Sixth Meeting of the Ontario Road Safety Forum

October 17, 2019 9:00 a.m. to 4:00 p.m.

(Registration – 8:30 a.m.)

University of Toronto, Galbraith Building, 2nd floor, Room GB 202

(http://map.utoronto.ca/building/070, http://map.utoronto.ca/access/parking-lots)

Agenda*

8:30 a.m. Registration and Coffee/Tea and Pastries

9:00 a.m. **Session 1: Welcome and Introductions**
Facilitator: Bhagwant Persaud, Ryerson University
Self-Introductions

Brief Update – Road Safety Professional Certification – Geni Bahar, NAVIGATS Inc.

9:20 a.m. **Session 2: Crash Causation, Countermeasures, and Policy Implications**
Facilitator: Alison Smiley, Human Factors North
Presenter: David Shinar, Ben Gurion University of the Negev, Israel

10:10 a.m. **Session 3A: Who is doing what? Ongoing Efforts**
Facilitator: Amit Arora, Road Safety Consultant

3.1 A GIS-based Network Screening Tool for Train Derailments - Tavia Chow, York University
3.2 A Real-Time Internet-of-Things (IoT) Device to Prevent First Responders' Injuries Involved in Collisions - Ahmad Mohammadi, York University
3.3 Weed Out the Risk: An Anti-Crash Course for Canadian Youth - Barrington Hector, Spring Board Services

10:40 a.m. **Break**

11:00 a.m. **Session 3B: Who is doing what? Ongoing Efforts – Part 2**
Facilitator: Sean Nix, Mohawk College

3.4 Vision Zero 2.0: City of Toronto's Road Safety Plan Update - Sheyda Saneinejad, City of Toronto
3.5 Leveraging Traffic Cameras for Road Safety in the City of Toronto: A Look into the Future – Jessica Keung, University of Waterloo
3.6 Understanding the Impact of Connected and Automated Vehicles for Pedestrians with Visual Impairment - Sina Azizisoldouz, University of Toronto
3.7 Impact of Ontario's 2009 Legislation Banning the Use of Handheld Electronic Devices by Drivers - Madiha Javed on behalf of Patrick Byrne, Ministry of Transportation, Ontario

11:40 a.m. **Session 4 – Fitness to Drive**
Facilitator: Evelyn Vingilis, Western University

4.1 Aging Drivers in Ontario: Challenge meets Opportunity - Brenda Vrkljan, McMaster University
4.2 Driving and Dementia – Assessing Fitness to Drive and Ethical Implications - Erica Weir, Queen's University

12:40 p.m. **Lunch** (Lunch will be provided and is covered by the $35 registration fee)

1:30 p.m. **Session 5: Active Transportation, Public Health, and Road Safety**.
Facilitator: Tom Smahel, Human Factors North

- 5.1 #BuildTheVisionTO - Nancy Smith Lea, TCAT and Keagan Gartz, CycleTO
- 5.2 Pedestrian Crash Causation in Ontario - Sarah Plonka, Ministry of Transportation, Ontario
- 5.3 The Effect of Reducing the Posted Speed Limit to 30 Km/hour on Pedestrian Motor Vehicle Collisions in Toronto, Canada - A Quasi Experimental, Pre-Post Study, Liraz Fridman, Hospital for Sick Children
- 5.4 Parachute: Updates on the National Work with Vision Zero - Valerie Smith, Parachute

2:45 p.m. **Break**

3:00 p.m. **Session 6: Winter Maintenance and Road Safety**
Facilitator: Soroush Salek, CIMA+

- 6.1 Safety of Snowplows at Road-Rail Level Crossings: Summary of the Human Factors Issues involved in the January 2018 London ON Level Crossing Crash - Missy Rudin-Brown, Transportation Safety Board of Canada
- 6.2 Safety Benefit of Employing Alternative Standards for Winter Road Maintenance - Taimur Usman, University of Waterloo

4:00 p.m. **Forum Adjournment**

4:00 p.m. **CARSP Young Professional Committee Networking Event**

5:30 p.m. **CARSP Event Adjournment**

Resources

* Please bring a copy of the agenda to the meeting.

For any communications – Geni Bahar (Coordinator) and Alison Smiley (Administrator)

PRESENTERS' BIOS, PRESENTATION TITLES AND ABSTRACTS (LISTED IN PRESENTATION ORDER)

David Shinar, Professor Emeritus, Ben Gurion University of the Negev, Israel

Title:
Crash Causation, Countermeasures, and Policy Implications

Abstract:
There are interrelationships between crash causes, countermeasures, and policy implications, but they are not necessarily direct and obvious. Part of the problem is the definition of a cause. The seminal 1979 Indiana University "Study of Accident Causes" has cemented some false assumptions that must be overcome to yield an effective crash countermeasures policy. The taxonomy of crash causes and the prevalence of different causes are determined by the investigators, who are biased in different ways. The prevalent notion that approximately 90 percent of the crashes are due to human errors or failures is due to a threshold bias, and the implied notion that 90 percent of the countermeasures should be directed at changing these behaviors is based on an erroneous assumption that the cure must be directly linked to the stated cause. A more balanced approach to the definition of a cause and to the search for crash countermeasures is needed, and the safe system approach appears to be a most promising one.

Bio:
David Shinar is a retired chaired professor from the Department of Industrial Engineering and Management, Ben Gurion University of the Negev, Israel. In over 40 years of research and teaching he has advised 40 M.Sc. students, 11 doctoral students, and 4 post-doctoral fellows (nearly all in the area of road safety and road-user behavior) and published over 100 refereed articles and three books on road safety and user behavior. His latest book is the 2nd edition of Traffic Safety and Human Behavior (Emerald, 2017, 1,249pp). He created and headed the Office of Chief Scientist of Israel's National Road Safety Authority. He has served on the editorial boards of most international journals that focus on road safety and is an honorary member of the U.S. Human Factors and Ergonomics Society. He has served on different U.S. TRB committees, and his research has been sponsored by the U.S. Department of Transportation, Israel Ministry of Transport, the European Union, and private industry.

Tavia Chow, MCIP, RPP, Masters Student, Department of Civil Engineering, Lassonde School of Engineering, York University

Title:

A GIS-based Network Screening Tool for Train Derailments

Abstract

Network screening is an industry-standard process used in engineering to address safety concerns in transportation infrastructure. With a focus on the Canadian railway network, the overall research objective is to address rail safety issues by screening derailment-prone railway segments. The research will result in developing a set of risk estimation models 1) to predict the number of derailments for each segment owned and managed by different track companies across Canada and 2) to identify derailment-prone segments based on the estimated number of derailments using advanced statistical techniques (negative binomial regression) coupled with empirical Bayes method.

The research also proposes the adaptation of network-constrained kernel density estimation in a GIS environment to complement the regression model. The advantage of this approach is that it takes spatial

relationships and neighbouring rail features into account as opposed to treating each rail segment as a standalone entity. Lastly, the statistical approaches that are prevalent in previous studies in North America used system-wide aggregated data. Therefore, a segment-level network screening tool can be viewed as an advanced method that is being adopted in our research.

Bio:

Tavia Chow is a Senior Transportation Planner at Wood PLC with over 8 years of experience in providing traffic engineering and transportation planning services to both public and private clients. She has a wide range of project experience that includes traffic assessments, planning studies, operational performance reviews, safety analyses, GIS analytics and pedestrian flow modeling. As a part-time student, she is currently pursuing a master's degree in the department of Civil Engineering (Transportation) at York University under the supervision of Dr. Peter Park. Her thesis focuses on the development of a network screening tool for train derailments in Canada.

Ahmad Mohammadi, Ph.D. Candidate, Department of Civil Engineering, Lassonde School of Engineering, York University

Title:

A Real-Time Internet-of-Things (Iot) Device to Prevent First Responders' Injuries Involves with Collisions

Abstract:

During the last decade, there have been a significant number of collisions involving first responders (e.g., field police officers). Many researches have investigated in-vehicle collision avoidance systems (e.g., automatic braking systems) designed to protect drivers/passengers and pedestrians in the case of an emergency. However, few studies have investigated a system designed to detect potential threats, such as fast-moving vehicles, and warn first responders when they need to take pro-active evasive actions to avoid collisions.

This study aims to develop a real-time threat detection and warning system using advanced Internet-of Things (IoT) devices (e.g., wearable warning devices). The proposed system has three essential stages: 1) detection and localization; 2) threat assessment; and 3) targeted warning. In the first stage, we use a radar system to detect various parameters such as the speed of an approaching vehicle, the vehicle's distance from the first responder, and the time-to-collision second-by-second. In the second stage, a threat assessment using a fuzzy inference system estimates a threat value second-by-second. In the third stage, a threshold for the threat value is determined in order to decide the appropriate threat level and appropriate type of warning necessary to enable first responders to take pro-active action. This study describes and discusses the entire process and presents outcomes based on a simulated collision scenario.
Note: This study is supported by the Defence Research and Development Canada (DRDC)

Bio:

Ahmad Mohammadi is a Ph.D. student in Civil Engineering, Lassonde School of Engineering, at York University since September 2018. He is working under the supervision of Dr. Peter Park. He obtained his master's degree from Iran University of Science and Technology in 2015. His area of current research involves with transportation safety and intelligent transportation system. He has published 8 papers in international journals and 3 papers in conferences in transportation area.

Barrington C. Hector, Project Manager, Weed Out the Risk, Spring Board Services

Title:

Weed Out the Risk: An Anti-Crash Course for Canadian Youth

Abstract:

WEED OUT THE RISK (WOTR) is an interactive harm reduction program which informs young people of the risks associated with cannabis and driving. The national program, available in both French and English, is endorsed by the Centre for Addiction and Mental Health (CAMH), MADD Canada, the Cannabis Council of Canada, educators, and most importantly, by the nearly 80,000 thousand youth who have participated in the program across Canada. This single classroom session, led by a trained facilitator, engages youth through interactive discussion, games, activities and videos. WOTR challenges youth misconceptions about weed and discusses the real risks of using cannabis and driving or being a passenger in a vehicle with an impaired driver, in a non-judgmental manner. (www.wotr.ca)

Bio:

Barrington C. Hector is Project Manager for Springboard's national Weed Out the Risk program. Prior to this, he served as project manager for Reading, Willing & Able, the Canadian Association of Community Living's inclusive employment initiative, and as program coordinator for Student Links, the provincial association's Ontario-wide youth mentorship initiative. He completed his Bachelor of Social Work at York University and holds a diploma in Community Development from George Brown College, both in Toronto. His commitment to community goes beyond his paid roles – and has seen him involved with various organizations in volunteer capacities including Habitat for Humanity, Volunteer Toronto and the student unions of post-secondary institutes he has attended.

Sheyda Saneinejad, P. Eng., Manager, Vision Zero Projects, Transportation Services, City of Toronto

Title:

Vision Zero 2.0: City of Toronto's Road Safety Plan Update

Abstract:

In July 2016 City Council approved Vision Zero 2.0, City of Toronto's update to the Vision Zero Road Safety Plan. The plan outlines a set of more extensive, more proactive and more targeted initiatives, informed by data and aimed at eliminating serious injury and fatalities on Toronto's roads. This presentation will go over the highlights of the plan, including a speed management strategy, renewed focus on road design improvements, proactively addressing high risk mid-block crossings, proactively addressing turning collisions at signalized intersections, and an education and engagement plan.

Bio:

Sheyda is a professional engineer and has been with Transportation Services at the City of Toronto for over 8 years. Most recently, she led the development of Vision Zero 2.0, City of Toronto's updated road safety plan. Sheyda has been involved in several aspects of planning, designing, operating and monitoring the right of way for vulnerable road users. Some examples include planning, programming and design of several geometric safety modifications, evaluation of Scramble crossing signals, development of the City of Toronto's award-winning road engineering design guidelines and development of the Leading Pedestrian Interval assessment guide. She also has experience working as a Supervisor in traffic operations and teaches at Mohawk College on the topic of Active Transportation. Sheyda has a bachelor's degree in

Civil Engineering and a Master's degree in Transportation Planning and Engineering with experience in both public and private sectors.

Jessica Keung, MASc Student, University of Waterloo | Civil and Environmental Engineering

Title:

Leveraging Traffic Cameras for Road Safety in the City of Toronto: A Look into the Future

Abstract:

The City of Toronto has adopted the Vision Zero road safety philosophy and promised to reduce the number of fatal and serious injury causing collisions to 0 by the year 2021. The City of Toronto's Vision Zero plan is based on four pillars: education, engineering, engagement and data. New technology has emerged that uses computer vision and artificial intelligence to leverage existing traffic cameras. By tapping into existing traffic cameras at intersections, safety can be monitored and tracked through near misses, or surrogate measures of safety. This technique is called conflict analysis and is a proactive approach to road safety when compared to traditional road safety analysis because safety issues can be treated before collisions occur. In collaboration with the City of Toronto and BriskSynergies, researchers at the University of Waterloo have worked towards improving safety in the City of Toronto and this presentation will discuss the state-of-the-art in conflict analysis research with a look ahead to what is to come in this field.

Bio:

Jessica Keung is a MASc student at the University of Waterloo. Her research focuses on road safety using video-based conflict analysis in the City of Toronto.

Sina Azizisoldouz, M.A.Sc. Candidate, Civil and Mineral Engineering, University of Toronto

Title:

Understanding the impact of connected and automated vehicles for pedestrians with visual impairment

Abstract:

This thesis develops a policy-framework that can be used for minimizing communication issues between connected autonomous vehicles (CAVs) and visually impaired pedestrians. The existing literature on CAVs is highly focused on different perspectives of the possible users of these technologies. Since, this research uses a dataset collected through a tailor-made stated adaptation survey among visually impaired pedestrians. The dataset includes the current mobility issues of this community, their perceptions about CAVs, and a wide range of socioeconomic attributes. Some evidence-based recommendations are provided on communication techniques, based on the key findings of a series of structural equation models (SEM) and ordered logit models estimated using the survey data. The results reveal that the low-noise issue of electric engines influences visually impaired pedestrians' safety and security in the contexts of CAVs. It shows that respondents who rely on mobile applications and technology-based devices for navigating purposes tend to trust in CAVs.

Bio:

Sina Azizisoldouz recently defended his MASc thesis under the supervision of Professor Habib at University of Toronto. He received his B.S. in Civil Engineering from Iran. Sina's research is focused on investigating the impacts of connected autonomous vehicles on pedestrians with visual impairment. Different

econometric models were developed to design a policy-framework regarding communication techniques between visually impaired pedestrians and connected autonomous vehicles.

Madiha Javed (on behalf of Patrick A. Byrne), Senior Safety Research Advisor, Ministry of Transportation of Ontario

Title:

Impact of Ontario's 2009 legislation banning the use of handheld electronic devices by drivers

Abstract:

In 2009 Ontario implemented legislation to ban the use of handheld electronic communication devices by drivers. A three-month educational/awareness period, in which police would educate drivers about the ban without issuing charges, was also undertaken before full enforcement began. Since it is difficult to estimate directly the number of collisions caused through distraction resulting from the use of handheld electronic devices, we evaluated the effect of Ontario's handheld ban using interrupted time series analysis of collision-based proxy measures. In this presentation we will discuss methodology along with the results of our qualitative and quantitative analyses of collision-based proxy and other data. The relationship between public awareness and handheld ban effectiveness will also be discussed.

Bio:

Madiha is a Senior Safety Research Advisor at the Ministry of Transportation, where she works on evaluating policies and preparing research for various policy issues to support evidence-based decision making in the government. She holds a master's degree in Public Policy from the University of Waterloo, and an undergraduate degree in Psychology from the University of Toronto.

Brenda Vrkljan, PhD, O.T. Reg. (Ont.) McMaster University

Title:

Aging Drivers in Ontario: Challenge meets Opportunity

Abstract:

Driving is the most common form of transportation in Canada, and has been identified as critical for older adults to maintain their independent lifestyles. However, this age group has one of the highest crash and associated injury and fatality risks, which has been attributed, in part, to their level of functional impairment. Concerns for public safety and efforts to restrict older drivers must be carefully considered given the impact on their health and social participation. This presentation will highlight two main projects focused on older drivers: 1) the CIHR-funded Canadian Driving Research Initiative for Vehicular Safety in the Elderly (Candrive) prospective cohort study of drivers aged 70+ and; 2) The 'Refreshing Older Adult Driving Skills' (RoadSkills); an evidence-based approach aimed at extending the safe driving years of seniors.

Bio:

Brenda Vrkljan is a Professor of Occupational Therapy in the School of Rehabilitation Science at McMaster University. Her expertise lies mainly in the transportation mobility of older people with a particular focus on their behind-the-wheel safety and medical fitness-to-drive. She was the lead investigator of the McMaster site for the Candrive cohort study. Her most recent work has focused on the potential impact

of advanced vehicle technologies on the aging population as well as the design and testing of the 'ROADSkills' program.

Erica Weir MD MSc CCFP (COE) FRCPC, Queen's University

Title:

Driving and dementia – Assessing Fitness to Drive and Ethical Implications

Abstract:

This presentation describes a typical case in elder care when the family raises concerns about a client's safety driving on the basis of suspected impaired cognition. The Canadian Geriatric Society's toolkit for assessing the presenting concern will be applied to illustrate the process. The individual and public health implications of the assessment outcome will be discussed according to the Upshur principles for guiding public health interventions.

Bio:

Erica Weir is an assistant professor in the Departments of Medicine and Public Health Sciences at Queen's University, trained and practicing in Care of the Elderly and Community Medicine.

Nancy Smith Lea, TCAT and Keagan Gartz, CycleTO

Title:

#BuildTheVisionTO

Abstract:

The Centre for Active Transportation (TCAT), in partnership with 8 80 Cities, Cycle Toronto, Friends and Families for Safe Streets, and Walk Toronto, surveyed candidates ahead of the 2018 Toronto municipal election, to gauge their commitment to 15 road safety priorities. These priorities were grouped into the following 7 categories: Moving at Human Speed, Sidewalks for Everyone, Build the Grid, Crossing with Confidence, Complete Streets The Default, Zero Traffic Deaths, and Streets for People. One third of city council candidates and ten mayoral candidates responded to the survey. Their answers were overwhelmingly positive.

Bio:

Nancy Smith Lea is the Director of TCAT. She has decades of project management experience and specialized knowledge in applied research and policy analysis specific to Complete Streets, safe and inclusive streets for walking and cycling. Nancy has published several articles and led numerous research projects aimed at improving understanding and conditions for active transportation. In 2011, Nancy was awarded a Toronto Foundation's Vital People grant for "Putting Active Transportation on the map". In 2016 she was featured in Spacing magazine as a "Safer Streets Crusader" and one of 12 extraordinary women city builders. In 2018 she was the recipient of the Gihon Jordan Scholarship Fund award from the Association of Pedestrian and Bicycle Professionals (APBP) to present at the Walk Bike Places conference in New Orleans. Also In 2018, she was featured in LocalLove.ca as one of eight top women change makers in Toronto working hard to make the city a better place.

Bio:
Keagan Gartz is Cycle Toronto's Interim Executive Director and oversees the organization's advocacy, programs, and operations. Her love of sustainability and governance was nurtured in her time obtaining an Environment & Resource Studies degree from the University of Waterloo. Her interest in transportation planning as a tool to transform cities was sparked as a Program Manager at Smart Commute and as a member of The Centre for Active Transportation steering committee. Keagan rides her bike year-round. She's passionate about reshaping public space as a means of civic engagement and social justice.

Sarah Plonka, MTO

Title:

Pedestrian Crash Causation in Ontario

Abstract

The Road Safety Research Office is currently conducting a pedestrian crash causation study to identify core contributing factors to the observed increase in pedestrian fatalities in Ontario. After decades of decline, Ontario data indicates pedestrian fatalities are trending upward when measured relative to population, as well as a proportion of all fatalities in motor vehicle collisions. This trend is not specific to Ontario, a recent Governors Highway Safety Association report projects that in 2018 pedestrian fatalities were the highest in nearly three decades. The study will model observed and proven indicators of pedestrian crash causation with the goal of pinpointing the contributing factors that may help to explain the increase in Ontario pedestrian fatalities. Our presentation will update the Road Safety Forum on our work to date and provide an opportunity for us to gain insights and useful feedback from gathered experts in road safety. As many jurisdictions are experiencing increases in pedestrian fatalities, our results would be informative to a larger audience.

Bio

Sarah Plonka is a Senior Safety Research Advisor in the Safety, Policy and Education Branch of the Ministry of Transportation (MTO), a graduate of the University of Toronto and a former teacher. Sarah is the winner of the 2017 CARSP Conference Dr. Charles H. Miller Award for best research and evaluation paper for her study on the safety effectiveness of large truck speed limiters. Other contributions to road safety research include: A published systematic review of fitness to drive post stroke; a study on the safety effectiveness of entry-level commercial driver training; key contributor to MTO's Ontario Road Safety Annual Report. Sarah is currently bringing her research expertise to the issue of pedestrian safety in conducting a Pedestrian Crash Causation Study.

Liraz Fridman, Hospital for Sick Children

Title:

Effect of Reducing the Posted Speed Limit to 30 Km per Hour on Pedestrian Motor Vehicle Collisions in Toronto, Canada

Abstract:

Lower speed roads are correlated with less pedestrian injury severity. Pedestrians are 8 times more likely to die after being struck by a motor vehicle going 50 km/h compared with 30 km/h. Few studies have used quasi-experimental study designs to examine the effect of speed limit reductions on vulnerable road users. Given the recent increase in the number of pedestrian motor vehicle collisions (PMVC) in Toronto, it is important to describe the effectiveness of interventions such as speed limit reductions. The objective of this study was to examine the effect of lowering local road speed limits to 30 km/h on police reported PMVCs in Toronto, Canada between 2013 and 2018. Results found a statistically significant 28% decrease in the PMVC rate following speed limit reductions after adjusting for season (IRR post-versus pre: 0.72, 95% CI: 0.58 – 0.89). There was also a significant 67% decline in major and fatal injury frequency post versus pre implementation (IRR: 0.33, 95% CI: 0.13 – 0.85). Conversely, there was a 7% decrease on control streets that remained at 40 km/h (IRR: 0.93, 95% CI: 0.79. – 1.21); however, this was not statistically significant. Therefore, posted speed limit reductions from 40 km/h to 30 km/h were associated with a significant decrease in PMVC in the City of Toronto on local roads 2 years post intervention. Longer term outcomes of posted speed limit reductions need to be further evaluated.

Bio:

Dr. Liraz Fridman is a former postdoctoral fellow at the Hospital for Sick Children. She completed her PhD at York University in 2017 with a focus on evidence-based injury prevention policies across provinces. Her research interests include road traffic related injury prevention with a focus on municipal policy differences in Canada and pedestrian motor vehicle collision prevention in children and youth.

Valerie Smith, Parachute

Title:

Parachute: Updates on the National Work with Vision Zero

Abstract:

Valerie Smith will present on Vision Zero in Canada. She will share Parachute's recent research on the Canadian landscape and how Vision Zero is rolling out in various jurisdictions-rural and urban. This will include patterns, trends, and interviews with key informants from various cities implementing Vision Zero. She will also share recent work from Parachute on the white paper which documents in various visuals Vision Zero in Canada.

Bio:

Valerie Smith is the Director of Solutions at Parachute. She oversees all of Parachute's campaigns and programs and helps to support our extensive network of community partners across Canada. She has a strong community engagement background and provides solid leadership to our network partners, especially in the areas of road safety and sports/recreation injuries. Valerie has presented at a number of events and conferences around the world on injury prevention issues. Prior to working with Parachute

Valerie was a senior program manager at a number of charities including Smartrisk, Katimavik and Youth Challenge International. She spent a substantial part of her career working on HIV/AIDS programs in South America and East Africa. She holds a MA in international and comparative education.

Missy Rudin-Brown, Ph.D., CCPE, Manager: Human Factors and Macro Analysis Division, Transportation Safety Board of Canada

Title:

Safety of snowplows at road-rail level crossings: Summary of the human factors issues involved in the January 2018 London, Ontario level crossing crash

Abstract:

On the morning of 9 January 2018, a freight train proceeding eastward struck a snowplow on the sidewalk at a public level crossing in London, Ontario. The lone occupant of the snowplow was fatally injured. Although the warning devices—which included flashing lights, a bell, and gates—activated while the plow was in the crossing, the combination of the plow's position, the restricted visibility inside the cab, and the background noise of the plow itself made it difficult to detect these warnings, or to hear the train's horn. A lack of experience with railway crossings, a lack of training on safe working practices when clearing snow at railway crossings, and tunnel vision exacerbated by fatigue inhibited the effectiveness of the snowplow operator's visual scanning. As such, the operator did not detect the oncoming train.

Bio:

Dr. Christina (Missy) Rudin-Brown has been a Senior Human Factors Investigator since joining the TSB in 2012, and is currently Manager of the TSB's Human Factors and Macro Analysis Division. She has over 20 years' experience in transportation safety and human factors, a Ph.D. and M.A. in Experimental Psychology from the University of Toronto, and a B.A. (Hons.) in Psychology from the University of Ottawa. A past board member of the Canadian College for Certified Professional Ergonomists (CCCPE), she is also an expert member of the U.S. Transportation Research Board (TRB)'s standing committees on highway/rail grade crossings (AHB60) and vehicle users' characteristics (AND10). Previous to the TSB, Dr. Rudin-Brown was a Senior Researcher with the Human Factors team at the Monash University Accident Research Centre (MUARC) in Melbourne (Australia) and spent over 10 years as a Human Factors Specialist in Transport Canada's Road Safety Directorate. She has published over 100 peer-reviewed papers across a number of transportation safety areas, including operator behaviour, distraction, in-vehicle automation, and adaptation. She is co-editor with UK colleague, Dr. Samantha Jimson, of the book "Road Safety and Behavioural Adaptation: Theory, Evidence, and Action", published in 2013 by Taylor & Francis (CRC Press).

Taimur Usman Ph.D., Post-Doctoral Fellow, University of Waterloo

Title:

Safety benefit of employing alternative standards for winter road maintenance

Abstract:

Recently MTO launched a pilot project by introducing a new class of highway on some of the road sections (previously Class 1) carrying more than 100,000 WADT. This new "urban freeway Class" has high level of service requirements and is expected to result in more benefits compared to road sections being maintained as per the standards of the previous Class 1. The objective of our research was to evaluate the relative performance of the two alternative classes and determine quantitatively the amount of benefits

that can be obtained (such as improved road safety) by maintaining a particular road section as per the new classBio.

Bio:

Dr. Usman is a post doc fellow at the department of civil engineering, University of Waterloo. He has conducted research on winter traffic, road safety and road maintenance for many years and worked on a number of projects related to winter road maintenance including GIS based dashboard management system for salt usage (MTO), Sustainable winter sanding (MTO), safety and mobility benefits of winter road maintenance (MTO/AURORA) , developing and using road safety models for evaluating policy variables (MTO) and the CRD project Snow and Ice Control for Parking lots and Sidewalks (SICOPS).