

2022 Fall Newsletter

Source: University of Alberta

Latest Research

Review of Resilience Hubs and Associated Transportation Needs

Recently, the nascent concept of “resilience hubs” has emerged to help communities overcome climate challenges and improve well-being during disasters and everyday conditions. This published paper provides an early conceptual understanding of resilience hubs, in particular their associated transportation needs, through a comprehensive literature review.

Authors: Thayanne G. M. Ciriaco & Dr. Stephen D. Wong

[Published Paper \(Open Access Version\)](#)

Recent Award

Eric Pas Dissertation Award: Dr. Wong accepted the 2020 Eric Pas Dissertation Award at the International Association for Travel Behaviour Research (IATBR) 16th Conference in Santiago, Chile. Following the award, he presented his dissertation work and the future of resilient transportation in a plenary session. Dr. Wong also presented research on regret minimization and attributes of wildfire evacuation choices. [Published Article](#) [Open Access](#)



Source: Stephen Wong

Featured Research

Behavioural Analysis for Hurricane Irma

In 2020, Dr. Wong along with Dr. Susan Shaheen (UC Berkeley), Caspar Chorus (TU Delft), and Adam Pel (TU Delft) collected and analyzed behavioural data from people impacted by Hurricane Irma. The paper employed a latent class choice model for evacuation decision-making and a portfolio choice model for the remaining transportation decisions. Two key results were that: 1) different classes of people react differently to evacuation orders; and 2) a number of evacuation choices are jointly preferred or disliked.

[Published Paper](#) [Open Access Version](#)

Conference Presentations

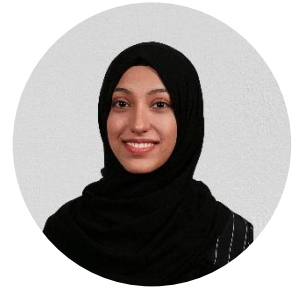
Transportation Association of Canada (TAC) Conference: Thayanne Ciriaco presented her [thesis work on resilience hubs](#) at the TAC Conference in Edmonton. Dr. Wong presented two unique presentations on traffic strategies for wildfire evacuations and ethical data collection following disasters.

Wildland Fire Canada Conference: Dr. Wong presented on “Lessons Learned from Recent Wildfire Evacuations in California” to fire scientists and forestry experts at the 2022 Wildland Fire Canada Conference. This unique opportunity shows the importance of working across related fields to enhance knowledge exchange. Much of the presentation was based on a [report on California evacuations](#) and a [paper on decision-making in wildfire evacuations](#).

Recent Additions

The RESUME Group is excited to welcome Syeda Narmeen Zehra and Veronica Wambura to the team!

Syeda Narmeen Zehra earned her B.E. in Civil Engineering from NED University of Engineering and Technology - NEDUET, in Pakistan. As a researcher with the RESUME group, Narmeen will explore the critical issues of evacuations, human behavior during wildfires, and infrastructure resilience. In addition to her academic and research pursuits, Narmeen is dedicated to promoting STEM education, especially among young women. She regularly volunteers for STEM outreach programs and aspires to be an engineer who makes a positive difference in the world. When not working, she can be found walking around the city and exploring new places.



Veronica Wambura is an MSc student in Civil and Environmental Engineering (specializing in Transportation Engineering) at the University of Alberta. She received her BSc in Civil Engineering from New York University Abu Dhabi, and her interests lie in furthering transportation sustainability and ensuring transportation accessibility for vulnerable populations. As part of the RESUME Group, Veronica will be focusing on equity and decision-making during evacuations.



Grant Funding Updates

Resilience Hubs: Dr. Wong and Dr. Karim El-Basyouny secured additional funding from Mitacs to expand the current work on resilience hubs for disaster and everyday conditions. A large survey has been distributed to Edmonton, Canada residents to analyze the potential of these hubs.



Electric Vehicles in Disasters: Dr. Wong was granted funding from Future Energy Systems to explore the topic of the resilience of electric vehicles in disasters and emergencies. The research is expected to look at the benefits/limitations of EVs and talk to people in high-risk areas about their intended use of EVs.