2023 Winter & Spring Newsletter

PC: University of Alberta

Latest Research

Do Incentives Make a Difference? Understanding smart charging program adoption for electric vehicles

"In this paper, we investigated the willingness of EV owners/lessees, EV interested buyers/lessees, and a general population to participate in a smart charging program. These programs can help shift demand from EVs to off-peak hours, improve the matching of supply and demand, reduce future grid costs, and enable more renewable energy usage."

Authors: Stephen D. Wong, Susan A. Shaheen, Elliot Martin, & Robert Uyeki
Published Paper (Published Version) | **Published Paper (Open Access Version)**

PC: John Cameron / Unsplash

Review of Research on Human Behavior in Large Outdoor Fires

"This paper provides a broad review of existing empirical research and modeling efforts on human behavior in large outdoor fires to provide researchers and practitioners with reference material."

Authors: Negar Elhami-Khorasani, Max Kinateder, Vincent Lemiale, Samuel L. Manzello, Ido Marom, Leorey Marquez, Sayaka Suzuki, Maria Theodori, Yu Wang, & Stephen D. Wong
Published Paper (Open Access Version)

Strengthening Public Transit Equity in Evacuation Planning through a Community-Centered Approach

"Understanding underserved populations' transportation needs and challenges is a step forward in creating equitable evacuation plans and increasing resilience during disasters. To achieve this objective, this paper used Edmonton, Alberta as a case study and conducted a series of focus groups based on specific vulnerabilities."

Authors: Veronica Wambura & Stephen D. Wong
Working Paper (Open Access Version)

PC: Valentyn Chernetskyi / Unsplash

Travel Behavior and Community Needs for Resilience Hubs

"This paper conducted an empirical study leveraging statistical tools and models using data from a survey of Edmonton, Canada residents (n=950), conducted between November 2022 and February 2023. Through descriptive statistics and discrete choice models, we uncover important results related to resilience hub usage, transportation design, and mode choice in both normal and disaster conditions."

Authors: Thayanne G.M. Ciriaco & Stephen D. Wong
Working Paper (Open Access Version)

Equitable Transportation and Resilience Hubs: Analysis of Underserved Population Needs, Usage, and Travel

"This study contributes to the understanding of resilience hubs and their role in promoting community resilience during emergency situations and normal conditions. By investigating the needs and behavior of underserved groups, including low-income households, older adults, households with children, visible minorities, people with disabilities, and carless individuals, we identified key characteristics that these groups seek in a resilience hub."

Authors: Thayanne G.M. Ciriaco, Syeda Narmeen Zehra, Veronica Wambura, & Stephen D. Wong
Working Paper (Open Access Version)

Recent Additions

The RESUME Group is excited to welcome Mohammad Babaei and Hector Calvo to the team!

Mohammad Hossein Babaei is an M.Sc. student studying Transportation Engineering at the University of Alberta. Mohammad Hossein graduated with a B.S. in Civil Engineering from the University of Tehran. During his undergraduate, he conducted internships in the areas of on-site construction safety management and supervision of construction procedures. His undergraduate research focused on urban air mobility (UAM) and the challenges of its implementation in urban areas. At the UofA, Mohammad Hossein will be focusing on future transportation energy systems and their resilience during disasters.

Hector Manuel Calvo Guevara is an M.Sc. student in Civil and Environmental Engineering (Transportation Engineering) at the University of Alberta. He received his B.S. in Infrastructure Engineering from The University of Panama. Graduating in the first position in the rankings of the Faculty of Engineering, Hector was awarded a full government scholarship from Panama's National Secretary of Science, Technology, and Innovation (SENACYT) to study in Canada. His undergraduate studies included an internship in a forest reserve designing and constructing a road with eco-friendly permeable pavement, where he developed an interest in innovating technologies that help connect disadvantaged communities. With the RESUME group, Hector will be researching the intersection of resilient infrastructure improvement, human behaviour, and disaster equity.

For more information about the RESUME Group, please access the RESUME Group website.

Grant Funding Updates

NSERC Discovery Grant: Dr. Wong received his NSERC Discovery Grant and will be focusing on resilient transportation and infrastructure using advanced analytics and big data. This project will be paired with ongoing behavioural analysis before, during, and after Canadian disasters.

2023 Alberta Wildfires Project: Dr. Wong was granted funding from the University of Alberta to pursue a project with Dr. Tara McGee on travel behaviour and host community actions for the May 2023 Alberta Wildfires.

Behaviour in Future Disasters: Dr. Wong was granted additional funds from the University of Alberta to research how different decision rules affect behaviour in disasters, in particular why people might share their resources.

Conference and Travel Updates

Transportation Research Board (January 2023): Dr. Wong and Thayanne Ciriaco wrapped up an exciting week at the 102nd Annual Meeting of the Transportation Research Board (TRB) in Washington, D.C. Dr. Wong presented at three different sessions on the topics of wildfire evacuations, rural evacuations, and young member perspectives for transportation organizations. He also moderated two sessions, including a unique panel on the differences among sustainability, resilience, and society. Thayanne shared her poster on resilience hubs and participated in multiple workshops and committee meetings.

PC: Stephen Wong

PC: Stephen Wong

8th International Wildland Fire Conference (IWFC) (May 2023): Dr. Wong participated in the 8th IWFC in Porto, Portugal, presenting his work on traffic strategies in wildfire evacuations and the use of shared mobility in disasters to a diverse group of academics and practitioners. The conference was a great opportunity to learn directly from fire scientists, firefighters, and emergency professionals.

For more information about the RESUME Group, please access the RESUME Group website.

British Columbia and Alberta Community Field Visits: As part of a project with Infrastructure Canada, members of the RESUME Group and colleagues from the University of British Columbia and the University of Alberta traveled to five communities for partner visits: Quesnel, Salmon Arm, Nelson, Canmore, and Whitecourt. It was a beautiful way to see Canada, but also a reminder of the immense wildfire risks that are present across many communities.

PC: Stephen Wong

In the News

[Alberta Primetime:](#) CTV News Edmonton, July 2023

[The Challenge: Building transportation resilience following natural disasters across Canada:](#) TELUS's Data for Good Program, June 2023

[U of A researcher studying how cities can be better prepared for natural disasters:](#) CBC Radio, Edmonton AM, May 2023

[What to expect in the days ahead with Alberta wildfires](#): The Globe and Mail, May 2023

For more information about the RESUME Group, please access the [RESUME Group website](#).