Stanley Lab

Second Place, 3-Minute Thesis
Competition



AWARDS & RECOGNITIONS



Biology GTA of the Year: Daniel Penados-Richter

Graduating Senior Awards:

**George M Happ Awards in Biology:
Ethan Korman & Nathaniel Jacobs**

**George Perkins Marsh Award in Ecology & Evolution:
Catherine Roseen**

**Joan M. Herbers Award in Biology:
Amblen Isenhour**

**Bernd Heinrich Award in Physiology or Evolution:
Sydney Sharp**

**Kurt Milton Pickett Award in Biology:
Elise Runnels**

Beta Beta Beta Biological

Honor



Society



Associate Members



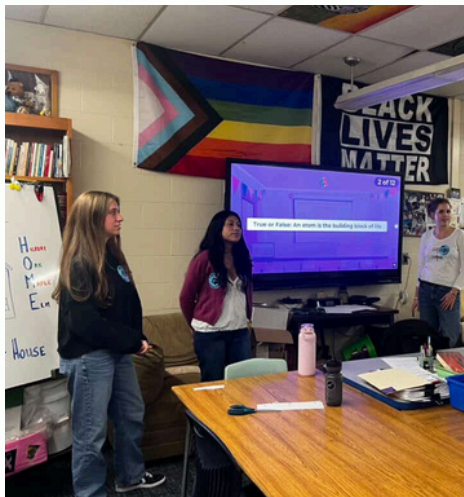
Leadership



Regular Members



This year, the Upsilon Tau chapter of TriBeta volunteered, fundraised and raised awareness!



Congratulations Tri-Beta Scholars!

Graduate Student Thesis Defenses



Jacqueline Guillemain, PhD

Advisor: Dr. Molly Stanley

*A Taste for Amino Acids: Investigating the Molecular Mechanisms That Mediate Amino Acid-Guided Behaviors in *Drosophila melanogaster*.*



Thomas S. O'Leary, PhD

Advisor: Dr. Brent Lockwood

*Selection, Acclimation, and Adaptation in *Drosophila melanogaster* Embryos living in a Variable Environment.*



Maia Austin, PhD

Advisor: Dr. Laura May Collado

Utilizing Novel Machine Learning Tools in Evaluating Social Drivers of Dolphin Acoustic Repertoire.



Graduate Student Thesis Defenses



George Ni, PhD

Advisor: Dr. Nicholas Gotelli

*Biological Control of the Emerald Ash Borer (*Agrilus planipennis*): Evaluating Constraints Across Physiological, Observational, and Spatial Scales.*



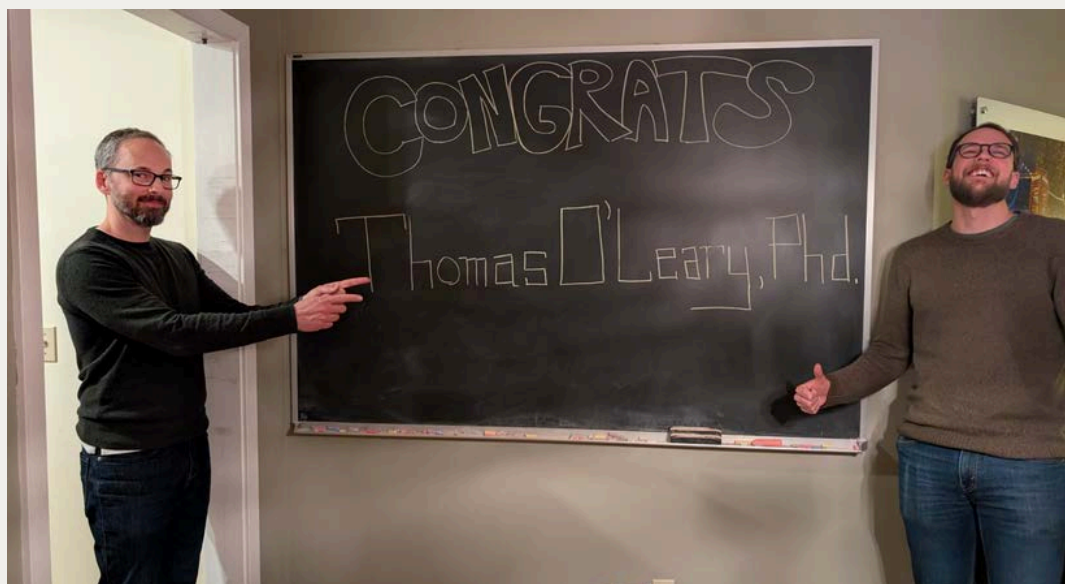
Alison Hall, PhD

Advisor: Dr. Melissa Pespeni

Coping With a Warming World: How Developmental Environment Shapes Plasticity in Thermal Tolerance and Gene Expression Responses.



Graduate Student Thesis Celebrations!



Undergraduate Student Thesis Defenses

Sadie Wilker

Advisor: Laura May-Collado, Biology

*"Burst pulse occurrence and utilization in Guiana dolphins (*Sotalia guianensis*)"*

Olin King

Advisors: Joaquin Nunez & Brent Lockwood, Biology

*"Characterizing Epistatic Interactions Between the *sp70* and *sog* Loci in the context of Embryonic Heat Tolerance in *Drosophila melanogaster*"*

Aidan Blasius

Advisor: Vikas Anathy, Pathology & Laboratory Medicine

"The role of IRE-1 in bronchial epithelial cells at the intersection of asthma and influenza infection"

Elise Runnels

Advisor: Bryan Ballif, Biology

"Investigating the Role of DCBLD2 in Regulating Insulin Receptor Signal Transduction and Epidermal Growth Factor Receptor"

Kayla Liebeskind

Advisor: Christopher Francklyn, Biochemistry

"Predicting Pathogenicity of Missense Variants in Aminoacyl-tRNA Synthetases Using Structural Information"

Nora Pride

Advisor: Brigitte LaVoie, Neurological Sciences

*"Microbial Modulation of the Gut-Brain Axis: Effects of *Lactobacillus rhamnosus* HA114 on GI Motility and Depression-Related Behaviors"*

Sydney Sharp

Advisor: Melissa Pespeni, Biology

*"Road salt major ion effects on thermal tolerance of copepod *Leptodiaptomus* species"*

Alyssana Lasek

Advisor: Stacey Simon, Psychiatry

"Investigating the Association Between Food Insecurity and Mental Health Among Individuals with Opioid Use Disorder"

Ava Vitters

Advisor: Molly Stanley, Biology

"Investigating the impact of dietary protein and internal nutrient sensors on taste sensitivity"

Amblen Isenhour

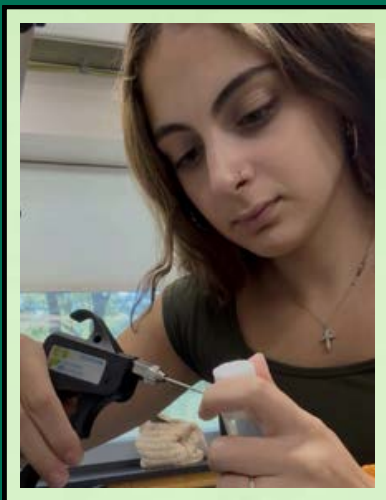
Advisor: Margaret Vizzard, Neurological Sciences

"Gene Expression Analysis on Inflammation and Heat Shock Response Biomolecules in Mice Subjected to Psychogenic Stress"



2025 Undergraduate Summer Research Awards

Three students were recipients of the Kay Klieman Larrabee Summer Research Award. We would like to thank the alumni donors whose funds supported these undergraduate students in their summer research in the Biology Department, providing stipends and funds for their research supplies.



Sofia Puccio

M. Stanley Lab

Evaluating the Impact of Artificial Sweetener Exposure on Feeding Behavior and Lifespan.

 [Undergrad Research Spotlight: Sofia Puccio](#)



Harry Gritsch

Ebert Lab

Investigating the Roles of Cell Proliferation and Cell Death in VARS Mutant Zebrafish.

 [Undergrad Research Spotlight: Harry Gritsch](#)



Armand Olteanu

Tang Worm Lab

Identifying Cell Adhesion Molecules (CAM) responding to insulin signaling to modulate synapses.

 [Undergrad Research Spotlight: Armand Olteanu](#)

2025 Wheeler and Chair Awards

Supporting graduate student research and travel

Leslie M. Paredes Torres



"Thanks to the UVM Wheeler Award, I was able to travel to Costa Rica in summer of 2025 to test new dolphin and whale acoustics recording equipment, such as hydrophone array systems and underwater SoundTrap hydrophones. I practiced preparing, preconfiguring, deploying, and retrieving each device, as well as determining which one is best for specific situations. I also had the opportunity to participate in the NSF International Research Experiences for Students (IRES) program as a Teaching Assistant, where undergraduate and postgraduate students gained experience in monitoring marine megafauna and coral reef communities using remote technologies. This funding enabled me to acquire more fieldwork expertise in bioacoustics recording and to practice my abilities in the use of drones in marine science, methodologies that I will apply to my research on dolphin interspecies acoustic communication in the Caribbean Sea."

Andrew McCracken



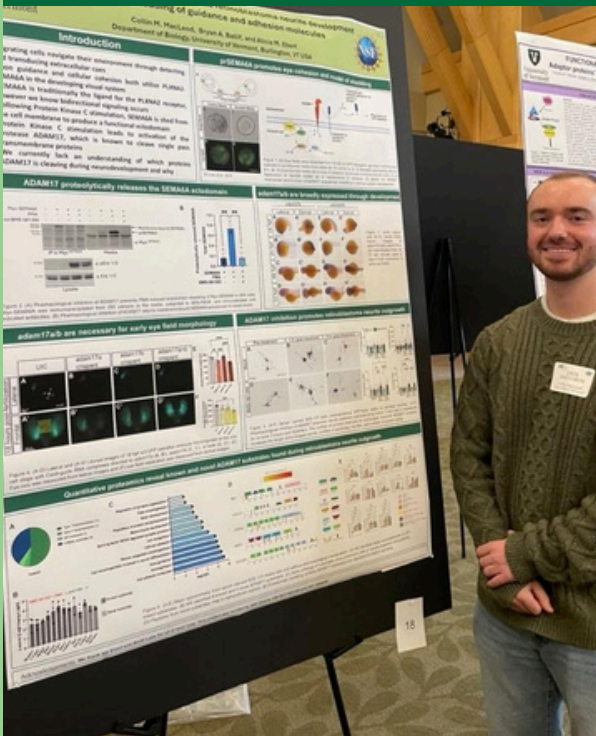
"I utilized funding from the Wheeler Award to attend and present at the 2025 Gordon Research Conference on Ecological and Evolutionary Genomics in Castelvecchio Pascoli, Italy. This international conference brings together scientists from around the world to share cutting-edge research that prioritizes discussion and fosters collaboration among researchers. I also participated in the concurrent Gordon Research Seminar (GRS), which specifically connects students and postdocs to network and share research prior to the main conference. As part of the meeting, I presented a poster on my research analyzing methods to detect adaptive genetic changes after just a single generation. This research addresses a major challenge in evolutionary biology, as traditional selection experiments require multiple generations and are impractical for long-lived organisms."



2025 Wheeler and Chair Awards

Supporting graduate student research and travel

Collin MacLeod



“With the Wheeler Award, I was able to purchase a selective inhibitor of an enzyme, an antibody directed to this same enzyme, and other reagents to aid in protein purification. The resources obtained from this award made it possible to carry out essential cell-based and quantitative proteomic experiments to better understand the roles this enzyme plays in neurodevelopment. The

Wheeler Award opened the door for me to answer a fundamental question in my dissertation work as well as the creation of a new project and product adjacent to my dissertation project, titled “Proteolytic control of adhesion and guidance molecules by ADAM17 regulates neurite and visual system development spanning optic vesicle morphogenesis to eye tracking”. So far, using the resources generated from this award, I have been able to present the work at the internal Neuroscience, Behavior, and Health Forum at UVM and plan to present it at the North East Society for Developmental Biology meeting in spring '26.”

Conference Highlights



Daniel wins poster award: Society for Dev. Biology



ONDAS Lab presents at Acoustical Society

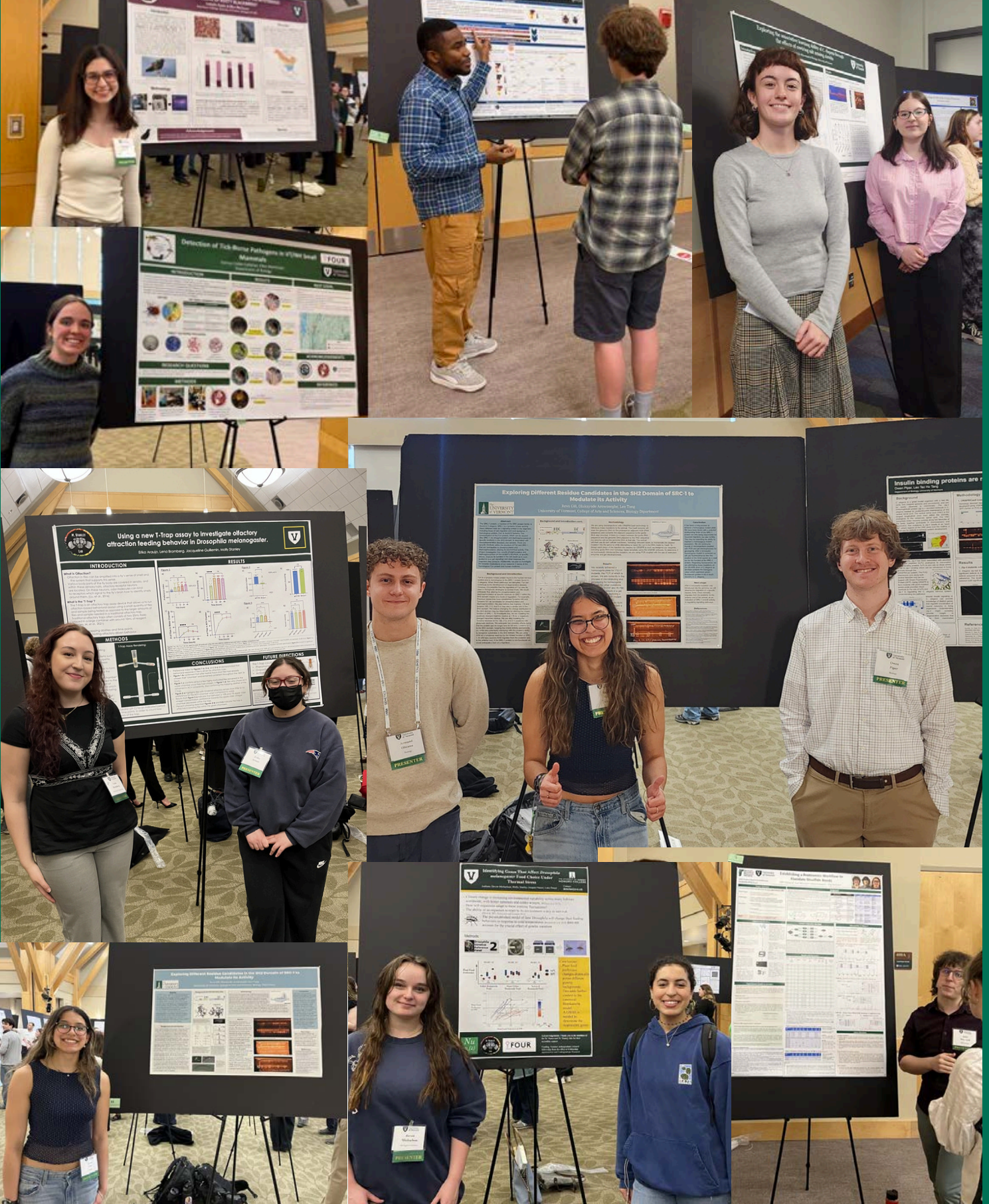


Nunez Lab presents at DrosEU



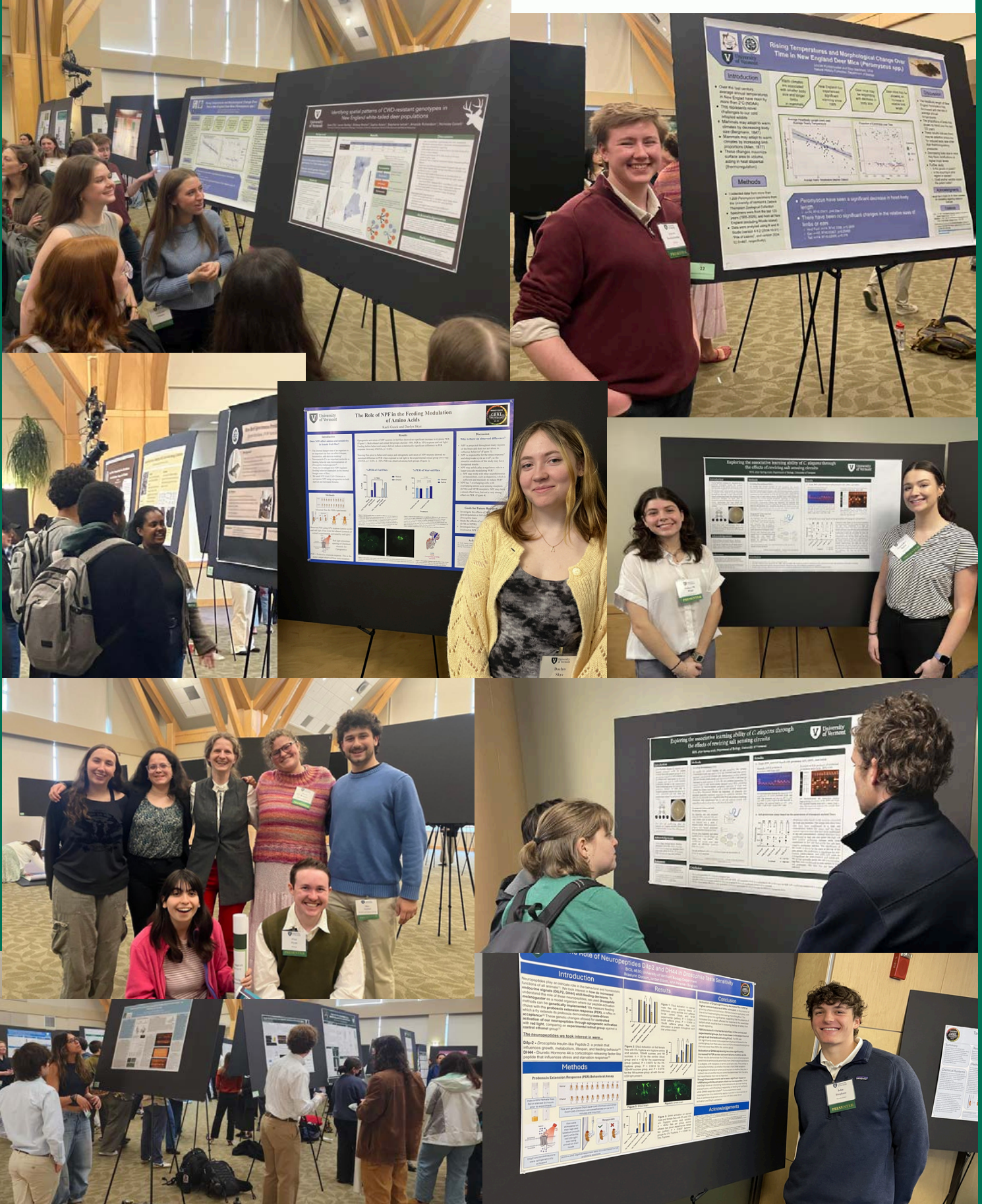
Student Research Conference Highlights

Graduate students & undergraduates conducting research in labs & classes present their work!



Student Research Conference Highlights

Graduate students & undergraduates conducting research in labs & classes present their work!



Accomplished Alumni Awards



**Accomplished Graduate
Student Alum:**

Vivek K. Vishnudas, PhD

PhD Biology, Class of 2006

Dr. Vishnudas is a leader in translational drug discovery, advancing experimental therapeutics from target identification through clinical trials. As a co-inventor of the Interrogative Biology platform, he has established innovative discovery programs grounded in disease-relevant phenotypes while leading interdisciplinary teams across biology, biochemistry, drug metabolism, and pharmacokinetics. His strategic scientific leadership, record of innovation, and commitment to collaborative R&D have strengthened therapeutic pipelines across disease areas.



**Accomplished Undergraduate
Student Alum:**

Hon. David Potter

BA Zoology, Class of 1965

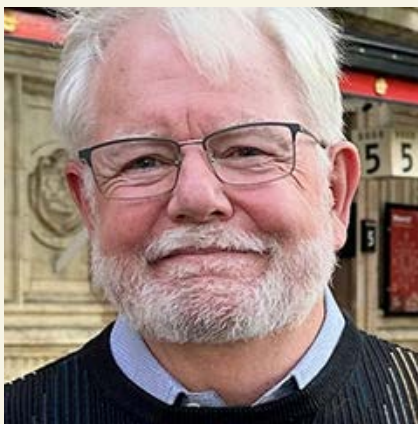
David Potter is a retired science educator, forester, and public servant whose life reflects the enduring value of a UVM Biology education. He has applied his training through decades of teaching, sustainable forest management, conservation leadership, military service, and state and local government. He is a Vietnam veteran, longtime Rutland High School teacher, former UVM trustee, and runs a multigenerational Vermont farm. He exemplifies the integration of science, service, and community.

Accomplished Alumni Awards



Hon. David Potter joined us at the Biology Honors Day, sharing the various ways he has applied his biology knowledge throughout his life, including a project he voted on while in office to build an amphibian road (read more [HERE](#)).

He also explained to our students that career paths are not always a straight line. While he did not bring a PowerPoint presentation, he did bring a prop! A pitchfork from his family farm, featured here with Biology Chair Brent Lockwood.



**Previous Accomplished Graduate Student Alum,
Dr. Paul Black,
named as an ASBMB Fellow.**

Dr. Black is a professor and chair emeritus of biochemistry at the University of Nebraska-Lincoln, and previously received one of our accomplished alumni awards. After winning the ASBMB (American Society for Biochemistry and Molecular Biology) Award for Exemplary Contributions to Education in 2020, he has recently been named as a 2026 ASBMB Fellow. (read more [HERE](#))

Dr. Daniel Peipert joins Biology Faculty



Dr. Peipert (Dan) is no stranger to UVM: he completed a BS in Neuroscience at UVM with College Honors, and after working as a Research Assistant at Dartmouth, he returned to UVM's Neuroscience Graduate Program. Dan's PhD training on the gut microbiome and Multiple Sclerosis is heavily grounded in microbiology and immunology as well as neurobiology.

As a full-time lecturer, Dan has already become an integral part of the undergraduate neuroscience program, teaching Exploring Neuroscience, Diseases of the Nervous System, and Model Systems in Neuroscience. Dan received an HHMI Inclusive Classrooms grant to revitalize the neuroscience labs this summer, alongside co-instructor Dr. Allison Anacker in Psychological Sciences.

Outside of neuroscience, Dan is passionate about scientific literacy, particularly in how science information and misinformation is integrated into the public and commercial domains. Outside of work, Dan enjoys hiking, skiing, running, gardening, and exploring local trails with his dog. In his spare time, he also enjoys cooking, video games, and playing Dungeons and Dragons with friends (although he may not have much spare time with an adorable new baby at home!).



PUMPKIN CARVING CONTEST

This past halloween, the biology department got into the competitive spirit during the yearly pumpkin contest. The spooky jack o'lanterns graced the halls of Marsh Life, presenting their fun and topical designs to everyone who crossed their path. Ultimately, it was the Ebert Lab's pumpkin who stole the show, winning first place, continuing the legacy of winning pumpkins in this lab.



Congratulations to our first-place winner, the Ebert Lab! They won with a whopping 292 votes.

In second place is the Lockwood Lab with 123 votes.

And in third place is the Nunez Lab with 80 votes.

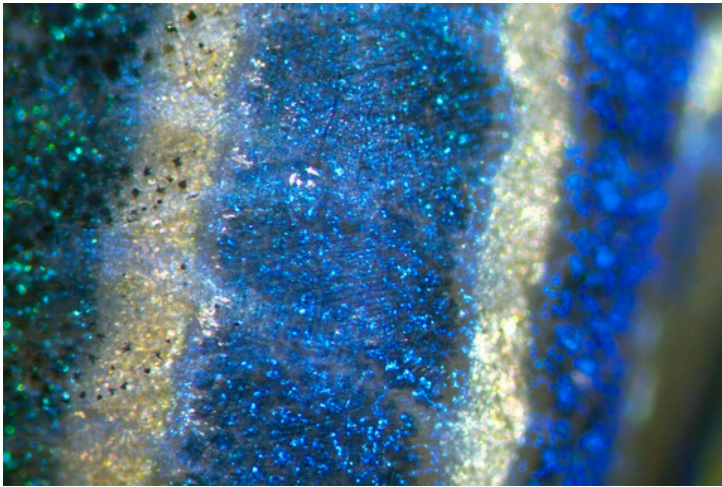


We hope you had fun designing, carving, and seeing everyone's pumpkins!



ART OF BIOLOGY PHOTO CONTEST

This year we held our 15th annual installment of the Art of Biology photo contest, hosted by the UVM Biology Department. For the contest, students are encouraged to submit photos that they've taken in their time researching within the department, and the entries are voted on by faculty, staff, and students.



-Jillian Perry, 1st Place Winner
Cover Photo

This image is of an adult zebrafish scale. It was taken using a standard dissecting light microscope camera on 10x zoom. The shimmery blue cells are iridophores, the yellow is xanthophores, and the black pigments are melanophores. Zebrafish research is vital because they are one of the key model systems we use to understand human development as well. This fish and others in our lab (Ebert Lab) are used to understand gene expression and development of fins, neurons, general body axis, etc.



-Gwen Ellis, 2nd Place winner

This paper collage is an interpretation of my research and how diseases spread across time, space, and different species. My dissertation research is on how frogs cope with biotic and abiotic stressors from a genetic and evolutionary viewpoint. In particular, I'm interested in population response to two emerging pathogens – Ranavirus and Chytrid fungus. These pathogens have decimated amphibian populations globally, but we don't fully understand how local populations have been impacted by the disease. Additionally, most work only focuses on a handful of immune genes, but my research investigates population genetics across the genome. For my first chapter, I am comparing population genetics of Green frogs (*Lithobates clamitans*) before and after Ranavirus and Chytrid introduction to Vermont using a combination of natural history collection specimens and modern sampling to get a better idea of the pathogens' direct effects.

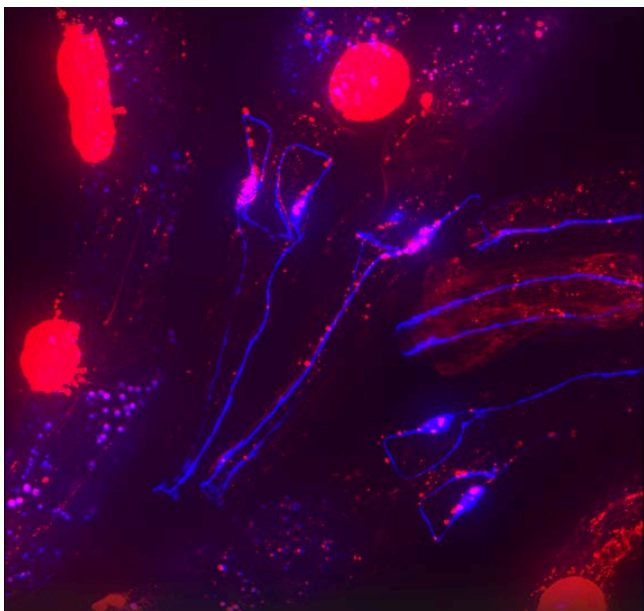
ART OF BIOLOGY PHOTO CONTEST

Continued



This photo shows a side view of the head of a *Chaoborus flavicans* larva. *Chaoborus* (also called phantom midges) live in lakes in this larval stage (up to 1 cm long) before they emerge as adult midges. As larvae, *Chaoborus* are voracious predators of smaller zooplankton such as cladocerans, copepods, and rotifers. They use a specialized structure called the “catching basket” formed by a combination of appendages pictured here (mandibles, mandibular fans, and antennae) to capture zooplankton with a strike velocity of 14 milliseconds, one of the fastest known attack movements in the animal kingdom! We are studying how these predators impact the migration behavior of zooplankton in experimental ponds. Photo taken using an Olympus LC30 camera attached to an Olympus SZX7 microscope.

-Anna Schmidt



Two pairs of neurons in *Caenorhabditis elegans* shown in red (ASE) and blue (AWC). Neurons work together to sense variations in salt concentration. Red puncta found along the neurites are synapses formed between the connection of ASE->AWC. Naïve worms (33mM Na⁺) have a left side bias but when condition on 100mM Na⁺ agar plates with food for 12 hours, the left side loses synapses, and the relationship becomes right side biased. IBLINC was used to create the cell specific fluorescence. I am investigating if mutations in Cell Adhesion Molecules effect the baseline asymmetry in both naïve and condition worms.

-Armand Olteanul

ART OF BIOLOGY PHOTO CONTEST

Continued



-Julia Smithmeyer

An American goldfinch (*Spinus tristis*) feeding on thistle (*Cirsium* spp.) seeds in a restored prairie habitat in Minnesota. This behavior illustrates the species' close ecological relationship with native thistle plants, which provide both food and nesting material.

Observations like this contribute to understanding seasonal seed dispersal and native bird foraging patterns. The image was captured with a Canon DS126741 using a 300mm lens in natural light. The picture was taken around 7:15 am on July 5, 2025.

Trivia! At the Holiday Party

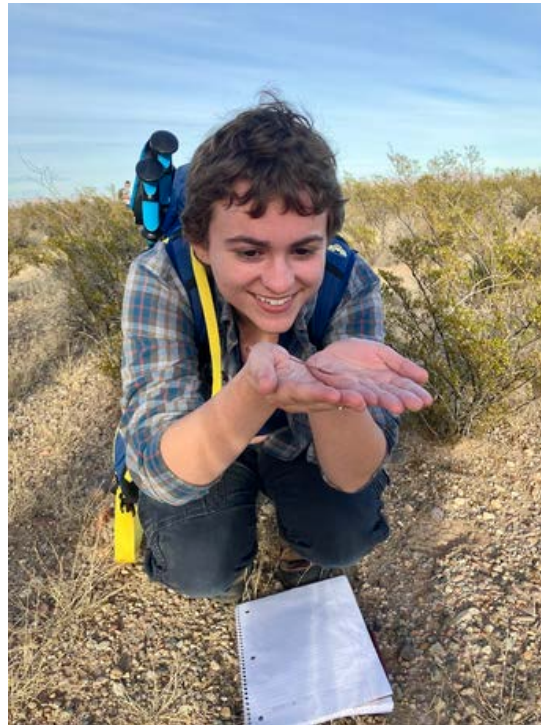


SKY ISLANDS BIODIVERSITY



In January, Dr. Elise Lauterbur and 11 intrepid undergraduate students spent 10 days exploring the Chiricahua Mountains and surroundings in southeastern Arizona.

Students worked together to learn about how and why habitats and ecological communities change from the desert at the base of the mountains to the pine forests at the top, and to generate and analyze citizen science data to understand patterns of species distribution across the landscape and the impacts of climate change. There they observed dozens of species of birds, white-nosed coati, grey fox, thousands of sandhill cranes, endangered Chiricahua leopard frogs, and the ubiquitous javelina. They also learned about the geological and human history of the region, including visiting the old mining town of Bisbee, the Mission Garden agricultural museum and the University of Arizona Natural History collection in Tucson, and the Tohono O'odham Cultural Center.



This course will run again next January!

BCOR 1450 Insects

BCOR 1450 students use new microscope cameras to capture the diversity of insects in stunning images



In this intro Biology lab, students explore the diversity of insects as part of their exploration of the vast range of life on Earth.

BCOR 1450 Insects



MAY-COLLADO LAB PROJECTS



In Spring '26, the Biology Department community helped the May-Collado Lab name a new group of Bottlenose dolphins from Bocas del Toro, Panama! Through voting on the [@BiologyUVM](#) Instagram, we named the following 10 dolphins!

Lando



Bear



Cheese



Benito



Grogu



Joel



Reyna



Olowaoli



Aparicio



Cadejos



In addition to helping name dolphins, we also learned more about undergraduate researcher **Annalena Chavrier '26** from the May-Collado Lab.

Originally from Paris, France, Annalena began her work in the lab studying sound waves before transitioning to analyzing hundreds of dorsal fin photographs from sightings in Bocas del Toro. Through this process, she records the longitude and latitude associated with individual dolphins, contributing valuable data used to better understand the behavior and distribution of pod populations. We're excited to see all she continues to accomplish in her research journey!



SciComm Interns

Students receive internship credit hours for science communication work

Jackson D'Elia



Jackson is a first year AMP student, completing his bachelor's degree while simultaneously pursuing a master's in Biology. He produced the undergraduate research spotlights as well as the *Life in the Pespeni Lab* video and the *Native Bees* video about his own research. Outside of the SciComm internship, Jackson is a beekeeper, a competing member of the UVM Club Gymnastics team, an RA, and an undergraduate lab TA for Biology II. As a science communicator, Jackson loves to share fun facts about plants, animals, and fungi to any who will listen.



[Watch the Native Bee Video Here!](#)



SciComm Interns

Students receive internship credit hours for science communication work

Sarah von Sneidern



Sarah is a Biology major with several interests including conservation, evolution, development, and protein interactions. She graduated in Fall, 2025, but stayed in Burlington as a member of the Ballif Lab in the spring. She wrote articles for the biology department website and also made Instagram posts. Sarah can also be found skiing, hiking, and hugging her two cats. At UVM, Sarah was the Co-President of the TriBeta Biological Honor Society, a Phi Beta Kappa scholar, and volunteered as a Mortar Board Honor Society member.



[See Sarah featured in our Biology video](#)



[Read Sarah's article: Pathways to Discovery](#)



[Read Sarah's article: Power of Visibility](#)

SciComm Interns

Students receive internship credit hours for science communication work

Maya Lin



Maya is a Biology major with a minor in Chinese, interested in molecular biology, cell biology and oncology. She hopes to do biomedical research and go to grad school. She just finished her second-year, and helps create undergraduate research spotlights and run the social media. Along with working on the SciComm team, Maya works in the Trybus Lab, in the FabLab and as a Residential Advisor. She is a member of TriBeta Biological Honour Society, a CAS STARS Ambassador and plays club frisbee. Maya also loves scrapbooking, a good sunset and long walks.

Check out our Instagram page [HERE](#) to see Maya's content!

The Science Communications Internship was started in spring 2023 and aims to provide students with the opportunity to engage in scientific media communications. The overall goal for the internship is to create content for department news across various platforms, including the website, social media, and this newsletter. Interns can expect to conduct interviews, write articles, create social media posts, and apply their photography or graphic design skills.

Contact Molly.stanley@uvm.edu for more information.

KEEP IN TOUCH WITH BIOLOGY!

Phone: (802) 656-2922

Email: Biology@uvm.edu

Website: https://www.uvm.edu/cas/biology_

See recent headlines at the bottom of the homepage.

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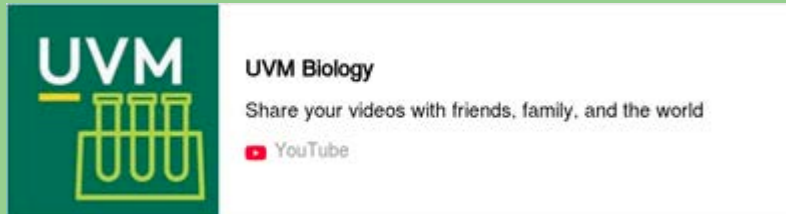
[@BiologyUVM](https://www.instagram.com/BiologyUVM)



[@UVM_NaturalHistory](https://www.instagram.com/UVM_NaturalHistory)

See updates from the Museum!

Find us on YouTube!



Connect, Share, & Donate!

Join UVM's global alumni network: www.UVMConnect.org

Are you a UVM Biology alumni with an interesting story or update to share?

Our SciComm interns would love to hear from you!

Please email us at BiologyMedia@uvm.edu

Please consider donating to Biology to support research and scholarship opportunities for our Biology students: [Donate Here](#)

Thank you to all of the Biology Department students, faculty, and staff that contributed to this newsletter!