

# A YEAR IN UVM NEUROSCIENCE

2025-2026

May, 2026

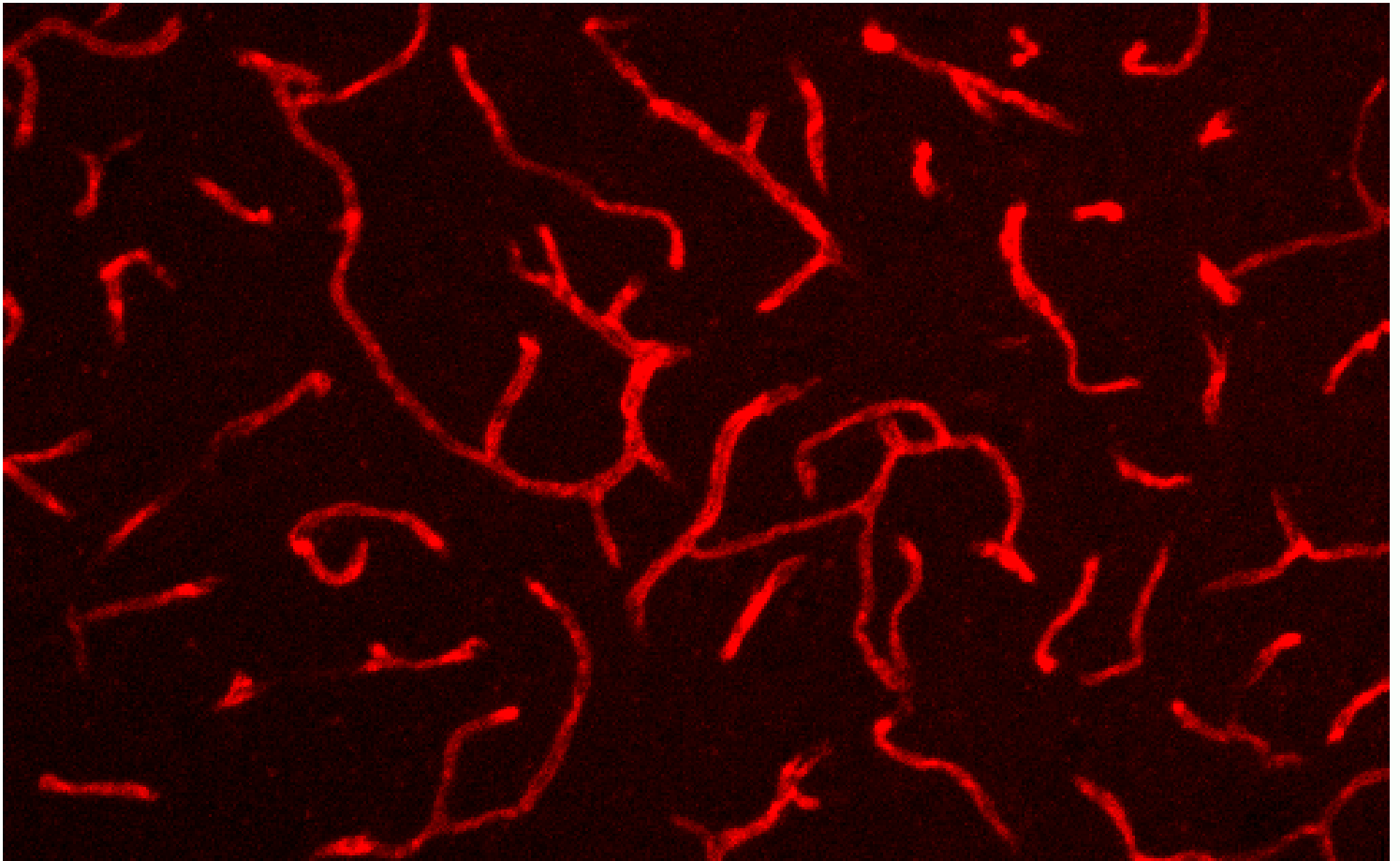


Image by Maya Rao, Neuroscience minor in the Harraz Lab in the Larner College of Medicine.

Brain slice from a hypertensive mouse, capillaries stained with CD31 antibody.

Work supported by NIH grant #1P20GM135007-01, Core C: Customized Physiology and Imaging Core.

## **A note from the Undergraduate Neuroscience Program Directors:**

Over the past academic year, our students have excelled in their classes, research, and beyond. We had a record number of nominations for our graduating senior awards, and Sydney Clouse received the Hannah Howard Prize, which is given to the student with the highest academic achievement across the entire College of Arts and Sciences. We also graduated one of our largest groups of students to date in the UVM Chapter of the Nu Rho Psi Honors Society. Seventeen students recently defended their senior theses, conducting research in labs that span 4 separate colleges across UVM. The variety of projects completed by our students truly highlights the interdisciplinary nature of neuroscience. Our students presented their work at local and international conferences and are making major contributions to numerous fields.

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We were excited to offer several new upper-level neuroscience electives on topics that ranged from Gut-Brain Connections to Neurophysiology. Our program also underwent its first external review, where we received feedback highlighting many strengths of UVM Neuroscience and suggestions to keep growing the program. Our undergraduate program was also able to connect with the larger neuroscience community in Vermont, including at a conference hosted by the Vermont Chapter of the Society for Neuroscience and the Vermont Brain Bee.

Congratulations to all of our recent graduates- we appreciate all of your contributions to our neuroscience program and are excited to see what you do next!

Sincerely,

Dr. Donna Toufexis (Co-Director)

Dr. Molly Stanley (Co-Director)



Dr. Toufexis with Sydney Clouse. Photo credit: Owen Leavy



*Dr. Quintana (left) presented with a plaque for giving the 2nd annual Dr. Mawe Keynote Lecture by Dr. Francisco (right). Photo Credit: Molly Stanley*

# 16th Annual NBH Forum Brings Record Attendance

by Wes Lissette, Science Communication Intern

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Hosted by the Vermont Chapter of the Society for Neuroscience, this year's event was the largest in the forum's history and showcased the remarkable breadth of neuroscience research happening at UVM and beyond.

Researchers from both McGill University and Dartmouth College made notable contributions. The annual forum brings together researchers from across disciplines to share discoveries, build collaborations, and celebrate student scholarship. This year's program featured platform talks, rapid "data blitz" presentations, a large poster session, and a keynote address from a remarkable scientist breaking ground in defining the relationship between our brain and our immune system.

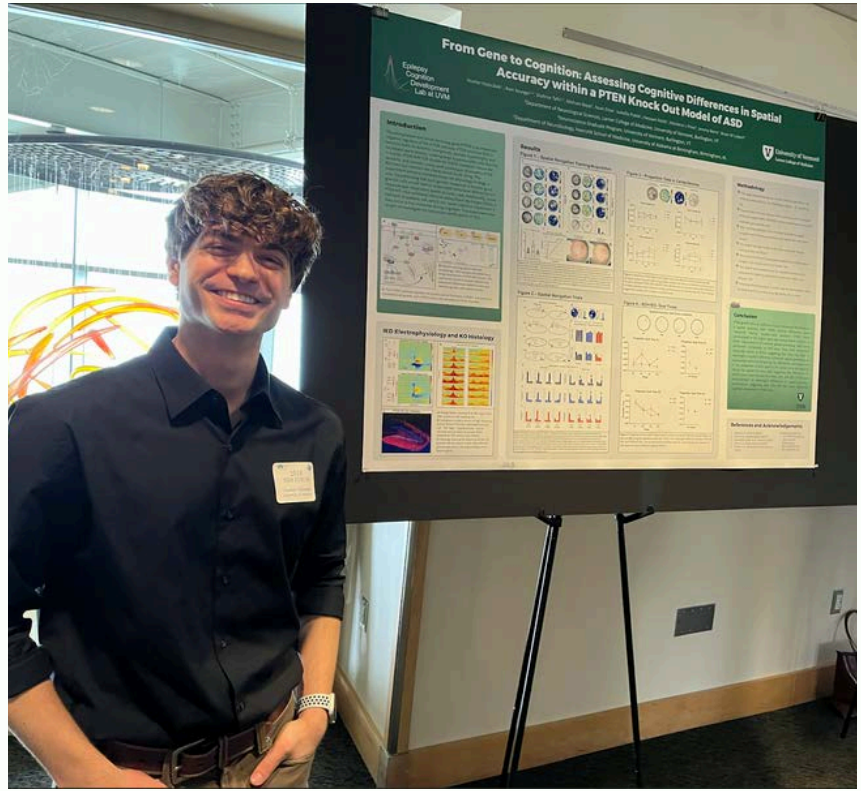
The forum's keynote speaker for the 2nd Annual Dr. Mawe keynote lecture, Dr. Francisco Quintana of Harvard Medical School, delivered an engaging presentation on the connection between the brain's support cells, astrocytes, the immune system, and brain tumors. These experiments have revealed that these cells in our brain are capable of two-way communication with our immune system. Dr. Quintana's lab has discovered that these cells can become 'hijacked' by brain tumors to reduce the efficacy of immunotherapy treatments.

Dr. Quintana's research has implications for many different aspects of neuroscience and cancer research, but even evaluating the effects of a single molecule required multiple experiments, each needing to be peer-reviewed and rigorously tested by a team of scientists. Dr. Quintana's talk showcased a more human side of research that can be frustrating and emphasized that big breakthroughs happen incrementally. The forum and Dr. Quintana's keynote speech both emphasized the importance of community in the research field across all disciplines.



*Participants gathered in the Davis Center watching a presentation on smooth muscle function. Photo Credit: Molly Stanley*

A hallmark of the NBH Forum is its focus on the accomplishments of undergraduate, graduate, and postdoctoral researchers presenting innovative work alongside professors in disciplines that span across molecular biology, psychology, neurodevelopment, and clinical science. The NBH Forum offers an introduction to research advancements and opportunities, from studies at the smallest scales in petri dishes, to various animal models and human disorders.

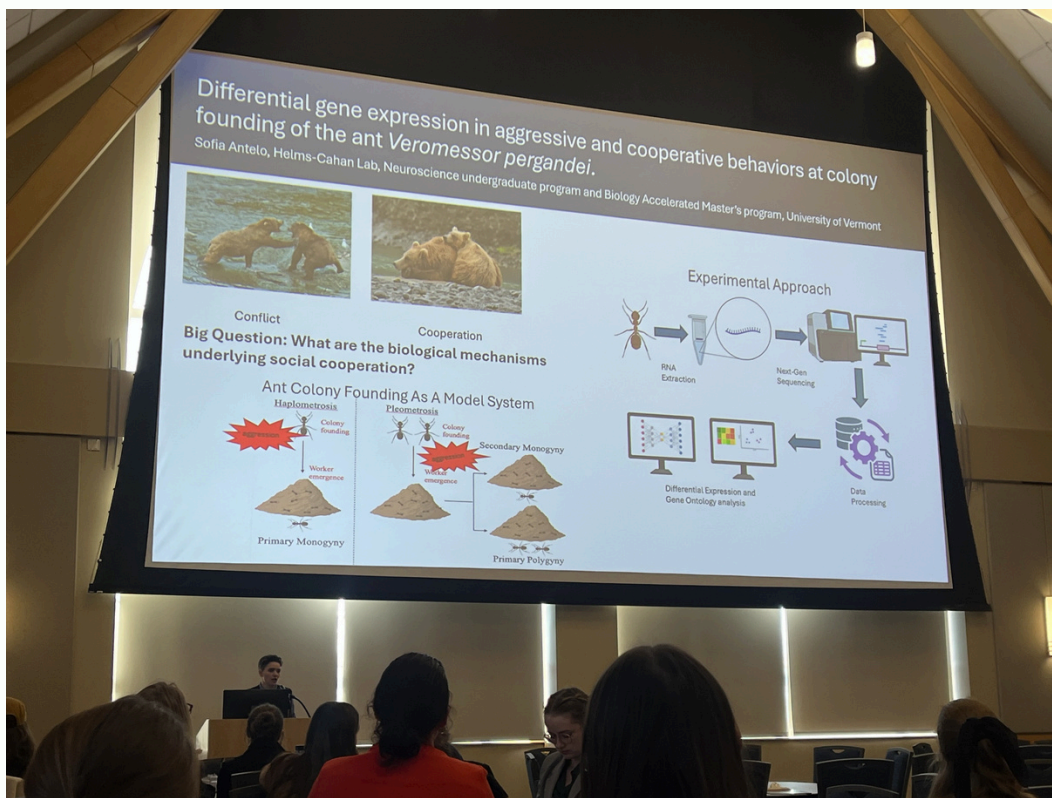


*Neuroscience Minor Hunter Holoubek presenting his research during the poster session. Photo Credit: Molly Stanley*

For many undergraduates, the forum provided an early opportunity to connect with neuroscience experts and share their research publicly. For many in this year's forum, it was their first time showcasing their own research in this way. The chance to get feedback, recognition, and practice presenting their experimental results was an essential part of the forum experience for many students.

Elizabeth Mai-Ling Hua (McGill University) presented groundbreaking work on promoting central nervous system axon regeneration. She has been identifying novel molecules that could be administered to the brain to effectively improve regrowth and healing. When asked about her experience in entering the field, she reiterated that, "There's nothing better than starting that conversation, even if they only stay as a connection", to identify potential opportunities.

The Data Blitz session provided a unique platform to summarize a research project in only five minutes. The fast-paced format gave a great opportunity for these upcoming researchers to focus on effectively communicating their research and makes for what Sarah Van Horn described as a, “nerve-racking but really rewarding process.” Communication has always been a crucial part of science. In the era of social media, there are many new tools that can be used to broadcast important scientific findings. The Data Blitz presentations required efficient delivery without compromising content, an important skill in the current media landscape.



*Neuroscience major Sof Antelo presenting research during the blitz talk session.*

*Photo Credit: Molly Stanley*

Organizers emphasized that the goal of the NBH Forum is to unite departments across neuroscience, psychology, biology, engineering, and clinical sciences. By creating space for collaboration and conversation, the forum continues to strengthen the scientific community at UVM and beyond. Bridgette Lavoie, president of the Society of Neuroscience Vermont chapter, shared, “We want to bring all the departments together, we want to expand and expose ourselves to all the different methods and disciplines to learn about the brain.”

With record attendance, an inspiring keynote, and an impressive display of student scholarship, the 16th Annual NBH Forum demonstrated the power of interdisciplinary research that exists in UVM and beyond. This neuroscience community is extremely welcoming and the forum can be an incredible launchpad for advancing a student's career or journey into scientific learning and professional development. Whether finding peer or professional mentors or just getting exposure to the community for the first time, the forum offers a setting to explore every possibility.

**This year's award winners:**

Best platform talks: Elizabeth Mai-Ling Hua and Rain Younger

Best blitz talk: Anna Lyndaker

Best graduate student poster: Harrison Morse

Best undergraduate student poster: Lindsey Earle

MBest Postdoctoral Poster: Hadi Esfandi



NBH Award Winners. Photo Credit: Molly Stanley



# NU RHO PSI HONORS SOCIETY

The national honors society for neuroscience aims get students involved to use their education and experience in neuroscience and apply that to relationships across the US. There are great resources for experience in research and internships opportunities and in the local community.



## CONGRATULATIONS!

### LEADERSHIP TEAM

#### President:

Jake Grenon

#### Vice President:

Caleb Purvee &  
Hunter Holoubek

#### Treasurer:

Lindsey Earle

#### Secretary:

Molly Manning

#### Faculty advisor:

Dr. Alicia Ebert

### CURRENT SENIORS

Ellie Armitage

Isabelle Baker

Gwyneth Boren

Jill Corbit

Darian Cook

Lindsey Earle

Jake Grenon

Hunter Holoubek

Campbell Kemp

Viola Linton

Molly Manning

Madison McCuin

Ella Psaltos

Caleb Purvee

### NEW SENIORS

Erin Boyd

Lilla Erdos

Elise Escobar

Jake Frattore

Paige Grover

Jenelle Hardy

Mallie Higgins

Alexandra Kassel

Bethany O'Toole

Isabella Piatek

Raneen Salha

Max Terraciano

Kaitlyn Zapson

### NEW INDUCTEES

Alexa Counter

Emma Ciccone

Zoey Greenbaum

Olivia Hansen

Hannah Humphreys

Linh Le

Nicholas Maurizi

Delaney Mcgrath

Abigail Poulston

Veronica Punty

Miriam Restrepo

Samantha Ringe

Avery Sullenberger



uvm.nu.rho.psi  
UVM Nu Rho Psi

# Congratulations to our 2026 Graduating Senior Award Winners!



## Sydney Clouse

### HANNAH HOWARD PRIZE

This award is given annually to the student with the highest academic achievement in the *entire College of Arts & Sciences*. We are honored that one of our Neuroscience students received this recognition.



*Dr. Toufexis with Sydney Clouse (top) and other senior award winners (bottom) at the CAS ceremony. Photo credit: Owen Leavy*





# Congratulations to our 2026 Graduating Senior Award Winners!



## Jacob Genon, Mallie Higgins, Kara Wentzel

### BRUCE S. KAPP AWARD

This award is given annually to graduating seniors in neuroscience who have conducted outstanding independent research in neuroscience while maintaining high scholastic standards. The award is named for Bruce Kapp, who was a Professor of Psychology from 1971-2001. Dr. Kapp was a pioneer in the study of the neurobiology of emotion, and his work has dramatically influenced and directed the research of subsequent scientists in the field.

## Molly Manning, Eleanor Steinman, Elise Escobar

### EXCELLENCE IN NEUROSCIENCE AWARD

This award is granted to graduating seniors who have achieved the highest academic performance in the program. Quite often these students not only excel in scholarship but are also active in research and service to the University and their community.

## Ellie Armitage, Lindsey Earle, Lilla Erdos

### RODNEY PARSONS AWARD

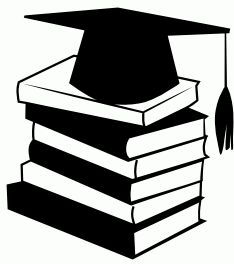
This award is given to seniors who demonstrate outstanding achievement in scholarship, leadership, and research in the field of neuroscience. The award is named for Rodney Parsons, a long-time former faculty member who served as the Director of the UVM Center of Biomedical Research Excellence in Neuroscience.



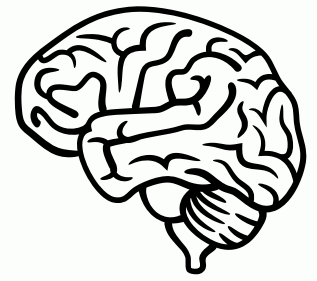
*We had a record number of nominations this year!*

*Award winners were recognized at the Nu Rho Psi banquet in April 2026*





2026  
**NEUROSCIENCE**  
**SENIOR THESIS DEFENSES**



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**Darian Cook**

Advisor: Bill Falls & Jom Hammack, Psychological Sciences, CAS  
*"The Effects of Exercise on Female Sensitivity to PTSD"*

**Hunter Holoubek**

Advisor: Jeremy Barry, Neurological Sciences, LCOM  
*"From Gene to Circuit to Cognition: Assessing Cognitive Differences in Spatial Accuracy within a PTEN Knock Out Model for ASD"*

**Isabella Piatek**

Advisor: Jeremy Barry, Neurological Sciences, LCOM  
*"Hippocampal Cross-Frequency Coupling in the PTEN Knockout Model for Autism-Spectrum Disorder"*

**Caleb Purvee**

Advisor: James Boyd, Neurological Sciences, LCOM  
*"Predictors of Successful Carbidopa/Levodopa Sustained-Release Use in Parkinson's Disease - A Real-World Retrospective Analysis"*

**Sasha Dailey**

Advisor: Frances Carr, Pharmacology, LCOM  
*"Effects of PFOS, a member of the PFAS chemical family, on Thyroid Hormone Receptor Beta (TR $\beta$ ) Molecular Signaling in Thyroid Cells"*

**Ellison Armitage**

Advisor: Alicia Ebert, Biology, CAS  
*"Investigating the role of Tjp2a and Tjp2b in zebrafish retinal development"*

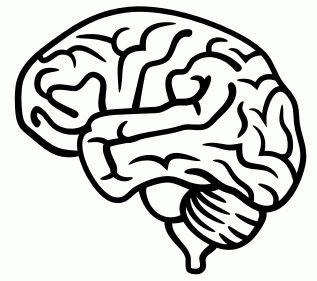
**Jake Fattore**

Advisor: Benedek Erdos, Pharmacology, LCOM  
*"Influence of Chronic Neuroendocrine Stress on Vascular Supply and Metabolic Demand in the Hippocampus"*



2026

**NEUROSCIENCE**  
**SENIOR THESIS DEFENSES**



**Kara Wentzel**

Advisor: Kaley Freeman, Emergency Medicine, LCOM  
*"Mechanism of Endothelial Cell Recovery after Traumatic Brain Injury"*

**Mallie Higgins**

Advisor: Jom Hammack, Psychological Sciences, CAS  
*"A role for PACAPergic lateral parabrachial nucleus (LPBn) afferents in the bed nucleus of the stria terminalis (BNST) in anxiety-like responding"*

**Jake Ruud**

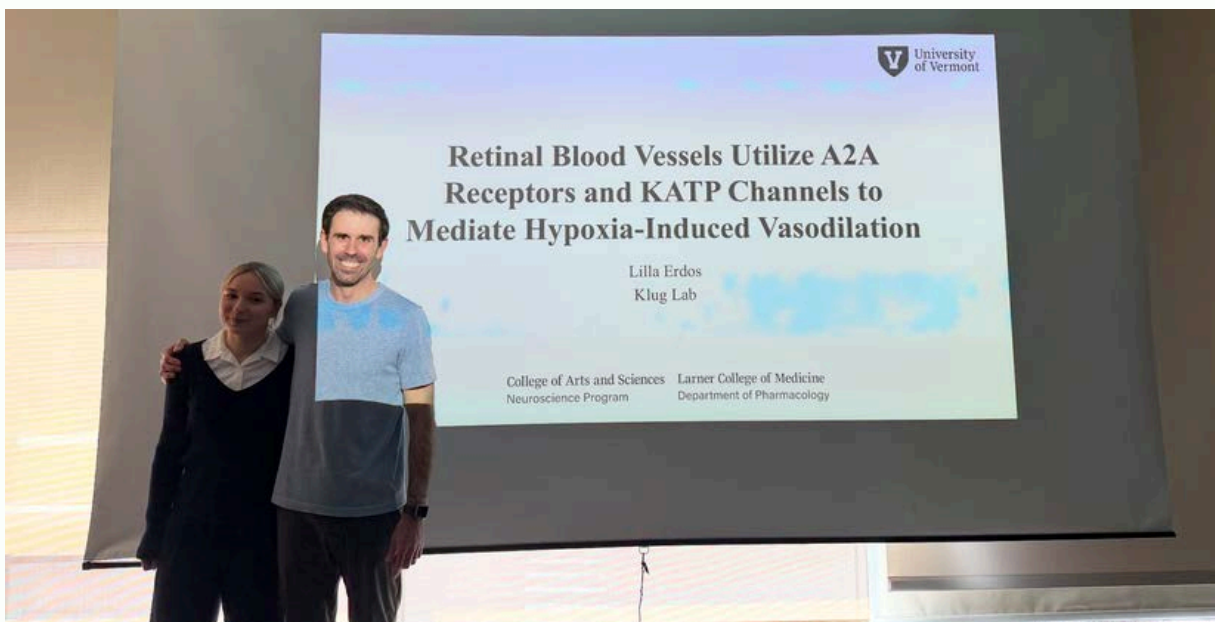
Advisor: David Jangraw, Electrical & Biomedical Engineering, CEMS  
*"Examining Mindless Listening During an Auditory Task"*

**Jacob Grenon**

Advisor: Chris Skinner, Nutrition & Food Sciences, CALS  
*"The Effect of Western Diet Paired with Binge Drinking on the Mouse Brain"*

**Lilla Erdos**

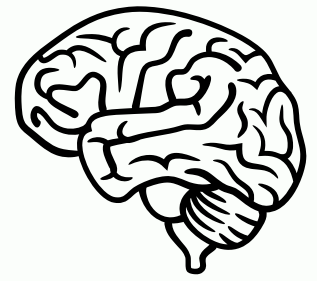
Advisor: Nicholas Klug, Pharmacology, LCOM  
*"Retinal Blood Vessels Utilize A2A Receptors and KATP Channels to Mediate Hypoxia-Induced Vasodilation"*



Lilla Erdos with advisor Dr. Nicholas Klug at her thesis defense.



2026  
**NEUROSCIENCE**  
**SENIOR THESIS DEFENSES**



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**Lindsey Earle**

Advisor: Molly Stanley, Biology, CAS

*"Metabolic Modulation of Taste Sensitivity: Investigating the Role of Dopamine and Insulin Receptor Signaling in Drosophila melanogaster"*

**Ellie Flanagan**

Advisor: Donna Toufexis, Psychological Sciences, CAS

*"The Androgenic vs. Estrogenic Effects of Testosterone on Habit Development in Male Rats"*

**Sydney Dawson**

Advisor: Estelle Bishop, Neurological Sciences, LCOM

*"Synaptic Mechanism of Nicotine in Restless Leg Syndrome"*

**Erin Boyd**

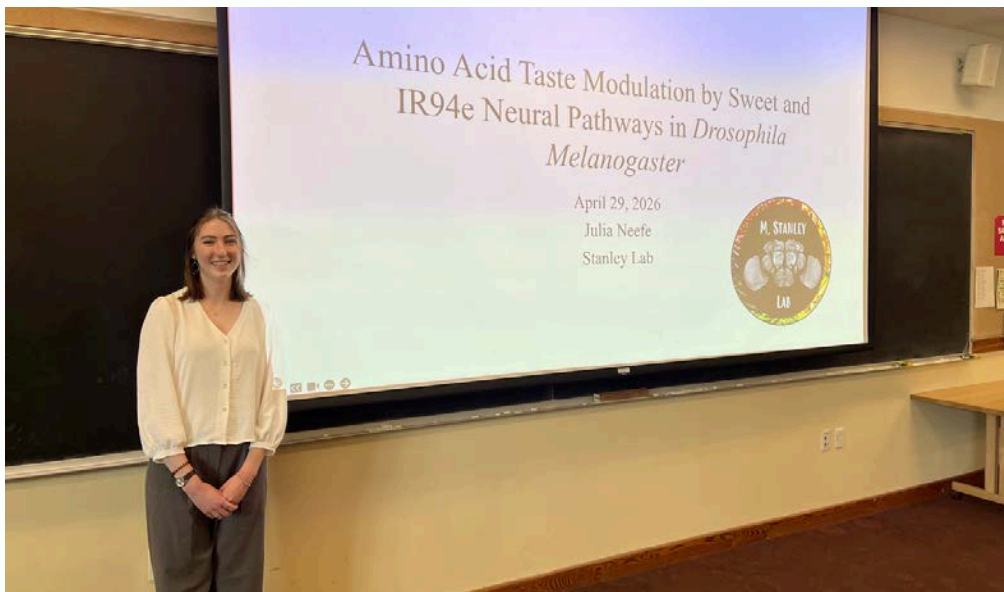
Advisor: Adam Sprouse-Blum, Neurology, LCOM

*"Variation in Headache Symptoms Across Age"*

**Julia Neefe**

Advisor: Molly Stanley, Biology, CAS

*"Investigating the role of sensory circuits in amino acid taste in Drosophila melanogaster"*



Julia Neefe at her thesis defense.



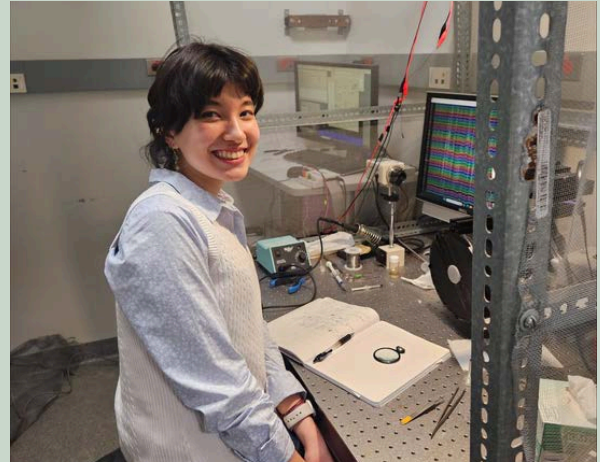
# UNDERGRADUATE RESEARCH AWARDS

SPONSORED BY GENEROUS DONATIONS FROM  
NEUROSCIENCE ALUMNI

## Angelina Woychosky

Jeremy Barry Lab  
Dept. of Neurological Sciences

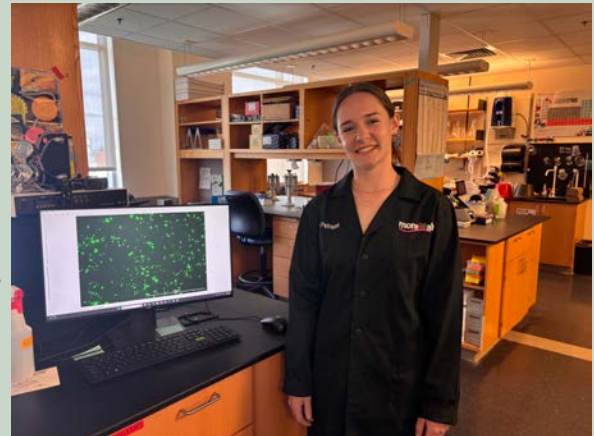
*“Parvalbumin-expressing hippocampal interneurons in a KCNT1 gain-of-function mouse model of epileptic encephalopathy”*



## Chiara Petracek

Kathy Morelli Lab  
Dept. of Neurological Sciences

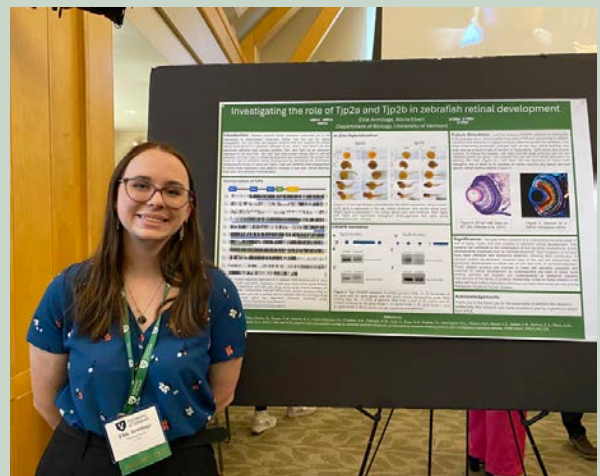
*“Systematic identification of RNA-binding proteins required for neuronal survival and oxidative stress resistance”*



## Ellie Armitage

Alicia Ebert Lab  
Dept. of Biology

*“Investigating the role of tight junction protein 2 in zebrafish retinal development”*



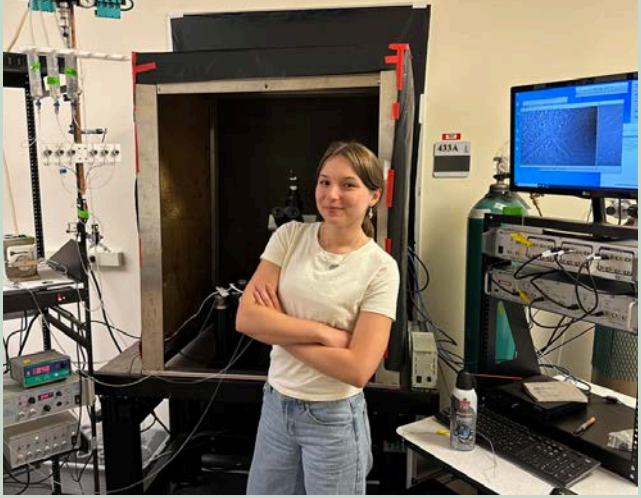


# UNDERGRADUATE RESEARCH AWARDS

SPONSORED BY GENEROUS DONATIONS FROM NEUROSCIENCE ALUMNI

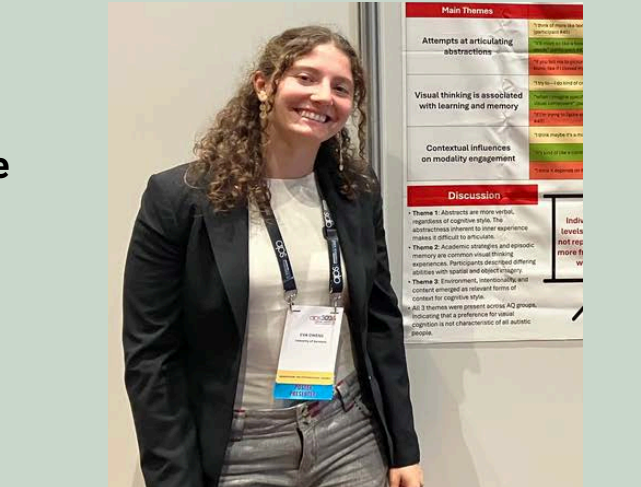
**Lilla Erdos**  
**Nicholas Klug Lab**  
**Dept. of Pharmacology**

*“Retinal blood vessels utilize A2A receptors and Katp channels to mediate hypoxia-induced vasodilation”*



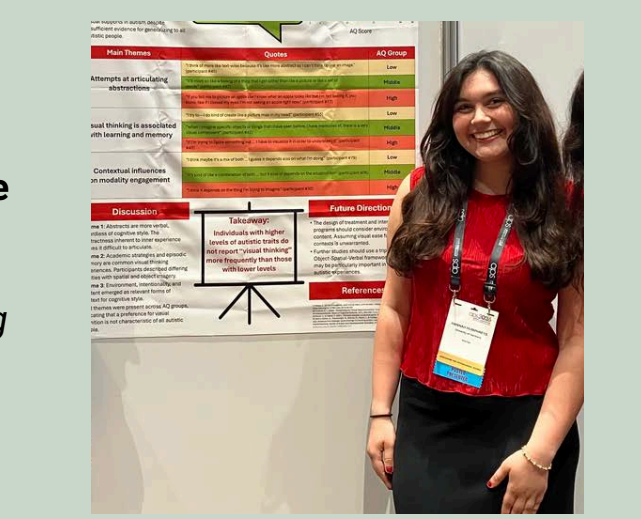
**Eva Owens**  
**Emily Coderre Lab**  
**Dept. of Communication Science and Disorders**

*“The apple of my (mind's) eye: exploring the relationship among autistic traits and cognitive introspection patterns.”*



**Hannah Humphries**  
**Emily Coderre Lab**  
**Dept. of Communication Science and Disorders**

*“Exploring the Relationship among autistic traits and cognitive introspection patterns”*





# NEUROSCIENCE CLUB

A VERY CHILL LOW COMMITMENT CLUB THAT IS OPEN TO ANY MAJOR!

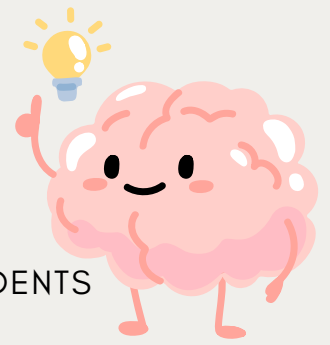
The Neuroscience Club at UVM is a student-run organization that meets every week during the fall and spring semesters. Our club serves as a meeting of students interested in neuroscience to learn more about the field and its ongoing discoveries through student presentations, research discussions, trivia nights, and other fun events. We want to provide a community for all students interested in neuroscience! These events give a great opportunity for those wanting to get into the field or dive deeper into it! Our most recent was a neuroanatomy lab hosted in LCOM, follow on [instagram](#) for updates on events!



uvm\_neuro\_club  
UVM Neuroscience Club

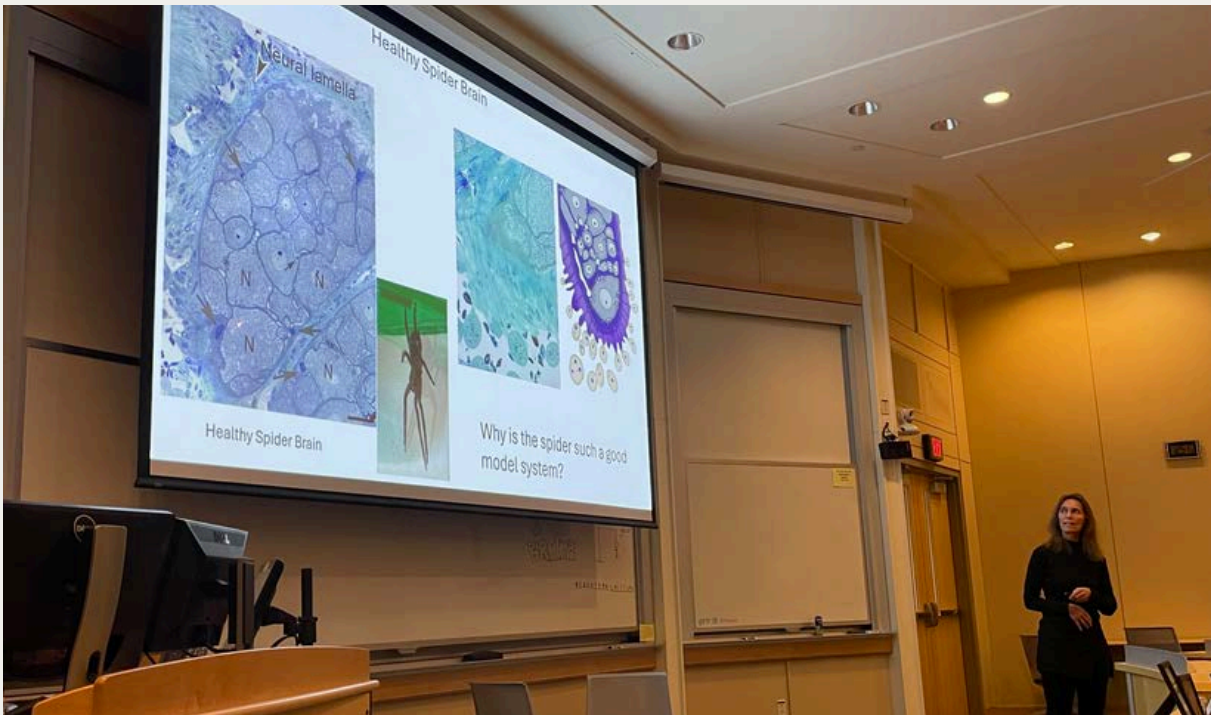


# VERMONT BRAIN BEE



A FUN OUTREACH OPPORTUNITY FOR NEUROSCIENCE STUDENTS

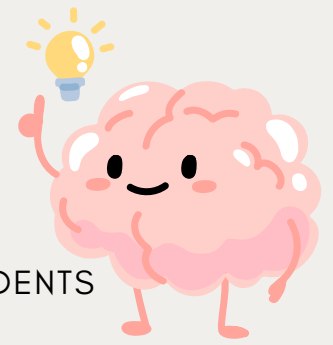
The 17th annual Vermont Brain Bee was held February 7th, 2026 at the University of Vermont. 48 students registered and given the snowstorm that morning, we had 41 students attend. There was representation from Rice Memorial High school, Champlain Valley Union High School, Middlebury High School, Essex High School, South Burlington High School, and St. Johnsbury Academy. Students demonstrated their neuroscience knowledge by taking a written quiz and a neuroanatomy lab practical. Dr. Ruth Fabian Fine, and Associate Professor from St. Michael's College gave a keynote lecture titled "Giant spider neurons uncover a waste canal system that fails in neurodegeneration."



*Presentation by Dr. Ruth Fabian Fine. Photo credit: Alicia Ebert*



# VERMONT BRAIN BEE



A FUN OUTREACH OPPORTUNITY FOR NEUROSCIENCE STUDENTS

Neuropsychologists Sharon Leach and Abby Ryan acted out case studies and led the students through the diagnosis process. There was a panel consisting of undergraduate and graduate students where the students asked questions about finding success in college and research. The top 8 students competed head to head in a live Kahoot to identify the top three students. The team with the highest total from their top four competitors won the team competition. We will be continuing fundraising throughout the spring as the individual winner has the opportunity to represent Vermont at the National Brain Bee in April in California.

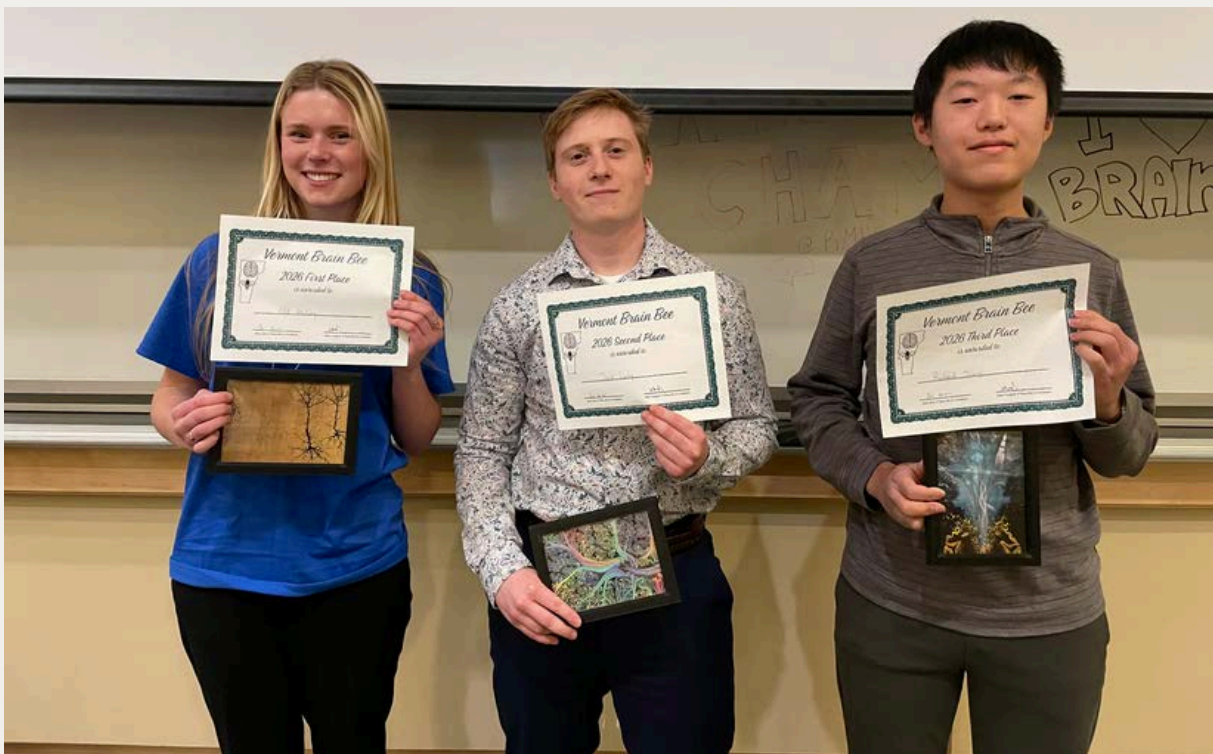
## **This year's winners are:**

Team: Champlain Valley Union High School

3rd place: Richard Jiang - South Burlington High School

2nd place: Jack Daly - Champlain Valley Union High School

1st place: Elle McAvey - Champlain Valley Union High School



*Vermont Brain Bee winners! Photo credit: Alicia Ebert*

# SciComm Internship

Students receive internship credit hours for science communication work



Wes Lissette '27 is a Neuroscience major and psychology minor. They co-produced the department newsletter, created content for Brain Awareness Week for the official Biology Instagram, filmed and edited a video post for the biology instagram, and wrote an article detailing the NBH forum. Outside of the internship Wes enjoys doing personal research, board games, and reading on a sunny day.



See more on Instagram [HERE](#)



Check out Wes's video feature on the Tang Worm Lab [HERE](#)

The Science Communication Internship aims to provide students with the opportunity to engage in scientific media communications. The goal for the internship is to create content related to our neuroscience program across various platforms such as 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.

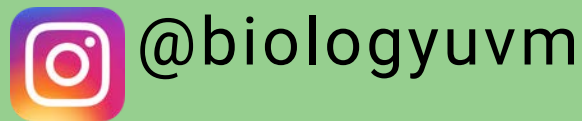
Contact [molly.stanley@uvm.edu](mailto:molly.stanley@uvm.edu) for more information.

## Thank You to Our Recent Donors!

Donations to support student scholarships or research opportunities have a HUGE impact on our students and program. We sincerely appreciate all of your contributions!

Please consider donating to Neuroscience: [Donate Here](#)

Follow on Instagram for Neuroscience updates!  
You will also find infographics from our students in the  
Brain Metabolism and Gut-Brain Connection courses!!



## Connect with Alumni!

Join UVM's global alumni network: [www.UVMConnect.org](http://www.UVMConnect.org)

*Are you a UVM Neuroscience alumni with an interesting story or update to share? Our SciComm interns would love to hear from you!*

*Please email [Molly.stanley@uvm.edu](mailto:Molly.stanley@uvm.edu).*

