2022 UNDERGRADUATE RESEARCH CONFERENCE

HOSTED BY
The Arts and Science Students Union (ASSU)
At the University of Toronto
February 17, 2022
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Letter from the Conference Directors

We are excited to have you join us for the fifth annual (and second ever virtual) ASSU Undergraduate Research Conference!

This conference has been in the works for many months and we have dedicated numerous hours to organizing this event. An event like this is a team effort and we would like to thank all the student presenters, volunteers, faculty members, programs, departments, and Course Unions who supported us along the way. We would especially like to thank the students of our Selections Committee, along with the committee chairs: Professors John De Backere, Rivanne Sandler, and Lynette Ong.

Our purpose is to showcase the research that is being undertaken by undergraduate students across all academic fields within the Faculty of Arts and Science. Presenters will have the opportunity to break barriers between disciplines and present their research to a wide audience; such opportunities are often few and far between for undergraduates. Audience members will have the opportunity to listen to expertise on the innovative research that is being done at U of T, engage with students, and think critically about the knowledge that is being shared.

Though COVID has presented many setbacks, we wanted to ensure that the conference was still able to go on. We believe that now more than ever, students can benefit from learning from and supporting their peers, and appreciate that accomplishments continue to be made despite barriers. We are truly inspired by the resilience and hard work of our students. Today’s presentations will illuminate the work that our students continue to do and, most importantly, highlight their dedication to learning, finding solutions, and contributing to global change.

We hope that you enjoy the conference, and we cannot thank you enough for supporting our Arts and Science community.

Sincerely,

Sidrah Rana  
Chemistry | Physics | Mathematics  
Executive, Arts & Science Students’ Union

Cianna Choo  
Neuroscience | Molecular Genetics | Microbiology  
Treasurer, Arts & Science Students’ Union
Keynote Address


A grand goal of modern theoretical physics is to figure out the operating system of the universe - for subatomic particles, forces, and the fabric of spacetime. Einstein's General Relativity, which describes heavy things, and Quantum Mechanics, which describes small things, are remarkably successful theories from an experimental perspective. But several deep puzzles still remain unsolved. In their talk, Professor A.W Peet seeks to provide an accessible introduction to how investigations at the intersection between black holes and quantum information has led to significant recent advances in our understanding of the fundamentals of spacetime. No prior experience with any of these topics will be expected.

About the Keynote Speaker

A.W Peet is a Professor of Physics at the University of Toronto. They hold a B.Sc.(Hons) from the University of Canterbury and a Ph.D. from Stanford University. Their research expertise is in theoretical subatomic physics, where they investigate questions about the quantum nature of spacetime using black holes as a theoretical laboratory. Their awards include a Radcliffe Fellowship from Harvard and a Research Fellowship from the Alfred P. Sloan Foundation. They are also an advocate for equity on and off campus, and were awarded the Arts & Sciences Students’ Union Terry Buckland Award for Diversity and Equity in Education. They grew up in the South Pacific island nation of Aotearoa/New Zealand and have lived experience of misogyny, ableism, and transphobia.
Selections Committees

SCIENCE SELECTIONS COMMITTEE

Academic Chair: Dr. John De Backere
Associate Professor | Chemistry

Student Members: Thomas Hall
Ecology & Evolutionary Biology | Human Biology | Forest Conservation

Ryan Ripsman
Physics | Mathematics | Statistics

Wenyuan (Kevin) He
Molecular Genetics | Physiology

HUMANITIES SELECTIONS COMMITTEE

Academic Chair: Dr. Rivanne Sandler
Associate Professor Emerita | Near and Middle Eastern Studies

Student Members: Sabrina Ren
Art History | Book Media Studies

Yi Le Zachary Lo
Philosophy

Sarah Rana
Contemporary Asian Studies

SOCIAL SCIENCES SELECTIONS COMMITTEE

Academic Chair: Dr. Lynette Ong
Associate Professor | Political Science | Munk School of Global Affairs and Public Policy

Student Members: Aida Zarghami
Political Science | Environmental Studies

Madison Skoblo
Political Science | History | European Studies

Zoheir Asnaashary
Political Science | Near and Middle Eastern Studies
Day Schedule

Thursday, February 17, 2022

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Registration Link: https://zoom.us/meeting/register/tJAvcu6rqj8rE9yCK0zt6FJthB12el-1sqLD

Detailed Itinerary

10:00 AM – 10:30 AM Opening Remarks
*Melanie Woodin, Dean of the Faculty of Arts & Science Conference Directors*

10:30 AM – 11:30 AM Morning Session
*Room I: Social Injustices & Impacts*
*Room II: Languages & Interpretations*
*Room III: Ecology & Psychology*

11:30 AM – 12:00 PM BREAK

12:00 PM – 1:00 PM Keynote Address

1:00 PM – 2:00 PM Afternoon Session
*Room IV: Equity & Solidarity*
*Room V: Science & Exploration*
*Room VI: International Crises & Policy*
*Room VII: Investigations & Reflections*

2:00 PM – 2:30 PM Poster Presentations

2:30 PM – 2:40 PM Closing Remarks
2022 Undergraduate Research Conference

Morning Session: 10:30 AM – 11:30 AM

**Room I: Social Injustices & Impacts**
Room Moderator: Anusha Madhusudanan

10:30 AM
A Carceral Solution That Maintains Violence – Legal Regulation of Sex Work (Bill C-36)
*Neel Desai*

10:45 AM
Un Violador En Tu Camino: A collective cry
*Raquel Serrano*

11:00 AM
George Bryce’s Story of Canada: Archeology and Geology as Tools of Indigenous Erasure
*Kendall Sneyd*

**Room II: Language & Interpretation**
Room Moderator: Shaina Sharma

10:30 AM
An Exploration of Rhetoric in Anti-Mask and Pro-Mask Movements
*Juliette Blais-Savoie*

10:45 AM
Tubiel’s Phoenix: On the Transference of the Identity of the Fallen Angel
*Rion Levy*

11:00 AM
How do Different Interpretations of Filial Piety Affect the Child-Parent Relationship?
*Sophia Zhang*

11:15 AM
Children’s Understanding of Possibility in the Past and Future
*Jeanne Polochansky*

**Room III: Ecology & Psychology**
Room Moderator: Micah Kalisch

10:30 AM
How Climate Change Affects Oyster Growth and Survival
*Aaron MacDonald*
10:45 AM
Online Psychological Testing using Executables: A Case Study on Visual Memory Resolution
James Yuan

11:00 AM
Road mortality and mitigation measures to reduce impacts on amphibian species in the Greater Toronto Area
Nicole Regimbal

11:15 AM
Optogenetic Stimulation of the Locus Coeruleus Enhances Extinction of Reward Seeking
Ashleigh Brink

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**Afternoon Session: 1:00 PM – 2:00 PM**

**Room IV: Equity & Solidarity**
Room Moderator: Fatemeh Nami

1:00 PM
Adaptation of Lebanese Muslims to the Albertan town of Lac La Biche: Strategies and Experiences of Discriminated Migrants and their Solidarity with Local Indigenous Peoples
Timothy Boudoumit

1:15 PM
Strengthening Legal Equity: Muslim Women in Family Law
Lina Lashin and Leena Badri

1:30 PM
Transformative Resilience through collective action: A study on migrant led organizing in Toronto
Tenzin Chime

**Room V: Science & Exploration**
Room Moderator: Mariam Ali

1:00 PM
Employing galaxy morphology to decode galaxy evolution
Daniella Morrone
1:15 PM
The Differential Influence of Schema and Category Knowledge on Memory in Age-Related Cognitive Decline
Miranda Chang

1:30 PM
Effect of Impulsiveness on Traumatic Brain Injuries
Christina Choo

1:45 PM
Root colonization patterns of a novel Bacillus strain isolated from Canadian soil in protection of plants against fungal pathogen Botrytis cinerea
Miya Tseng-West

Room VI: International Crises & Policy
Room Moderator: Basmah Ramadan

1:00 PM
Internationalizing the War: The FLN and the Algerian War of Independence, 1954-1962
Tessa Di Vizio

1:15 PM
Refugee Integration During Economic Crisis: A Case Study in Turkey
Oya Darici

1:30 PM
Women, Climate Change and Peacebuilding: The Kenyan Story
Shreya Vohra

1:45 PM
Addressing the State of International Healthcare: An Analysis of Health Inequities in Developed Nation
Samraggi Hazra

Room VII: Investigations & Reflections
Room Moderator: Jolie Gan

1:00 PM
I Won’t Be Like: An Investigation of the Use of Constructed Dialogue in the Greater Toronto Area (GTA)
Mechelle Wu
1:15 PM
Investigating the Effect of COVID-19 on the 2020 US Presidential Election
*Isabella Giancola*

1:30 PM
Determining the status of [v] and [w] in Urdu: A case study
*Aiman Khan*

1:45 PM
"Locke on Natural Law and Natural Rights"
*Radheesh Ameresekere*

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**Poster Session: 2:00 PM – 2:30 PM**

[Breakout Room 8]

On detecting face cycles in incrementally constructed planar graphs
*Vishnu Nittoor*

Photoperiodism sensitivity in Ivyleaf morning glory, Ipomoea hederacea, reveals important considerations for climate change-mediated range shifts
*Jessie Wang*

Review of Types and Applications of Bioplastics
*Jahnavi Dalmia*

[Breakout Room 9]

Why are bones abnormal in babies who stop growing before they’re born?
*Tsz Wing Chu*

Subjective well-being shapes U.S. presidential, Senate, and House election outcomes
*Elizabeth Chan*

Kilonovae: We don't know what we don't know.
*Utkarsh Mali*
[Breakout Room 10]

Regulation of Runx3 expression in early proprioceptor development
Jenny Jiahuan Liu

Parent-Child Kinship Detection in Preschool-Aged Children
Elida Nexha & Anastasiya Tregubenko

[Breakout Room 11]

Analysis of Stem Cell Self-Renewal and Differentiation in the Drosophila Ovary
Jacky Jia Jie Liu

Validation of a Lipoxin B4 Receptor Interaction Using the Cellular Thermal Shift Assay
Mahdieh Golzari – Sorkheh

Emily Wang:

[Breakout Room 12]

Identifying Bilingual Children’s Use of Strategies in English and French Word Categorization: A Comparative Case Study
Hasaan Sobaan

The Impact of Personal Cost and Need on Children’s Helping Behaviour
Elisabetta Canaletti

Granular Analysis of Pretrained Object Detectors
Eric Xue:

[Breakout Room 13]

Suspension based induction of human lung organoids
Jocelyn Nurtanto

Building RNAi library for RNA binding proteins in C.elegans nervous system
Congrong He

Design and optimization of an on-axis microscope system for integration into PIRL-DIVE-MS (Picosecond Infrared Laser-Desorption by Impulsive Vibrational Excitation-Mass Spectrometry)
Lubna Burki