



# **2024 ASEE St. Lawrence Section Annual Conference at the Lassonde School of Engineering**

## **Conference Program**

April 26 – 27, 2024  
Bergeron Centre for  
Engineering Excellence



# Table of Contents

Teaching Award Winner	<b>3</b>
Conference Officials	<b>4</b>
Current Officers, ASEE St. Lawrence Section	<b>5 - 6</b>
Conference Information	<b>7 - 9</b>
Conference Schedule	<b>10 - 14</b>
Speaker Profiles	<b>15 - 16</b>
Technical Sessions	<b>17 - 22</b>
Poster Session	<b>23-24</b>
Special Thanks	<b>25</b>
Campus Map	<b>26</b>

# Teaching Award Winner



## **Dr. Shivaun D. Archer**

Senior Lecturer

Meinig School of Biomedical Engineering

Cornell University

The ASEE St. Lawrence Section recognizes Dr. Shivaun Archer as the 2024 Outstanding Teacher for her contributions in developing 28 innovative labs across the biomedical engineering curriculum and her deep caring for students. She extends her impact by mentoring new faculty, leading teaching workshops, and sharing her work through ASEE.

# Conference Officials

## Conference Chair

- Mojgan Jadidi, York University, Canada

## Organizing Committee

- Emily Hammond, University of Buffalo, USA, (Paper Chair)
- Koenraad Gieskes, Binghamton University, USA
- Kathryn Dimiduk, Cornell University, USA
- David Titley-Peloquin, McGill University, Canada
- Lawretta Ononye, State University of New York at Canton, USA
- Hadas Ritz, Cornell University, USA

## Local Organizing Committee

- Marzieh Ahmadzadeh, York University, Canada
- Maleknaz Nayebi, York University, Canada
- Damith Tennakoon, York University, Canada
- Melissa Abraham, York University, Canada

# Current Officers

## ASEE St. Lawrence Section



**Chair**  
**Koenraad Gieskes**

Assistant Director  
Engineering Design Division  
Binghamton University



**Conference Chair**  
**Mojgan Jadidi, PhD, PEng**

Associate Professor,  
Teaching stream, Civil  
Engineering, Lassonde  
School of Engineering,  
York University



**Awards Chair**  
**David Titley-Peloquin**

Senior Faculty Lecturer  
McGill University  
Department of  
Bioresource Engineering  
McGill University



**Secretary**  
**Dr. Lawretta Ononye**

Associate Professor  
Canino School of  
Engineering Technology  
State University of New  
York at Canton

# Current Officers (cont.)

## ASEE St. Lawrence Section



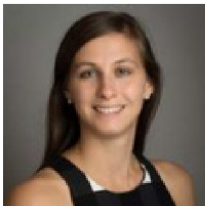
**Treasurer**  
**Kathryn Dimiduk**

Director, James McCormick  
Family Engineering  
Teaching Excellence Institute  
Cornell University



**Officer at Large**  
**Hadas Ritz**

Senior Lecturer, Sibley  
School of Mechanical and  
Aerospace Engineering  
Cornell University



**Past Chair**  
**Emily Hammond**

Associate teaching Professor  
Department of Engineering  
Education, School of  
Engineering and Applied  
Sciences  
University of Buffalo

# Conference Information

## Topics

Academic and industry collaboration  
Assessment of teaching and learning  
Connected engineering communities  
Diversity, equity, inclusion, and accessibility in engineering  
Experiential learning and project-based learning  
Integrating technology into engineering education  
Leadership and entrepreneurship in engineering  
Outreach and pipeline solutions  
Trends and innovations in engineering education

## Registration

Registration is required for all attendees and presenters. Badges are required for admission to all events. Registration fees include admission to the conference banquet and closing reception.

# Conference Information (cont.)

## Hotel

### Accommodations

#### On-campus

Special Price Hotel on campus at Executive Learning Center (for bookings made prior to March 25, 2024)

- Email: [reservations@schulich.yorku.ca](mailto:reservations@schulich.yorku.ca)
- Phone: 1 416-650-8300
- Provide these details when booking:
  - Block Name: 2024 ASSE STL Conference at Lassonde
  - Block Number: 692663

## Hotel

### Accommodations

#### Off-campus

#### **Courtyard by Marriott Toronto Vaughan**

150 Interchange Way, Toronto, ON L4K 5P7

#### **Homewood Suites – Toronto Vaughan**

618 Applewood Crescent, Vaughan, Ontario, L4K 4B4, Canada

#### **Residence Inn Toronto Vaughan**

11 Interchange Way, Vaughan, Ontario, Canada, L4K 5W3

#### **Spring Hill Suites Toronto Vaughan**

612 Applewood Crescent, Vaughan, Ontario, Canada, L4K 4B4

#### **Hilton Garden Inn**

3201 Highway 7 Vaughan, Ontario L4K 5Z7, Canada



# Conference Information (cont.)

## Parking

### Arboretum

Closest parking location to conference building

Cost (maximum): \$2.50/half-hour (\$20.00 max)  
Weekday Evenings: \$2.50/half-hour (\$8.00 max after 6:00 p.m.)  
Saturday: \$7.00 flat  
Sunday: \$5.00 flat

For parking at other locations on campus, visit the York University's parking servers website:

- York University Parking:  
<https://www.yorku.ca/parking/>
- Daily Rates:  
<https://www.yorku.ca/parking/parking-rates-permits/daily-rates/>
- Map: [https://www.yorku.ca/parking/wp-content/uploads/sites/51/2023/04/2D-KEELE\\_Map\\_APR-2023-Parking-r1.pdf](https://www.yorku.ca/parking/wp-content/uploads/sites/51/2023/04/2D-KEELE_Map_APR-2023-Parking-r1.pdf)

## Conference Proceedings

Conference proceedings will be published on the ASEE website (<https://www.asee.org>).

## Social Functions

**Cash Bar Reception** April 26, 6:00PM - 6:50PM  
Bergeron Centre for Engineering Excellence  
Room 125  
11 Arboretum Ln, North York, ON M3J 2S5

**Dinner Banquet** April 26, 7:00PM - 9:00PM  
Bergeron Centre for Engineering Excellence,  
Eatery  
11 Arboretum Ln, North York, ON M3J 2S5

# Conference Schedule

## Friday, April 26

### **Registration**

**4:00pm - 5:00pm**

Main Floor

### **Cash Bar Reception**

**6:00pm - 6:50pm**

Room 125

### **Dinner Banquet**

**7:00pm - 9:00pm**

Eatery

Welcome

**7:10pm - 7:30pm**

Keynote Speaker

**7:30pm - 8:10pm**

ASEE STL Section Chair

**8:30pm - 8:50pm**

# Conference Schedule

## Saturday, April 27

### **Registration & Breakfast**

**8:30am - 9:20am**

Main Floor

### **Welcome & Plenary**

**9:20pm - 10:20pm**

Room 125

### **Technical 1**

**10:30am - 11:30am**

Room 217

Bhavana Kotla and Lisa Bosman, Perdue University

Junnan Cao, University of Mount Union

Janet. J. Y. Lam, University of Toronto

Kai Zhuang, Dimpho Radebe, and Mojgan Jadidi, York University

## Technical 2

**10:30am - 11:30am**

Room 313

Jimmy Hulton, Tyler Aitken, Libby (Elizabeth) Osgood, Matthew Hutchinson, and Tin Nguyen, University of Prince Edward Island

Evalyna Bogdan, Nadine Ibrahim, and Heather Murdock, York University

George G. Weinschenk and Koenraad Gieskes, Binghamton University

Trystan S. Goetze, Cornell University

## Student Poster Session

**11:30am - 12:30pm**

Eatery

## Lunch

**12:00pm - 1:00pm**

Eatery

## Technical 3

**1:00pm - 2:15pm**

Room 217

Brian P. Murphy, SUNY Buffalo State University

Daniela Galatro, Cathy Chin, and Bradley Saville, University of Toronto

Darren Singh, Raafat Khankan, Yousaf Ijaz, Damith Tennakoon, and Mojgan Jadidi, York University

Michael E. Kuhl, Rochester Institute of Technology

Libby (Elizabeth) Osgood, Faculty of Sustainable Design Engineering and Christopher Power, University of Prince Edward Island

## Technical 4

**1:00pm - 2:15pm**

Room 313

Ioana E. Tiu, Koenraad Gieskes, and Melissa Simonik, Binghamton University

William Craine, Libby (Elizabeth) Osgood, University of Prince Edward Island

Juliette Sweeney, University of Toronto

Chris Rennick, Mary A. Robinson, Sophie T. Nasato, and Samantha T. White, University of Waterloo

Vanessa Ironside and Lisa Lim-Cole, York University

## Coffee Break

**2:15pm - 2:30pm**

Eatery

## Technical 5

**2:30pm - 3:45pm**

Room 217

Rajarajan Subramanian and Sofia M. Vidalis, Pennsylvania State University at Harrisburg

Lisa L. Greenwood, Yewande S. Abraham, Sumita Mishra, and Jennifer L. Schneider, Rochester Institute of Technology

Cindy Rottmann, University of Toronto

Reilly L. Sullivan and Libby Elizabeth Osgood, University of Prince Edward Island

## Technical 6

**2:30pm - 3:45pm**

Room 313

David Titley-Peloquin, Alice Cherestes, Gernando Altamura, McGill University

Katherine Abrey, Deanna Malone, Maddy Cronin, and Libby (Elizabeth) Osgood, University of Prince Edward Island

Andrew L. Maxwell, Victoria B. Horvath, Nicholas Di Scipio, York University

Maryam Nasri and Stephanie R. Goldberg, Buffalo State University

## Break

**3:45pm - 4:00pm**

Eatery

## Closing Remarks and Awards Ceremony

**4:00pm - 4:30pm**

Eatery

## Ice Cream and Networking

**4:30pm - 5:00pm**

# Speaker Profiles



**Franz Newland**  
Associate Professor at  
York University

Dr Franz Newland is an associate professor – teaching stream at York University in the Department of Earth & Space Science & Engineering. He is also a romantic idealist, who recognizes and inadequately tries to work to overturn his privilege. Through this privilege and good fortune, he has been able to collaborate on creating the “cross-campus capstone classroom”, which has won the Airbus GEDC award for diversity in June 2020 and the STLHE D2L award in June 2023. He was also awarded the ASEE St Lawrence Section Outstanding Educator award in April 2021. He is a lifelong learner, a dotty dad, husband and friend to a quaker parrot.

# Speaker Profiles



## Lisa Cole

Director of  
Programming at k2i –  
Lassonde School of  
Engineering, York  
University

Lisa Cole is the Director of Programming at k2i (kindergarten to industry) academy at the Lassonde School of Engineering. The k2i academy is an innovative ecosystem, committed to dismantling systemic barriers to opportunity for underrepresented students in STEM. Launched in June 2020, k2i academy works alongside some of the largest school boards in Canada to co-create strategic directions for system change work in STEM education in Ontario. Alongside innovative partners and collaborators, k2i academy has reached over 27,000 youth, educators, families, and community members in over 230,000 hours of STEM learning experiences.

k2i has employed over 400 high school students in work-integrated learning programs and empowered over 130 undergraduate STEM students to engage in this work as mentors and leaders. The k2i academy is an award-winning team, passionate about creating equitable and inclusive opportunities for students to explore STEM fields and careers, and to develop the skills and mindsets that will enable them to become future innovators, critical thinkers, and problem solvers.



# Technical Session 1

10:30AM-11:30AM| Bergeron Room 217

Moderated by Marzieh Ahmadzadeh

- 1 **A Review of Photovoice-Based Entrepreneurial-Minded Pedagogical Interventions in the Engineering Classroom: Definitions, Benefits, and Challenges**  
Bhavana Kotla and Lisa Bosman (Perdue University)
- 2 **Influences of course evaluation frequency on teaching and student learning**  
Junnan Cao (University of Mount Union)
- 3 **Impact of lecture recordings in a post-COVID environment**  
Janet. J. Y. Lam (University of Toronto)
- 4 **Art-Inspired Pedagogies in Engineering Education**  
Kai Zhuang, Dimpho Radebe, and Mojgan Jadidi (York University)

# Technical Session 2

10:30AM-11:30AM| Bergeron Room 313

Moderated by Maleknaz Nayebi

- 1      What is Success? Lessons Learned from a Student-Taught Co-Curricular CAD Program**  
Jimmy Hulton, Tyler Aitken, Libby (Elizabeth) Osgood, Matthew Hutchinson, and Tin Nguyen (University of Prince Edward Island)
  
- 2      The Flood Resilience Challenge serious game to teach complex socio-environmental issues in engineering**  
Evalyna Bogdan, Nadine Ibrahim, and Heather Murdock (York University)
  
- 3      Ethical Analysis Process Toward Learning Professionalism in the Applied Sciences Classroom**  
George G. Weinschenk and Koenraad Gieskes (Binghamton University)
  
- 4      Roleplaying Game–Based Engineering Ethics Education: Lessons from the Agency of Art**  
Trystan S. Goetze (Cornell University)

# Technical Session 3

1:00PM-2:15PM| Bergeron Room 217

Moderated by Emily Hammond

- 1 Clean Energy Education and the Energy Transition Agenda**  
Brian P. Murphy (SUNY Buffalo State University)
- 2 Strategies for Chemical Process Design: A Sustainability-based Approach**  
Daniela Galatro, Cathy Chin, and Bradley Saville (University of Toronto)
- 3 Towards Development of an Interactive Mobile Application for Teaching UN SDG Goals**  
Darren Singh, Raafat Khankan, Yousaf Ijaz, Damith Tennakoon, and Mojgan Jadidi (York University)
- 4 A Simulation Escape Room: Verification and Validation is the Key**  
Michael E. Kuhl (Rochester Institute of Technology)
- 5 Reflection in Engineering Design: Student Perceptions on Usefulness**  
Libby (Elizabeth) Osgood, Faculty of Sustainable Design Engineering Christopher Power (University of Prince Edward Island)

# Technical Session 4

1:00PM-2:15PM | Bergeron Room 313

Moderated by Lawretta Ononye

- 1      The Effect of Male to Female Ratios on Female Students in Engineering and Technical Science Majors**

Ioana E. Tiu, Koenraad Gieskes, and Melissa Simonik (Binghamton University)
- 2      Work-In-Progress Investigation on Academic Accommodations: Needs and Barriers for Support**

William Craine, Libby (Elizabeth) Osgood (University of Prince Edward Island)
- 3      Graduate Engineering Programs: Admission, Success, Support and Institutional Culture**

Juliette Sweeney (University of Toronto)
- 4      An investigation into gender diverse populations in hackathon environments**

Chris Rennick, Mary A. Robinson, Sophie T. Nasato, and Samantha T. White. (University of Waterloo)
- 5      Work-Integrated Learning: An Alternative Pathway for High School Physics**

Vanessa Ironside and Lisa Lim-Cole (York University)

# Technical Session 5

2:30PM-3:45PM| Bergeron Room 217

Moderated by Mojgan Jadidi

- 1      Students Evaluate Professor's Teaching Performance: Analysis**  
Rajarajan Subramanian and Sofia M. Vidalis (Pennsylvania State University at Harrisburg)
  
- 2      Preparing the Engineers of Tomorrow: Standards Education for Infrastructure Improvement and Resilience**  
Lisa L. Greenwood, Yewande S. Abraham, Sumita Mishra, and Jennifer L. Schneider (Rochester Institute of Technology)
  
- 3      “Leadership as an Alienating Social Myth”: Disciplinary fissures as a catalyst to interdisciplinary understanding**  
Cindy Rottmann (University of Toronto)
  
- 4      Do We Design for People or to Make Things?: Student Motivations, Barriers and Mindsets in an International Humanitarian Engineering Experience**  
Reilly L. Sullivan and Libby Elizabeth Osgood (University of Prince Edward Island)

# Technical Session 6

2:30PM-3:45PM| Bergeron Room 313

Moderated by Emily Hammond

- 1 Experiences with Collaborative Learning Activities in Undergraduate STEM Courses**  
David Titley-Peloquin, Alice Cherestes, Gernando Altamura (McGill University)
- 2 International Humanitarian Trips: Objectionable or Estimable?**  
Katherine Abrey, Deanna Malone, Maddy Cronin, and Libby (Elizabeth) Osgood (University of Prince Edward Island)
- 3 The SARIT Electric Vehicle: Driving Change in Micro-Mobility at York University's Living Lab**  
Andrew L. Maxwell, Victoria B. Horvath, Nicholas Di Scipio (York University)
- 4 Infusing a Series of Motor Lab Exercises and Projects into the Freshman Circuits Course**  
Maryam Nasri and Stephanie R. Goldberg (Buffalo State University)

# Poster Session

## **A Review of Photovoice-Based Entrepreneurial-Minded Pedagogical Interventions in the Engineering Classroom: Definitions, Benefits, and Challenges**

Bhavana Kotla, Lisa Bosman

## **Algorithms and Education: A Review of the Current and Future Effects of Using Artificial Intelligence in the Classroom**

Nicholas Garner

## **Buffalo State University Transformer Trainer**

Joshua Gagliardi, Caleb J Saxbury, Christian A Prem, Daemani Devonshire

## **COSMOS IV**

Dante Cracchiola, Jinnan Wu, Colin Pfeifer, Sang Chin

## **Crossing Boundaries and Building Leadership Competencies in a Global Engineering Course: A Case Study**

Anuli S. Ndubuisi, Philip Asare, Mesha Ajaz, James Slotta

## **Poster Session (cont.)**

### **Do students develop social justice principles through an international service-learning experience?**

Analiya Benny, Libby (Elizabeth) Osgood

### **Investigating the effects of project-based learning on engineering career preparedness**

Spencer R. Davis, Jennifer L. Bailey

### **Novel Amputee Board**

Katherine Abrey, Adiel Rutabana, Victoria Yates, Mohamed Alzohary, Elizabeth (Libby) Osgood

### **The Learning Divide: Understanding Educational Disparities Amidst Crisis**

Emily J. Wiesenfeld

### **W.A.N.D.A for the C.O.S.M.O.S**

Samuel F. Molino, Jamaal M. Huff, Joseph D. Genau

### **Writing and Presentation in Engineering Education**

Jake D. Ritchie



# Special Thanks



## **Melissa Abraham**

Events Coordinator  
Lassonde School of Engineering  
York University



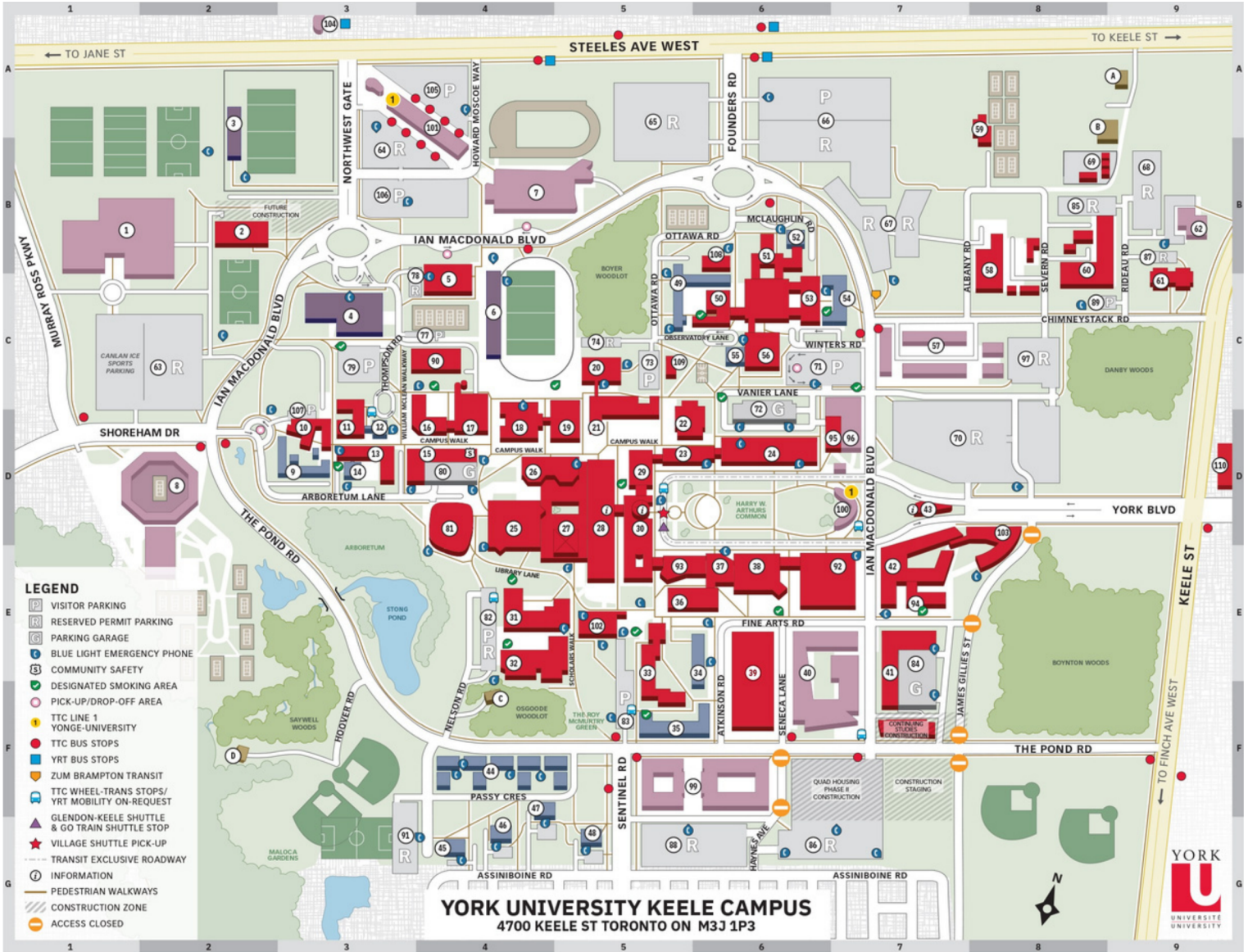
## **Salvatore Paneduro**

Director of Educational Innovation  
Lassonde School of Engineering  
York University

**Special thanks go to Melissa Abraham and Lassonde Education Innovation Studio (LEIS) Team! This conference came together because of their patience, diligence, strong relationships, and unwavering commitment to “make it happen”.**

**Thank you!**

# Campus Map



**YORK UNIVERSITY KEELE CAMPUS**  
4700 KEELE ST TORONTO ON M3J 1P3

## CAMPUS DIRECTORY

### ACADEMIC, ADMINISTRATIVE & COMMERCIAL BUILDINGS

59	190 Albany Road	ALB	A8
110	4747 & 4751 Keele Street	D9	
92	Accolade East	ACE	E7
93	Accolade West	ACW	E5
33	Atkinson	ATK	E5
17	Allan I. Carswell Astronomical Observatory, Petrie	PSE	D4
29	Behavioural Science	BSB	D5
41	Bennett Centre for Student Services, Admissions	BCS	E7
81	Bergeron Centre for Engineering Excellence	BRG	D4
24	Bookstore, York Lanes	YL	D6
69	Bus Compound	BB	
10	Calumet College	CC	D3
27	Central Square	CSQ	D5
58	Central Utilities Building	CUB	B8
38	Centre for Film & Theatre	CFT	E6
16	Chemistry	CB	D4
26	Curtis Lecture Halls	CLH	D4
94	Executive Learning Centre	ELC	E7
21	Farquharson Life Sciences	FRQ	D5
23	First Student Centre	STC	D5
108	Founders Annex North	FAN	B6
109	Founders Annex South	FAS	C5
50	Founders College	FC	C6
31	Health, Nursing & Environmental Studies	HNE	E4
32	Ignat Kaneff Building, Osgoode Hall Law School	OSG	E4
36	Joan & Martin Goldfarb Centre for Fine Arts	CFA	E5
95	Kanef Tower	KT	D7
61	Kinsmen	K	C9
19	Lassonde Building	LAS	D5
90	Life Sciences Building	LSB	C4
43	Lorna R. Marsden Honour Court & Welcome Centre	HC	D7
20	Lumbers	LUM	C5

### RESIDENCES & APARTMENTS

48	320 Assiniboine Road	AS2	G5
47	340 Assiniboine Road	AS4	F4
46	360 Assiniboine Road	AS6	G4
45	380 Assiniboine Road	AS8	G4
34	Atkinson Residence	AR	E6
9	Calumet Residence	CR	D3
49	Founders Residence	FR	C5
12	Norman Bethune Residence	BR	D3
44	Passy Gardens, 2-18 Passy Cres.	PASSY	F4
14	Stong Residence	SR	D3
52	Tatham Hall	TH	B6
35	The Pond Road Residence	PON	F5
55	Vanier Residence	VR	C6
54	Winters Residence	WR	C7

### PARKING GARAGES - VISITORS

80	Arboretum Lane Parking Garage	APG	D4
84	Student Services Parking Garage	SPG	E7
72	York Lanes Parking Garage	YPG	D6

### PARKING LOTS - VISITORS

83	Atkinson Lot	F5
107	Calumet Lot	D3
66	Founders Road East Lot	A6
73	Lumbers Lot	C5
82	Nelson Road Lot	E4
64	Northwest Gate Lot	B3
105	Northwest Gate North Lot	A4
106	Northwest Gate South Lot	B3
89	Physical Resources South Lot	C8
77	Thompson Road East Lot	C3
79	Thompson Road Lot	C3
71	Vanier Lot	C6

### PARKING LOTS - RESERVED PERMIT

67	Albany Road Lot	B7
97	Chimneystack Lot	C8
66	Founders Road West Lot	A6
65	Founders Road West Lot	A5
88	Haynes Avenue Lot	G5
87	Kinsmen Lot	B9
74	Lumbers North Lot	C5
82	Nelson Road Lot	E4
64	Northwest Gate Lot	B3
91	Passy Crescent Lot	G3
85	Physical Resources North Lot	B8
68	Physical Resources East Lot	B9
63	Shoreham Drive Lot	C2
86	The Pond Road Lot	G6
78	West Office Building Lot	C4
70	York Boulevard Lot	D7

### VISUAL PERFORMANCE ARTS FACILITIES

92	Art Gallery of York University	ACE	E7
37	Burton Auditorium *	BU	E6
93	Gales Gallery	ACW	E6
38	Joseph G. Green Studio Theatre	CFT	E6
32	McLean Performance Studio	ACE	E7
92	Price Family Cinema	ACE	E7
92	Sandra Faire & Ivan Fecan Theatre	ACE	E7
92	Tribute Communities Recital Hall	ACE	E7

### ATHLETICS & RECREATION FACILITIES

3	Alumni Field	STA	A2
4	Tait McKenzie Centre	TM	C3
6	York Lions Stadium	YLS	C4

### HISTORICAL HOUSES

D	Hoover House	HOH	F2
C	Skennen'k'owa Gamig "bab-d b"	SKG	F4
B	Stong Barn	SB	A9
A	Stong House	SH	A9

\* Shared use  
\* Temporarily Closed