THE UNIVERSITY OF VERMONT WELCOMES YOU to the 2023 STUDENT RESEARCH CONFERENCE Event Program

APRIL 19, 2023
9:00AM - 4:30PM
DAVIS CENTER

AFTERNOON I SESSION
Afternoon I Session 1:00 - 2:30PM

Environmental

Andrew Mccracken
Anna Grunes
Bertrand Black
Caroline Wolfe
Chris Floreani
Csenge Petak
David Green
Mariel Dunn
Micayla Schambura

Social Sciences

Ava Feuer
Danish Ansari
Emily Schalkham
Helaina Curtin
Juliana Neira
William Thompson

Life Sciences

Amber Goerner
Andrew Crompton
Cole Logan
Gillian Berglund
Grace Davis
Isabelle Kressy
Kermisha Felix
Lee Mazzacone
Marcy Dockham
Peter Ashfield
Richmond Baye
Seana Kelly
Sebastian Duno
Miranda
Shannon Prior
Sydney Mcfarland
Waverly Gebhardt

Clinical

Abby Palaza
Emma Freitas
Hannah Scott
Isabelle Laskey-Rigrod
Laura Cohen
Richard Norton
Sophie Majerske
Vanessa Ramirez

Anna Sellon
Brittany Antonczak
Claire Bushey
Clare Nelson
Genevieve Foranl

Engineering, Mathematics, & Physical Sciences

Julia Zimmerman
Neil Traft
Peter Tschaikowsky
Sarah Days-Merrill
<table>
<thead>
<tr>
<th>Title</th>
<th>Faculty Mentor</th>
<th>Mentor's Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unveiling Cryptic Fern Diversity in American lady ferns (Athyrium filix-femina)</td>
<td>Dr. David Barrington</td>
<td>Plant Biology, CALS &amp; GC</td>
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<tr>
<td>Importance of Outcrossing in Highbush Blueberry Cultivars</td>
<td>Dr. Allison Brody</td>
<td>Biology, CAS</td>
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<tr>
<td>Assessing the trophic ecology of troutperch in Lake Champlain</td>
<td>Dr. Ellen Marsden</td>
<td>Wildlife &amp; Fisheries Biology, RSENR</td>
</tr>
<tr>
<td>The Effect Of the Plant Herbicide Fluridon on the Accumulation of Plant Hormone Abscisic Acid in Roots</td>
<td>Dr. Jeanne Harris</td>
<td>Plant Biology, CALS &amp; GC</td>
</tr>
<tr>
<td>Summit-to-Shore Snow Monitoring Network in Vermont</td>
<td>Dr. Arne Bomblies</td>
<td>Environmental Engineering, CEMS &amp; GC</td>
</tr>
<tr>
<td>Microbial dysbiosis precedes signs of Sea Star Wasting Disease in wild populations of Pycnopodia helianthoides</td>
<td>Dr. Melissa Pespeni</td>
<td>Biology, CAS &amp; GC</td>
</tr>
<tr>
<td>The evolution of adaptive strategies to deal with variable environments</td>
<td>Dr. Melissa Pespeni</td>
<td>Biology, CAS &amp; GC</td>
</tr>
<tr>
<td>Advancing the Use of DWTR in Stormwater Treatment Features to Enhance Phosphorus Removal for Transportation Projects</td>
<td>Dr. Eric Roy</td>
<td>Natural Resources, RSENR</td>
</tr>
<tr>
<td>Investigating the characteristics of flash drought events in Vermont from 1987-2022</td>
<td>Dr. Lesley-Ann Dupigny-Giroux</td>
<td>Environmental Studies, CALS &amp; HCOL</td>
</tr>
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</table>

**Claire Bushey**
Faculty Mentor: Dr. Dana Rowangould
*Civil and Environmental Engineering, CEMS & GC*

Investigations Into Copper-Mediated Photocatalytic Hydroarsination

**Brittany Antonczak**
Faculty Mentor: Dr. Rory Waterman
*Chemistry, CAS & HCOL*

Security Parameter Bounds for Attacks on the Ring Learning with Errors Decision Problem

**Sarah Days-Merrill**
Faculty Mentor: Dr. Christelle Vincent
*Mathematics, CEMS & GC*

Travel Burdens in Rural US Households

**Sierra Espeland**
Faculty Mentor: Dr. Dana Rowangould
*Civil and Environmental Engineering, CEMS & GC*

Cuban River Sediments: An X-Ray "Conversation"

**Genevieve Foran**
Faculty Mentor: Dr. Nico Perdrial
*Geoscience, CAS*

Methodology for comparing the performance of DER coordination schemes in providing frequency regulation

**Hani Mavalizadeh**
Faculty Mentor: Dr. Mads Almassalkhi
*Electrical Engineering, CEMS & GC*

An Exploration of the Equity and Economic Viability of Mileage Fees: A Budding Alternative to the Gas Tax

**Clare Nelson**
Faculty Mentor: Dr. Gregory Rowangould
*Civil Engineering, CEMS & GC*

Enzyme Modification of Carbon Fiber Microelectrodes for in Vivo Acetylcholine Detection

**Anna Sellon**
Faculty Mentor: Dr. Yangguang Ou
*Neuroscience & Environmental Sciences, CAS*

Zapping the Weights in a Neural Network for Better Continual and Transfer Learning

**Neil Traft**
Faculty Mentor: Dr. Nick Cheney
*Complex Systems and Data Science, CEMS & GC*

Hydrophosphination Substrate Scope Expansion

**Peter Tschaikowsky**
Faculty Mentor: Dr. Rory Waterman
*Chemistry, CAS*

Themes of Power, Danger, and Structure in Human Culture

**Julia Zimmerman**
Faculty Mentor: Dr. Christopher M. Danforth
*Complex Systems and Data Science, CEMS & GC*
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<thead>
<tr>
<th>Depletion of the Abelson Helper Integration site-1 gene in Paramecium</th>
<th>Describing a novel ionotropic receptor in Drosophila feeding behavior</th>
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<td><strong>Peter Ashfield</strong></td>
<td><strong>Grace Davis</strong></td>
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<tr>
<td>Faculty Mentor: Dr. Megan Valentine</td>
<td>Faculty Mentor: Dr. Molly Stanley</td>
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<tr>
<td>Biomedical Sciences, SUNY Plattsburgh</td>
<td>Neuroscience, CAS</td>
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<tr>
<th>Understanding how intention to adopt biosecurity measures affects indemnity design by United States swine producers.</th>
<th>Effect of Selective TRβ Agonist (GC-1) on ER+ and Tamoxifen Resistant Breast Cancer Cells</th>
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<tr>
<td><strong>Richmond Baye</strong></td>
<td><strong>Marcy Dockham</strong></td>
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<tr>
<td>Faculty Mentor: Dr. Asim Zia</td>
<td>Faculty Mentor: Dr. Frances E. Carr</td>
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<tr>
<td>Sustainable Development Policy, Economics and Governance, CALS &amp; GC</td>
<td>Biochemistry, CAS</td>
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<tr>
<th>Characterizing the Role of Abl Kinase in Semaphorin6A Reverse Signaling</th>
<th>Molecular Mechanics of E525K Dilated Cardiomyopathy Mutant Human Cardiac Myosin</th>
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<tr>
<td><strong>Gillian Berglund</strong></td>
<td><strong>Sebastian Duno-Miranda</strong></td>
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<tr>
<td>Faculty Mentor: Dr. Bryan Ballif</td>
<td>Faculty Mentor: Dr. David Warshaw</td>
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<tr>
<td>Neuroscience, CAS</td>
<td>Cellular, Molecular, &amp; Biomedical Sciences, LCOM &amp; GC</td>
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<th>REV1 inhibition elicits differential response to cancer therapy</th>
<th>Investigating the role of PKHD1 in the ciliated cell, Paramecium tetraurelia</th>
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<td><strong>Andrew Crompton</strong></td>
<td><strong>Kermisha Felix</strong></td>
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<tr>
<td>Faculty Mentor: Dr. Nimrat Chatterjee</td>
<td>Faculty Mentor: Dr. Megan Valentine</td>
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<tr>
<td>Microbiology, CALS &amp; HCOL</td>
<td>Biomedical Sciences, SUNY Plattsburgh</td>
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Small Molecule Inhibition of ERK Signaling at the PAC1 Receptor

Waverly Gebhardt
Faculty Mentor: Dr. Victor May
Neuroscience, CAS

Investigation of Toxoplasma gondii Host Interactions Utilizing Novel Brain Cell Line

Amber Goerner
Faculty Mentor: Dr. Bruno Martorelli Di Genova
Cell, Molecular & Biomedical Sciences, LCOM

Determining the fatty acid content and composition of yogurt and non-dairy yogurt alternatives available in Vermont

Seana Kelly
Faculty Mentor: Dr. Jana Kraft
Animal Science, CALS

Structural and functional studies into the ATPase family AAA+ domain-containing protein 2

Isabelle Kressy
Faculty Mentor: Dr. Karen Glass
Biochemistry, CAS

Valuing Life After Death: Vertebrate specimen preparation within the Zadock Thompson Zoological Collections

Cole Logan
Faculty Mentor: Dr. Sara Helms Cahan
Zoology, CAS

Elucidation of Gene Function for Four Genes of the Mycobacteriophage Archie Using Cytotoxicity and Defense Assays

Lee Mazzacone
Faculty Mentor: Dr. Megan Valentine
Biomedical Sciences, SUNY Plattsburgh

Thyroid Hormone Receptor Beta protein complex in ER+ Breast Cancer

Sydney McFarland
Faculty Mentor: Dr. Frances Carr
Biochemistry, CAS & HCOL

Investigating how metabolic alterations in STK11-null lung adenocarcinoma promote metastatic spread

Shannon Prior
Faculty Mentor: Dr. Paula Deming
Medical Laboratory Science, CNHS & GC
# Afternoon I 1:00 - 2:30PM

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<tr>
<th><strong>Eco-Currency and Sustainability: A Case of the Mata Atlantica Forest</strong></th>
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<tr>
<td><strong>Danish Hasan Ansari</strong></td>
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<tr>
<td>Faculty Mentor: Dr. Joshua Farley</td>
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<th><strong>Negative social and ecological effects of “superfood” markets</strong></th>
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<td><strong>Juliana Neira</strong></td>
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<th><strong>Implications of Agricultural Extension and Gender on Seed Sourcing Among Smallholder Farmers in Uganda</strong></th>
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<td><strong>Helaina Curtin</strong></td>
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<td>Faculty Mentor: Dr. Daniel Tobin</td>
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<tr>
<td><strong>Emily Schalkham</strong></td>
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<tr>
<td>Faculty Mentor: Dr. Travis Reynolds</td>
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<th><strong>Functionality of the Visual Attributes of Physical Anti-Vaping Signage in a High-Density Urban Area</strong></th>
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<td><strong>Ava Feuer</strong></td>
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<td>Faculty Mentor: Dr. Thomas DeSisto</td>
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<th><strong>Evolving Robust Facility Layouts</strong></th>
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<td><strong>Will Thompson</strong></td>
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<td>Faculty Mentor: Dr. Peters Dodds</td>
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<td>Complex Systems and Data Science, CEMS &amp; GC</td>
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</table>
The daily covariation between diabetes treatment engagement and everyday life stress in adolescents with type 1 diabetes

Laura Cohen
Faculty Mentor: Dr. Amy Hughes Lansing
Clinical Psychology, CAS, LCOM, & GC

Accuracy of a Telerehabilitation Objective Exam Compared to a Face-to-Face PT Exam

Emma Freitas
Faculty Mentor: Dr. Justine Dee
Physical Therapy, CNHS & GC

Characterization of Novel Dengue Antibody Derived from Vaccination

Isabelle Laskey-Rigrod
Faculty Mentor: Dr. Sean Diehl
Molecular Genetics, CALS

Exposure to Online Content on Emotions

Vanessa Ramirez
Faculty Mentor: Dr. Jamie Abaied
Clinical Psychology, CAS, LCOM, & GC

Moderator Effects of Perceived Social Support and Perceived Impact of the COVID-19 Pandemic of Psychopathology Symptoms in Young Adults with a History of Childhood Maltreatment

Sophie Majerske
Faculty Mentor: Dr. Matthew Price
Psychological Sciences, CAS & HCOL

A Network Intervention Analysis of Differential Symptom Change in Cognitive-Behavioral Therapy and Light Therapy for Seasonal Affective Disorder

Richard J Norton
Faculty Mentor: Dr. Kelly J. Rohan
Clinical Psychology, CAS, LCOM, & GC

Characteristics of Informal Caregivers and Social Participation of People with Dementia

Abigail Palaza
Faculty Mentor: Dr. Nancy Gell
Health Sciences, CNHS & HCOL

The Unique Associations of ADHD and Motor Competence with School Functioning

Hannah Scott
Faculty Mentor: Dr. Betsy Hoza
Clinical Psychology, CAS, LCOM, & GC