Special thanks to our supporters:

LASSONDE SCHOOL OF ENGINEERING — YORK UNIVERSITÉ UNIVERSITY

NSERC CRSNG

health | YORK UNIVERSITÉ UNIVERSITY

science | YORK UNIVERSITÉ UNIVERSITY
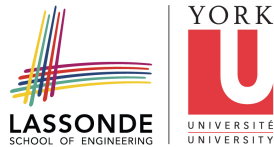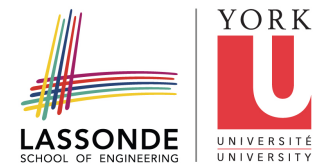
Schulich School of Business York University | YORK UNIVERSITÉ UNIVERSITY

Office of The Vice-President
Research & Innovation

So You Think You Can Research?

Undergraduate Summer Student Research Conference

August 11, 2016

LASSONDE SCHOOL OF ENGINEERING — YORK UNIVERSITÉ UNIVERSITY

Notes

- JANUSZ KOZINSKI

MESSAGE FROM THE FOUNDING DEAN, LASSONDE SCHOOL OF ENGINEERING

Renaissance engineering isn't just about learning differently and understanding concepts from a variety of perspectives. It's about applying knowledge to discover more about the world around us and to understand how to use those findings to improve our society. The intuitive and imaginative process of research can be exhilarating and exasperating in equal measure. As with any pursuit in life you learn more from the research journey than you ever will from the final destination. This occasion marks the end of one chapter, but for many of our students this summer represents the beginning of a lifelong quest to tackle the questions that don't yet have an answer.

- SPIROS PAGIATAKIS

MESSAGE FROM THE ASSOCIATE DEAN OF RESEARCH & GRADUATE STUDIES, LASSONDE SCHOOL OF ENGINEERING

This conference is a wonderful opportunity to demonstrate your scholarship, innovation and creativity. Your first research contributions matter, they are valued and recognized. May this be a remarkable beginning of a successful and fulfilling career. Trust your passion, whereever it takes you!

Event Schedule & Program Index

7.30 am - 8.30 am	Registration, breakfast, poster set-up
8.30 am - 8.45 am	Opening remarks:
	Janusz Kozinski *(Founding Dean, Lassonde)*
	Sushanta Mitra *(AVP Research, York University)*
	Barbara Crow *(Dean, Faculty of Graduate Studies)*
8.45 am - 11.00 am	Undergraduate oral presentations (pg. 4)
11.00 am - 11.15 am	Coffee break
11.15 am - 12.45 pm	Poster presentation session #1 (pgs. 5-6)
12.45 pm - 2.00 pm	Lunch
2.00 pm - 3.30 pm	Poster presentation session #2 (pgs. 7-8)
3.30 pm - 3.45 pm	Coffee break
3.45 pm - 4.30 pm	Graduate student research / Graduate school experience talks (pg. 4)
4.30 pm - 5.00 pm	Awards: Exceptional undergraduate oral presentations (3) and posters (6)
Location	*All oral presentations and poster presentations will be held on the ground floor of the Bergeron Centre for Engineering Excellence*

13. Faizaan Naveed. *Individual Tree Crown Detection Using Multi-Wavelength LiDAR Data.* (LASSONDE- ESSE)

14. Chukwubuikem Omeziri. *A Passive Flow Regulator for Intravenous Drug Infusion.* (LASSONDE- Mechanical)

15. Akash Oommen. *Investigating the Mechanical Properties of a 3D Printed Elastomer Under Different Loading Conditions.* (LASSONDE- Mechanical)

16. Aniket Prabhudesai. *Characterization of Moth-Eye Anti-ReflectionCoated Solar Panel Technology.* (LASSONDE- ESSE)

17. Sepehr Sadeghi. *Chromatin Dynamics and Gene Expression.* (SCIENCE- Biology)

18. Kajendra Seevananthan. *Development of a Solar Cell Measurement Payload.* (LASSONDE- ESSE)

19. Dmytro Shebanov. *Image Data Augmentation for the Training of Large Artificial Neural Networks.* (LASSONDE- EECS)

20. Xue Ying Shi. *Your Browsing History is NOT a Secret.* (LASSONDE- EECS)

21. Gurpreet Singh. *Imaging Fourier Transform Spectrometer for Nadir Atmospheric Measurement.* (LASSONDE- ESSE)

22. Tetiana Sitiugina. *Hardware-in-the-Loop (HIL) Testing of Attitude Control System (ACS) for 1U CubeSat Using Air-Bearing Table.* (LASSONDE- ESSE)

23. Goldie Srulovich. *Probabilistic Plan-Recognition in Ergo Golog.* (LASSONDE- EECS)

24. Cristofaro Timpano. *Passive Micromixing via the Use of Multi-orientation Microbridges.* (LASSONDE- Mechanical)

25. Jason Walden. *Helmholtz Cage Design for CubeSat Attitude Control System.* (LASSONDE- ESSE)

26. Sedtawut Watcharawittayakul & Yuchen Kang. *Named-Entity Recognizer for English, Spanish, and Chinese Languages.* (LASSONDE- EECS)

27. Bita Yousefi Pihani. *Influence of BioStremes on Biological Wastewater and Sludge Treatment Processes.* (LASSONDE- Civil)

Poster Presentations, Session 2: 2.00 pm - 3.30 pm

1. Ashraf Altesha. *Sequencing and Transcript Localization of GPA2/GPB5 in the Blacklegged Tick Ixodes Scapularis.* (SCIENCE- Biology)

2. Joel George & Amanda Jass. *Characterization of the Frq-less Oscillator System in Neurospora Crassa Using Oxidation and Reduction Cycles of Peroxiredoxin as a Biological Marker of Circadian Rhythms.* (SCIENCE- Biology)

3. Armita Jalooli. *Searching for the Fifth Force in the Low Scale QCD.* (SCIENCE- Physics)

4. Karishma Loharkar. *Quantifying the Effect of Reduced Surface Tension on Compaction of the Soil.* (LASSONDE- Civil)

5. Juan Loja. *Implementing a Computer Vision Algorithm for Smooth Pursuit Applications.* (LASSONDE- EECS)

6. Brandon Loy. *Identification of Pollution Sources in the Alberta Oil Sands.* (LASSONDE- ESSE)

7. Sara Malik. *Development of a Highly Compact and Power Efficient Converter Circuit for OLED Display Panel in Flat Screen Devices.* (LASSONDE-EECS)

8. Neil McCall. *When Angels Dance with Demons: Preforming Microwave Spectroscopy on Positronium.* (SCIENCE- Physics and Astronomy)

9. Kristen McIntosh. *Relationship of Parallel and Serial Search with Endogenous and Exogenous Attention.* (LASSONDE- EECS)

10. Rachel Modestino. *DSCOVR-EPIC Images of Earth's Atmosphere as Means for Planetary Scattering and Phase Function Comparisons.* (LASSONDE- ESSE)

11. Andrei Mouraviev. *Hue and Colour Contrast Based Attention Model.* (LASSONDE- EECS)

12. Samal Munidasa. *Development of a Head-Mounted Near-Field Visual Display for the Detection and Monitoring of Age-Related Macular Degeneration.* (LASSONDE- EECS)

Oral Presentations

Undergraduate, 8.45 am - 11.00 am

Kajanan Kanathipan. *A Robust and Fast Maximum Power Extraction Technique for Hybrid Renewable Energy Systems.* (LASSONDE- EECS)

Xinheng Du. *Photogrammetric UAV Flight Planning and Simulation Tool.* (LASSONDE- ESSE)

Simona Yakobov. *Studying the conformational changes of Glutathione S Transferase (GST-A4) Upon Binding of 4–hydroxynonenal Using Time-Resolved Hydrogen-Deuterium Exchange.* (SCIENCE- Chemistry)

Semi Hasaj. *COTS Star Imager for Nanosatellite Applications.* (LASSONDE- ESSE)

Boris Barron. *Investigation of Allan Variances of Homebuilt Diode Lasers.* (SCIENCE- Physics)

Asal Nady. *A Microfluidic Device for Head Immobilization, Chemical Exposure, and Behavioral Screening of Zebrafish Larvae.* (LASSONDE- Mechanical)

Sherief Aboelaze. *Design and Development of the Fourth Generation Attentive Sensor.* (LASSONDE- EECS)

Benjamin Brunson. *Application of Least-Squares Wavelet Analysis to Identify Earth's Inner Core Motions.* (LASSONDE- ESSE)

Mohammed Kagalwala. *Mechanical Design of the Fabry-Perot Spectrometer for Balloon Flight.* (LASSONDE- ESSE)

Graduate, 3.45 pm - 4.30 pm

Zoe Davis. *Adventures in Air Quality Measurements: To the Alberta Oil Sands and Beyond.* (LASSONDE- ESSE)

Julien Li-Chee-Ming. *Seamless Indoor/Outdoor Navigation for Drones.* (LASSONDE-ESSE)

Vikash Kumar. *Microparticle Magnetic Sorting: Solving Biological Problems With the Help of Mechanical Engineering Concepts.* (LASSONDE- EECS)

Raghavender Sahdev. *Grad School is Cool - You Decide!* (LASSONDE- Mechanical)

Abid Sahi. *Simulation of Climate Data for Geotechnical & Geoenvironmental Design Problems.* (LASSONDE- Civil)

N.B. EECS - Electrical Engineering & Computer Science; ESSE - Earth & Space Science Engineering

Poster Presentations, Session 1: 11.15 am - 12.45 pm

1. Yasha Amani. *Using Google Street View to Study Spatial Memory and Navigation in Young and Older Adults.* (HEALTH- Psychology)

2. Praise Ayorinde. *Development of a 3D simulation for Automatic Single-View Calibration and Rectification from Parallel Planar Curves.* (LASSONDE- EECS)

3. Parastoo Baghaei Ravari. *On-chip Spirometer.* (LASSONDE- EECS)

4. Katiyayni Balachandran. *Surface Studies of Icy Regoliths Using Light Scattering at Small Phase Angles.* (LASSONDE- ESSE)

5. Keegan Barbosa. *Ultra Products of Self-Adjoint Operators Done Right.* (SCIENCE- Mathematics)

6. Gehrig Carlse. *Design and Construction of Semiconductor Waveguide Amplifiers.* (SCIENCE- Physics & Astronomy)

7. Nicholas Chrobok. *Mathematical Modelling of Functional Pathways for the Cancer Target Protein STAT3.* (SCIENCE- Biology)

8. Brittney Cooper. *Characterizations of Martian Cloud Water-Ice Crystal Geometries from Cloud Phase Functions Derived Using MARCI Image Data.* (LASSONDE & SCIENCE- ESSE & Physics & Astronomy)

9. Dmitriy Danchenko. *Simulating the Surfaces of Terrestrial and Minor Planets.* (LASSONDE- ESSE)

10. Marmara El Masri. *Knowledge Base Population Slot Filling Task.* (LASSONDE- EECS)

11. Andrew Evdokimov. *Applying Deep Learning to the Solution of Winograd Schemas for Commonsense Reasoning.* (LASSONDE- EECS)

12. Kenneth Faria. *Development of a Sports Bra Tester.* (LASSONDE- EECS)

13. Syyeda Fatmi. *Voltage Regulation in Islanded Microgrids Using Distributed Constraint Satisfaction.* (LASSONDE- EECS)

14. Sebastian Fei. *Microfluidic Dual Gradient Generator on Agar Surfaces for Antibiotic Susceptibility Testing.* (LASSONDE- Mechanical)

15. Juan Guzman. *Micro-Spatial Heterodyne Spectrometer (SHS) UAV Payload.* (LASSONDE- ESSE)

16. Michael Ihilchik. *Topology Optimization.* (LASSONDE- Mechanical)

17. Vithusan Jeyakanth. *Partial Nitrification as a First Step of Nitrite Shunt Process in a Sequential Batch Reactor Using Ammonia Oxidizing Bacteria.* (LASSONDE- Civil)

18. Zaid Kaimgi. *Different Biological Methods of Utilizing Methane.* (LASSONDE- Civil)

19. Julia Khalilova. *Affective Forecasting in Individuals with Medial Temporal Lobe Lesions.* (HEALTH- Psychology)

20. Matthew Klincans. *The Development of a Thermally Resilient Multichip Packaging for use in Extreme Environments.* (LASSONDE- ESSE)

21. Keagan Lee. *A New Approach to Improving Solar Panels.* (LASSONDE- ESSE)

22. Breannon Lewis. *Communication CubeSat Thermal Simulation.* (LASSONDE- ESSE)

23. Armin Makki. *Involvement of Matrix Metalloproteinases and Tissue Inhibitor of Metalloproteinases in Wildtype vs TIMP-1 Knockout Mice Exposed to Prazosin Treatment and Femoral Artery Ligation.* (HEALTH- Kinesiology)

24. Charlie Shier. *Blockchain Applications.* (SCHULICH- Finance)

25. Somaiyah Sultani. *Predictive Avoidance Model.* (LASSONDE- EECS)

26. Amanpreet Walia. *Precise Motor Control for Smooth-Pursuit Motion Tracking.* (LASSONDE-EECS)

27. Yosef Bisk. *Monte Carlo Methods for Pattern-Avoiding Permutations.* (SCIENCE- Mathematics)

28. Vidushi Jain. *A Linear 2-Axis, Motorized Mirror Pointing System for Nadir Image Tracking.* (LASSONDE- ESSE)