



**TAL RESEARCH DAY**  
**Wednesday July 6<sup>th</sup>, 2022**

**Sponsored by the**  
**Transit Analytics Lab**  
**University of Toronto Mobility Network**

Draft Program

- 09:00 **Introduction to the Transit Analytics Lab (TAL)**  
Words of Welcome and Update on TAL Activities (Amer Shalaby)
- 09:20 **Transit Analytics Related to Planning and Scheduling**  
**(Moderator: Brendon Hemily)**
- Planning Integrated On-Demand and Scheduled Bus Transit Services: Guiding Principles (Alaa Itani)
  - Incorporating Service Reliability in Multi-Depot Vehicle Scheduling: Stochastic Optimization Approach (Margarita Castro)
  - Transfer Synchronization in Transit Networks: Stochastic Programming Approach (Zahra Ansarilari)
  - Advanced Real-Time Transit Management Strategies in Mixed-Traffic Arterials (Kareem Othman)
  - Coordinated and Bi-Objective Transit Signal Priority (TSP): Optimization Using a Deep Reinforcement Learning Approach (Wenxun Hu)
- 10:30 Break
- 10:50 **Operations Analytics to Improve Rail Performance**  
**(Moderator: Amer Shalaby)**
- Using Customer Facing WiFi Data for the Analysis of Subway Service Performance and User Experience (Aidan Grenville and Willem Klumpenhower)
  - Modelling Origin-Destination Demand in Toronto's Subway Network using Wi-Fi and AFC Data (Diego Da Silva and Feras Elsaid)
  - Disruption Delays in Nanjing Urban Rail Transit Network: Analysis of Disruption Duration and Frequency (Jinyi Chen)

- Analyzing Stochastic Railway Networks Using Event-Based Mesoscopic Simulation (Willem Klumpenhouwer)
- 12:00 Lunch Break
- 12:45 Keynote Presentation  
**TransLink Tomorrow; Promoting Innovation in Transit through Collaboration on Research**  
 Graham Cavanagh, Senior Planner - New Mobility, Strategic Planning & Policy
- 1:30 **Transit Analytics Applications from the Field**  
 (Moderator: Brendon Hemily)  
 Presentations highlighting applications or initiatives involving advanced analytics at transit systems.
- **Using Data and Analytics at Metro Transit** (Eric Lind, Manager, Research & Analytics)
  - **Applied Planning Intelligence at WMATA** (Catherine Vanderwaart, Strategic Planning Advisor, Office of Planning)
- 2:30 Break
- 2:45 **Transit Analytics to Support Policy and Equity (Moderator: Amer Shalaby)**
- Potential Policy Analyses Using the Equity Dashboard Platform (Willem Klumpenhouwer and Diego Da Silva)
  - An Equity Evaluation of Bus Prioritization Measures within the Toronto Transit Commission's 5-year Service Plan & 10-year Outlook (Alex Tabascio)
  - Assessment of Toronto Transit Network Resilience and Effects on Social Equity (Rick Liu)
  - Investigating the Impact of COVID-19 on Post-Pandemic Transit Demand (Sk. Md. Mashrur)
- 3:55 Wrap-Up
- 4:00 End of Research Day