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

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

MORNING I SESSION
Morning I Session
9:00 - 10:30AM

VERMONT STUDIES

Lauren Cresanti
Hannah Despres
Lukas Draugelis
Chris Duduch
Vanessa Marascio
Sydney Miller
Chelsey Patch
Ethan Pezzini
Dimagi Pitawala
Logan Solomon
Grace Yaros
Pallas Ziporyn

SOCIAL SCIENCES

Ben Ryan
Carter Ward
Chris Donovan
Ellen Whitton
Grant Hoffman
Julia Danielsen
Polina Yudin
Melisa Uyar
Patrick Faust
Samantha Garbus
Toyib Aremu
Nora Ripley-Grant

ENGINEERING, MATHEMATICS, & PHYSICAL SCIENCES

Calum Buchanan
Elyse Hassett
Evan Choquette
Jeremy Quail
Jordan Donovan
Leandro Conrado Fernandes
Mariah Boudreau
Nick Gibson
Panagiota Stamatopoulou
Parker King
Prianka Bhattacharjee
Uyoyoghene Adeyemo

LIFE SCIENCES

Emma Rosenau
Lara Monteiro
Alison Hall
Ashley Pearson
Emilia Norberg
Hannah Kubinski
Jenna McDonald
Jessica Gagne
Julie Raiguel-Meis
Justin Zielinski
Magda Kmiecik
Regina Visconti
Rho Kackley
Monitoring Spongy Moth Defoliation with UAS

Lauren Cresanti
Faculty Mentor: Dr. Jarlath O’Neil-Dunne
Environmental Sciences, RSENR

Surveillance of Vermont wildlife in 2022 reveals no detected SARS-CoV-2 viral RNA

Hannah Despres
Faculty Mentor: Dr. Emily Bruce
Cellular, Molecular, & Biomedical Sciences, LCOM

Comparison of normal and giant rainbow smelt using diet composition, growth, and otolith microchemistry

Lukas Draugelis
Faculty Mentor: Dr. Ellen Marsden
Natural Resources, RSENR

Organization of the University of Vermont’s Hymenoptera Insect Collection

Chris Duduch
Faculty Mentor: Dr. Sara Helms-Cahan
Biology, CAS

Demographic and Seasonal Factors Contributing to Accidental Opioid Fatalities: A Case Study of Vermont

Vanessa Marascio
Faculty Mentor: Amanda Jones, MPH
Public Health, LCOM

Improving the quality and availability of locally adapted honey bee stock

Sydney Miller
Faculty Mentor: Dr. Samantha Alger
Agroecology, CALS

Evaluating Prevalence of Salmonella enterica and Campylobacter spp. in Backyard Poultry in Vermont

Chelsey Patch
Faculty Mentor: Dr. Andrea Etter
Animal Biosciences, CALS

Top Grafting Apple Trees to Manage Fire Blight Infection

Ethan Pezzini
Faculty Mentor: Dr. Terence Bradshaw
Agroecology, CALS & HCOL

On the Cutting Edge : Technology Adoption of Small and Medium-Scale Maple Syrup Producers in Vermont

Dimagi Pitawala
Faculty Mentor: Dr. Travis Reynolds
Community Development and Applied Economics, CALS & GC

Environmental Injustice? Spatial Analysis and Mapping of 2017-2021 Drinking Water Tap Lead Exposure in Vermont's Public Schools

Logan Solomon
Faculty Mentor: Dr. Brendon Fisher
Environmental Studies, RSENR

Use of Artificial Nest Boxes by American Kestrels (Falco sparverius) in Western Vermont

Grace Yaros
Faculty Mentor: Dr. Allan Strong
Wildlife Biology, RSENR & HCOL

Are Vermonters living on private water systems testing their water as frequently as the state health department recommends?

Pallas Ziporyn
Faculty Mentor: Dr. Preeti Zanwar
Public Health, LCOM
Odd Covers of Graphs

Calum Buchanan
Faculty Mentor: Dr. Puck Rombach
Mathematics, CEMS & GC

Ergothioneine in an Enzyme: Using Protein Engineering to Create Unique Antioxidant Enzymes Containing 2-thiohistidine

Elyse Hassett
Faculty Mentor: Dr. Robert Hondal
Biochemistry, CEMS

Ergothioneine in an Enzyme: Using Protein Engineering to Create Unique Antioxidant Enzymes Containing 2-thiohistidine

Elyse Hassett
Faculty Mentor: Dr. Robert Hondal
Biochemistry, CEMS

Effects of in-stream process-based restoration on the geomorphology of a New England headwater stream

Evan Choquette
Faculty Mentor: Dr. Beverley Wemple
Environmental Sciences, CAS & HCOL

Positroids and Graphs

Jeremy Quail
Faculty Mentor: Dr. Puck Rombach
Mathematical Sciences, CEMS & GC

Unsupervised Pre-Training by Evolving for Diverse Features

Jordan Donovan
Faculty Mentor: Dr. Nicholas Cheney
Computer Science, CEMS & GC

Effect of pH on Anaerobic Degradation of Amino Acids to Produce Volatile Fatty Acids (VFAs)

Leandro Conrado Fernandes
Faculty Mentor: Dr. Matthew Scarborough
Environmental Engineering, CEMS & LCOM

Temporal and probabilistic forecasts of epidemic interventions

Mariah Boudreau
Faculty Mentor: Dr. Laurent Hébert-Dufresne
Mathematical Sciences, CEMS & GC

Generation of Pattern Free Music

Nick Gibson
Faculty Mentor: Dr. Byung Lee
Computer Science, CEMS

Medium Chain Carboxylic Acids Production by Engineering Anaerobic Microbiomes

Panagiota Stamatopoulou
Faculty Mentor: Dr. Matthew Scarborough
Environmental Engineering, CEMS & GC

Heterogeneity in heat among built space in Vermont cities

Parker King
Faculty Mentor: Dr. Greg Rowangould
Civil/Environmental Engineering, CEMS & GC

Censorship laws vs. hate speech in online social networks: A computational approach

Prianka Bhattacharjee
Faculty Mentor: Dr. Jeremiah Onaolapo
Computer Science, CEMS & GC

Advancing machine learning for remote sensing applications in agriculture: Case study of the Brazilian Cerrado.

Uyoyoghene Adeyemo
Faculty Mentor: Dr. Gillian L. Galford
Natural Resources, RSENR & GC
The Impact of Environmental Factors on Invasive Vinca major Management in the Sonoran Desert

Emma Rosenau
Faculty Mentor: Dr. Eric Roy
Environmental Sciences, RSENR & HCOL

How to move forward? Incentives to promote the restoration of savanna and grassland ecosystems

Lara Monteiro
Faculty Mentor: Dr. Brendan Fisher
Natural Resources, RSENR & GC

Revealing plastic and genetic underpinnings of heat tolerance

Alison Hall
Faculty Mentor: Dr. Melissa Pespeni
Biology CAS & GC

Mealworm consumption and growth on different diets with plastic

Ashley Pearson
Faculty Mentor: Dr. Yolanda Chen
Agroecology, CALS

The Effect of Tryptophan Synthesizing Bacteria on Gut Motility in Mice

Emilia Norberg
Faculty Mentor: Dr. Gary Mawe
Microbiology & Molecular Genetics, GC

Identification of a stable nucleocapsid dimer formed by SARS-CoV-2 Variants of Concern

Hannah Kubinski
Faculty Mentor: Dr. Emily Bruce
Molecular Genetics, CALS

Role of Sensory Neuron TRPV1 Channels in Mesenteric Artery Vasodilation

Jenna McDonald
Faculty Mentor: Dr. George Wellman
Neuroscience, CAS

Characterization of the Receptors that Mediate the Prokinetic Effects of 5-HT4 Agonists on Propulsive Motility

Jessica Gagne
Faculty Mentor: Dr. Gary Mawe
Biological Science, CALS & HC0L

Divergence of Gene Function after Duplication Events in certain Plant Genes

Julie Raiguel-Meis
Faculty Mentor: Dr. Jeanne Harris
Plant Biology, CALS & GC

TRB Differentially Regulates the Glycogen Synthesis Pathway Between ATC Cell Lines

Justin Zielinski
Faculty Mentor: Dr. Frances Carr
Biochemistry, CAS

Global DNA Methylation Analysis in North American Moose

Magda Kmiecik
Faculty Mentor: Dr. Stephanie McKay
Animal Science, CALS

The Role of the VTI13 Endosomal Pathway in Arabidopsis Abiotic Stress Response

Regina Visconti
Faculty Mentor: Dr. Mary Tierney
Plant Biology, CALS, LCOM

A Partial Checklist of the Bryophytes of Montserrat, West Indies

Rho Kackley
Faculty Mentor: Dr. Laura Hill
Plant Biology, CALS

Evolution of the devernalization flowering response in temperate Pooideae grasses

Hannah Shafer
Faculty Mentor: Dr. Jill Preston
Plant Biology, CALS & GC
Morning I 9:00 - 10:30AM

**Performance-based Payment for Ecosystem Services: A Systematic Review**

Ben Ryan  
Faculty Mentor: Dr. Asim Zia  
*Sustainable Development Policy, Economics and Governance, CALS & GC*

**How to analyze parental conversations online: a computational stack for studying vaccine hesitancy**

Carter Ward  
Faculty Mentor: Dr. Chris Danforth  
*Complex Systems and Data Science, CEMS & GC*

**Attribution as a Moderator between Extreme Weather Events and Pro-Environmental Behavior**

Chris Donovan  
Faculty Mentor: Dr. Trisha Shrum  
*Community Development & Applied Economics, CALS*

**Personality Assessment Inventory Scores as Predictors of Static-99R Risk of Recidivism Category in Adult Male Sex Offenders**

Ellen Whitton  
Faculty Mentor: Dr. Judith Christensen  
*Psychological Science, CAS*

**Price Effects of Airline Mergers Through Network Changes**

Grant Hoffman  
Faculty Mentor: Dr. Richard Sicotte  
*Economics, CAS*

**The Power of the Commons**

Julia Danielsen  
Faculty Mentor: Dr. Jane Kolodinsky  
*Community Development & Applied Economics, CALS*

**Agency and Autobiography: Key themes in the Systemic Failures of the Criminal Legal System Examined Through Personal Accounts of Incarcerated Individuals**

Polina Yudin  
Faculty Mentor: Dr. Alec Ewald  
*Political Science, CAS & HCOL*

**The ABCs of the EKC Shift**

Melisa Uyar  
Faculty Mentor: Dr. Donna Ramirez-Harrington  
*Economics, CAS*

**Consumers and Politics: Buyer Behavior and Corporate Political Activity**

Patrick Faust  
Faculty Mentor: Dr. Richard Vanden Bergh  
*Business, GSB*

**Pilot Study: Continuing Education Increases Mental Health Clinicians’ Knowledge and Potential Capacity for Providing Refugee and Survivor of Torture Services**

Samantha Garbus  
Faculty Mentor: Dr. Karen Fondacaro  
*Psychological Sciences and Global Studies, CAS*

**Extension Access and its Effects on Welfare of Rural Households in Nigeria**

Toyib Aremu  
Faculty Mentor: Dr. Travis Reynolds  
*Sustainable Development Policy Economics and Governance, CALS & GC*

**Gift Horse: A Study in Visitor Values on Assateague Island**

Nora Ripley-Grant  
Faculty Mentor: Dr. Harlan Morehouse  
*Environmental Studies and Political Science, CAS*