

Winter 2022 Research Project Topics and Supervisors

Advanced Battery Material Design and Synthesis

Dr. Mark Obrovac & Roby Gauthier - Chemistry

Measuring the Effect of Hydroxide on Phytoplankton Sinking Rate Using Chlorophyll-a Fluorescence

Dr. Hugh McIntyre, Mikaela Ermanovics & Cat London – Oceanography

Bycatch Distribution for Pelagic Longline Fisheries?

Dr. Heather Bowlby – Bedford Institute of Oceanography

Attention Trip: How Can We Make It Harder to Ignore Flankers?

Dr. Raymond Klein & Colin McCormick – Psychology and Neuroscience

Discriminating Rock Types Under Bermuda Using pXRF and Machine Learning

Dr. Lexie Arnott & Wednesday Gillespie – Earth and Environmental Science

Breeding Habitat Characteristics and Bird Population Decline in SWNS

Dr. Cindy Staicer & Caleb Gibbons – Biology

Identifying Critical Habitats for Two Landbird Species at Risk

Dr. Cindy Staicer & Caleb Gibbons – Biology

Is Extreme Weather Becoming More Frequent in Nova Scotia?

Dr. Manuel Helbig – Physics and Atmospheric Sciences

Trends and Variability in Sea Ice Along the Labrador Coast and Shelf

Dr. Christoph Renkl & May Wang, Dr. Eric Oliver's Lab – Oceanography

Exploring Public Interest in Canadian Endangered Species

Kayla Hamelin, Dr. Jeffrey Hutchings Lab – Biology

Chemical Hydrogen Production Using Mesoporous Silicon

Dr. Mita Dasog & Sarah Martell – Chemistry

Dissolved Oxygen Sensor Response Under Varying Flow Conditions

Dr. Clark Richards & Mathieu Dever – Bedford Institute of Oceanography, Dal Oceanography, RBR

Search Abilities of Dogs: Does Age or Breed Matter?

Dr. Sophie Jacques – Psychology and Neuroscience

Identifying the Extracellular Matrix Composition of Bovine Chordae Tendineae During Pregnancy

Dr. Sarah Wells & Meghan Martin – School of Biomedical Engineering, Physics and Atmospheric Science

Parental Conflict, Seed Size, and Germination in *Lobelia cardinalis*

Dr. Mark Johnston – Biology

Tiny Earth: Studentsourcing of Antibiotics

Dr. John Rhode – Microbiology and Immunology

Collagen Assembly in Oscillatory Flow

Dr. Laurent Kreplak – Physics and Atmospheric Science, School of Biomedical Engineering

Quantifying Sediment Transport from High Spatial Resolution LiDAR Data

Dr. Lexie Arnott & Dr. Chris Greene – Earth and Environmental Science

Using Fruit Flies to Study Muscles and Flight Behavior

Dr. Nicanor Gonzalez-Morales – Biology

Investigating the Optimal Conditions for Biofilm Formation of *Neisseria sicca* in an Aqueous Two-Phase System

Dr. Brendan Leung & Dr. Naeimeh Jafari – School of Biomedical Engineering, Applied Oral Sciences

Human Automation in Underwater Mine Detection

Dr. Heather Neyedli & Chelsey Sanderson – Kinesiology, Cognitive and Motor Performance Lab

Geographic Characterization Of Coffee By Statistical Analysis Of ¹H-NMR Data

Ian Burton – National Research Council

How do operating conditions impact enzyme catalase activity?

Dr. Laleh Nazari – National Research Council

Comparison of signalling molecules in lentil root and seed exudates using LC-MS

Dr. Junzeng Zhang – National Research Council

Winter 2021 DISP Research Project Topics and Supervisors

Validating a New Technology for Measuring Brain Activity

Lindsey Power & Brendan Brady, Dr. Tim Bardouille's Lab – Physics and Atmospheric Science

Continuous Wave Surface Enhanced Stimulated Raman Spectroscopy to Analyze Biomolecules

Ben Hansson, Dr. Kevin Hewitt's Lab –Physics & Atmospheric Science

Crowdsourcing Fisheries Science

Kayla Hamelin, Dr. Jeffrey Hutching's Lab – Biology

Differentiation of the Volcanic Basement Rocks of the Bermuda Rise

Dr. Lexie Arnott – Earth and Environmental Sciences

Ocean Alkalization as a Carbon Capture Technology

Dr. Hugh MacIntyre – Oceanography

AttentionTrip: How Can We Make it Harder to Ignore Flankers?

Swasti Arora and Dr. Raymond Klein – Psychology & Neuroscience

Is Searching in Time like Searching in Space?

Brett Feltmate and Dr. Raymond Klein – Psychology & Neuroscience

Tiny Earth: Studentsourcing Antibiotic Discovery

Dr. John Rhode – Microbiology and Immunology

Investigating Peroxisomes as an Immunometabolic Organelle

Dr. Francesca Di Cara – Microbiology and Immunology

On Time Use and Wellbeing: The Role of Personal and Project Characteristics

Taylor Hill, Dr. Sean MacKinnon's Lab – Psychology & Neuroscience

Does Earlier Greening Lead to Enhanced CO₂ Uptake in the North?

Dr. Manuel Helbig – Physics & Atmospheric Science

Habitat Change and Bird Populations Decline in Nova Scotia

Dr. Cindy Staicer – Biology

Executive Function and Physical Activity in Undergraduates

Dr. Sophie Jacques – Psychology & Neuroscience

Executive Function and Physical Activity in Dogs

Dr. Sophie Jacques – Psychology & Neuroscience

Language and Executive Function Abilities of Dogs

Dr. Sophie Jacques – Psychology & Neuroscience

Nano-Silver: Computer Analysis Towards Biochemical Applications

Dr. Peng Zhang & Andrew Walsh – Chemistry and Biomedical Engineering

Human Automation of Underwater Mine Detection

Dr. Heather Neyedli – Kinesiology

Envirovote: A Global Initiative

Dr. Derek Tittensor & Isabelle Hurley – Biology

Anishinaabe Ethnobotany: Metabolomics for Biochemical Discovery and Characterization of Indigenous Foods, Medicines, and Materials

Dr. Jonathan Ferrier – Biology

Using Growth Bands to Determine the Age and Growth Rates of the Deep-Sea Coral *Keratosia* sp.
Dr. Simone Booker, Dr. Owen Sherwood's Lab – Earth and Environmental Sciences

Scintillators: all in one dosimeter?

Cody Church & Dr. Thalath Monajemi – Department of Physics and Atmospheric Science, Medical Physics Program

Blue Shark distribution

Dr. Heather Bowlby – Bedford Institute of Oceanography

Winter 2020 DISP Research Project Topics and Supervisors

Using the fruit fly to study innate immunity

Dr. Francesca Di Cara – Microbiology & Immunology

Testing the effectiveness of chemotherapeutics in triple negative breast cancer

Rachel Woodside, Dr. Jun Wang's lab – Microbiology and Immunology

How does electrical injury affect tendon structure and biomechanics

Dr. Michael Lee – Biomedical Engineering

Effects of Collagen on Polymer Melt Fibers

Dr. Samuel Baldwin, Dr. John Frampton's lab – Biomedical Engineering

The Turbulent Waters of the Bay of Fundy

Dr. Maricarmen Guerra Paris – Oceanography

Imaging Brain Function with Infrared Light

Brendan Brady & Cassidy Northway, Dr. Tim Bardouille's lab – Physics and Atmospheric Science

The “Observer Effect” and Applied Research in Mobile Gaming

Dr. Joshua Salmon & Courtney Clarke – User Research @ Ubisoft Halifax

NMR spectroscopy applied to honey

Ian Burton – National Research Council Canada

Carotenoid content in fresh and frozen vegetables

Dr. Arjun Banskota – National Research Council Canada

Effect of Temperature and Dissolved Oxygen on Bivalves

Keryn Winterburn, Dr. Ramon Filgueira's lab – Biology

Improving energy storage in supercapacitors

Dr. Heather Andreas – Chemistry

Delay Behaviors in the Delay-of-Gratification Task

Dr. Sophie Jacques – Psychology and Neuroscience

Designing a teaching lab: a diaphonized fish project

Dr. Isabelle Aube – Biology

Do zebrafish form spatial memories?

Dr. Roger Croll – Physiology and Biophysics

Does the outcome of a common assessment of motor imagery ability mirror expected distributions?

Dr. Shaun Boe – Physiotherapy

Is searching in time like searching in space?

Brett Feltmate & Dr. Raymond Klein – Psychology and Neuroscience

Filming sound with a high-speed camera

Dr. David Barclay – Oceanography

Response to toy removal in infants at high vs. low risk for autism spectrum disorder

Vickie Armstrong & Isabel Smith – Pediatrics/Psychology

How to make a tumor slice? – Geometric considerations for a sandwiched tumor model

Dr. Brendan Leung - Applied Oral Sciences; Biomedical Engineering

The effects of aerobic exercise on the brain's response during cognitive tasks and stress using fNIRS

Dr. Heather Neyedli – Kinesiology

Envirovote: a global initiative

Dr. Derek Tittensor & Isabelle Hurley – Biology

What is punctuation?

Alex Ryken, Dr. H el ene Deacon's lab – Psychology and Neuroscience

Algal conversion of wastes to feeds

Dr. Hugh McIntyre – Oceanography

Modeling aging interventions in model organisms

Dr. Andrew Rutenberg & Spencer Farrell – Physics and Atmospheric Science

Feasibility study: reprocessing of mine waste to recover strategic minerals

Dr. Lexie Arnott – Earth and Environmental Sciences

Viability of cultured sponge explants

Dr. Gabrielle Tompkins – Integrated Science

Second-generation optical device for accurate and real-time assessment of liver fat content in human subjects

Dr. Kevin Hewitt, Alexey Tikhomirov, & Lexie Mitchell – Physics and Atmospheric Science

TinyEarth – Studentsourcing antibiotic discovery

Dr. John Rohde – Microbiology and Immunology

The organic chemistry of drug action: virtual drug discovery

Dr. David Jakeman – College of Pharmacy, Chemistry