ICT4S - SMART CITIES REQUIRE A DESIGN TOOL KIT
OCAD University Vision

OCAD University’s Strategic, Academic and Research plans underscore the importance of interdisciplinary knowledge - interchange between art, design, and the STEM disciplines. We are committed to Indigenous knowledge and culture and to diverse ways of thinking and making. Human and environmentally-centered research methods and design thinking are combined with the strengths of studio learning, invention, experimentation, and interpretive qualities of art-making practices.
Design Thinking

Design thinking emerged from IDEO in the 1990s, predicated on participatory design and embracing, Systems thinking, addressing “wicked problems” (Horst Rittel) through creative brainstorming, problem solving and real world solutions.

Solutions focused from the most diverse range of perspectives. Generate multiplicity based on wide scan of possibilities and then converges towards a solution + design = implementation.
Design Jam
A Collective Discussion for Northern Ontario

How might we re-energize our economy through social entrepreneurship & innovation?
Register [http://northjam.eventbrite.ca](http://northjam.eventbrite.ca)

Thursday August 25, 2016 9 am – 4:30 pm
OCAD University 230 Richmond St West, third floor room 322
Algoma University 1520 Queen St East, Sault Ste. Marie, ON, room EW205

How might we
Diversify the economy of Northern Ontario cities
Advance diversity & support youth in transition
Revitalize downtown areas of the North?

[Logos and sponsors]
Types of Futures

Possible

Plausible

Probable

Preferable

Scenario

"Wildcard"

Today

Time
**Horizon Scanning**

- **Signals & Trends**: tangible specific evidence of change
- **Drivers & Uncertainties**: patterns in signals and the structure behind the trends
- **Scenarios**: unpredictable direction or effect of drivers
- **Implications**: imagined futures driven by key uncertainties and how to think about the scenarios
Redefining Public Art in Toronto

A collaborative project by researchers from OCAD University and the University of Toronto
Key Points

- Public art beyond the core
- Seize existing opportunities
- Revise policy to reflect contemporary practice
- Move beyond the dichotomy of infrastructure and art
- Think beyond individual sites
- Encourage collaboration among design professionals
- The importance of site
- Public art and city building
- Diversifying the field
- Responding to diverse publics
- Diversifying the work
Redefining Public Art in Toronto provides a blueprint for the future of public art in Toronto. It makes a number of recommendations:

1. A renewed vision for public art in Toronto
2. Redefine public art
3. Public art everywhere
4. Simplify process
5. Robust funding for public art
6. Build new collaborations
7. Integrate public art into all future planning
8. Promote public art
At iCity we develop decision support tools combining social media and mobile data with GIS, demographic, socio-economic and transit data.

Image: iCity Visualization; ESRI cityengine, Betaville, Marcus Gordon, Carnevalle, Manpreet Juneja
Overview of Comparative Tools & Visualization Types

Intro to comparative mindmap that display visual functionality, and screen capture of what software is pertinent to each cluster.
Comparative Toolsets
Comparative Methodology: A survey of landscape to understand the types of software that exist and the functions already being served.
Taxonomy Sketch showing essentials aspects of visualizations
User centered Taxonomy for Urban Transportation Applications

Image: Based on Pike (2009), Mahyar (2015) and Sorger (2015); iCity process phases, Taxonomy, iCity Team
Design Charrette

15 min., 1:00-1:15 pm)

Overview of program of activities and workshop process, principles

Initial group allocation, mixed group approach

Explain Activity 1/2/3 sequence:

Activity 1: verify requirements and prioritize use cases
Activity 2: sketch/wireframe tools in the context of use cases
Activity 3: preliminary technology identification and roadmapping, including timeline
Design Charrette

Test Taxonomy Sketch
Establish priorities to build interface prototypes
Traffic & Transit - Comparative Toolsets

*based on using the visualization landscape concept map

Visualization Response

Traffic Management

Design Charrette

Pattern / Spatial

Connection Map
great for showing connections and relationships geographically
mapping routes through a single chain of links
reveals spatial patterns through connection distributions/concentrations

Dot Map
detecting spatial patterns
distribution of data over geographical regions
reveals patterns when points cluster on a map

Pattern / Flow

Sankey Diagram
display flows and their qualities in proportion to one another
width of arrows and lines show magnitude including flow magnitude
colour can be used for categories/states

Parallel Sets
shows flow and proportions (like Sankey)
each time-set corresponds to a dimension/date
width and flow path data of a line is a proportional fraction of a category total

Stream Graph
a variation of a stacked area graph
values displayed against a varying central baseline
changes by varying organic shapes resembling river streams

Theme 3 Research Assistant: Marcus Gordon.
Use Case Mapping
Selected Integrated Use Domain Example
iTSoS
Traffic & Transit Dashboard
Ian Clarke, *Greenhaus Project*, 2015 - Present
This research project will design passive solar greenhouses to reduce the carbon footprint and create opportunities for winter urban agriculture in Toronto and other northern cities. We will optimize passive solar designs for the Toronto climate and produce prototypes to collect data and evaluate their performance in the urban setting.

We aim to produce low cost, open-source, distributed, standardized designs for individual or community food security. One design is a small scale, apartment balcony sized, passive solar greenhouse. The other is larger, approximately 3.7m x 2.5m scalable unit, that could be built on existing rooftops, parking pads or alley garage spaces.


Dr. Ian D-Clarke
Project Lead

In Partnership with:
Metcalf Foundation
FoodShare Toronto