I-CUREUS UNDERGRADUATE RESEARCH CONFERENCE

Undergraduate Student Research Conference
March 29, 2023, 9:30 to 11:30 a.m.
Future Learning Lab, 4th Floor MacOdrum Library

The Internship-Carleton University Research Experience for Undergraduate Students (I-CUREUS) program provides undergraduate students the opportunity to conduct faculty-supervised research and gain hands-on experience in their field or an area of interest.

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Poster Presentations

Sabrina Perry
Faculty of Arts and Social Sciences
Supervisor: David Sidhu
How the Sound of a Word Affects its Meaning

Research has shown that people can intuitively sense whether certain sounds fit certain meanings, e.g., the sound /o/ has been associated with large things. As an extension, we are running a study to see how pairing small vs. large-sounding nonwords with a definition of an obscure object influences people's perception of the size of these objects.

Inaya Huda
Faculty of Arts and Social Sciences
Supervisor: Julie Garlan
Girls in the Digital World

This is a research project headed by Dr. Julie Garlen. The aim is to explore ways to include youths in participatory action research. The child participants were part of a short, virtual 'camp' to learn research skills along with follow-up sessions with the team. This helped explore how to better involve children in PAR.

Andromeda Veer
Faculty of Engineering and Design
Supervisor: Scott Bucking
Temperature Based Mortality

This project is a literature review which discusses current research on the topic of temperature based mortality. This encompasses variables affecting temperature changes and the population's local temperature threshold, as well as possible adaptation and mitigation strategies specialized to green building design.

Marly Magharious
Faculty of Engineering and Design
Supervisor: Catherine Bonier
Amphibious Architecture

The project explores amphibious or flood-resistant habitation and the learnings from their construction and adaptability to climate conditions. A catalogue comprising 6-7 vernacular, hybrid, and hyper-engineered dwellings, wherein their points of similarity and contention are explored, to begin the understanding & soften the top down architecture.

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Tejas Kokatnur
Faculty of Engineering and Design
Supervisor: Elie Azar
WELL Building Standard: A review and Bibliometric Analysis

The WELL Building Standard was launched in 2014 and focuses on promoting the health and well-being of building occupants. This paper conducts the first review and bibliometric analysis of studies applying and evaluating WELL. It aims to synthesize current literature, corroborate conclusions, and inform future research in this growing field.

Alec Jeffery
Faculty of Engineering and Design
Supervisor: Gabriel Wainer
Designing a Real-Time Simulation Assignment for the SYSC 3310 Course

The goal of this project is to expand Professor Wainer's Introduction to Real-Time Systems course (SYSC 3310) by adding a real-time simulation assignment for students to complete. The project will use the ARS lab's real-time Cadmium software and will run on the SYSC 3310 provided microcontroller.

Maria Agada
Faculty of Engineering and Design
Supervisor: Adrian Chan
Mean Linear Intercept (MLI) Scoring Interface

Mean Linear Intercept (MLI) is a measure of air space in histopathological lung images. The MLI score is the average chord length of the air space between alveolar septa, usually measured by human raters. Generating the score is a time-consuming process and subject to rater variability. My project is contributing to the development of an automated MLI scoring system.

Abi Kang
Faculty of Engineering and Design
Supervisor: Mario Santana Quintero
Digital Workflows for Adaptive Reuse of Alexander Fleck House

This project objective is to develop a digital workflow to record historic places located in "Ottawa Heritage Conservation Districts" to produce accurate digital assets, which can be used for the appropriate adaptive reuse and integration of these critical landmarks in the further development of the city centers in Canada.

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Poster Presentations

Lahari Nanda
Faculty of Public Affairs
Supervisor: Irena Knezevic
Carving Pathways for Cultural Safety in Indian Public Healthcare

Public health is often studied as part of medicine, but what if a humanizing aspect, one of cultural awareness and respect for social determinants of health, were introduced to the discipline? This project aims to review and synthesize literature on public healthcare in India to discover avenues to introduce and practice cultural safety.

Maram Emara
Faculty of Science
Supervisor: Apollinaire Tsopmo
Inhibition of Cholinesterases by Food Derived Peptides

The aim of this project is to assess the effects of peptides from oat proteins to inhibit the activity of acetylcholinesterase and butyrylcholinesterase with a potential to slow neurodegeneration.

Cassandra Stabile
Faculty of Science
Supervisor: Sue Bertram
You Are What You Eat: How Lifetime Macronutrient Intake Affects Final Body Composition of Gryllodes sigillatus

In this project, samples from a large-scale experiment were used to test effects of 21 distinct diets ranging in protein to carbohydrate ratio on cricket yield. Spectrophotometric analysis of cricket lipid, carbohydrate, and protein content was performed to determine how dietary availability of protein and carbohydrate affects the final product, the adult cricket.

Michael Oostlander
Faculty of Science
Supervisor: Anatoli Ianoul
Effect of Plasmonic Nanoparticles on Enzymatic Activity Monitored by Surface Enhanced Raman Spectroscopy

Measuring nano-enhanced activity using traditional methods lacks surface specificity, and therefore can lead to incorrect enzymatic activity data. To increase the precision, a surface-sensitive technique is required. Surface enhanced Raman spectroscopy (SERS) is a vibrational technique that utilizes nanomaterials to enhance the Raman scattering.

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Poster Presentations

Elijah Jeffery
Faculty of Science
Supervisor: Daniel Grégoire
Validating Colorimetric Methods for Biological Iron Cycling

This project is focused on validating colorimetric methods, through analytical techniques, to detect soluble iron in e-waste. Iron in its two redox states (Fe^{2+} & Fe^{3+}) were chosen due to its physiological relevance as well as its value to the e-waste industry.

Benjamin Edwards
Faculty of Science
Supervisor: Daniel Grégoire
Optomizing DNA Extraction from Electronic Waste

This comparative study aims to optimize the extraction of DNA from electronic waste (e-waste) using different pre-extraction washing methods and commercially available DNA extraction kits. The resultant methods will be used in future investigations such as meta-genomic assays to identify potential microbes influencing the fate of metals in e-waste.

Mary-Emma Barnhill
Faculty of Science
Supervisor: Elizabeth Stobert
Examining Pronounceable Password Memorability

Pronounceable passwords are secure assigned passwords intended to be more memorable than randomly assigned passwords due to their pronounceability. Our objective is to collect users' ratings of the memorability of pronounceable passwords to examine how users' perceptions match actual memorability, as well as to create a machine learning model.

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