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

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

MORNING II SESSION
Morning II Session
11:00 - 12:30PM

VERMONT STUDIES

Allie Shiers
Colin Mckay
Eli Stein
Emily Paribello
Emma Hendra
Eurydice Aboagye
Evie Wolfe
Hailey Sanphy
Jack Baker
Julia LanzDuret-Hernandez
Lauren Giroux
Rachel Elliott
Sophie Linde
Patrick Payne

SOCIAL SCIENCES

Ally Morrissey
Angela Ploysangngam
Brian Boyle
Caela Flanagan
Hannah Shafer
Izzy Ley
Jordan Mcguire
Kathleen Bright
Marlana Winschel
Nicole Tessier
Penelope Roberts
Ryan Fitzpatrick
Sam Brewer
Samantha Paige
Sophie Unger
Soyeon Gullickson
Lauren Smathers

CLINICAL

Lauren Lamberton
Mia Kopelson
Jennifer Alaska

LIFE SCIENCES

Khadga Thakuri
Mazen Elsaadany
Megan Lavigne
Narges Ahmadnia
Nicole Roode
Olivia Szumski
Omid Sedighi
Robert Tracy Jr.
Waheed Owonikoko
Kelly Jacobson

ENGINEERING, MATHEMATICS, & PHYSICAL SCIENCES

Ben Jackson
Bradley Cech
Ekaterina Lopez-Bondarchuk
Ivan Perez Avellaneda
Jay Hwasung Jung

SOCIAL SCIENCES

Halimeh Abuayyash
Keelan Boisvert
Rubaina Anjum
Sean Rogers
Shashank Poudel
Casey Buck
Emma Spett
Parisa Pezeshknejad
River Parker
Yoshi Bird
Ginny De Frances
Does length-at-age of burbot differ between two isolated and trophically dissimilar basins of Lake Champlain?

Emily Paribello
Faculty Mentor: Amelia McReynolds
Wildlife and Fisheries Biology, RSENR

Environmental (In)Justice from the Ground Up

Rachel Elliott
Faculty Mentor: Dr. Deborah Neher
Environmental Science, RSENR & HICOL

Transportation Access for Latinx Migrant Workers In Vermont

Julia LanzDuret-Hernandez
Faculty Mentor: Dr. Dana Rowangould
Community and International Development, CALS

Assessment of Differences in Performance of Lake Trout Stocking Strategies

Jack Baker
Faculty Mentor: Dr. Ellen Marsden
Fisheries Biology, RSENR

Assessing spatial variability in the benthic invertebrate communities of Lake Champlain

Allie Shiers
Faculty Mentor: Dr. Ellen Marsden
Environmental Science & Fisheries Biology, RSENR

Aiding Local Food Systems Amongst Resettled Refugees in Chittenden County

Evie Wolfe
Faculty Mentor: Dr. Pablo Bose
Religion & Global Studies, CAS

Attraction of Beneficial Insects in Field Vegetable Production

Emma Hendra
Faculty Mentor: Dr. Margaret Skinner
Biological Science, CALS

Machine learning for species classification of the invasive Centaurea Jacea hybrid complex

Sophie Linde
Faculty Mentor: Dr. Stephen Keller
Biological Science, CAS & HICOL

Monitoring Pesticides in Vermont Pollen Samples

Colin McKay
Faculty Mentor: Dr. Samantha Alger
Biological Science, CAS

Evaluating the Success of Fish Consumption Advisories among Angling Groups in the Lake Champlain Basin, Vermont

Eli Stein
Faculty Mentor: Dr. Ariana Chiapella
Environmental Science, RSENR

Effects of Integrated Pest Management for grazing dairy cattle on beneficial insect diversity

Lauren Giroux
Faculty Mentor: Dr. Nicholas Gotelli
Biology, CAS & CALS

Influence of Biofilm Architecture on Sanitizer Tolerance of Listeria monocytogenes from Vermont Artisanal Cheese Environments

Eurydice Aboagye
Faculty Mentor: Dr. Andrea J. Etter
Food Systems, GC

Assessment of Differences in Performance of Lake Trout Stocking Strategies

Jack Baker
Faculty Mentor: Dr. Ellen Marsden
Fisheries Biology, RSENR

Aiding Local Food Systems Amongst Resettled Refugees in Chittenden County

Evie Wolfe
Faculty Mentor: Dr. Pablo Bose
Religion & Global Studies, CAS
Morning II
11:00 - 12:30PM

VERMONT STUDIES

Aquaponics as an Educational Eco-design Tool at the University of Vermont

Hailey Sanphy
Faculty Mentor: Dr. Eric Roy
Environmental Science, RSENR

Association Between Insurance Type and Extended Length of Stay in Urban and Rural Vermont Hospitals

Patrick Payne
Faculty Mentor: Dr. Sarah Nowak
Public Health, LCOM
Space Drones

Ben Jackson
Faculty Mentor: Dr. Luis Duffaut Espinosa
Mechanical Engineering, CEMS

Methods to determine immunoglobulin G content of the abomasal curd of calves fed different colostrum sources

Ekaterina Lopez-Bondachuk
Faculty Mentor: Dr. Joao Henrique Cardoso Costa
Animal Biosciences, CALS & GC

Optimization of Chen-Fliess series and Output Reachability of Nonlinear Systems

Ivan Perez Avellaneda
Faculty Mentor: Dr. Luis Duffaut Espinosa
Electrical Engineering, CEMS & GC

A Spatial Analysis of the Fuel Economy Rebound Effect Focusing on Small and Rural Communities

Narges Ahmadnia
Faculty Mentor: Dr. Gregory Rowangould
Transportation Engineering, CEMS & GC

Aggregate Demand Modeling of Thermostatically Controlled Loads

Mazen Elsaadany
Faculty Mentor: Dr. Mads Almassalkhi
Electrical Engineering, CEMS & GC

Optimal Design of Under-Frequency Load Shedding Controller

Waheed Owonikoko
Faculty Mentor: Dr. Mads Almassalkhi
Electrical Engineering, CEMS & GC

RFID and Wireless IoT Technologies for Transportation Maintenance Operations and Asset Management

Jay Hwasung Jung
Faculty Mentor: Dr. Tian Xia
Computer Science, CEMS

Investigation of Defects in Metal-Dielectric Photonic Crystal OLED Structures

Khadga S Thakuri
Faculty Mentor: Dr. Matthew S White
Physics, CEMS & GC

Identification and Spectroscopic Characterization of the Active Sites of Two Class II Chelatases

Megan Lavigne
Faculty Mentor: Dr. Matthew Liptak
Chemistry, CAS

Therapeutic Potential of Novel TRPV4 Endothelial Leakiness

Nicole Roode
Faculty Mentor: Dr. Amber Doiron
Biomedical Engineering, CEMS & GC
Observing Protein-Protein Interactions on Mesoporous Silica Nanoparticles Using STORM

Bradley Cech
Faculty Mentor: Dr. Christopher C. Landry

Chemistry, CAS & GC

Efficient and Selective Photocatalytic Conversion of Methanol Using Porous Au-WO3 and Visible Light

Robert Tracy Jr
Faculty Mentor: Dr. Christopher C. Landry

Chemistry, CAS & GC

Immunogold Bioconjugate Nanoparticle Synthesis for Bacterial Targeting

Kelly Jacobson
Faculty Mentor: Dr. Amber Doiron

Biomedical Engineering, CEMS
Endoplasmic reticulum moves by hitchhiking on multiple Rab vesicles

Faculty Mentor: Dr. John Salogiannis

*Cellular, Molecular, & Biomedical Sciences, LCOM*

Early expression of MyBP-C inhibits sarcomere formation in the muscles of developing zebrafish

Faculty Mentor: Dr. David Warshaw

*Biological Sciences, CAS*

Molecular Mechanisms of Histone H2A Variant Recognition by the ATAD2/B Bromodomains

Faculty Mentor: Dr. Karen Glass

*Biochemistry, CAS*

Life History Traits and Thermal Tolerance of Drosophila affinis Flies from Elevational Transects

Faculty Mentor: Dr. Sara Helms Cahan

*Biological Sciences, CALS*

Daily oral consumption of probiotic B. subtilis necessary for continuous presence

Faculty Mentor: Dr. Gary Mawe

*Neuroscience, CAS*

The Role of Valyl-tRNA Synthetase (VARS) in Zebrafish Eye Development

Faculty Mentor: Dr. Alicia Ebert

*Neuroscience, CAS*

Co-treatment with BAZ1A Inhibitor, Cpd-2, Sensitizes ER Positive Breast Cancer Cells to Tamoxifen

Faculty Mentor: Dr. Seth Fritze

*Cellular, Molecular, & Biomedical Sciences, LCOM*

Tier 1 Dairy Farms

Faculty Mentor: Dr. Andrea Etter

*Microbiology, CALS*

Influence of Maternal Inflammation on Fetal γδ T Cell Development

Faculty Mentor: Dr. Jonathan Boyson

*Biology & Anthropology, CAS*

The roles of Grb2 adaptor proteins in zebrafish development

Faculty Mentor: Dr. Alicia Ebert

*Biological Science, CAS*

Digitization and Rehousing of the Historic Pember Egg Collection

Faculty Mentor: Sonia DeYoung

*History, CAS*

Exploring alpha7-nicotinic acetylcholine receptors (a7R) as a type 1 diabetes therapeutic target

Faculty Mentor: Dr. Tom Jetton

*Biochemistry, CAS*
### Woodchips and drinking water treatment residuals in vegetated bioretention systems

**Sam Brewer**  
Faculty Mentor: Dr. Stephanie Hurley  
*Plant and Soil Science, CALS & GC*

### Natural History Museum Mammal Collection

**Samantha Paige**  
Faculty Mentor: Dr. Sara Helms Cahan  
*Biological Sciences, CAS*

### Enhanced Biofilm Formation Between *R. insidiosa* and *L. monocytogenes*

**Sophie Unger**  
Faculty Mentor: Dr. Matt Wargo  
*Biochemistry, CALS*

### Divergent Genetic Regulation of Nitric Oxide Production Alteration Effects in Dendritic Cells

**Soyeon Gullickson**  
Faculty Mentor: Dr. Eyal Amiel  
*Biochemistry, CNHS & GC*
Exploring Collaborative Data Governance Across Scales

Emma Spett
Faculty Mentor: Dr. Christopher Koliba
Sustainable Development Policy, Economics and Governance, CALS & GC

Early Community Violence Exposure and Adolescent Aggressive Behavior: Moderation by Sympathetic Nervous System Reactivity

Casey Buck
Faculty Mentor: Dr. Dianna Murray-Close
Clinical Psychology, CAS & GC

That’s Outrageous: Examining Fox News Coverage of LGBTQ+ People

Ginny DeFrances
Faculty Mentor: Dr. Ellen Andersen
Political Science, CAS & HCOL

Smart Resilient Landscapes: Leveraging AI, Sensors, and Games to Nudge Sustainable Behaviors at the Nexus of Climate, Food, and Water Interactions

Halima Abuayyash
Faculty Mentor: Dr. Asim Zia
Sustainable Development Policy, Economics and Governance, CALS & GC

Gardening for Health

Keelan Boisvert
Faculty Mentor: Dr. Jeanne Shea
Health and Society, CAS

Effectiveness of Rectangular Rapid Flashing Beacons in Small & Rural Communities

Parsa Pezeshknejad
Faculty Mentor: Dr. Dana Rowangould
Civil Engineering, CEMS & GC

Lesbian Identities and Their Meaning

River Parker
Faculty Mentor: Dr. Jan Fook
Social Work, CESS & GC

Machine learning approaches using satellite remote sensing to inform sustainable farming

Rubaina Anjum
Faculty Mentor: Dr. Asim Zia
Sustainable Development, CALS & GC

Human Dimensions of Animal Exploitation

Sean P. Rogers
Faculty Mentor: Dr. Jeremiah Onaolapo
Complex Systems and Data Science, CEMS & GC

Policy rifts in the Anthropocene

Shashank Poudel
Faculty Mentor: Dr. Josh Farley
Sustainable Development Policy, Economics and Governance, CALS & GC

Twitter data as a proxy measure of US homelessness

Yoshi M. Bird
Faculty Mentor: Dr. Christopher Danforth
Complex Systems and Date Science, CEMS & GC
UVM KID Study: Behavioral and Physiological Data Detects Childhood Internalizing Disorders

Jenny Alaska
Faculty Mentor: Dr. Ellen McGinnis
Computer Science, CAS & CEMS

HOW DO COMMONLY USED SHOULDER HHD PROTOCOLS INFLUENCE THE ACCURACY OF SHOULDER STRENGTH MEASURES

Lauren Lamberton
Faculty Mentor: Dr. Mathew Failla
Physical Therapy, CNHS & GC

UVM KID Study

Mia Kopelson
Faculty Mentor: Dr. Ellen McGinnis
Health Sciences, CNHS