



University
of Windsor

2021-2022 Outstanding Section/Chapter Award (Annual Report)

Executive Board:

	<u>Name</u>	<u>Contact</u>	<u>Degree program</u>
President	Terence Dimatulac	dimatul@uwindsor.ca	PhD Civil Engineering
Vice-president	Haesung Ahn	ahn112@uwindsor.ca	PhD Civil Engineering
Secretary	Farnaz Zahedieh	zahedie@uwindsor.ca	MASc Civil Engineering
Treasurer	Saeideh Esmaeili	esmaeil4@uwindsor.ca	MASc Civil Engineering

Number of student chapter members: 10
Number of alumni chapter members: 3

About the UWindsor CITE Student Chapter

The CITE student chapter at the University of Windsor began in September of 2020 with an aim to promote the field of transportation engineering to the student community, provide a platform for learning and support to prepare students for transportation engineering careers, and build connections with academic and industry partners in the ITE community. Dr. Hanna Maoh of the department of Civil and Environmental Engineering is currently serving as the chapter's faculty advisor.

The University of Windsor is home to two growing transportation research groups, the *Transportation Systems Innovation (TSI) lab*, which provides training opportunities for undergraduate and graduate students in transportation engineering, and the *Cross Border Institute (CBI)*, a multidisciplinary research body specializing in cross-border logistics and security that provides an avenue for graduate students to engage in transportation research. Transportation-specific courses at the University of Windsor are offered beginning at the third-year undergraduate level, with additional required and elective offerings in the fourth year. At the graduate level, transportation topics include integrated transportation and land use modeling, advanced GIS data modeling, freight transportation analysis, traffic operations and control, road safety analysis, and intelligent transportation systems. The current student chapter members are actively pursuing research in a number of these areas of research specialization.

The goal of the chapter is to provide a platform for providing information to students on various topics of interest in on various topics of interest in transportation engineering. A seminar series has begun through the chapter, inviting guest speakers from various backgrounds in industry and academia, to speak on the projects, challenges, and opportunities they have encountered in their own experience in transportation and to engage in a discussion with the chapter's members. As the chapter grows, collaborative events with other institutions and chapters will be implemented, along with social and networking events for chapter members, and technical tours to provide hands-on experience. The undergraduate and graduate students who express an interest in transportation will be welcome and encouraged to participate in chapter events and enroll as chapter members. Our hope is to build a hub for information, education, support, and networking to promote the field of transportation engineering and prepare our students for successful careers in the transportation engineering profession.



Award requirements

Regular Meetings (10 points)

Since last year's annual report submission, the University of Windsor CITE Student Chapter has continued holding regular monthly chapter meetings, along with a seminar series. Attendance to the seminar events has been open to chapter members and other undergraduate and graduate students within the faculty of Civil and Environmental Engineering at the University of Windsor. Chapter members have also been invited to present their own research, offering a platform to practice in preparation for conferences and receive feedback from knowledgeable transportation student colleagues. To date, the following meetings have been held/are planned to the end of the current academic semester:

No.	Meeting Date	Location	Meeting Type	Presentation/Speaker
1	Mar 4, 2021	Virtual	Chapter meeting	Chapter executive board
2	Mar 19, 2021	Virtual	Seminar	Dr. Hanna Maoh – Chapter Faculty Advisor and Professor in the Civil and Environmental Engineering Department, University of Windsor
3	Apr 1, 2021	Virtual	Chapter meeting	Chapter executive board
4	Apr 29, 2021	Virtual	Seminar	Dr. Lawrence McKeown – Chief of Analysis, Centre for Tourism and Transportation Statistics, Statistics Canada
5	May 6, 2021	Virtual	Chapter meeting	Chapter executive board
6	Jun 3, 2021	Virtual	Chapter meeting	Chapter executive board
7	Jun 4, 2021	Virtual	Seminar	Mr. Haesung Ahn – PhD candidate in the Civil and Environmental Engineering Department, University of Windsor
8	Jul 7, 2021	Virtual	Chapter meeting	Chapter executive board
9	Aug 17, 2021	Virtual	Chapter meeting	Chapter executive board
10	Sep 23, 2021	Virtual	Chapter meeting	Chapter executive board
11	Oct 21, 2021	Virtual	Chapter meeting	Chapter executive board
12	Nov 18, 2021	Virtual	Seminar	Mr. Terence Dimatulac – PhD candidate in the Civil and Environmental Engineering Department, University of Windsor
13	Dec 16, 2021	Virtual	Seminar	Dr. Georgiana Vani – PhD graduate in the Civil and Environmental Engineering Department, University of Windsor
14	Feb 10, 2022	Virtual	Chapter meeting	Chapter executive board
Upcoming events				
9	Feb 28, 2022	Virtual	Seminar	Mr. Haesung Ahn – PhD candidate in the Civil and Environmental Engineering Department, University of Windsor
10	Mar 7, 2022	Virtual	Chapter meeting	Chapter executive board
11	Mar 28, 2022	Virtual	Seminar	Dr. William Anderson – Director of Cross-Border Institute at the University of Windsor
12	Apr 4, 2022	Virtual	Chapter meeting	Chapter executive board
13	Apr 2022	Virtual	Seminar	Speaker TBD – Transportation-related software demo
14	May 2, 2022	Virtual	Chapter meeting	Chapter executive board
15	May 2022	Virtual	Seminar	Speaker TBD – Transportation-related software demo

The first seminar held for this academic year was presented by Dr. Hanna Maoh, Professor of Civil and Environmental Engineering at the University of Windsor, Associate Director of the Cross-Border Institute (CBI), and the founder of its Traffic Lab, also at the University of Windsor. In his presentation, Dr. Maoh addressed the current gap in knowledge regarding electric vehicles (EV) by evaluating the impacts of adopting EVs in two Canadian cities: London, Ontario and Calgary, Alberta. The presentation described and discussed the key findings from simulations conducted to quantify the extent of benefits from adopting EVs. This seminar was conducted in cooperation with the University of Windsor School of Environment.

Next, another seminar was held at the end of April 2021, where Dr. Lawrence McKeown of Statistics Canada presented a topic related to transportation, statistics, and the federal government. Dr. McKeown is the Chief of Analysis in the Centre for Tourism and Transportation Statistics department and has conducted research on public transit use, airline deregulation, railway performance and logistics as well as Internet use and telephone call centres. The presentation mainly provided the historical and policy context for transportation-related statistics used by the principal players in the federal government. In addition, he discussed the role engineers are playing with respect to analyzing transportation statistics across the government and at Statistics Canada.

During the summer term, the Windsor Chapter started a series of graduate seminars during the instances where industry speakers were not available to present their work for specific months. Mr. Haesung Ahn, a PhD candidate in the Civil and Environmental Engineering Department at the University of Windsor, started this series. Mr. Ahn presented his research topic regarding the relationship between COVID-19 transmission and onboard travel conditions on public transportation in the case of Seoul, South Korea. More specifically, he utilized real-world data to track transmission resources and reconstructed in-vehicle conditions by using the complete data to alleviate the fear of using transit.

Mr. Terence Dimatulac, also a PhD candidate in the Civil and Environmental Engineering Department at the University of Windsor, was next to present his research work to the chapter. During this seminar, Mr. Dimatulac shared his research work, where he used ArcGIS extensively to develop a model using the ModelBuilder module to estimate the available allowable area for a secondary residential unit on each land parcel in the City of Windsor in Ontario, Canada. He also discussed how this potential household change over space could affect the transportation demand within the city.

Lastly, Dr. Georgiana Vani, a recent PhD graduand of the Civil and Environmental Engineering Department at the University of Windsor, shared her dissertation topic to the chapter, which was about the modeling of truck freight network robustness and criticality in Ontario, Canada. Her research applied the Network Robustness Index (NRI) in combination with economic measures to explore the potential criticalities that arise in the freight transportation network servicing the Province of Ontario. The research outlined a framework for assessing the effects of proposed infrastructure improvements to inform policy and prioritization decisions.

The Windsor Chapter plans to continue to conduct graduate student-led seminars, in addition to industry partner presentations, to inform student members of the research that their colleagues are currently conducting as well as state-of-the art developments in transportation applications. Demos and/or “crash courses” of various transportation-related software are also in the works to be shared to current members in the near future.

Student/Younger Member Support (15 points)

The Windsor Chapter is working diligently to ensure that a strong basis is set up for student support through the chapter. However, due to the limitations imposed by the current pandemic situation, chapter activities have been constrained to virtual events. Since the launch of the seminar series, undergraduate engineering

students have shown interest in the chapter and have been invited to participate. The purpose of the seminars is to educate students on different issues and opportunities in the field of transportation, as well as to bring awareness to the vast array of specialty areas tied to transportation research and practice. An informational poster is prepared for each chapter event and made available to the current chapter members, as well as distributed to the Civil Engineering graduate and undergraduate student body. Students at any level are encouraged to reach out for the virtual meeting details, where they are welcome to participate in the discussion.

The seminar series is meant to invite discussion on a variety of transportation-related topics, which will not only be relevant to the research activities of the students, but also aim to ignite an interest in areas of transportation that students may be less familiar with. Inviting seminar speakers from both academic and industry backgrounds will also aid students in building connections and provide insights into the types of career opportunities available. The chapter aims to provide a platform for student learning and support, in preparation for a career in transportation. To this end, the chapter executives keep an open line of communication to answer inquiries from students, accept suggestions, and provide resources. Additionally, chapter alumni are welcome to remain in contact with the chapter, participate in chapter events, network, and provide insights and guidance to current chapter members.

Application of Technical Knowledge (10 points)

Due to the existing pandemic situation and consistent restrictions, the chapter was not able to be directly involved with any industry partners during the past academic year. At the same time, it had been difficult for the chapter to receive responses from interested local partners to present and share their current work with the chapter members. Nonetheless, the chapter will continue to reach out to them. For the time being, the chapter encouraged its members to share their work in the form of graduate seminars to inform other students regarding their current research and present tools and models they develop and implement. Beginning with the Winter 2022 semester, the chapter plans to conduct various transportation-related software demos and/or “crash courses” to let the students know such programs exist and demonstrate how these can be applied and help with their research work.

Networking Events (10 points)

Again, the current pandemic restrictions forbade the Windsor Chapter from conducting an official in-person networking event. However, contact information is shared among chapter members to maintain constant communication regarding upcoming chapter events. The chapter has introduced the position of Communications Officer, who is responsible for maintaining the chapter’s social channels and informing student members of upcoming events and opportunities. During the chapter’s monthly meetings, we take the time to share not only on the trajectory of chapter, but also information regarding current events (e.g., conferences) related to the industry to keep the chapter members informed and up to date with all opportunities available to them. In addition, the chapter strives to promote meaningful experiences to its members by conducting transportation-related seminars from speakers of various transportation backgrounds. To date, however, we only had one seminar led by a Chief Analyst from Statistics Canada, where the speaker shared his contact information with the students to encourage further discussion. Building these connections is very valuable to the student chapter members, as they are connected to individuals with a wealth of experience in the field who can provide specific guidance and advice, as well as potentially serve as contacts for future career opportunities. Also, the chapter is currently planning to reach out to other CITE student chapters to establish possible joint events, in which different students from different chapters can share their current research work.

K-12 STEM Outreach (10 points)

As the chapter is still quite new, we have not had the opportunity to host any outreach events yet. Additionally, it was not possible to conduct a STEM outreach event to K-12 students due to the current pandemic. However, such outreach will certainly be part of the future work of the chapter once everything

settles down. We believe that there is great value in inspiring the next generation of transportation engineers and outreach events at the K-12 level are an excellent opportunity to spark an interest early. The chapter will endeavour to collaborate with local elementary and high schools to organize engaging events for their students, such as setting up competitions centering around transportation topics.

New Member Recruitment (10 points)

The chapter is currently developing a recruitment strategy for the upcoming semester and academic year. We are planning to speak with the 4th year undergraduate Capstone class to encourage them to be part of CITE and to let them know the benefits of the regular events the chapter conducts. The also chapter established a communications officer position in the last year to handle the social media accounts of the Windsor Chapter and advertise the current and upcoming events held by the chapter. Here, we are able to reach out non-member engineering students to attend the seminars, chapter events, and regular chapter meetings. As restrictions begin to be lifted and gatherings will be allowed, the chapter will introduce an informational meet-and-greet event at the beginning of the academic year, inviting any potential student members to learn about the chapter's activities and benefits.

To date, the chapter's events have been well-received by both undergraduate and graduate students. Chapter memberships are open to undergraduate and graduate students with an interest in transportation. As gathering restrictions on campus are lifted, the chapter will continue in its efforts to invite undergraduate engineering students to attend different chapter events and become involved. Seminar events and software demonstrations are intended to inform undergraduate students of the field of transportation engineering and spark an interest in the field, either leading to graduate studies or the pursuit of a career in transportation industry. Moreover, information about the chapter is made available to anyone through the chapter's official website and social channels. In general, graduate students researching under our faculty advisors will continue to be offered the opportunity to join the chapter, and information will also be forwarded to the graduate cohort with an invitation to the chapter meetings and events.

As the chapter grows, the long-term vision includes expanding outreach efforts to other departments and faculties within the University with an interest in transportation. For example, the Mechanical Engineering Department is heavily invested in automotive research and the Electrical Engineering Department conducts ongoing research into connected and autonomous vehicle technologies. Students in both of these departments could benefit from the chapter's seminars and discussions and could offer unique insights. Students in the Computer Science and Kinesiology Faculties, similarly, may have transportation-related research interests, dealing with big data analytics or human-machine interactions. As connections are made across departments and faculties, expanding the scope of the seminars and events that the chapter can host, the aim is to attract interest from students in a wide range of domains, each with a unique perspective.

Diversity and Inclusion (5 points)

The chapter's executive committee is comprised of a diverse group which includes two male and two female members, all from different ethnic backgrounds. The current student membership also belongs to various backgrounds. The focus of the chapter is to engage in discussion and share information on transportation, and our aim is to empower any students with an interest in this field to pursue it. We believe that inclusivity and diversity are key components to creating a platform for building up transportation professionals. Chapter membership is open to students at the undergraduate and graduate levels, regardless of background or gender, and the chapter's recruitment policies and campaigns, which are currently being developed, will reflect this. Concerning the events that have already taken place through the chapter, which are open to chapter members and any interested non-members, a diverse range of guest speakers have been, and will continue to be invited. These events have all been very well-received and generated excellent discussion among the group.

Training/Professional Development (5 points)

In addition to monthly seminars, the Windsor chapter is planning to conduct various transportation-related software demonstration events led by different student members experienced in their application as well as in collaboration with other student chapters. This would provide a platform for our students to showcase technical aspects of the software packages with which we have experience and to learn additional technical skills from other chapters. Also, the chapter plans to provide a platform for student members to practice giving conference presentations. Since not all chapter members may be able to attend conferences during their academic training, we believe that it is important to provide an opportunity to develop professional presentation skills. This would be done in a supportive environment, where valuable feedback could be gleaned from fellow student members familiar with the topics at hand.

Field Trips/Technical Tours (5 points)

So far, pandemic restrictions limit the chapter from conducting any field trips or technical tours. Field trips and technical tours will certainly be a part of the chapter's future planned events, as these types of activities allow students primary and hands-on experience with the transportation topics we study. As the home of Canada's busiest border crossing, Windsor offers a unique location for the first-hand study of transportation issues with tangible results. The construction of the new international bridge crossing presents a real opportunity for such a field trip event, where student members can learn about the planning and implementation process of such a massive undertaking. Opportunities for technical tours also include partnerships with local consulting firms. The consultants with whom the chapter can network would be eager to showcase their projects and invite our chapter members to learn about their activities, while providing a networking opportunity to equip our student members for entering the workforce as transportation professionals.

Service Projects (5 points)

Interaction with the community has been limited due to the current pandemic situation. However, community service projects will be a part of the chapter's future work. It is important for our chapter members to be engaged in their community. We believe that participating in service projects will lead the student chapter members toward developing a compassionate and well-rounded character as they head toward their professional careers. The chapter will coordinate with the Civil and Environmental Engineering department, the Engineering Student Society, and industry partners to organize service events.

Funding Support (5 points)

In the past year, the Windsor Chapter opened a bank account and started collecting membership dues from its current members. Since the chapter is still young and does not yet conduct events with expenses, the executives decided to collect an annual membership of \$10 from its current members. In addition, the chapter also received a one-time allowance worth \$500 from the main CITE office. A small monthly interest is also deposited in the chapter's account. As of February 2022, the chapter holds \$581.08 and the only expense the chapter incurred is the monthly bank service charge, which is \$3.50.

The chapter is planning to reach out to outside sponsors to find valuable chances of funding for members of this chapter. Thanks to the *Transportation Association of Canada Foundation (TAC)*, the *Norman Esch Foundation*, and the *Cross Border Institute (CBI)*, the *RC Spencer Associates Graduate Scholarship* has supported several students every year from 2015 to the present. Additionally, we have a plan to reach out to other local consulting firms or institutions to find additional avenues of support for our members and develop a robust relationship between the chapter and local neighbors. The chapter funds are earmarked for guest speaker endowments, off-site chapter events, and sponsorships of student members for attending conferences.

Leadership ITE (5 points)

As the chapter is still quite new, we have not had the opportunity to support members for the Leadership ITE events. The chapter is currently developing a database of alumni contact information to ensure that member graduates are still able to network through the student chapter and engage with chapter events. The executive board continues to forward CITE leadership events and scholarship information to members and alumni, ensuring that they are aware of the opportunities for involvement with CITE at large. The guest speakers that have been invited through the chapter's seminar series also encourage and advise our members on improving their leadership skills and becoming successful transportation professionals and leaders.

Advocacy (5 points)

With the previous seminars, transportation specialists and professors have given insights to our chapter members into very practical processes from their experience in the field. For instance, Aaron and John, members of local consulting firm RC Spencer Associates Inc., shared their recent industry experience in reshaping the form and function of the uptown district of the municipality of Leamington, Ontario. Similarly, Dr Potoglou of Cardiff University presented the latest research topics regarding the role of manufacturing materials and autonomous driving. He pointed to very important and practical considerations that must be kept in mind when designing solutions to such transportation problems. Each speaker is able to offer valuable insights and advice to our chapter members. The chapter plans to continue hosting seminars to keep developing the members' knowledge and capability as professional transportation engineers and researchers.