4UniC

4-UNIVERSITY CONFERENCE ON TRANSPORTATION

Intelligent Mobility and Climate-Resilient Infrastructure for a Sustainable Future

Schulich School of Engineering
University of Calgary

June 14 – 16, 2026

Banff, Alberta, Canada

UNIVERSITY OF CALGARY

同濟大學 TONGJI UNIVERSITY

熊本大学 Kumamoto University

서울시립대학교 UNIVERSITY OF SEOUL

Day 1 - June 14

18:00 19:45	Steering Committee Meeting (Closed Session)
20:00	Networking Dinner

Day 2 - June 15

08:00 08:30	Registration
08:30 08:40	Opening Remark **Alexandre De Barros** *(University of Calgary)*
08:40 **10:15**	**Session: Keynote Plenary** **Chair**: Lina Kattan *(University of Calgary)*
08:40 09:00	Modeling Cascading Failures in Metro Networks **Seungjae Lee** *(University of Seoul)*
09:00 09:20	The City at Child Height **Syuji Yoshiki** *(Kumamoto University)*
09:20 09:40	When do reflective pavements save energy? A global accounting of heating-cooling trade-offs **Chenglong Liu** *(Tongji University)*
09:40 10:00	Why Do We Need Travel Behaviour Theory in the Age of AI? Multiple Goal Pursuit as an Illustrative Theory **Jason Hawkins** *(University of Calgary)*
10:00 10:15	Joint Discussion Session (Q&A)
10:15 10:45	Coffee Break
10:45 **12:10**	**Technical Session 1: Transportation Resilience, Safety, and Emergency Planning** **Chair:** Takuya Maruyama *(Kumamoto University)*
10:45 11:05	Smart Mobility, Traffic Management: The Banff Experience **Stephen Allan** *(Town of Banff)*
11:05 11:25	Wildfire and Evacuation Preparedness: The Banff Experience **Katherine Severson** *(Town of Banff)*
11:25 11:40	Optimization of Evacuation Plan for Tourist Towns: Lessons Learned from Historical Events Using Mobile GPS Data and a Proposed Simulation Model **Yuxiao Wang⁎, Saeid Saidi, Pouya Zangeneh** *(University of Calgary)*
11:40 11:55	Resilience as a Service for Urban Multimodal Transportation Systems **Mostafa Ameli** *(Université Gustave Eiffel Paris)*
11:55 12:10	Joint Discussion Session (Q&A)
12:10 13:30	Lunch
13:30 **14:45**	**Technical Session 2: Transportation Systems Optimization, AI, and Game Theory** **Chair:** Chenglong Liu *(Tongji University)*
13:30 13:45	A Dynamic Game-Theoretic Land-Use and Transport Interaction Model for Resilient Urban Transition **Satoki Masuda⁎, Eiji Hato** *(Kumamoto University)*
13:45 14:00	Optimal Deployment of New Transport Mode in a Multi-layer Network **Hiroe Ando⁎, Francesco Corman** *(Nagoya University)*
14:00 14:15	Balancing Charging Access and Grid Constraints: A Bargaining Framework for Shared EV Charging Hubs in Multi-Unit Residential Buildings **Mohammed Abuhadrous⁎, Lina Kattan, Jason Hawkins** *(University of Calgary)*
14:15 14:30	From Optimization to Prediction: A Deep Learning Approach for the Traffic Assignment Problem **Mostafa Ameli** *(Université Gustave Eiffel)*
14:30 14:45	Joint Discussion Session (Q&A)
14:45 15:15	Coffee Break

15:15 – 17:15 **Panel Discussion: Pathways to Future Collaboration**
Moderator: Saeid Saidi (*University of Calgary*)

Panellists:
Dongmin Lee *(University of Seoul)*
Ji Yuxiong *(Tongji University)*
Takuya Maruyama *(Kumamoto University)*
Merkebe Demissie *(University of Calgary)*
Negin Alisoltani *(University Gustave Eiffel)*

Panel Format:
5–10 minute presentation by each panellist.
Moderator-facilitated interactive discussion.
Audience engagement and open discussion.
Breakout session to further develop collaborative ideas.

18:00 – 21:00 Banquet Dinner

Day 3 - June 16

08:30 – 09:00 Registration

09:00 – 10:15 **Technical Session 3: Advances in Transportation Systems Modeling, Transit Innovation, and Equity**
Chair: Hiroe Ando *(Nagoya University)*

09:00 – 09:15 Integrated Spatial Economic and Travel Demand Modelling Framework for Transportation Infrastructure Impact Assessment
Ali Farhan *(Alberta Transportation and Economic Corridors, AB, Canada)*

09:15 – 09:30 Modernizing Calgary Transit Through Open, Connected, and Sustainable Bus Technologies
Muhammad Arslan Asim *(Calgary Transit, AB, Canada)*

09:30 – 09:45 A multidimensional equity evaluation of micromobility and public transit coopetition.
Abebe Dress Beza*, Merkebe Demissie, Lina Kattan *(University of Calgary)*

09:45 – 10:00 A Generalizable Hierarchical Bayesian Framework for Estimating Network-Level Transit OD from Heterogeneous Data Sources.
Javad Esmailpour*, Saeid Saidi, Neema Nassir *(University of Calgary)*

10:00 – 10:15 Joint Discussion Session (Q&A)

10:15 – 10:45 Coffee Break

10:45 – 12:00 **Technical Session 4: Smart Mobility, Shared Mobility, and Human Travel Behavior**
Chair: Shin Hyoung Park *(University of Seoul)*

10:45 – 11:00 Can Behavioral Nudges Promote Adoption of On-Demand Mobility Services?: Evidence from a Randomized Controlled Trial Using Behavioral Nudges
Shoshi MIZOKAMI*, Rio TERADA, Syuji YOSHIKI *(Kumamoto University)*

11:00 – 11:15 Fair and Efficient Peer-to-Peer Ride-Sharing for Sustainable Urban Mobility
Negin Alisoltani *(University Gustave Eiffel)*

11:15 – 11:30 The impact of license surrender on the travel behavior of seniors: evidence from Kumamoto, Japan
Zhiwei Zhang, Yuki Hamasaki, Yige Wang, Takuya Maruyama* *(Kumamoto University)*

11:30 – 11:45 Revealing travel behavior differences across Japanese metropolitan areas in the post-pandemic period: A time use survey analysis
Yige Wang*, Zhiwei Zhang, Takuya Maruyama *(Kumamoto University)*

11:45 – 12:00 Joint Discussion Session (Q&A)

12:00 – 13:30 Lunch

13:30 – 14:45 **Technical Session 5: Transportation Networks, Mobility Patterns, and Safety**
Chair: Difei Wu *(Tongji University)*

13:30 – 13:45 Quantum-Inspired Graphon Mean Field Games for Decentralized Control of Connected and Autonomous Vehicles in Lane-Free Traffic
Kinda Chakas*, Lina Kattan *(University of Calgary)*

13:45 – 14:00 Long-term Trends in Peak Commuting Demand Intensity: A Case Study of Kumamoto, Japan, 1984–2023
Takuya Maruyama*, Yuichiro Kai *(Kumamoto University)*

14:00 – 14:15 Analyzing Shifts in Urban Driving Patterns Following Speed Limit Adjustments: An Isolation Forest Approach Using Commercial Vehicle Trajectory Data
Min Ji Kang , Shin Hyoung Park* *(University of Seoul)*

14:15 – 14:30 Driver Awareness and User Acceptance of Pedestrian Alert Systems in Alberta: Insights from Two Questionnaire-Based Studies
Pubudu Damsara*, Alexandre de Barros *(University of Calgary)*

14:30 – 14:45 Joint Discussion Session (Q&A)

14:45 – 15:15 Coffee Break

15:15 – 15:45 Closing Session

Venue

Banff Centre for Arts and Creativity
107 Tunnel Mountain Drive Banff, Alberta, Canada T1L 1H5

About 4UniC

History

The 4 Universities Joint International Conference (4UniC) originated in 2007 as a collaborative seminar between the University of Calgary in Canada and the University of Seoul in South Korea as proposed by Professors Seungjae Lee and Chan Wirasinghe. As the partnership strengthened, the event expanded to include Kumamoto University in 2010 and Tongji University in 2014, forming the four-university network that has hosted the conference for more than a decade. Since then, the conference has rotated annually among the partner institutions, with each university hosting every four years. Over its evolution, 4UniC has convened numerous times across Asia and North America, with recent meetings including Tongji (2025), Kumamoto (2024), Seoul (2023), and Calgary (2019). By 2025, the conference had reached its 17th edition, reflecting a long-standing commitment to international academic collaboration.

Background and Purpose

4UniC serves as a collaborative international platform that connects researchers, scholars, and students from the University of Calgary, the University of Seoul, Tongji University, and Kumamoto University. The conference focuses on advancing research in transportation, urban systems, mobility, and related interdisciplinary fields. Its purpose is to support the dissemination of cutting-edge research, encourage the exchange of ideas, and foster long-term academic relationships across continents. Each edition highlights contemporary themes relevant to global mobility challenges. The program typically integrates research presentations, dialogue sessions, and technical tours, offering participants both academic and on-the-ground insights.

Significance

The significance of the 4UniC conference lies in its role as a sustained and evolving platform for international cooperation among universities deeply engaged in transportation and urban research. Through its rotating format, participants experience diverse cultural, geographical, and mobility contexts, enriching comparative research and broadening global perspectives. The conference is especially impactful for emerging scholars, providing an inclusive venue for students and early-career researchers to engage with leading academics and contribute to meaningful research dialogue.

Sponsor

The organizers gratefully acknowledge the financial support provided by the Schulich Momentum Directors through the Engineering for a Sustainable Future Program at the University of Calgary's Schulich School of Engineering. The Schulich Momentum initiative supports innovative activities that strengthen research excellence, interdisciplinary collaboration, student development, industry engagement, and the societal impact of engineering. Through strategic investments in emerging research areas and community-building activities, the program helps accelerate solutions to complex challenges facing society and contributes to the long-term vision of positioning the Schulich School of Engineering as a global leader in engineering innovation and education.

The Engineering for a Sustainable Future Program focuses on advancing engineering research, education, and partnerships that contribute to environmental stewardship, economic prosperity, and social well-being. Recognizing that many of today's challenges, such as climate change, resilient infrastructure, sustainable transportation, energy transitions, public health, and equitable access to services, require integrated and multidisciplinary solutions, the program encourages collaboration across engineering disciplines and with external partners. Support for the 4UniC Conference aligns closely with these objectives by fostering international knowledge exchange, promoting collaborative research on sustainable mobility and urban systems, supporting the development of highly qualified personnel, and creating opportunities for long-term partnerships among leading universities. The conference serves as a platform for researchers, students, industry professionals, and public-sector partners to share innovative ideas and collectively advance engineering solutions for a more sustainable and resilient future.

Organizing Committee

Dr. Saeid Saidi, Co-chair
Dr. Merkebe Demissie, Co-chair
Dr. Jason Hawkins, Co-chair
Dr. Yunping Huang, Awards and Recognition Chair
Abebe Dress Beza, Technical Program Coordinator
Mariana Otero Becerril, Social Activities Coordinator
Thomas Williams, Logistics Coordinator
Sam Pollock, Master of Ceremonies
Pubudu Kapurubandarage, Photography and Documentation Coordinator