

iCity-ORF: Urban Informatics for Sustainable Metropolitan Growth

4th Annual Research Day, May 31, 2019, University of Toronto

A.M.: GB202, Galbraith Building, 35 St. George Street, 2nd floor
P.M.: MY315 Design Studio, Myhal Centre, 55 St. George Street, 3rd floor

10:00	Welcome	Eric Miller, iCity-ORF Principal Investigator
10:15	Layering ontologies, taxonomies, platforms and visualization 4×20 min	<ul style="list-style-type: none">• A linked data repository for transportation data, Megan Katsumi• iCity - ITSoS integrative platform, Hasan Bayanouni• Using <i>R</i> to explore data wrangling protocols in mapping applications, Greice Mariano• Animating TTS data using Kepler GL, Orlando Bascunan
11:45	Measuring, modeling and managing	<ul style="list-style-type: none">• KidScore: Child-friendly cities and place-based well-being, Susie Saliola and Josh Fullan• Development of a functional ArcGIS Pro add-in for customizable OD Matrix output visualizations, Hossein Hosseini, Michael Luubert, Brent Hall and Jon Salter
<hr/>		
12:30	Lunch	
<hr/>		
1:30	Research Café Choose 3 from among the 9 presentations 3×25 min	<p><i>Location:</i> MY315, Myhal Centre, 55 St. George Street, 3rd floor</p> <ul style="list-style-type: none">• KidScore: Child-friendly cities and place-based well-being in ArcGIS Online and Survey 123• Complete street 3D scenario visualizations and supporting dashboard• Visualizing TASHA OD Matrix patterns with ArcGIS Pro• Visualizing qualitative analytics into transportation planning and placemaking• iCity-ITSoS: How to integrate applications and data• How do pedestrians perceive walkable streets? Results of a 3D stated preference survey• Representing pedestrian tours in contemporary travel forecasting models• Long-term travel demand and land value developments in the GTHA• Improved transit route operations through signal priority and bus bridging decision support
3:00	Kickstart ideas for iCity 2.0	<ul style="list-style-type: none">• Brainstorming roundtables on iCity 2.0 next steps• Presentations back
4:00	Closing comments	Judy Farvolden, iCity-ORF Project Manager

This research is supported by the Ontario Ministry of Research, Innovation and Science through the Ontario Research Fund-Research Excellence Program, ORF-RE.

<p>1) KidScore: Child-friendly cities and place-based well-being in ArcGIS Online and Survey 123 with Susie Saliola and Josh Fullan</p> <p>YouthScore and KidScore are engagement tools and metrics for evaluating streets, places and neighbourhoods based on their youth friendliness. The scores were developed for youth, by youth, based on principles of youth participation and co-creation of solutions for better urban planning and child well-being outcomes for happier, healthier cities.</p>	<p>2) Complete street 3D scenario visualizations and supporting dashboard with David Kossowsky, Michael Luubert, Brent Hall and Jon Salter</p> <p>This custom web-based survey and 3D visualizations gather data on complete street preferences on selected street segments in and around downtown Toronto. A web-based dashboard with a real-time data feed provides insight and updates on trends, preference frequency and demographics.</p>	<p>3) Visualizing TASHA OD matrix patterns with ArcGIS Pro with Hossein Hosseini, Michael Luubert, Brent Hall and Jon Salter</p> <p>People choose the mode by which they travel between zones in the GTHA on their assessment of the "costs" of different travel modes. Visualizing the difference in costs between different modes offers insight into the causes of our region's chronic traffic congestion.</p>
<p>4) Visualizing qualitative analytics into transportation planning and placemaking with Jeremy Bowes</p> <p>Utilizing the iCity King Street Pilot survey work, and others as case studies, this talk explores some of the tools that can be integrated to provide a more comprehensive visualizations of the qualitative and quantitative placemaking characteristics of particular community streets and neighbourhoods. The intention is that these tools provide assistance in urban design and planning decision support.</p>	<p>5) iCity-ITSoS: How to integrate applications and data with Hasan Bayanouni</p> <p>Description</p> <ol style="list-style-type: none"> Integrating and Linking ITS data Using Semantics to enable ATIS iCity-ITSoS SDK Highway Traffic Estimation 	<p>6) How do pedestrians perceive walkable streets? Results of a 3D stated preference survey with Dena Kasraian</p> <p>How do pedestrians rate different street designs? Would they opt for on-street dining at the cost of narrower side walks? What do they think of transit-only streets? Do they prefer cyclists or parked cars on the curb lane? We share the results of a 3D stated preference survey on walkable streets carried out on a representative sample of 600 Torontonians.</p>
<p>7) Representing pedestrian tours in contemporary travel forecasting models with Jeff Casello and Ming Xu</p> <p>Current travel forecasting models ignore pedestrian trips and fail to consider how pedestrian activities fulfil household activity lists. Pedestrian tours both link pedestrian activities and related trips and reflect the sequence, frequency, and duration of scheduled pedestrian activities. Understanding the propensity to make pedestrian tours enables us to better represent pedestrian travel behavior.</p>	<p>8) Long-term travel demand and land value developments in the GTHA with Dena Kasraian</p> <p>Are GTHA inhabitants travelling longer distances? What are the drivers of kilometres travelled by vehicles and by transit? Which areas produce the highest kilometres travelled? Does access to jobs by transit play a significant role in GTHA land values? This research discusses the dynamics of travel demand and land values over the past decades across the GTHA.</p>	<p>9) Improved transit route operations through signal priority and bus bridging decision support with Siva Srikukenthiran, Wenxun Hu and Alaa Itani</p> <p>In this presentation, we will show how to improve simultaneously speed and reliability of surface transit routes using signal-priority control based on deep learning and microsimulation methods. We will also present a practical tool to help transit agencies decide on shuttle bus strategies in response to subway disruption.</p>