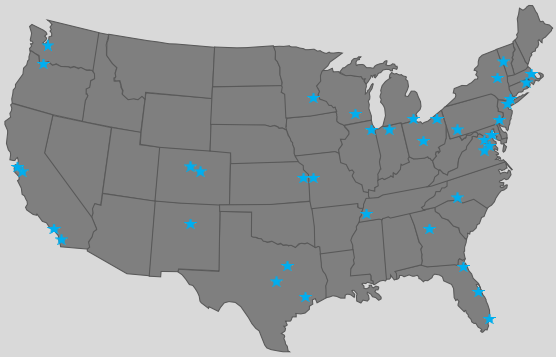
MetroLab Network Progress Report | December 2016

Background

MetroLab Network has grown to include 38 cities, 4 counties, and 51 universities, organized in more than 35 regional city- (or county-) university partnerships focused on *research, development, and deployment (RD&D)* projects that offer technologically- and analytically-based solutions for challenges facing urban areas: inequality in income, health, mobility, security and opportunity; aging infrastructure; and environmental sustainability and resiliency.

Why Now?

Enabled by changes in technology – increases in computing power and cloud storage, the proliferation of smart phones, decreasing costs of sensors and energy storage, and more – cities have opportunities to take advantage of new approaches to better deliver public services and manage their built and natural environments. Universities, motivated by the pursuit of new knowledge and the improvement of society, possess the expertise and creativity to serve as partners to cities in their pursuit of more effective, efficient, and just government.



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Organizational Updates from 2016

	Martin O'Malley, 61st Governor of Maryland and 47th Mayor of Baltimore, joined MetroLab as a Senior Fellow. As a pioneer in data-driven government, he brings insights and advice about how to drive innovation in cities. He has spent time visiting with MetroLab's cities and universities across the country.
May	MetroLab held its first annual summit in San Diego, in partnership with the City and the University of California, San Diego. The event brought together more than 100 leaders from cities, universities, foundations, industry, and non-profits to discuss city-university projects and opportunities for greater collaboration.
	MetroLab introduced 13 new city-university members, expanding its membership to 35 partnerships.
June	MetroLab launched its Steering Committee, which includes 9 leaders from cities and universities from its membership.
September	MetroLab introduced 3 new city-university members, expanding its membership to 38 partnerships.
	Ben Levine was named Executive Director, after serving as Interim Director since MetroLab's launch. The team also includes Katy Getsie and will be hiring additional staff.
October	MetroLab hosted a workshop on Water and Green Infrastructure, featuring city-university collaborations focused on emerging technologies and approaches, including above-ground sensing and data collection methods, underground mapping and robotic control systems, and pay-for-success finance programs. This is one of several Labs that MetroLab is rolling out.
December	MetroLab launched its Advisory Council, chaired by Governor O'Malley, which includes former Mayors, and leaders from universities, non-profits, and industry. The members will draw from their diverse experiences, activities, and insights to help guide MetroLab's ongoing activity.

Progress in 2016

MetroLab Network's mission is to elevate city-university activity at two levels.

Network-level *– the strategic, policy, and organizational infrastructure and guidance that are inherently valuable because they emanate from a large, national network of cities and universities*

- MetroLab has established the city-university partnership as a recognized and branded approach. It is now common to hear references to "our MetroLab partnership" from both local governments and universities.
- MetroLab has helped provide validation to these efforts through its programming and participation in the urban innovation discussion.
- MetroLab has provided structure, through membership requirements like memoranda of understanding between cities and universities and letters of commitment from mayors and university leadership, leading to better-structured, more institutionalized partnerships.
- MetroLab has resulted in the strengthening of city-university partnerships that preceded its launch and has led to new partnerships that would not have existed without its presence.

Project level *– to coordinate research, development, and deployment activity across communities, thereby accelerating urban innovation*

- MetroLab has developed a library of more than 120 RD&D projects that are currently underway across its membership, creating a mapping and organization of city-university activities.
- The library helps cities explore the types of innovations that are possible and helps academics connect with potential collaborators.
- MetroLab has also fulfilled its definitional purpose – as a network. It has created an interpersonal web of city officials and academics focused on collaborating across communities on urban RD&D, which has already led to a number of new projects.

We are proud of these success and aim to do more to accelerate urban innovation.

2017 Activities

The following activities – underway and proposed – will build upon 2016 efforts and further enable city-universities activity.

Scheduled Events

- ***Big Data and Human Services Workshop***, January 17th and 18th, Seattle Washington (more info below)
- MetroLab is currently planning its ***2017 Summit*** – stay tuned for details

City-University Partnership Structures

- While city-university partnerships are mutually beneficial relationships that make sense conceptually, we are still in the early stages of their development.
- MetroLab – based on its interaction with cities and universities across the country – developed 10 Principles for Successful City-University Partnerships.
- MetroLab plans to publish a White Paper to build on these Principles, including an exploration of the types of functions universities have taken on in partnership with their cities.
    - For example, some universities have become the managers of their city's integrated data systems; others have focused specifically on the development of technology prototypes that can improve local government; others have lent expertise related to data governance and ethics; finally, some have focused on randomized control testing of policy interventions.
- The white paper will also offer case studies on university efforts to integrate undergraduate and graduate education, applied internships, public sector training, and other initiatives into their city partnership.

10 Principles for Successful City-University Partnerships

For Mayors & University Presidents, Provosts

1) **Embrace the idea of the city as a "living lab" and the university as a research & development resource** where faculty and students can work on policies and technologies that will enhance quality of life and advance the understanding of cities and urban science.
2) **Formalize a partnership between your city and university with a memorandum of understanding** that includes a commitment to jointly undertake "research, development, and deployment" (RD&D) projects.

For Cities

3) **Assign a lead point-of-contact at the city** who is responsible for managing the innovation partnership. The PoC should have a multi-agency purview, rather than representing a single city agency. The PoC should be a policymaker with a research perspective.
4) **Identify problems that need to be solved and opportunities for innovation** by conducting an internal review of city agencies and by surveying constituents for their areas of importance, concern, and frustration.

For Universities

5) **Assign a lead point-of-contact at the university** who is responsible for managing the innovation partnership. The PoC should have a multi-disciplinary purview, rather than representing a single department's perspective. The PoC should not be a full-time researcher and should have experience in policy.
6) Survey faculty and students for interest in working on urban science matters. **Form a multi-disciplinary network of faculty and students managed by the university point-of-contact.** Create a student club focused on urban science.

For Cities and Universities

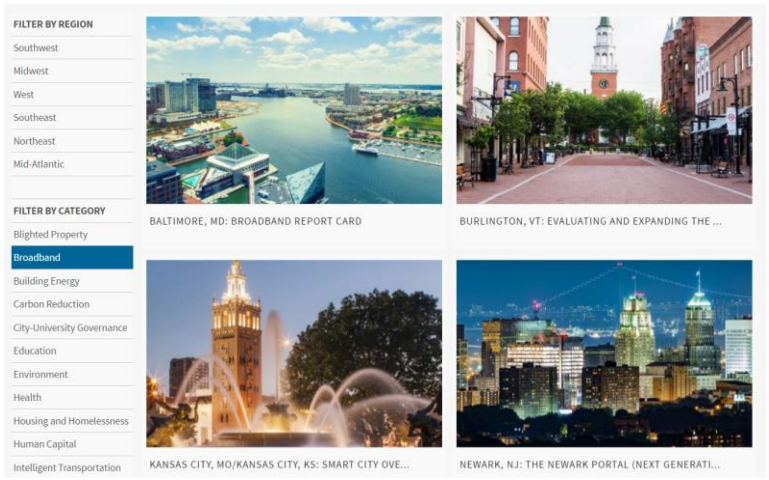
7) **Find the intersection between city priorities and university expertise.** Connect city policymakers with university researchers to undertake RD&D projects in these areas. **Identify metrics that will define success on these efforts.**
8) **Arrange regular, predictable, monthly meetings between the city and university points-of-contact** at which they track progress on existing RD&D efforts and identify new opportunities.
9) In addition to seeking Federal, State, and Local governmental support, **approach your local business and philanthropic community to support your RD&D efforts,** given a shared interest in improving quality of life in the city.
10) **Engage local community groups as partners** to ensure that projects have their support and include their feedback.

Download the TEN PRINCIPLES

Scaling Projects

- There are currently more than 120 RD&D projects underway across MetroLab's 35+ city-university pairs.
- It would be beneficial to scale these projects across communities, which will lead to operational improvements for local governments and add rigor to the academic efforts by employing a multi-laboratory approach.
    - However, university-led projects will not easily scale due to constraints on faculty and graduate student time and the need to build relationships outside of their region.
    - The commercialization process – the transfer of technologies from the lab to the market – is often not aligned with civic applications, which may not have associated revenue streams and require testing across *living labs*.
- In 2017, MetroLab will focus on helping cities and universities overcome these challenges and help ***scale the most promising RD&D projects*** underway in its Network.

More than 120 Research, Development & Deployment Projects Underway



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Roundtable on Urban Instrumentation

- Globally, urban areas are being outfitted with a multitude of devices that will provide ***real-time information about human activity, the built environment, and environmental conditions***.
    - This information will lead to more targeted public and private services, better management of infrastructure, and a better understanding of environmental stresses.
    - To that end, the ***devices will collect, process, and store massive amounts of data, some of which will include human images, recorded conversations, and other sensitive information***.
    - These approaches are being undertaken across sectors (cities, universities, private sector) and jurisdictions (pursuant to varying state and local policy and privacy regimes).
- Researchers, industry, and citizens would benefit from a coordinated effort across sectors and communities to share and disseminate techniques, views, and concerns, and potential responses related to urban instrumentation.

There Are Many Active Sensor Deployment Across the Network (e.g. video analysis, air quality sensors, traffic signalization, sensing and control of underground infrastructure)

Chicago, IL

Pittsburgh, PA

South Bend, IN

Washington, DC

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In 2017, MetroLab will launch the ***MetroLab Roundtable on Urban Instrumentation***, consisting of 25-35 leading practitioners from cities, universities, and industry currently engaged in urban instrumentation efforts. The Roundtable participants will convene for a series of discussions and focus groups over the course of one year, covering topics in the ***technical, socio-technical, cyber, and ethical*** domains. The Roundtable participants will develop a series of deliverables as part of the effort:

1) A report on the leading instrumentation efforts that are currently underway, including the technical approaches, the metrics for impacts, and the city-university partnerships that were leveraged.
2) A report to municipalities and citizens on the socio-technical, cyber, ethical, equity, and civil liberty-related issues (e.g. data collection, access, privacy, storage, and use) that should be considered when implementing and managing urban instrumentation.
3) Toolkits, frameworks, and guides for cities, universities, citizens, and students to understand, manage, and implement instrumentation projects, including guidance on issues like procurement and integration with data and network infrastructure.

Big Data + Human Services

- As technology transforms cities' transportation systems, data collection processes, and operational efficiency, the ***tools have been slower to migrate to the delivery of critical human services***, largely provided by local governments.
    - Specifically, new approaches in data collection, integration, and analysis present opportunities to better target and improve service delivery.
    - But there are obstacles: limited budgets and capacity for local governments to develop, test, and deploy new data-driven strategies; the diffusion of data across service providers in a single region; and the sensitive nature of the data.

- Notwithstanding the impediments, human services – including ***foster care, addressing homelessness, affordable housing, job training and public health*** – could be greatly improved by leveraging emerging big data and data analysis technologies and platforms. Universities are ideal partners for local governments in this pursuit.
    - Universities are well positioned, from an institutional perspective, to deal with sensitive and personally identifiable information.
    - They are also well positioned, from a technical perspective, to deal with advanced data methods.

- The Annie E. Casey Foundation is supporting our work to incubate a ***Big Data and Human Services Lab*** aimed at deploying and scaling equitable, secure, and efficient solutions to improve the delivery of human services, with the ultimate goal of improving the quality of life for those using these services.
- The effort will kick-off in January 2017 with a workshop in Seattle. Experts from local governments, universities, non-profits, and philanthropy will gather to discuss common challenges and explore data-driven solutions to human service issues. Following the event, MetroLab will drive collaborative research, scalable projects, and tools and materials (data sharing methods, white papers, software) that will help support efforts between local governments and universities in this domain.

Financial Update and Future Sustainability

MetroLab's operational activities are supported by an initial $1 million grant from the MacArthur Foundation. Additional support from the Annie E. Casey Foundation will allow for the incubation of the Big Data and Human Services Lab in 2017. Funding to support MetroLab's programming in 2017 and beyond is a priority for its leadership.

MetroLab Members

Arlington County – Virginia Tech-National Capital Region
City of Atlanta – Georgia Institute of Technology, Georgia State University
City of Austin – University of Texas at Austin
City of Baltimore – Johns Hopkins University, University of Baltimore
City of Boston – Boston Area Research Initiative
City of Boulder, City of Denver – University of Colorado-Boulder
City of Burlington – University of Vermont
City of Charlotte – University of North Carolina at Charlotte
City of Chicago – The University of Chicago
City of Columbus – Ohio State University
Cuyahoga County, OH – Case Western Reserve University
City of Dallas – Texas Research Alliance
City of Detroit – Wayne State University
District of Columbia – Georgetown U., George Washington U., Howard U.
City of Houston – Rice University
City of Jacksonville – University of Florida, University of North Florida
City of Kansas City, MO, City of Kansas City, KS – University of Missouri-Kansas City, University of Kansas
City of Los Angeles – California State University, Los Angeles
City of Madison – University of Wisconsin-Madison
City of Memphis – University of Memphis
Greater Miami & the Beaches – U. of Miami, Fla Int'l U., Miami Dade College
City of Minneapolis, City of Saint Paul – University of Minnesota
Montgomery County, MD – Univ. of Maryland, Univ. at Shady Grove
City of New York – New York University, Columbia University
City of Newark – New Jersey Institute of Technology
City of Orlando – University of Central Florida
City of Philadelphia – Drexel University, University of Pennsylvania
City of Pittsburgh – Carnegie Mellon University, University of Pittsburgh
City of Portland – Portland State University
City of Providence – Brown Univ., College Unbound, RISD
City of San Diego – University of California San Diego
City of San Francisco – University of California, Berkeley
City of San Jose – San Jose State University
City of Santa Fe – Santa Fe Institute
City of Schenectady – University at Albany, SUNY
City of Seattle – University of Washington
City of South Bend – University of Notre Dame

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