UVM BIOLOGY DEPARTMENT

2024/2025 NEWSLETTER

May, 2025

Winning photo from this year's Art of Biology contest, by Megan O'Connor

A Letter from the Interim Chair of Biology:

It is always a joy to celebrate Biology's graduate students who have completed their M.S. and Ph.D. degrees at the Graduate College's May Commencement Ceremony. This year, we welcomed two new Ph.D. colleagues and three new M.S. colleagues. We are incredibly proud of their contributions to research and scholarship in the department. We also celebrated the accomplishments of our undergraduate students. Nine graduating seniors completed distinguished theses through the Leahy Honors College or the College of Arts and Sciences Honors Program. This year's student award recipients included five undergraduates (photo below) and Thomas O'Leary, who was named Graduate Teaching Assistant of the Year and received the Graduate College Accolade. Our faculty were also recognized for a wide range of outstanding achievements this academic year: Nicholas Gotelli was promoted to University Distinguished Professor—the highest academic honor UVM bestows, Linden Higgins received the President's Distinguished Senior Lecturer Award, Alicia Ebert was honored with the CAS Distinguished Service Award, Laura May-Collado was promoted to Associate Professor with tenure, and Alison Brody delivered the 2024 George V. Kidder Outstanding Faculty Award Lecture.

In this Edition...

4 *Awards & Recognitions*

8 *Tri Beta Honor Society*

9 *Graduate Thesis Defenses*

10 *Undergraduate Thesis Defenses*

11 *Accomplished Alumni*

12 *Undergraduate Research Awards*

14 *Wheeler & Chair Awards*

18 *Dr. Alison Brody's Retirement*

19 *Three New Biology Professors*

21 *Natural History Museum*

24 *BilDS Program*

25 *BCOR Projects & Student Research*

30 *Department Fun: Competitions*

34 *3 Minute Thesis Competition*

35 *SciComm Internship*

37 *Thank you & keep in touch!*

(Alison also became Emerita—congratulations!). Elise Lauterbur was appointed to the Mammal Scientific Advisory Group of the Vermont Endangered Species Committee and Sarah Wittman, along with Melissa Pespeni and Linden Higgins, received HHMI funding to enhance BCOR courses. This year's alumni honorees included Brenda Waters, M.D. (undergraduate) and Paul Rennert (graduate), who will return to campus in the fall for a seminar. As I conclude my time as Interim Chair of the Biology Department, I want to express my deep gratitude. It has been an honor and a privilege to serve this extraordinary community of scholars, teachers, and students. I return to my professorial duties in the Department of Psychological Science with profound pride in all that our faculty, staff, and students have accomplished—and with great optimism for what lies ahead for Biology at UVM.

With warmest regards,
Antonio Cepeda-Benito, Ph.D.
Interim Chair, Department of Biology
Professor, Dept. of Psychological Science

Senior award winners with Brent Lockwood, incoming Biology Chair.
Photo by Owen Leavey

Thank You to Our Recent Donors and the National Science Foundation!!

We extend our sincere thanks for your generous support over the past year, which has helped fund student scholarships and research projects. The Biology Department depends on external funding to pursue impactful research, and your continued contributions—along with support from federal agencies like the National Science Foundation (NSF) and the National Institutes of Health (NIH)—make it possible for our students to engage in meaningful, hands-on work alongside faculty. Together, we are advancing technology, shaping policy, deepening understanding, and improving lives.

We also want to take this opportunity to recognize and thank the National Science Foundation. This year marks the 75th anniversary of the NSF, a momentous milestone for science in the United States. In partnership with universities nationwide, the NSF continues to be the primary driver of research, education, and outreach in the fundamental sciences.

What Can You Do to Help Us Continue to Support Students and Conduct Top-Notch Science?

1. Consider donating to Biology: Donate Here

2. Contact your representatives in Congress to express your support for federal science funding. Advocacy is a powerful tool for promoting sustained investment in scientific research. Now more than ever, it's important for Congress to hear that you value and support science.

With your help, we can continue to be leaders in science and science education!

This logo will appear throughout the newsletter to acknowledge projects in our department that were supported by NSF funding.

AWARDS & RECOGNITIONS
INTERNAL

University Distinguished Professor Award

Nicholas Gotelli, PhD

The highest academic honor that UVM bestows upon a faculty member. Read a full article HERE.

President's Distinguished Senior Lecturer Award

Linden Higgins, PhD

Recognizes the distinguished accomplishments of lecturers for outstanding teaching, scholarship, and service.

Promotion to Associate Professor with Tenure

Laura May Collado, PhD

Recognizes a strong track record of research, teaching, mentorship, and service at UVM and beyond.

AWARDS & RECOGNITIONS
INTERNAL

Distinguished Service Award

Alicia Ebert, PhD

Recognizes outstanding service to the College of Arts and Sciences.

Graduate Teaching Assistant of the Year Award

Thomas O'Leary

Recognizes the high accomplishments of a GTA across the entire Graduate College.

Planetary Health PhD Student Research Awards

Gwen Ellis
&
Alison Hall

AWARDS & RECOGNITIONS
EXTERNAL

NSF Graduate Research Fellowship

Emily Dombrowski

Supports a research project in the Lockwood Lab

NSF Postdoctoral Research Fellowship in Biology

Nasreen Broomandkhoshbacht

Supports a research project in the Lauterbur Lab

State of Vermont Advisory Group Member

Elise Lauterbur, PhD

The Mammal Scientific Advisory Group to the Endangered Species Committee

AWARDS & RECOGNITIONS

GRADUATING SENIOR AWARDS

George M Happ Awards in Biology: **Paloma Salmeron-O'Brien**

This award is presented to a student with outstanding academic performance in Biology after Dr. Happ who arrived at the University of Vermont as a Professor and Chair of the Department of Zoology in 1978.

George Perkins Marsh Award in Ecology and Evolution: **Jake Hart**

This award is presented to a student doing research in Ecology and Evolution, named after George Perkins Marsh who is regarded as the founder of the environmental movement.

Joan M. Herbers Award in Biology: **Olivia Morton**

This award is presented to a high-achieving Biology student doing research after Dr. Joan M. Herbers, the first tenure-track female professor in the history of the Biology Department.

Bernd Heinrich Award in Physiology or Evolution: **Sami Gibbons**

This award is given to a student doing research in the area of Physiology or Evolution after Dr. Bernd Heinrich, Emeritus Professor of Biology, often regarded as one of the world's foremost naturalists.

Kurt Milton Pickett Award in Biology: **Ella Dearden**

This award is given to a high-achieving student doing research in memory of Dr. Kurt Milton Picket who was a Professor in the Biology Department from 2007-2011.

Beta Beta Beta Biological Honor Society

Associate Members

Full Members

Graduating Seniors

Congratulations Tri-Beta Scholars!

Graduate Student Thesis Defenses

Matt Futia, PhD

Advisor: Dr. Ellen Marsden

"Born to be Wild: Hatchery Rearing has Life-time Effects on Foraging and Movement Behaviors of Lake Trout Salvelinus namaycush"

Csenge Petak, PhD

Advisor: Dr. Melissa Pespeni

"Exploring the Effects of Environmental Variability on Adaptation and Phenotypic Variation in Sea Urchins and Simulations"

Megan O'Connor, MS

Advisor: Dr. Laura May Collado

"Social and Anthropogenic Influenes on Whistle Emission and Acoustic Structure of Bottlenose Dolphins"

Frances Oppenheimer, MS

Advisor: Dr. Laura May Collado

"Estimating Change in Humpback Whale Song through Occupancy Modeling and Phrase Transition Analysis"

Undergraduate Student Thesis Defenses

Caitlin Maloney

Advisor: John Barlow, Animal and Veterinary Sciences

"Culture of Vermont White-Tailed Deer (Odocoileus virginianus) Nasal Swabs Reveals Limited Strain Diversity and Antibiotic Resistance of Staphylococcus aureus"

Mirabelle Suri Harris

Advisor: Jana Kraft, Animal Science

"Effects of a Probiotic-Enriched Yogurt on Adiponectin Concentrations in an obese Mouse Model"

Adeline Linda Hacker

Advisors: Julie Dumas, Psychiatry & Alicia Ebert, Biology

"Hippocampal Structure and Memory Function in Normal Postmenopausal Women"

Amina Malagic

Advisor: Alicia Ebert, Biology

"The phenotypic presentation of DCBLD1 in retinal development in zebrafish"

Thomas Sparhawk Mulder

Advisor: Shanmugasundaram Nallasamy, Animal and Veterinary Sciences

"Spatiotemporal Distribution of LOXL1-4 in the Endometrium During Embryo Implantation"

Luke Andrew Proud

Advisors: Joaquin Nunez, Biology & Molly Stanley, Biology

"Characterizing the effect of genetic diversity on temperature-dependent behavior in Drosophila melanogaster"

Auny Kussad

Advisors: Donna Toufexis, Psychological Sciences

"The Effect of Testosterone in the Dorsolateral Striatum in Fear-Extinction"

Laura O'Brien

Advisors: Matthew Wargo, Microbiology & Molecular Genetics

"Induction of the Pseudomonas aeruginosa virulence factor, CerN, by host-derived lipids"

Ella Kriegel Dearen

Advisors: Laura May Collado, Biology

"Singing activity of humpback whales (Breeding Stock G) at two locations with varied boat activity along the pacific coast of Costa Rica."

2025 Accomplished Alumni

Accomplished Graduate Student Alum:

Paul Rennert, Ph.D.

M.S. Zoology, Class of 1986

We are proud to recognize Paul Rennert as the 2025 Accomplished Graduate Alumni Award recipient. With a distinguished career in biotechnology and immunology, Paul has played a leading role in developing innovative therapies for cancer and autoimmune diseases. As Co-founder and President of Aleta Biotherapeutics, he continues to shape the future of cancer treatment while inspiring others through his leadership, mentorship, and public engagement.

Accomplished Undergraduate Student Alum:

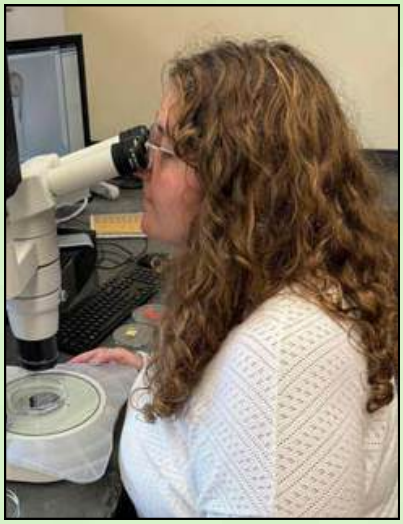
Brenda Waters, M.D.

Class of 1972.

We are proud to honor Dr. Brenda L. Waters, M.D., as the 2025 recipient of the Distinguished Undergraduate Alumnus Award in Biology. With a career spanning more than 30 years at UVM, Dr. Waters has made lasting contributions to clinical service, medical education, and pathology, earning deep respect as a teacher, mentor, and leader. Her impactful scholarship and tireless dedication to the university and broader medical community exemplify the very best of UVM's alumni legacy.

2024 Undergraduate Summer Research Awards

The following students are 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.



Amina Malagic

Ebert Lab

"The phenotypic presentation of DCBLD1 in retinal development in zebrafish."

Lila Rose Tomlinson

Ebert Lab

"Investigating the Role of DCBLD2 in Visual Function and Eye Development."

Emma Privett

Martinsen Wildlife Pathogen Lab

"Microsporidian parasite Heterosporis sp. prevalence in Lake Champlain yellow perch"

2024 Undergraduate Summer Research Awards

The following students are 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.

Brayden Hall

Martinsen Wildlife Pathogen Lab

"Surveying of Vector-Borne Pathogens in Vermont's Raptor Populations."

Luke Proud

Nunez and M. Stanley Labs

"Characterizing the Effect of the In(2L)t Inversion on Food Choice in Drosophila"

Ella Freed

M. Stanley Lab

"Mechanisms of Tryptone taste processing through the Proboscis Extension Response (PER)"

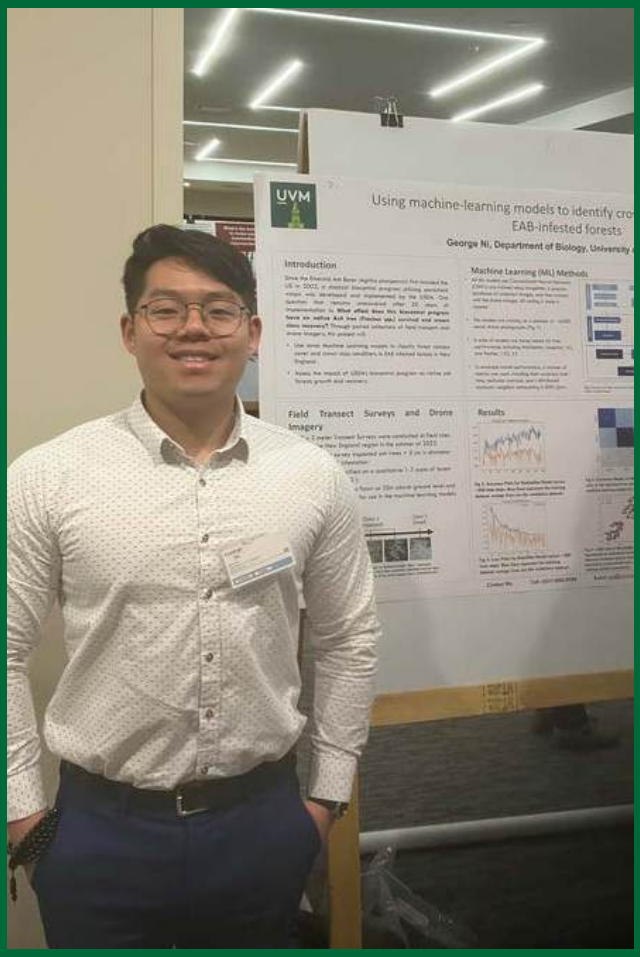
2025 Wheeler and Chair Awards

Supporting graduate student research and travel

Maia (second from left) with members from the ONDAS Lab, Durham, NH

Maia Austin

"I utilized funding from the Chair's Award to attend and present at the 2025 Meeting of the Northeast Student Chapter for the Society of Marine Mammalogy at the University of New Hampshire. This group (that I am actually the president of!) connects students from across New England who work with and are passionate about marine mammals to network, share our research, and hear from local experts in the field. As part of this annual meeting, we had student talks and posters alongside guest speakers from UNH, UNE, and the Blue Ocean Society, and a necropsy at the Sea Coast Science Center."



George in Portland, OR.

George Ni

"I used the Wheeler Award to fund the FAA licensing exam to obtain a Remote Pilot Certification, and then used the remaining funds to travel to Portland, Oregon, where I was able to both conduct fieldwork and present my research on machine learning and image classification of Emerald Ash Borer (EAB) infested ash trees at the Ecological Society of America (ESA). I conducted transect surveys throughout Oregon to record native ash tree health and collected images of the tree crowns using drone photography. I then used those images as data for convolutional neural networks (CNN) to classify the difference between healthy and dead ash trees. As of right now, those models can reach 96% accuracy in assessing that binary crown class health but can be further improved to distinguish more specific health assessments and details. This research seeks to provide an additional tool for forest managers and researchers to monitor the Emerald Ash Borer and assess its impact on native ash forests in North America."

2025 Wheeler and Chair Awards

Supporting graduate student research and travel

Sof at Chuckwalla National Monument

Sof Antelo

"The UVM Biology Chair's Award contributed to my funding to be able to conduct critical field work to support my ongoing research project investigating the biological mechanisms of aggression and cooperation, using colony founding in queens of the ant Veromessor pergandei. This species is a desert seed harvester ant, native to deserts of the southwestern United States (Arizona, southern Nevada, and southern California) and into northern Mexico. Across their range, environmental pressures vary from resource scarcity in the north, near Death Valley, to areas with monsoons bringing resources further south. Congruent with this regional variation in environmental conditions, V.pergandei display a regional distribution in social strategies and colony structure; queen ants can establish colonies independently through haplometrosis or in groups through pleometrosis, and once workers emerge the colonies are either monogynous (one queen) or polygynous (multiple queens). Over spring break, I was able to go to the deserts of Arizona and California to collect worker samples to conduct genetic and population genomic testing to support these findings, investigate possible allelic influences, and understand the role of selection in the development of this behavioral polymorphism."

Read a full article on Sof's research HERE

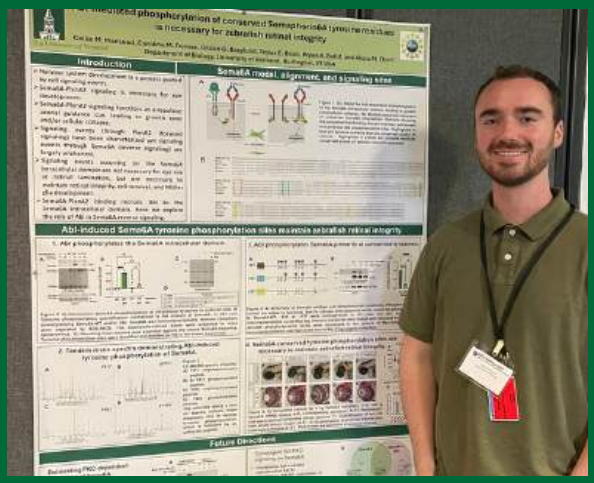
Jackie in San Diego, CA

Jacqueline Guillemin

"Thanks to the Biology Chair's Award, I could attend the 66th Annual Drosophila Research Conference in March. This event is an international stage for fruit fly research, with topics ranging from neuroscience to evolution. This conference was an excellent professional development opportunity for me, as I was able to present my recently published research article as a platform talk! This enhanced my experience, giving me a greater chance to network with Drosophila researchers at different stages of their careers. Further, it allowed me to explore the options available for the next step in my scientific career: a post-doctoral position at Dartmouth College, thanks to the Biology Chair's Award!"

2025 Wheeler and Chair Awards

Supporting graduate student research and travel



Collin in Woods Hole, MA

Collin Macleod

“With my Chair's Award, I was able to attend the North East Society for Developmental Biology (NESDB 2025) conference in April. I was fortunate enough to be selected for a flash talk and a poster presentation titled "Abl mediated phosphorylation of conserved Semaphorin6A tyrosine residues is necessary for zebrafish retinal integrity". This award allowed me to not only gain greater practice in presenting my data but also connect with fellow researchers interested in similar topics!"

Anna Schmidt

“I had the opportunity to attend the Global Lake Ecological Observatory Network (GLEON) 2025 All-Hands’ Meeting in North Sumatra, Indonesia in February thanks to support from the Biology Department Chair’s Award and additional support from the Grad College. GLEON is a network of freshwater science researchers from around the globe who participate in collaborative research projects to understand the functioning of lakes in a global context. At the meeting, I presented a poster titled “Freshwater zooplankton diel vertical migration and carbon flux under varying levels of planktivory: A mesocosm-based approach.” This poster presented some of my dissertation research conducted in 2023 at the Leibniz Institute of Freshwater Ecology and Inland Fisheries (IGB) mesocosm facility in Germany, where I investigated the role of zooplankton diel vertical migration in downwards carbon fluxes in lakes.During the conference I also coordinated workshops, student presentations, and student social activities through my role as Co-Chair of the GLEON Student Association.

Anna at Lake Toba, Indonesia.

I was also a moderator for the Freshwater Biological Interactions Working Group, where we brainstormed collaborative project ideas involving freshwater plankton. Overall, the meeting was a great chance to network with the global community of aquatic researchers and form some new collaborations. Some fun highlights included singing karaoke with everyone almost every night, trying lots of Indonesian fruits I had never tried before, hiking through the jungle, and going for a boat ride and swim in the beautiful Lake Toba!”

2025 Wheeler and Chair Awards

Supporting graduate student research and travel

Gwen in the lab

Gwen Ellis

"With the UVM Biology Wheeler Award, I was able to conduct preliminary work on my dissertation research examining how local amphibian populations have, or have not, adapted to Ranavirus and chytrid fungus. This funding enabled me to expand my sampling strategy to include historical specimens that are from before pathogen introduction to Vermont. This year, I've completed DNA extraction methods for these samples from the UVM Zadock Thompson Zoological Collection and am waiting to hear back about some sequencing results on these samples!"

CONGRATULATIONS, GRADUATES!

Dr. Melissa Pespeni & Dr. Laura May Collado with graduate students from their labs

Dr. Joaquin Nunez with the graduating seniors in the Nunez Lab

Professor Alison Brody Retires after 30 years in the Biology Department

Dr. Brody in a field near the Rocky Mountain Biological Lab.

Dr. Alison K Brody recently retired from UVM after 30 years with the Biology Department. Her career at UVM included long-term studies at the Rocky Mountain Biological Lab, outside of Crested Butte, CO where she sought to understand how multiple species including pollinators, seed predators, herbivores, and nectar robbers affect the ecology and evolution of floral traits. In Vermont, Alison explored how the association with mycorrhizal fungi affects floral traits and yield in highbush blueberry. Alison's research also took her back and forth to Kenya for 10 years to study how termites effect the biological diversity of plants and insects in savannah grasslands. Alison's research was funded by the National Science Foundation and a variety of intramural grants. As a field biologist, Alison wondered daily at the awe nature provides, sought to understand it more thoroughly, and introduce others to its importance.

Dr. Brody was as passionate about teaching and advising students as she was about conducting research. UVM's "teacher-scholar" model was the perfect academic fit for her, and she was duly rewarded and honored by her students, her College, and the University. During her time at UVM, Alison won the Kroepsch-Maurice Teaching Award, the Dean's Lecturer Award, UVM Faculty Advisor of the Year Award, and the George V. Kidder Outstanding Faculty Award. In her 30 years, Alison mentored dozens of graduate and undergraduate students in their academic endeavors. Many of these mentorships led to long-term friendships and collaborations which she maintains today. It is with gratitude, reverence, and deep appreciation that Dr. Alison K Brody bids us all farewell. *If you wish to keep in touch, please contact her at alison.brody@uvm.edu.*

Dr. Brody at the Kidder Award celebration

Congratulations on all of your accomplishments and happy retirement, you will be greatly missed!

You can watch a YouTube video from Dr. Brody's Kidder Award celebration HERE

Dr. Brody's research throughout her 30-year career was supported by the NSF

Meet Our Three New Assistant Professors

The biology department is excited to welcome three new faculty members this year! As they were awaiting the finalization of their respective lab spaces, they enjoyed getting to know each other over coffee chats.

Dr. Elise Lauterbur

During their undergraduate degree at Oberlin College and Conservatory, Dr. Lauterbur and their advisor found that male goldfinches allocate more resources into wooing females with bright beaks. After college, Dr. Lauterbur shifted gears for her PhD at Stony Brook University, where she used bamboo lemur pee to understand the biological processes that allow for cyanide tolerance. Next, Dr. Lauterbur studied bats during their post-doc at the University of Arizona. They are continuing that work here at the UVM, using the bat genome as a scorecard of how infectious diseases have impacted the success of invaders in a new habitat. Dr. Lauterbur also enjoys hiking with her partner and spending time with their pets - a dog, snake, and 3 cats.

Dr. Leo Tang

Ever since earning his undergraduate degree at Chinese University Hong Kong in biochemistry, Dr. Tang knew that he wanted to go into academia. He decided neuroscience was his calling during an internship at Ohio State University. Then, at the University of Bristol in England, for his PhD, he began his neuroscience research. After his PhD, Dr. Tang was drawn to model species, *C. elegans,* a worm often found in soil or research labs, feeding on decaying matter.

Bats studied in the Lauterbur Lab

Meet The Three New Assistant Professors

Worms studied in the Tang Lab

These microscopic worms are transparent, meaning by highlighting specific neurons with green fluorescent proteins, Dr. Tang can see neurons in action. Dr. Tang's research looks at how neuron connections change when C. elegans undergoes Pavlovian conditioning. These neural pathways are so fundamental to life that how a worm learns what salt concentration has the yummiest food may be the same mechanism for how you decide your favorite foods–which hits close to home, since outside of his research lab, Dr. Tang is an avid baker.

Dr. Joaquin Nunez

While Dr. Tang and Dr. Lauterbur just arrived at UVM, Dr. Nunez has been on campus for over a year now as a Henderson/Harris Fellow. One of the most exciting things he has been up to is receiving substantial grant funding for his research on invasive fruit flies. In collaboration with faculty at Northeastern University, the University of Kentucky, and the UVM Institute of Agroecology, Dr. Nunez is investigating how these fruit flies have become so successful through the lens of rapid evolution. Spotted Wing Drosophila used to be contained in SouthEast Asia, but in recent years these fruit flies have taken over the world. Spotted Wing Drosophila lay their eggs on crops such as blueberries and grapes, threatening organic farming.

This year, Dr. Nunez has also found new ways to enjoy old hobbies. Outside of his work, he has been gardening and doing house repairs.

Beyond their research, the three of them wear many hats as faculty advisors and course instructors. We are excited to watch their research, grants, and ideas unfold and come to life.

Flies studied in the Nunez Lab

Read the full article HERE:

Time Traveling Through the UVM Natural History Museum

By Sam Boutilier

When most people think about science, they often picture bubbling reactions under the fume hood and chasing down animals to tag in the field. But the Blundell House on Redstone Campus hosts a different kind of research. Stepping into the Natural History Museum feels like entering a time portal. There is a huge glass display of all kinds of birds, some now extinct. Hidden in drawers are eggs, seashells, and insects waiting to be cataloged by undergraduate interns.

One intern, Finn Flynn, a sophomore studying biology, spent a semester searching through 66,270 beetles to determine which were from Haiti. Finn found 272 Haitian beetles, meaning that the University of Vermont has one of the largest collections of Haitian beetles, second only to Harvard University. This collection is unique in that no other museum contains Haitian beetles from the 1970s and 1980s. As Finn said, “It's super weird that the University of Vermont has this collection.”

In a world losing biodiversity left and right, it can be difficult to quantify change without understanding the starting point. Natural history museum collections are the closest scientists can get to going back in time. Finn said that “where this comes back to natural history collections is that we're really able to, using the tiny little pockets of collections from this region, have a little window into what it was like there before we saw this horrible extinction crisis”.

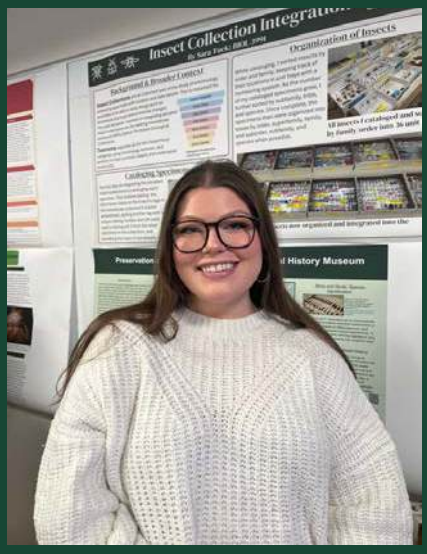
That's what Charles Woods and a team from the University of Vermont were thinking in the 1970s when they traveled to Haiti to identify essential areas of biodiversity to protect as national parks and conservation areas. On this trip, as researchers do, they collected beetles to bring home. Ffty years later, and through several location changes, the Haitian beetle collection became mixed in with other local beetles. Along with cataloging and sorting which beetles were from Haiti, Finn undertook the passion project of bringing this history to light.

Time Traveling Through the UVM Natural History Museum

One reason that Finn was drawn to UVM was because of the immense opportunities for undergraduates to participate in active museum collections research. There are several other undergraduate students who are also working on projects at the Natural History Museum. J Isaacson has been going through a worldwide bird collection from the 1800s to gather data on species, collection date, location, and collector name. This information will be added to a database, making it available to scientists everywhere. Lilo Schultz has been skinning small mammals such as a jumping mouse, squirrels, a star-nosed vole, and a rat to prepare the specimens for storage. These will be used to understand changes in the population size, color, morphology, and even genetics. Through the BIOL 3991 museum internship course, led by Dr. Ellen Martinsen, additional undergraduate students are looking at lady beetles, bird eggs, and shells with the goal of compiling a public online data resource.

The Natural History Museum also hosts guest lecturers such as Spencer Hardy, who spoke to students about how he has used natural history collections to evaluate local bee populations. While the Natural History Museum is only available to see by appointment, it is bustling with exciting research and rare collections. As Charlotte Nobel said, “In the realm of conservation, natural history museums are an extremely important and undervalued resource for a lot of research work. Something that I didn't know about until Dr. Martinson told me about it. But now that I'm here, I see the value of all the work that people are doing.”

Lilo Schultz



Charlotte Nobel

You can learn more about the Zadock Thompson Zoological Collections & donate to support this work HERE.

Community and Collections

EMS students examining the butterfly collection

From Dr. Ellen Martinson, Intership Director.

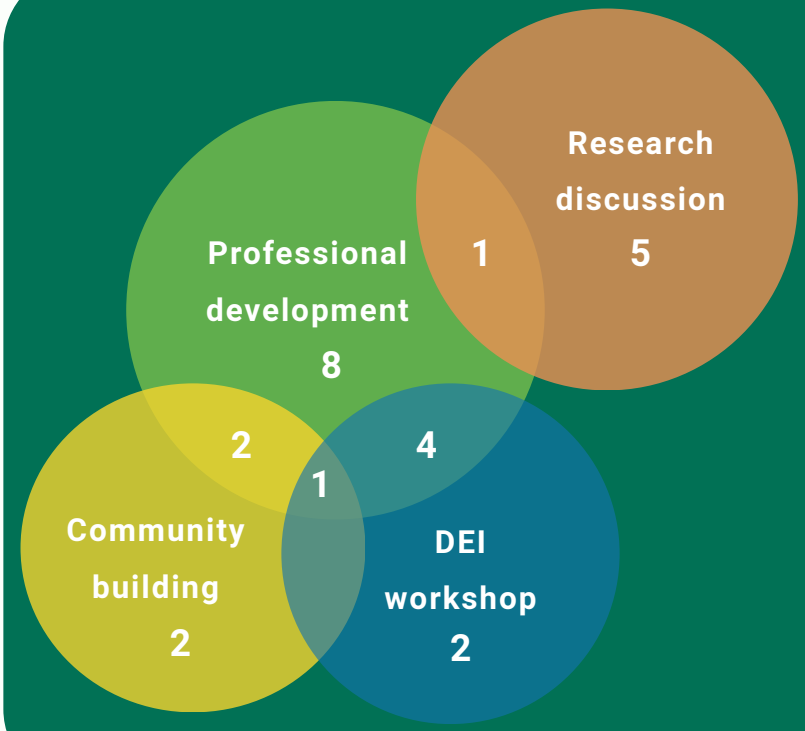
In early May, local sixth grade students from Edmunds Middle School in Burlington visited the UVM Zadock Thompson Zoological Collections on campus. Ahead of the visits, interns from the Natural History Collections Course (BIOL 2991) designed and developed lessons in the insect, bird, and mammal collections. The interns then led the lessons including how to use a dissecting scope, visualization of insects under the scope including colorful butterflies, mammal anatomy and skeletal structure, and adaptations of birds and mammals to live in different environments.

The sixth graders were excited to be in the collections with the interns and to see cool specimens including a whale vertebrae, bison head, dog skeleton, the skins of local mammals, and a diversity of birds including now extinct species. One of the Edmunds Middle School sixth graders proudly reported, "In six years I am going to come to UVM and work here in the natural history museum." The Natural History Collections internship course will continue to engage with local schools to share the collections and the treasure trove of specimens and lessons held within.

Museum interns after the school group visits

BilDS Biological Data Science Program

BilDS Seminars Spark Interdisciplinary Communication and Collaboration



With 25 seminars and workshops in AY 24-25, BilDS had a diversity of offerings focusing on its four core program components. Highlights include a multi-part workshop on pedagogy and course design, several seminars on science communication in the age of social media, and multiple fruitful research discussions. In addition, BilDS awarded supplemental funding to 17 students in the program to support professional development.

BilDS outside of the classroom

Fall 2024 celebration

Spring 2025 celebration

Summer 2024 retreat

Learn More about BilDS: https://www.uvm.edu/cas/bilds @UVM_BilDS BilDS.Program@uvm.edu

Previously the NSF-sponsored QuEST program

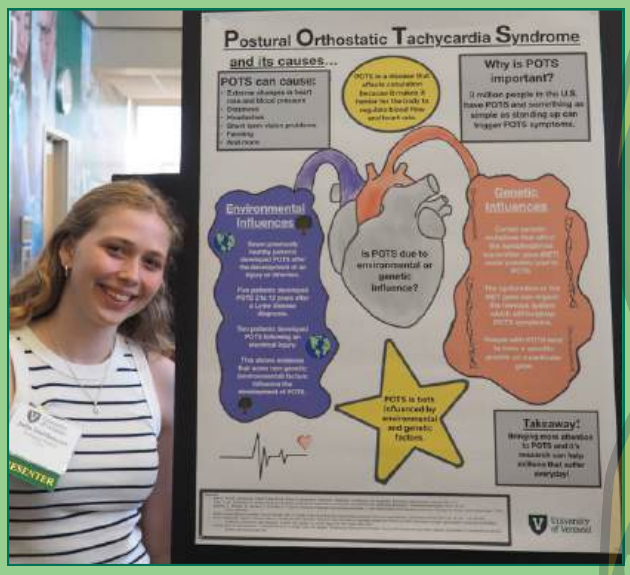
Plant/Fungal Symbiosis Labs

BCOR 1450 students design a semester-long project investigating the role of Mycorrhizal fungi in plants

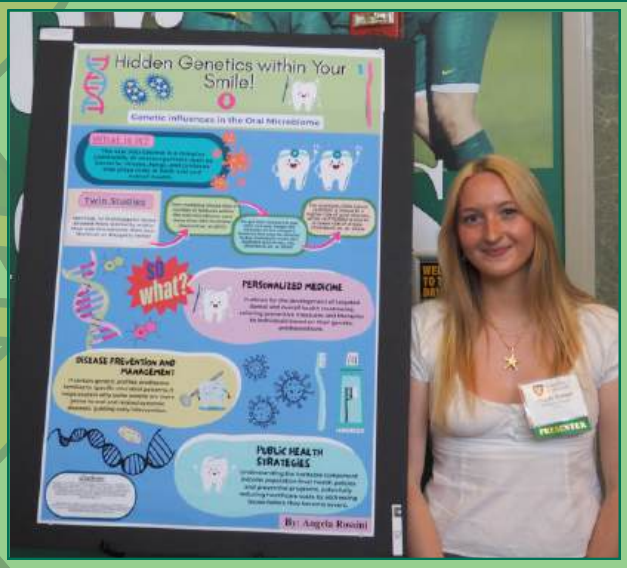
From formulating their own hypotheses and predictions, to watering and treating the plants throughout the class, these students get a hands-on tour through the scientific process from start to finish.

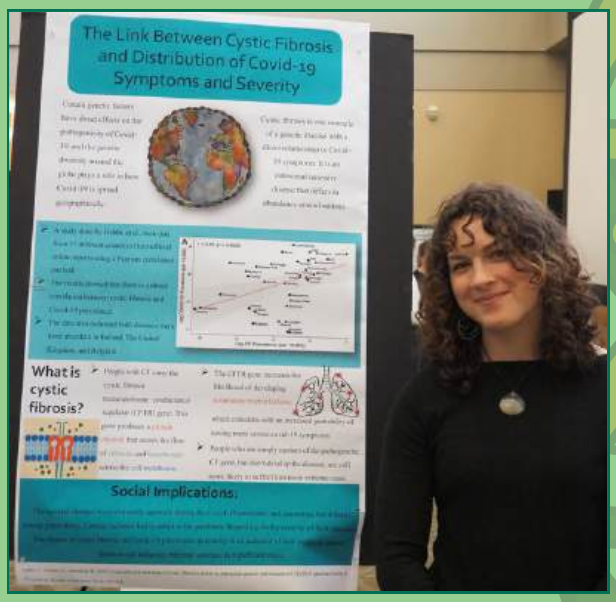
This project culminates into a formal lab report at the end of the semester, giving the students a real experience in writing a scientific paper.
The BCOR program recently received a grant through UVM's Driving Change program, funded by the HHMI, to further enhance success of our students.

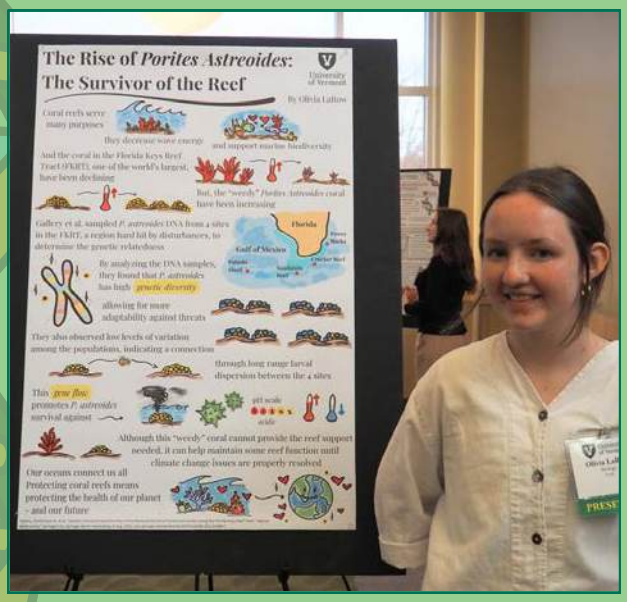
BCOR2300 Genetics & Society Infographic Project



This project has Genetics students creating an infographic for a study of their choice to summarize primary scientific literature into a digestable poster.



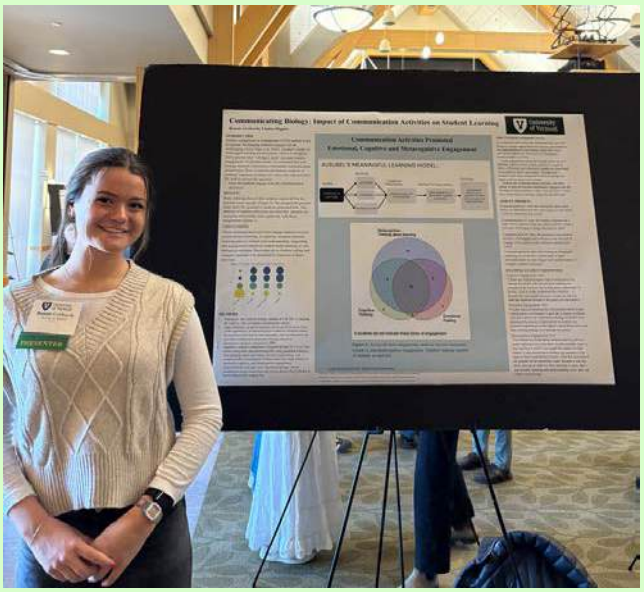




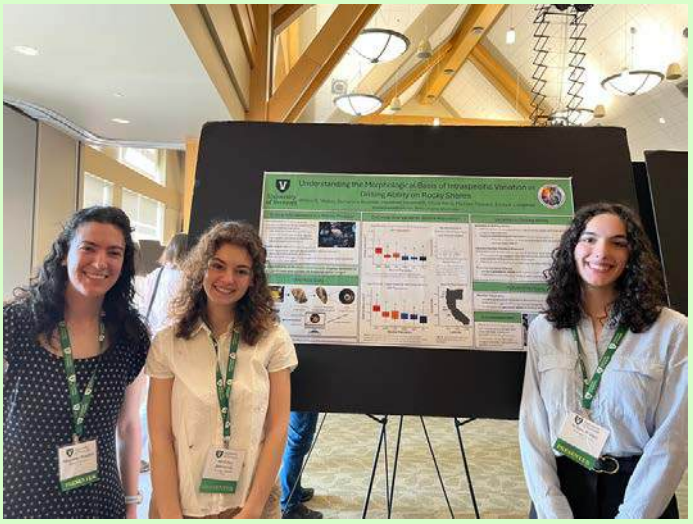
BCOR2300 Genetics & Society Infographic Project

30 Outstanding infographics were chosen to be displayed in a gallery walk during this year's Student Researech Conference

Undergraduate Student Research Compilation

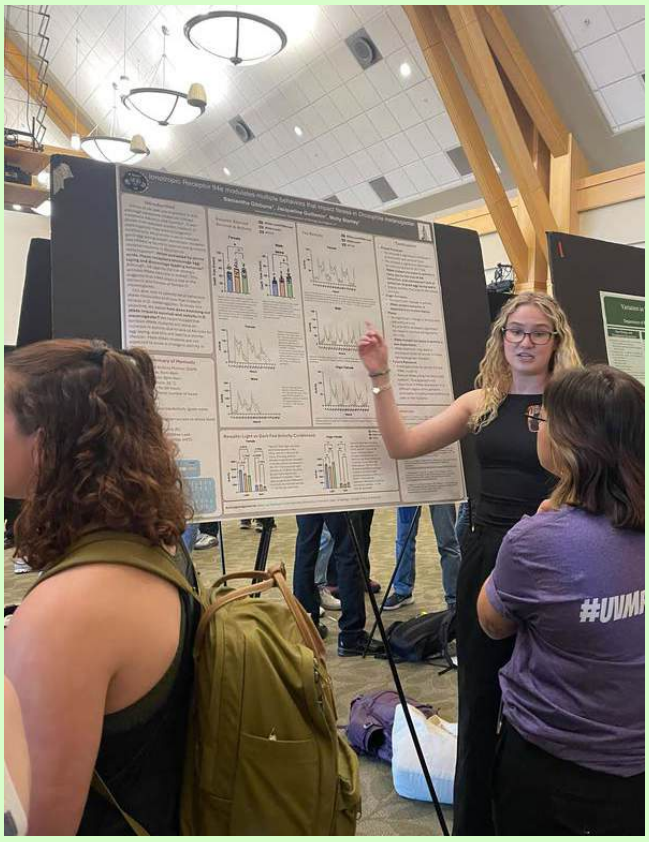


Bonnie Gerhardt's research conducted with advisor Linden Higgins



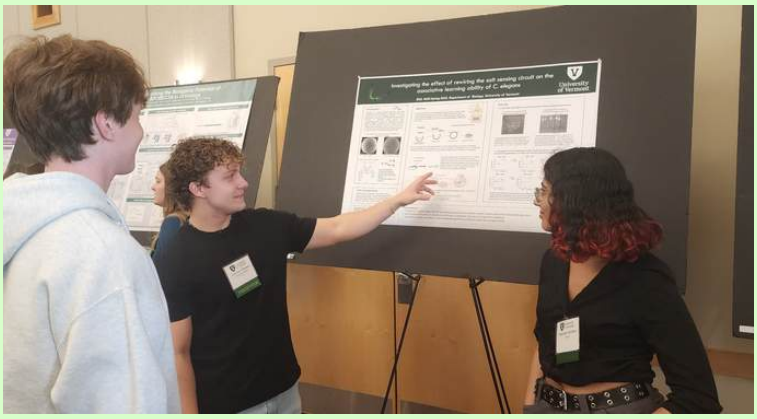
Sam Boutilier, Maddie Hilzenrath, and Willow Walker from the Pespini Lab

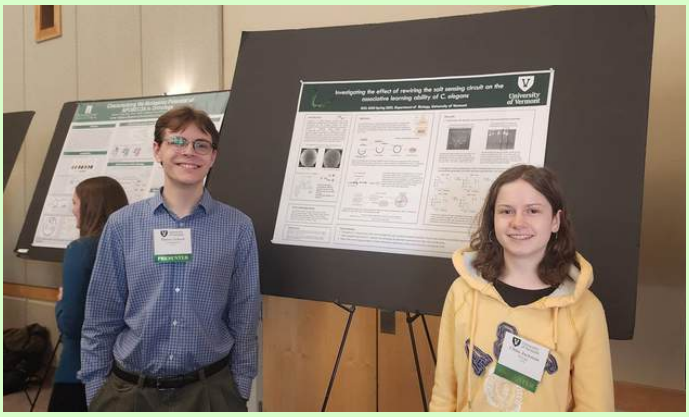
Lila Rose Tomlinson presenting thesis research from the Ebert Lab



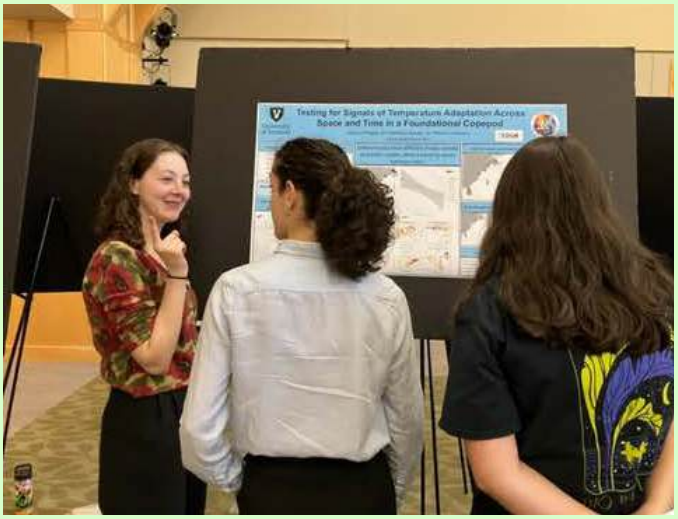
Sami Gibbons presenting research from the M. Stanley Lab

Undergraduate Student Research Compilation





Armand Olteanu, Chanchal Saratkar, Harry Gritsch, and Chloe Jackman presenting research from Leo Tang's BIOL 4630 CURE course.



Aly Rodger, presenting thesis research from the Pespini Lab

Congratulations to all of our students who presented at the 2025 Student Research Conference!

Luke Proud presenting research from the Nunez Lab

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.

The winning pumpkin was created by the Ebert Lab. This spooky pumpkin earned 60 votes.

The second place winner, with 36 votes, came from the Lockwood Lab.

The Stanley Lab placed third with 25 votes.

ART OF BIOLOGY PHOTO CONTEST

This year we held our 14th 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.

-Megan O'Connor, 1st Place Winner

Cover Photo

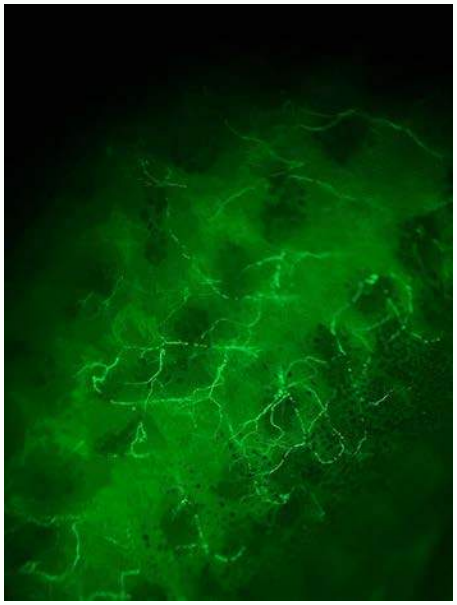
Two bottlenose dolphins, a mother (right) and her calf (left), break the ocean's surface to breathe in Bocas del Toro, Panama. While we record the communicative sounds of these dolphins from a boat, photos of the dolphins' dorsal fins are also taken to identify individuals so we can further understand the social dynamics of the population. Taken with a digital camera from the research boat.

-Jacqueline Guillemin, 2nd Place winner

Title: Pegacorn in a cotton candy field. *David Attenborough voice* "Here we see a rare sight, the female Drosophila melanogaster with a singular fused antenna, lazing in the cotton candy field of a vial plug. Lovingly referred to as the pegacorn, which is a portmanteau of pegasus and unicorn, with origins in ancient mythical texts" . This photo was taken with an Iphone through the eyepiece of a dissection scope. While preparing for experiments we often use dissection scopes to look at each fly individually for certain phenotypes. This fly has a fused antenna which is a unique finding, like the rare sightings of a mythical creature.

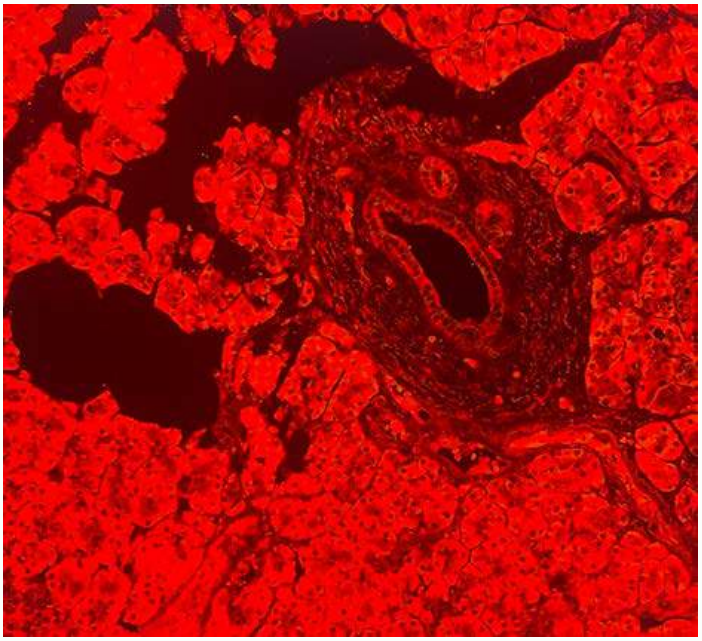
ART OF BIOLOGY PHOTO CONTEST

Continued



-Taylor Bean

Fluorescent imaging of ngn1:GFP zebrafish adult, highlighting sensory neurons in the skin. The green fluorescence indicates the expression of the ngn1 gene in sensory neurons, allowing for visualization of their distribution and organization in the skin. This image provides insights into the role of Neurogenin 1 (ngn1) in the differentiation and patterning of sensory neurons in adult zebrafish.



-Gavin Treschll

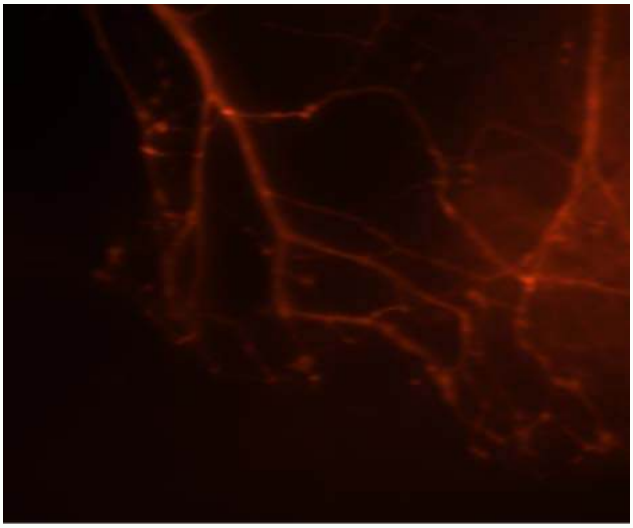
This photo was taken from a frankenslide colon sample at 20x magnification using confocal microscopy. There's an angry face hidden in the beautiful fluorescent staining for this sample which I found cool.

ART OF BIOLOGY PHOTO CONTEST

Continued

-Lila Rose Tomlinson

This image was captured while I was testing the visual acuity of Zebrafish in the Ebert Lab. My research has been the investigating the DCBLD2 structural protein and it's impacts on eye development. The fish captured in this photo is a mutant, created using CRISPR injection, that lacks the DCBLD2 gene. I was preparing this little guy for testing and thought that the positioning of the bubbles and the shadows looked magical.



-Collin MacLeod

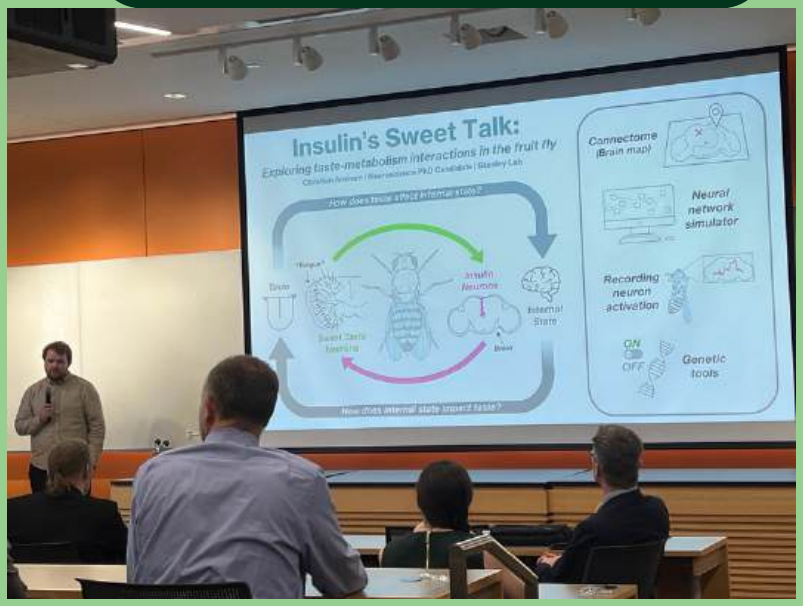
Title: A visualization of pulling on the heart strings
Image shows a picture of motor neurons synapsing on the heart in mnx1:RFP transgenic zebrafish. Arboresque branching of the axons reach around the heart, modulating cardiomyocyte contraction in the developing zebrafish, which helps us better understand the synergy between the developing nervous and cardiovascular systems. Interestingly, heart function is known to be modulated by sympathetic and parasympathetic nerves, yet this image suggests the somatic nervous system may be included in that relationship. Image of 4 day post fertilization zebrafish was taken at 20x utilizing epifluorescence microscopy.

SciComm Challenge:

Graduate students compete in the 3-Minute Thesis Competition

This year's second annual 3-Minute Thesis Competition at UVM challenged graduate students to briefly but effectively communicate their research with only 1 slide. Two student in Biology labs made it to the final round!

Christian Arntsen presenting.



Daniel Penados Richter won the People's Choice Award!

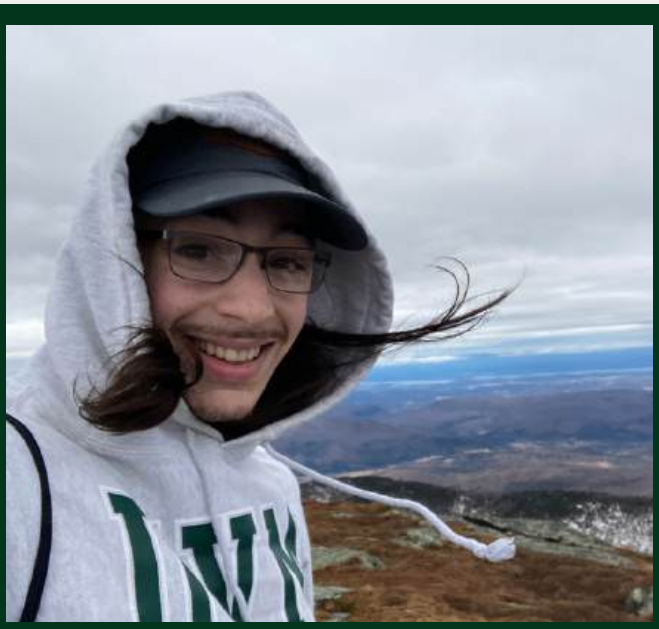
Daniel with his advisor Bryan Ballif

Daniel Penados Richter presenting.

Alison Hall won 1st Place!

SciComm Interns

Students receive internship credit hours for science communication work



Jackson D'Elia is an Evolution & Ecology major with a minor in Wildlife Biology at UVM, class of 2026. He produced the undergraduate research spotlights as well as the research interview video (with more of those to come). Outside of the SciComm internship, Jackson is a hive manager for the UVM Beekeeping Club, a competing member of the UVM Club Gymnastics team, as well as an undergraduate lab TA for Biology II. Jackson can be found tending to his hives, playing *Magic; the Gathering* at local game stores, or investigating every mushroom he sees while on a hike.

Check out our Instagram page HERE for more content!

SciComm Interns

Students receive internship credit hours for science communication work

Sam Boutilier is a Biology major with an interest in Marine Biology. Her favorite water animal is currently lobster, with the oarfish in a close second. She writes articles for the biology department website and also makes Instagram posts. Sam can also be found skiing, running, and mini-golfing. Catch her at the Vermont 10 miler this fall (or watching Survivor season 48). At UVM, Sam is participating in undergraduate research in the Pespeni Lab and also works at the tutoring center.

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 such as the official website, social media, and this newsletter publication. Interns can expect to conduct interviews, write articles, create social media posts, and apply their photography or graphic design skills.

Contact Dr. Molly Stanley, the faculty advisor, for more information: Molly.stanley@uvm.edu

KEEP IN TOUCH WITH BIOLOGY!

Phone: (802) 656-2922

Email: Biology@uvm.edu

Check out our website!

Recent Headlines are at the bottom of the homepage.

Department of Biology

Follow us on Instagram!

@BiologyUVM

Connect with Alumni & Share Updates!

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

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