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ARTS AND SCIENCE STUDENTS' UNION  
**2024 UNDERGRADUATE  
RESEARCH CONFERENCE**

**DAY PROGRAM**

SIDNEY SMITH HALL

FEBRUARY 9th, 2024



# LETTER FROM THE CONFERENCE DIRECTOR

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We are delighted to have you join us today at the seventh annual ASSU Undergraduate Research Conference!

This project 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 selection committee chairs: Dr. John De Backere, Dr. Alana Boland, and Dr. Siobhan O'Flynn.

Our goal is to showcase the dynamic research that is being undertaken by undergraduate students from a multitude of academic fields within the Faculty of Arts and Science. Presenters will have the opportunity to pose their research to a wide audience; such opportunities are often few and far between for undergraduates. Audience members will have the opportunity to witness some of the amazing research that is being done at U of T, engage with students, and think critically about the knowledge that is being shared.

We believe that students can benefit from learning from and supporting their peers and appreciate that accomplishments continue to be made despite barriers. We truly are inspired by the resilience, resolve, and ingenuity 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 helping to initiate world change.

We hope that you enjoy today's experience, and we cannot thank you enough for supporting our Arts and Science community.

Sincerely,

**Sophia Grace Lopez**

Director, 2024 Undergraduate Research Conference

Executive, Arts & Science Students' Union

## KEYNOTE SPEAKER

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### **Professor Jennifer Campbell, Department of Computer Science**

Professor Jennifer Campbell serves as a Professor in the Teaching Stream and recently completed a three-year term as the Associate Chair of Undergraduate Studies in the Department of Computer Science here at U of T. She holds a Bachelor of Science from the University of Prince Edward Island and a Master of Math from the University of Waterloo. Renowned for her innovative teaching methods, she has significantly contributed to U of T's computer science education by developing a "flipped" approach to CSC108, the Department's introductory programming course, with active learning and online components. Within the Faculty of Arts and Science, she helped lead the transition to online teaching and learning during the COVID-19 pandemic. Beyond her classroom, she co-founded the Second-Year Learning Community (SLC) program which provides second-year students with a sense of community and professional development opportunities. Her exceptional dedication to teaching and educational leadership at U of T was recognized with the prestigious 2021 President's Teaching Award, the University's highest honour for teaching.



## SELECTIONS COMMITTEE

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### *SCIENCES SELECTIONS COMMITTEE*

Academic Chair: **Dr. John De Backere**  
Assistant Professor, Department of Chemistry

Student Members: **Cynthia Ji**  
**Michelle Lee**  
**Hetvi Soni**  
**Ye Fun Tan**  
**Sarah Walker**

### *SOCIAL SCIENCES SELECTIONS COMMITTEE*

Academic Chair: **Dr. Alana Boland**  
Associate Professor, Department of Geography and Planning

Student Members: **Allyson Cui**  
**Tarushi Kalra**  
**Maryam Khan**  
**Aditi Upadhyaya**

### *HUMANITIES SELECTIONS COMMITTEE*

Academic Chair: **Dr. Siobhan O'Flynn**  
Assistant Professor, Canadian Studies Program

Student Members: **Patrick Kinchsular**  
**Jevan Konyar**  
**Samir Mechel**  
**Milka Tigbaru**



## DAY SCHEDULE

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- 10:00 AM - 11:00AM**      **OPENING CEREMONY**  
ASSU President & Conference Director  
Melanie Woodin, Dean of Faculty of Arts & Science  
Jennifer Campbell, Professor, Department of Computer Science
- 11:00 AM - 12:00 PM**      **ORAL PRESENTATION: SESSION I**  
Room I: Cosmic to Cellular Frontiers (SS1071)  
Room II: The Brain and Beyond (SS1074)
- 12:00 PM - 1:00 PM**      **POSTER PRESENTATIONS**  
Sidney Smith Hall Lobby
- 1:00 PM - 2:00 PM**      **ORAL PRESENTATION: SESSION II**  
Room III: Identity and Empowerment (SS1069)  
Room IV: Media and Politics (SS1071)
- 2:00 PM - 3:00 PM**      **ORAL PRESENTATION: SESSION III**  
Room V: Perspectives and Legacies (SS1087)  
Room VI: Bioimaging and Molecular Insights (SS2110)
- 3:00 PM - 4:00 PM**      **ORAL PRESENTATION: SESSION IV**  
Room VII: Perception and Physiology (SS1087)
- 4:00 PM - 5:00 PM**      **ORAL PRESENTATION: SESSION V**  
Room VIII: Environmental Dynamics & Geopolitical Impacts (SS1087)  
Closing Remarks



# POSTER PRESENTATION (SS Lobby)

12:00 PM - 1:00 PM

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## *SCIENCES*

- Adin Aggarwal - Cell and Genome Analyses Uncover the Cancer-Killing Potential of Curcumin
- Riley Alvarez - Quantifying Postzygotic Reproductive Isolation in *Caenorhabditis* Species Pairs
- Sebastian Ibarra Mendez - Quantifying bias in measurements of carbon monoxide and nitrogen dioxide from TROPOMI in the GTA
- Mathula Muhundan - Exploring the metabolic effects of IDH1/2 knockout in HAP1 cells through metabolomics analysis
- Vasilisa Nikiporets - Investigating the role of the SuML in regulating theta activity during REM sleep.
- Kumal Udamjulla - Investigating Phosphorus Dynamics in Urban Stormwater Ponds
- Emile Watanabe - Singing snapping turtles! Vocal repertoire and vocal response to visual stimuli in *Chelydra serpentina*
- Min Yi (Mindy) Yu - MicroRNA-mediated regulation of agouti-related peptide mRNA in hypothalamic neurons
- Amy Zhang - Interventions to Increase Cooperation Amongst Ideological Outgroups

## *SOCIAL SCIENCES*

- Bhavnoor Pannu - Misdiagnosis of Cardiovascular Diseases in Racialized Women
- Myah Meleca - The Effects of Bilingualism on Preschoolers Judgements of Transgressions

## *HUMANITIES*

- Mitzi Badlis - Teaching Queer Young Adult Literature
- Mia Jakobsen - Rupert Raj's Written Act of Activism and Care Throughout the 1980s and 1990s



## ORAL PRESENTATION: SESSION I

11:00 AM - 12:00 PM

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### Room I: Cosmic to Cellular Frontiers (SS1071)

*Moderator: Adi Gautam*

- **Aditya Chugh** - All the Light We Cannot See: Studying Dark Photon-Photon Oscillations in Astrophysical Environments
- **Stephanie Ziyue Liu** - Rab7a and V-ATPase a3 Colocalization Depends on the Nucleotide State of Rab7a
- **Nicole Berezyuk** - Mechanical Stress Affects Epigenetic Regulation of Fibrotic Genes in Mesenchymal Stromal Cells
- **Genlei Lu** - Presence of Murine Trophoblast Systemically Alter Uterine Macrophage Polarization: Insights from Bead-Induced Deciduoma Model

### Room II: The Brain and Beyond (SS1074)

*Moderator: Bob Gillespie*

- **Michael Cheng** - Autism, Intellectual Impairment, and Neural Variability: Putting the “Spectrum” in the Autism Spectrum
- **Skerdi Progri** - Can we see the claustrum in the living human brain? Comparing magnetic resonance imaging to an anatomical gold standard.
- **Sabrina Zhu** - Elucidating METTL13 mediated regulation of eEF1A1 in diffuse intrinsic pontine glioma (DIPG) tumorigenesis
- **Anna Mouzenian** - The Effects of Bilateral Salpingo Oophorectomy on Medial Temporal Lobe Structure and Relational Binding



## ORAL PRESENTATION: SESSION II

1:00 PM - 2:00 PM

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### Room III: Identity and Empowerment (SS1069)

*Moderator: Anusha Madhusundanan*

- **Jiangyuan Lin** - Exploring New Fathers' Perspectives: Unraveling the Division of Unpaid Care and the Role of Caregiver
- **Gabrielle Pittinger** - Disability Porn: How the Medical Models Definition Victimized People with Disabilities
- **Avishka Gautham** - The dual impacts of a lack of access to ICT technology and gender norms
- **Caitlin Joy Boos** - From Liberated Woman to Male Sex Object: The Transformation of the "Groupie" From an Empowering and Respected Identity into a Pathologized and Disparaged Identity Over the Course of the Mid-to-Late 1960s to the Mid-to-Late 1970s

### Room IV: Media and Politics (SS1071)

*Moderator: Bob Gillespie*

- **Tony Xun** - The CCP's Ideological Governance of China's Video Game Industry
- **Soban Atique** - Tuning In, Not Tuning Out: A Reexamination of Televised Debates in Canadian Politics
- **Abidur Rahman** - The Orientalist Representation of Bangladesh in Western Policymaking and Media
- **Julia Chapman** - Love and Justice: The Incompatibility of Socratic Eros and Good Political Citizenship





## ORAL PRESENTATION: SESSION III

2:00 PM - 3:00 PM

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### Room V: Perspectives and Legacies (SS1087)

*Moderator: Sobhneek Hothi*

- Trent Atkinson - Getting Jacked for Jesus: Muscular Christianity and American Men in the Twenty-First Century
- Daya Charchun - Discovering the truth of the past, present, and future of Sir Daniel Wilson's legacy
- Guy Arie Mizrahi - In The Wilderness: The Selected Poems of Malachi Abramowicz
- Kathryn Hawkins - The Trauma Of Skinny Pete

### Room VI: Bioimaging and Molecular Insights (SS2110)

*Moderator: Sophia Grace Lopez*

- Jana Mahmoud - Utilizing Dragonfly ORS for Rabbit Lung Micro-CT Scan Image Segmentation
- Evelyn Chen - Copper-based Spin Labelling of a Membrane Protein
- Larry Kofi Asiwome Afun - Exploring the presence of Myelin Transcript Enriched Microglia (MTEM) in Multiple Sclerosis



## ORAL PRESENTATION: SESSION IV & V

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3:00 PM - 4:00 PM

### Room VII: Perception and Physiology (SS1087)

*Moderator: Miriam Bezner Kerr*

- Jessica Sah - Forever Young: The end of history illusion in children
- Divya Gupta - Dreams and their Uncovered Purpose: Insight Problem Solving
- Michelle Wang - CYP2D metabolism in the brain: Analgesic tolerance and sensitization after repeated oral oxycodone exposure

4:00 PM - 5:00 PM

### Room VIII: Environmental Dynamics and Geopolitical Impacts (SS1087)

*Moderator: Safia Zaman*

- Raia Ottenheimer - Efficacy of Versions 8 and 13 of the GEOS-Chem Adjoint for Quantifying Wildfire CO Estimates
- Jenna Barhoush - The Absence of the Palestinians Through Israeli Strategies of Environmental Manipulation
- Fatema Mullan - Land and Law: Coloniality in the Labor Landscape of Trinidad