



Anne Dodge

Mansueto Institute for
Urban Innovation

University of Chicago

Building Smart Cities with Citizens and
for the Public Good: A Symposium at
the Heseltine Institute

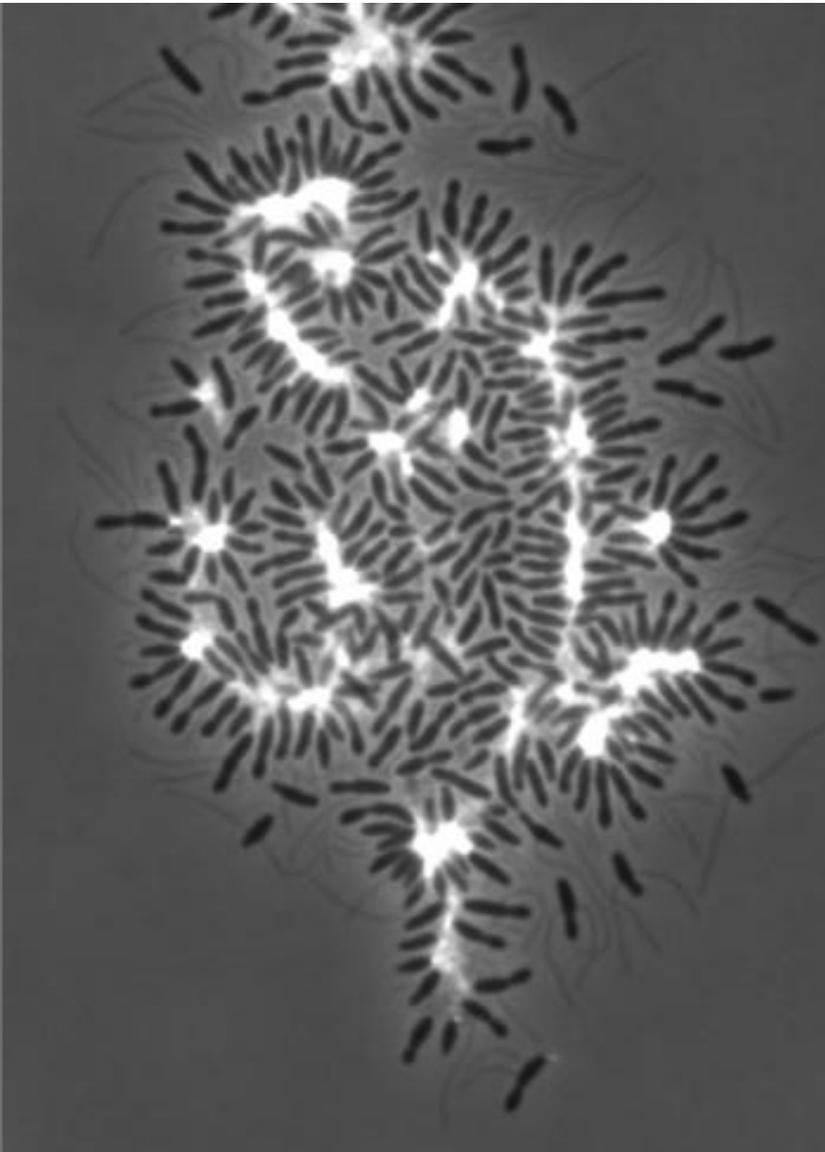
Agenda

1. The Mansueto Institute (brief) history
2. Mobilizing data: DSSG, AOT, and 1MN
3. MetroLab Network and Universities' unique value

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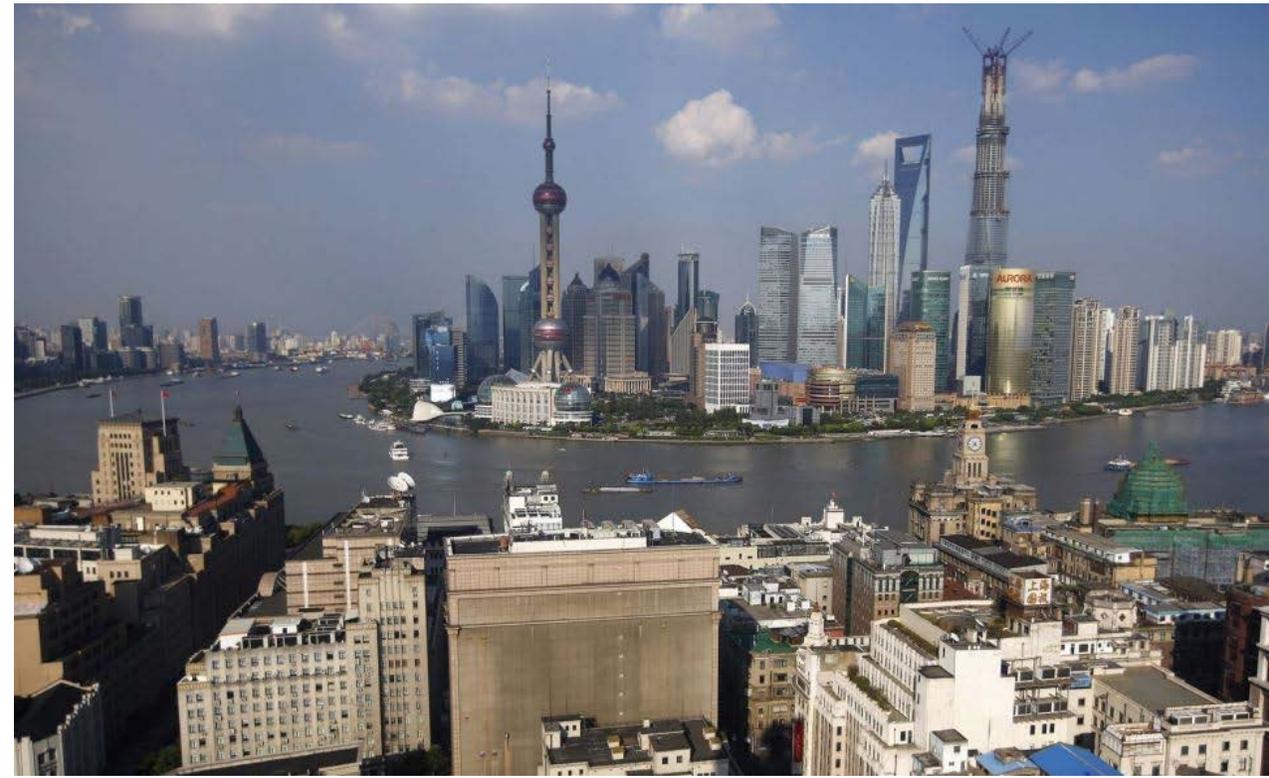
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Shanghai, 1987



Shanghai, 2013

Staff



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Mansueto Institute
Fellows



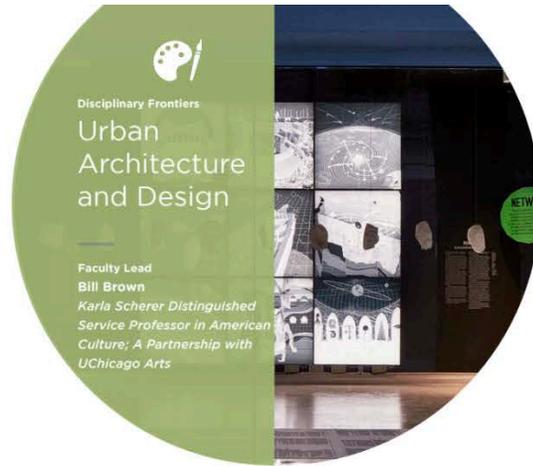
Kreisman Graduate
Fellows



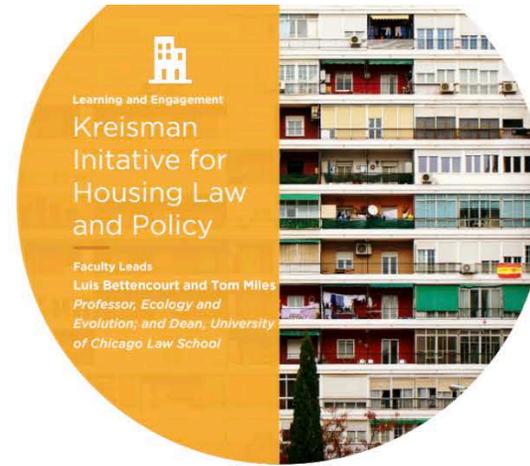
Urban Doctoral
Fellows



Institute Initiatives



Advancing Urban Design through Innovative Research, Conceptualization, and Training



Building a Community of Scholars to Advance Housing Research and Practice



Applying Spatial Analysis to Drive Breakthroughs in Social Science



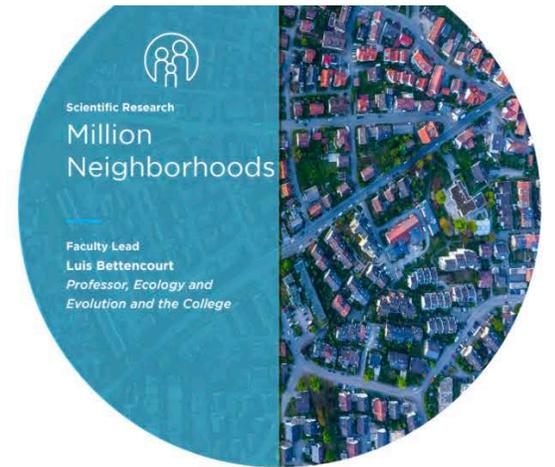
Exploring How Urban Landscapes Affect Human Cognition and Decision Making



Empowering Students to Create a Scientifically Robust, Sustainable Future



Creating Sensor Networks and Software Tools to Promote Health and Well-being in Cities

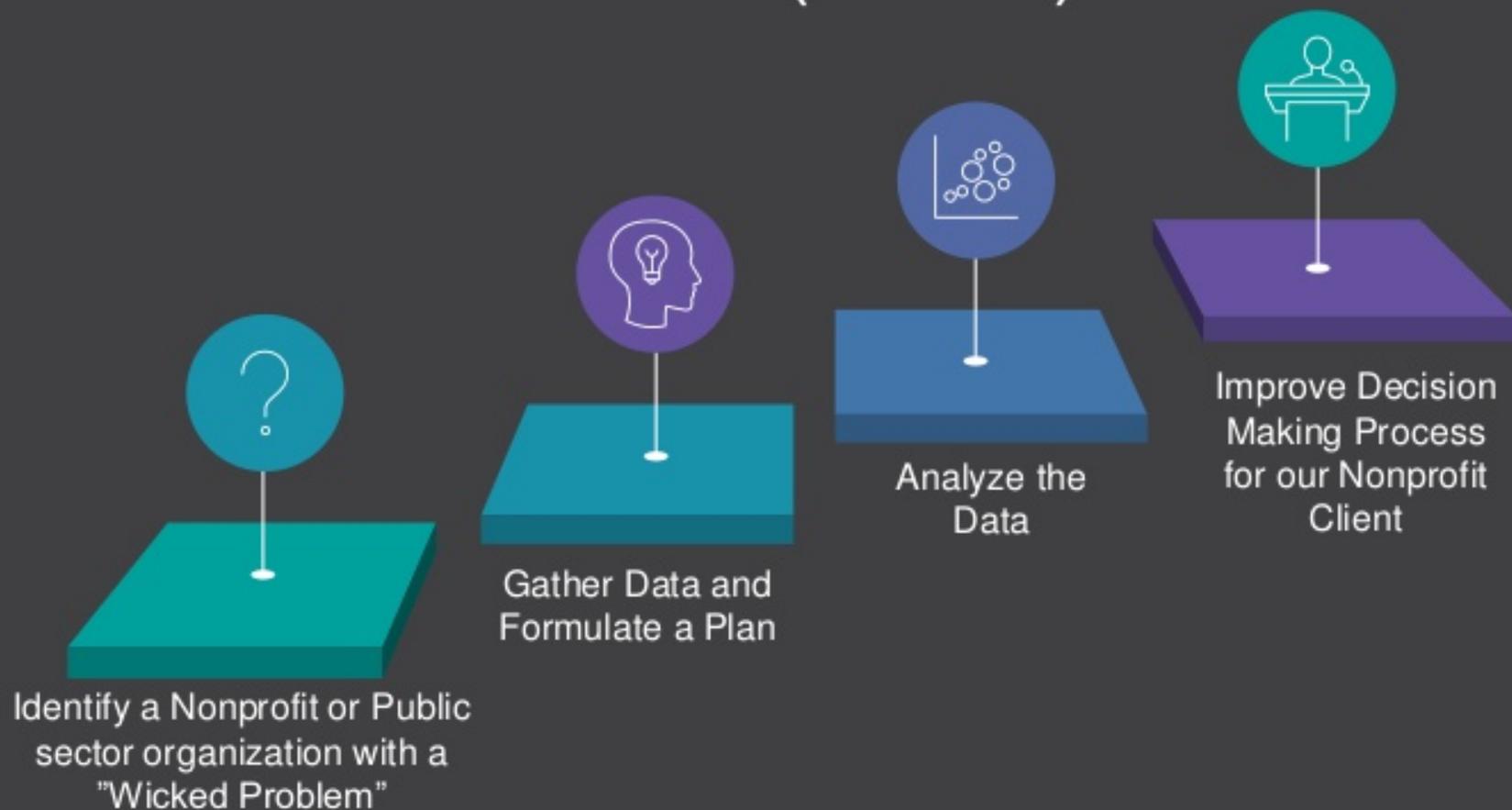


Tackling Human Societies' Greatest Challenges Neighborhood by Neighborhood

Agenda

1. The Mansueto Institute (brief) history
2. **Mobilizing data: DSSG, AOT, and 1MN**
3. Metrolab Network and Universities' unique value

Data Science for Social Good (DSSG)



DSSG concept formed and started at the University of Chicago in 2013.

Million Neighborhoods

[Continue explainer \(2/8\)](#)

[Play video](#)

Why street access

Streets connect each home or place of work to basic services. Without street access there is often no sanitation or clean water. There are also no addresses or routes for emergency responders, trash collectors, and buses.

Around the world, over a million neighborhoods lack adequate access to such services. We are mapping them here, block by block. Here is an example in Port-au-Prince, Haiti.

Explore a city

[Freetown, Sierra Leone](#)

[Monrovia, Liberia](#)

[Nairobi, Kenya](#)

[Dar-es-Salaam, Tanzania](#)

[Beira, Mozambique](#)

[Douala, Cameroon](#)

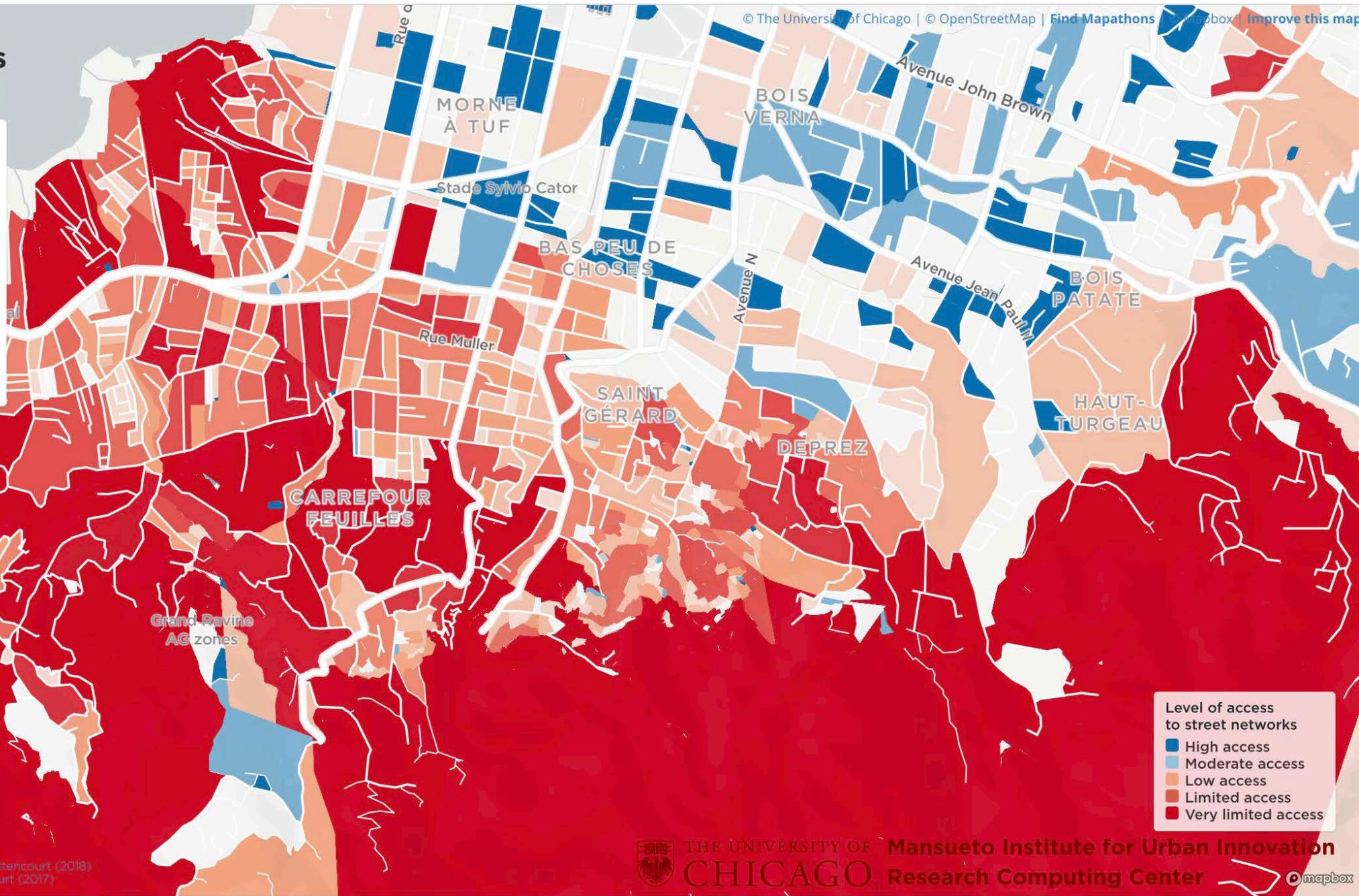
[Kinshasa, DR Congo](#)

[Blantyre, Malawi](#)

[Port-au-Prince, Haiti](#)

[Petare, Venezuela](#)

[Kathmandu, Nepal](#)



Level of access to street networks

- High access
- Moderate access
- Low access
- Limited access
- Very limited access



Methods:
Brelsford, Martin, Hand, and Bettencourt (2018)
Brelsford, Martin, and Bettencourt (2017)



Node Components



Environmental Sensors

Air temperature, Humidity, Barometric Pressure, Vibration, Sound Intensity, Magnetometer



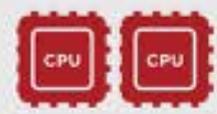
Air Quality Sensors

Nitrogen Dioxide, Ozone, Carbon Monoxide, Hydrogen Sulfide, Sulfur Dioxide



Light & Infrared Sensors

Light intensity, infrared (CLOUD COVER; SURFACE TEMPERATURE), camera, vehicle and pedestrian traffic. Images processed in-situ and discarded.



Linux Node Controllers

Image Processing Computer & System Health Manager and Control/Communications Computer

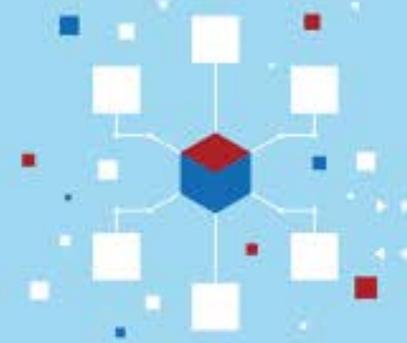


Node Power Manager

Node health monitoring and resilience functions



Argonne Server



Plenario, Open Data Portals, Dashboards, and Apps



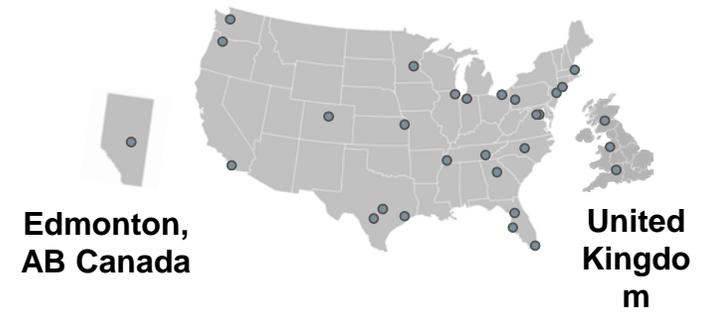


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1. The Mansueto Institute (brief) history
2. Mobilizing data assets: DSSG, AOT, and 1MN
3. **MetroLab Network and Universities' unique value**



MetroLab Network works with *cities, universities, federal agencies, philanthropy, and industry* to advance the impact of *data- and tech-focused research* to address priorities in cities and communities. Our network includes 27 cities, 6 counties, and 34 universities.



What We Do

1. We cultivate partnerships between universities and local governments to drive *research-informed, evidence-based policy* and enable *data and technology transformation*.
2. We foster a peer network of stakeholders from academia and local government that constitute an *applied, interdisciplinary field of research and practice*.
3. We connect to an *ecosystem of federal, philanthropic, and civic partners* with a shared interest in the promise of civic research and innovation.

Our Initiatives

Annual Summit



The Summit gathers a community of leaders from across the civic ecosystem to share projects and methods and build partnerships.



Innovation of the Month



The Innovation of the Month partnership with GovTech allows our members to tell their stories about projects that are transforming the built and natural environment, service delivery, and civic engagement in their communities.

Thought Leadership



We leverage our network and create opportunities for members to highlight their experience in reports that address high-priority areas. Past reports have focused on predictive analytics in human services, data integration technology, and an exploration of civic innovation activities across the U.S.

Civic Innovation Challenge



The Civic Innovation Challenge is a forthcoming research and action competition supported by the National Science Foundation and other federal stakeholders. It aims to leverage social science, data, and technology to address complex community challenges.

Member Platform



We facilitate information-sharing and member-to-member communications with a member site and a project library which feature more than 100 projects underway between universities and local governments in the network. This platform enables the dissemination and replication of projects and partnership structures.

MetroLab's members are universities and local governments, partnered locally to address priorities in cities and communities. If you are interested in joining, contact us here:



www.metrolabnetwork.org



info@metrolabnetwork.org



[@MetroLabNetwork](https://twitter.com/MetroLabNetwork)

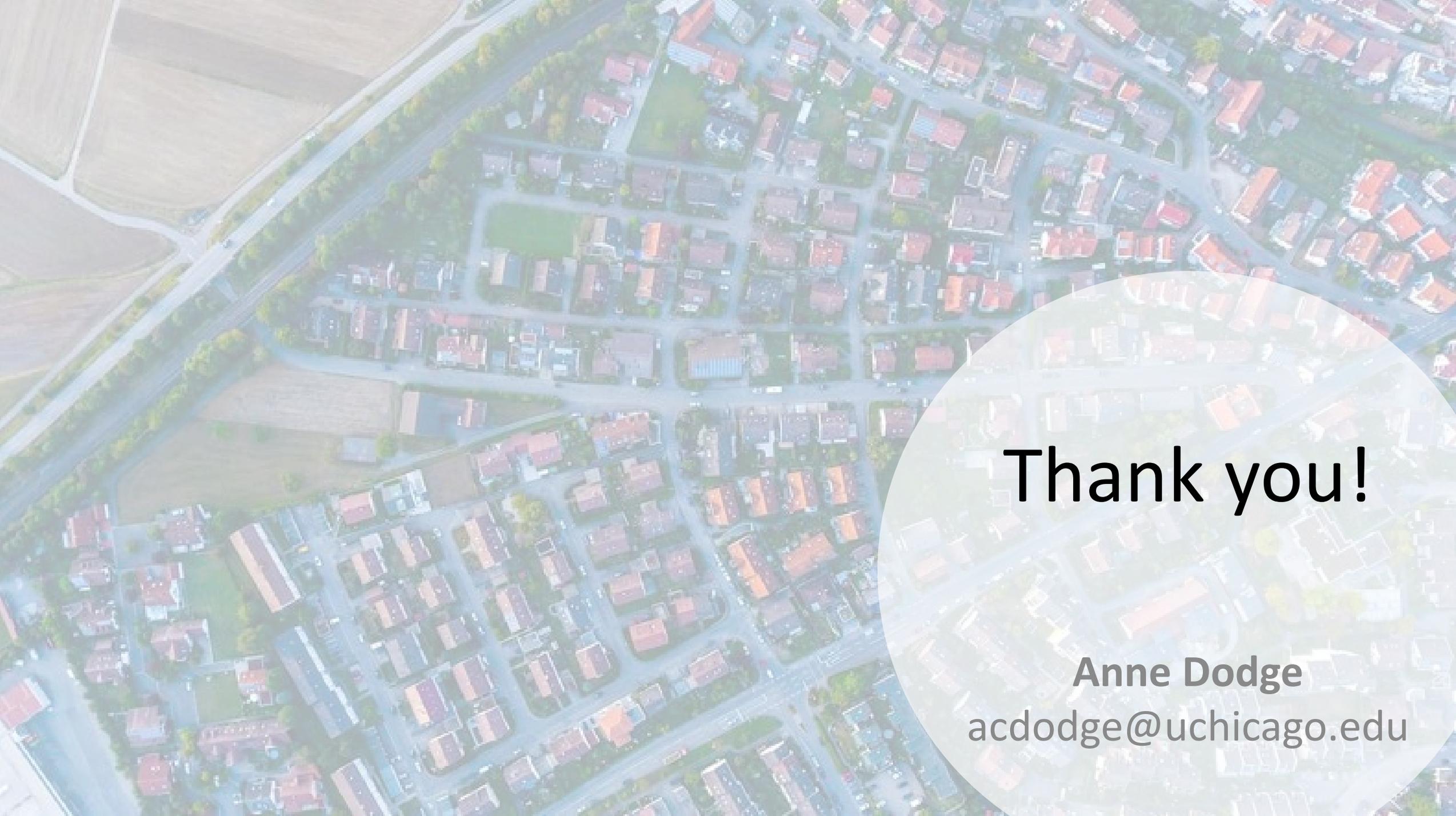


Washington, DC



To Learn More:

- Miurban.uchicago.edu – Mansueto Institute
- Millionneighborhoods.org – 1MN Project
- Arrayofthings.github.io – AOT Project
- Dssgfellowship.org – Data Sci for Social Good
- www.chicagobooth.edu/research/kilts – Kilts Center for Marketing (Nielsen Data)
- Metrolabnetwork.org



Thank you!

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