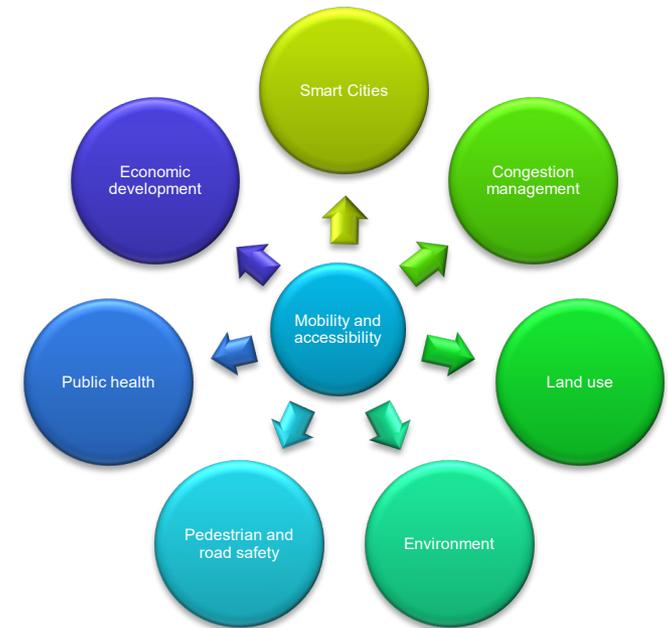


# Urban Informatics

iCity-ORF

May 31, 2019



# iCity, iCity-ORF, iCity-CATTS...

- iCity: UTTRI collaborative research
  - *Applying advanced data, analysis and visualization capabilities to improve urban transportation system performance and design efficient sustainable cities for the well-being of individuals and society.*
- iCity-ORF aka iCity-Urban Informatics
- iCity-CATTS aka iCity-Transformative Transportation Systems
- iCity-South: Urban informatics applications in Latin America
- iCity-SMART Mobility (Spatial Modelling Analytics and Real-time Tracking)
- *iCity-Next Big Idea Here*

# UTTRI affiliated research groups



# University/Industry/Government Collaboration

## University of Toronto

Eric Miller, Baher Abdulhai,  
Steve Easterbrook, Mark Fox,  
Paul Hess, Matt Roorda, Amer  
Shalaby, Matti Siemiatycki,  
Enid Slack

University of Waterloo Jeff Casello

OCAD-U Sara Diamond, Jeremy Bowes



## Industry Partners

Esri Canada  
IBM Canada  
Cellint

## Public Partners

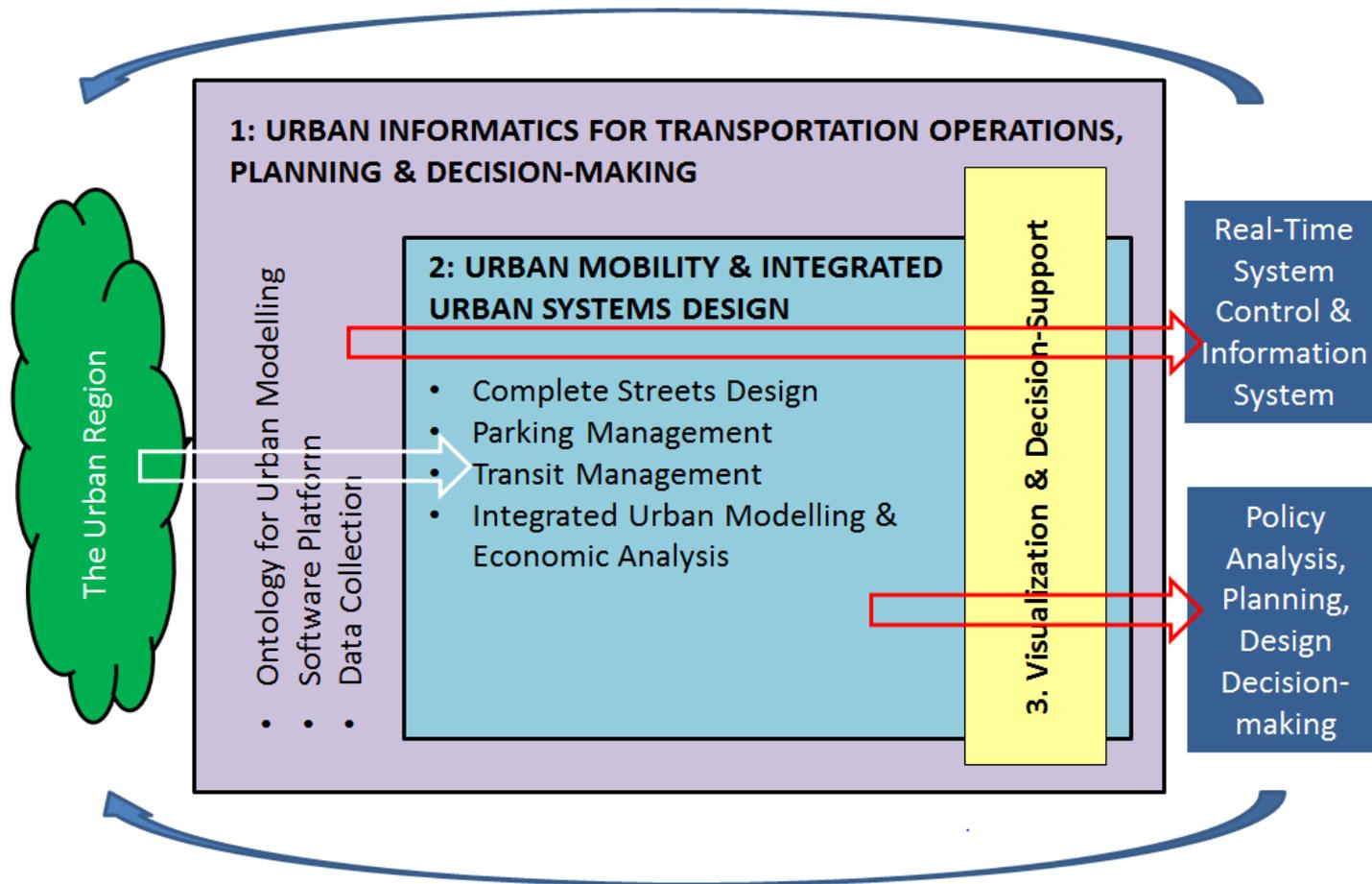
City of Toronto  
Waterfront Toronto  
Region of Waterloo

Youth Outreach  
Maximum City

Supported by a host of **post-doctoral fellows** and **graduate students**

Funded by the **Ontario Research Fund ORF-RE07** in 2015 for 2015-2020

# iCity-Urban Informatics



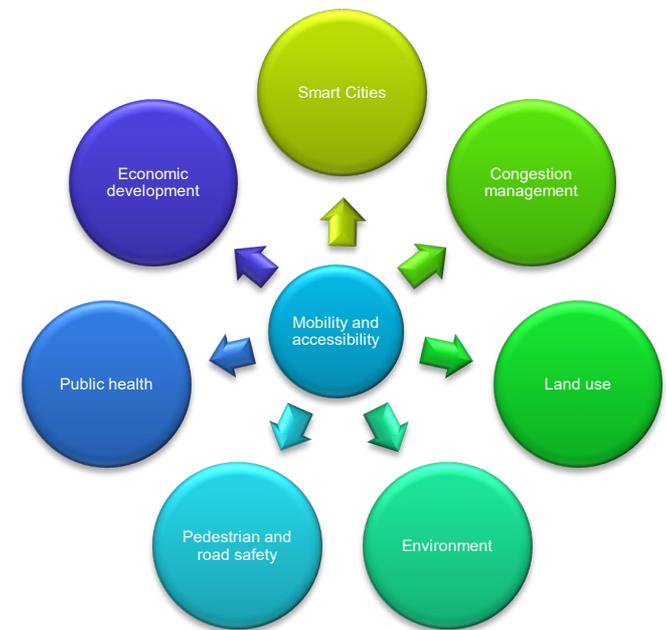
# Agenda for today

- Morning plenary
  - Layering ontologies, taxonomies, platforms and visualization 4x(20+5 minutes)
  - Measuring, modeling and managing 2x(20+5 minutes)
- Lunch and move to Myhal 315
- Research Café 3x(25+5 minutes)
- Brainstorming: “iCity-Next Big Idea Here”
- Sharing roadmaps and visions
- Thank you

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# Research Café, 9 topics, 3 sessions

<p><b>1) KidScore: Child-friendly cities and place-based well-being in ArcGIS Online and Survey 123</b> <i>with Susie Saliola and Josh Fullan</i></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><b>2) Complete street 3D scenario visualizations and supporting dashboard</b> <i>with David Kossowsky, Michael Luubert, Brent Hall and Jon Salter</i></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><b>3) Visualizing TASHA OD matrix patterns with ArcGIS Pro</b> <i>with Hossein Hosseini, Michael Luubert, Brent Hall and Jon Salter</i></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><b>4) Visualizing qualitative analytics into transportation planning and placemaking</b> <i>with Jeremy Bowes</i></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><b>5) iCity-ITSoS: How to integrate applications and data</b> <i>with Hasan Bayanouni</i></p> <p>Description</p> <ol style="list-style-type: none"> <li>Integrating and Linking ITS data</li> <li>Using Semantics to enable ATIS</li> <li>iCity-ITSoS SDK</li> <li>Highway Traffic Estimation</li> </ol>	<p><b>6) How do pedestrians perceive walkable streets? Results of a 3D stated preference survey</b> <i>with Dena Kasraian</i></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><b>7) Pedestrian tours in an evolving transit-oriented development</b> <i>with Jeff Casello and Ming Xu</i></p> <p>The introduction of ION, Waterloo Region's new LRT, increased density and changed land use along the corridor. We present observations and modelling constructs on the evolving nature and purpose of pedestrian tours, based on data collected over the course of the LRT construction period.</p>	<p><b>8) Long-term travel demand and land value developments in the GTHA</b> <i>with Dena Kasraian</i></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><b>9) Improved transit route operations through signal priority and bus bridging decision support</b> <i>with Siva Srikukenthiran, Wenxun Hu and Alaa Itani</i></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>

# Research Café

Sessions  
are

**Session 1**

numbered  
1-9

**Session 2**

Take one of  
each colour

**Session 3**



# Lunch

Meet in Myhal Centre MY 315 for Research Café at 1:30pm

