



University of Waterloo Institute of Transportation Engineers Student Chapter 2024 Annual Report

The University of Waterloo (UW) ITE Canada Student Chapter is pleased to submit this annual report to showcase another extremely successful year.

Chapter Administration

The student chapter’s elected executive team and faculty advisor are listed below in Table 1. Due to the University of Waterloo’s co-op program, some positions are shared between students on opposite co-op streams, ensuring year-round in-person leadership coverage on campus.

Table 1: UW ITE Student Chapter Executive Team

Position	Member Name
President	Shrinidhi Elangovanneela & William Pham
Treasurer	Aditi Atodaria**
Secretary	Jeffrey Dai & Tayler Lam**
Event Director	Dylan Mah* & Andrew Wong
Media Director	Rae Mahboob*
Faculty Advisor	Christian Bachmann

*New executive member **New ITE member

Chapter meetings were held in a hybrid format in Waterloo throughout the year. No meetings were held during the final examination period in April, August and December or on statutory holidays. The meeting schedule is summarized in Table 2.

A meeting that stood out and was well perceived by members was the fall term kick-off meeting, which took place on September 16, 2024. This is largely in part due to the administrative parts being kept short and having icebreakers, discussions about local transit projects and upper-year students sharing their experiences with first-year students, fostering collaboration and networking.

Table 2: UW ITE Student Chapter Meetings

1	January 4, 2024	2	January 18, 2024	3	February 1, 2024	4	February 15, 2024
5	February 29, 2024	6	March 14, 2024	7	March 28, 2024	8	April 29, 2024
9	May 13, 2024	10	May 27, 2024	11	June 13, 2024	12	June 24, 2024
13	July 8, 2024	14	September 16, 2024	15	September 30, 2024	16	October 28, 2024
17	November 11, 2024	18	November 25, 2024				

All meetings were held in Waterloo with a hybrid format.

UW ITE is grateful for the support of our sponsors, whose contributions help fund our events, conferences and networking opportunities. For the 2024-2025 year, we received generous donations from our Gold Sponsor, Paradigm Transportation Solutions Ltd., and Bronze Sponsor, BA Consulting Group Ltd. Their support has been instrumental in enhancing our chapter’s activities and providing valuable resources for our members.



Networking Events

The Chapter organized a variety of networking events throughout the year, offering members the opportunity to engage with professionals and experts from the transportation industry. These in person events include presentations from leaders in the field, industry conferences, and career fairs, all of which provide valuable insights into current and future transportation projects, engineering practices, and professional development. The chapter’s networking events are listed below in Table 3.

Table 3: UW ITE Student Chapter Networking Events

Presenter (Company)	Date	Description of Event
Jacob Terry (Dillon Consulting)	January 25, 2024	Projects and challenges faced on said projects. Special bit on on-demand transit service.
Jamie Black (GHD)	February 8, 2024	Inclusion and diversity in the transportation industry. They spoke of their journey to become an engineer. This was a joint event with the McMaster student chapter.
Joint Civil Engineering Networking event	February 27, 2024	Joint networking event with the UW Concrete Toboggan Team
Paula Sawicki (Region of Waterloo)	March 8, 2024	The history and future of the ION light rail project in the Waterloo Region
Yishu Pu (WSP Canada)	March 15, 2024	Railway modeling and simulation and highlighting large-scale transit projects at WSP
Matthew Sweet (City of Mississauga)*	June 3, 2024	Active transportation and Mississauga’s shared micro-mobility program
ITE Canada Conference	June 9-12, 2024	UW ITE members attended the Conference in Hamilton, where the Chapter received the Outstanding Student Chapter Award and participated in the Traffic Bowl Competition.
Sam Harker and Patrick Yutiga (TTC)	July 25, 2024	Service planning and the role of planners within the Toronto Transit Commission
UW ITE 50 th Anniversary	September 27, 2024	UW ITE hosted a luncheon celebrating the 50 th anniversary, bringing together alumni, ITE executives and former student chapter leaders for networking and knowledge sharing
Gordon Meth (ITE)	October 24, 2024	ITE International VP shared insights on his professional background and experiences, specifically in highway engineering
CEAGES Industry Night	November 7, 2024	A career fair designed for Civil, Environmental, Architectural & Geological engineering students that provided a platform for networking with industry professionals.
Adam Morrison (Paradigm)	November 21, 2024	Waterloo Alumni and Transportation Modelling Lead at Paradigm shared insights on transit engineering, transportation modeling and professional development in the field

*Denotes event was led by a non-executive member through the leadership program

The Student Chapter celebrated its 50th anniversary on September 27, 2024, and we thank those who came to the celebration, especially executives from ITE Canada and ITE International who made the trip to visit our student chapter! This event was also attended by former UW ITE Student chapter executives who participated in our events throughout the day, which included icebreakers, speeches from ITE Canada executives, as well as campus tours of the Autonomous Vehicle Research and Intelligence Lab



(AVRIL) and the Centre of Pavement and Transportation Technology (CPATT) lab. This semicentennial event allowed former members to meet current executives and students and was a lovely opportunity to showcase how far the chapter has come over the decades!

Leadership Development

To encourage leadership development within the chapter, five of our members attended the 2024 ITE Student Leadership Summit hosted by ITE McMaster from June 8-9, 2024. This summit provided them with an excellent opportunity to enhance their leadership skills through team-building activities, panel discussions, and presentations from industry professionals and young ITE leaders. By attending this event, our members gained valuable insights into team dynamics, leadership roles, and networking, which helped them further contribute to the growth and success of our ITE Student Chapter.

The executive team actively encourages members to take the lead on events they are passionate about. Members are welcome to propose their own event ideas, provided they can demonstrate their feasibility. Last year, a formal leadership program was introduced, offering members the chance to lead events with the guidance and support of the executive team. Under this program, members are responsible for managing logistics, promotion, catering and other details with the help of the entire executive team.

K-12 STEM Outreach

Our chapter actively participated in several outreach events to engage and inspire high school students.

In January 2024, volunteers from the student chapter ran a pedestrian signal timing activity with the Engineering Science Quest Camp for students in grades 3-5. Students learned how pedestrian signals should be timed to accommodate different types of pedestrians, with students acting out different roles while pretending to cross a crosswalk (e.g. child late for school, elderly person, etc.).

In February 2024, the student chapter was fortunate to partner with the Women in Engineering After school clubs to also run the pedestrian timing activity with students in grades 5-7. The activity was adjusted for the older students to focus on the mathematical relationship between walking speed and pedestrian signal timing.

During the University of Waterloo's March Open House on March 22, 2024, the chapter set up booths in both the Environment and Engineering buildings. This event provided an opportunity for prospective students to learn more about the university and its programs through campus tours and interactions with current students. As the chapter is primarily composed of undergraduate students in Civil Engineering and Urban Planning, it was an ideal occasion to introduce high school students to the field of transportation engineering and the ITE Student Chapter.

Additionally, the chapter participated in the Environment Life Fair on May 15, 2024, where we again showcased the diverse opportunities within ITE and encouraged high school students to explore careers in transportation and urban planning. These events allowed the chapter to promote STEM education and inspire the next generation of professionals in the field.



Application of Technical Knowledge

Secretary Jeffrey Dai continued his research by assisting a PhD candidate’s work on real-time forecasting of intersection turning movements using a combination of neural network models. Jeffrey’s role involved examining traffic volumes in edge cases such as extreme weather events and comparing that to the model outputs. Jeffrey will also be meeting and collaborating with universities worldwide in Germany in 2025 to come up with creative solutions to transportation issues in country.

Technical Publications

Technical publications authored by student chapter members are listed below in Table 4.

Table 4: Technical Publications

Author	Publication name	Publication	Date
Reza Aminghafouri	An Automated Threshold Selection Framework for Conflict-Based Road Safety Analyses	TRB Poster presentation	January 2024
Lucas Sobreira	Expanding Short-Term Pedestrian Volume Counts to Average Annual Daily Counts at Intersections: Temporal Pattern Indices and a Comparison of Statistical Land Use and Simple Threshold Methods	TRR: Journal of the Transportation Research Board	October 2024

Conference Attendance

At the 2024 ITE Canada Conference, our previous treasurer Lucas Sobreira took the opportunity to present his research on methods to estimate pedestrian exposure at intersections on a jurisdiction-wide level. His innovative approach involved using the large language model GPT-4 to assess pedestrian exposure, showcasing the chapter’s commitment to exploring new technologies for improving transportation safety. The conference was a significant milestone for one of our members, Adriana Ceric, who received the ITE Canada Undergraduate Scholarship. Adriana, a passionate undergraduate Civil Engineering student, has focused on public transit, accessibility, and emerging technologies. Through her past internships, she contributed to the development of accessible, multi-modal trip planning applications for transit agencies across North America. Adriana’s dedication to advancing transportation studies and her contributions to the field reflect the chapter’s commitment to fostering future leaders in transportation engineering.

Our chapter also participated in the Traffic Bowl at the conference, where our team placed 2nd in our round, demonstrating the strong application of technical knowledge in transportation engineering. This competition challenged our team to answer a question on a wide range of topics in transportation planning and engineering, and our team’s success reflects their ability to apply what they’ve learned in real-world contexts. By participating in the Traffic Bowl, our members were able to further develop their technical expertise while strengthening their problem-solving and teamwork skills.

New Member Recruitment

The chapter has actively engaged in several strategies to recruit new members and increase involvement. Our Presidents, Shrinidhi and William, visited many Civil Engineering and Planning courses early in the term, promoting the chapter to students. Additionally, we hosted outreach events such as the transportation research meetup at the Grad house in August, which connected the executive team



as well as students interested in transportation with transportation graduate students and professors. While we were hosting elections for executive positions for the current year, we held an Election Event, where we recruited new members as well. Additionally, our beginning of term meetings in September and January focused on icebreakers and discussions about local transit projects, were well-received and helped new members engage with other members in the chapter. For example, our recent events have consistently filled the entire room with over 40 attendees, consistently with many new faces each time. With over 66 members, the chapter is also the largest it's ever been, and we seek to break 80 in 2025!

Diversity and Inclusion

On February 8, 2024, the chapter was fortunate to host a joint event with McMaster ITE student chapter with guest speaker Jamie Black from GHD to talk about their journey to become an engineer, their projects and past experiences. Other events, such as the talk by Gordon Meth, attracted students from diverse fields such as Computer Science, Mathematics, Statistics, Systems Design, and Management Engineering, leading us to broaden the scope of our event promotion. As a result, we now regularly promote ITE events to a wider range of disciplines, encouraging the engagement of students from fields outside of the traditional transportation curriculum. This year's executive committee also has the highest number of women in the history of our student chapter. We are proud to expand our reach to a more diverse group of students, especially from the undergraduate community.

Training/Professional Development

Several executive ITE members volunteered at the university's Engineering Society's resume critique event, assisting first-year civil engineering students in improving their resumes as they prepare for their first job search under the co-op program.

Field Trips/Technical Tours

This year, our chapter organized several technical tours open to both ITE and non ITE students. Students were able to explore the ION light rail operations facility, toured the Pearson Airport's maintenance and control center, and visited the Toyota Manufacturing plant to observe vehicle production. Additionally, students also joined Professor Brian Doucet on a walking tour of Kitchener, exploring urban infrastructure and social change.

Service Projects

UW ITE members played a key role in advocating for better transit service in the Waterloo Region. Several members were involved in efforts to restore the Grand River Transit's evening service, successfully preventing the cancellation of key bus routes. Additionally, our chapter actively contributed to successfully restoring the Region of Waterloo's ION light rail service from the proposed 30-minute frequency back to 10-minute peak service and 15-minute nighttime service, ensuring reliable transit options for the community.

Secretary Jeffrey Dai will also continue with his transportation research and will work on projects with Grand River Transit in 2025 to tackle transit issues within the Region of Waterloo.



From top to bottom, left to right: March open house event, Student leadership summit, ITE Canada Conference Award, ION operations yard tour, UW ITE 50th Anniversary event, Pearson Airport Tour, Gordon Meth Talk