



The Comparative Genetics of Cities Workshop - Outcomes

An underlying goal of this Workshop is to increase dialogue among the providers and users of urban observations and models. We seek to improve the relevance of urban data collection to urban models, and the usefulness of these models to stakeholders such as managers responsible for making cities work, companies with substantial urban operations, and future generations of urban practitioners.

Based on the anticipated participants, we have identified the following set of possible outcomes, presented under three headings: Observations and Data, Models and Results, and Stakeholder Engagement. We have also organized them in terms of short-, medium- and long-term time frames. Not all of these will be directly addressed during the Workshop, but they offer a backdrop and context to our forthcoming discussions.

Observations and Data

- 1) Corporate Data Supply Chain: Many companies with large municipal operations (e.g., waste disposal, electric utilities, water providers, gas station operators, home builders) routinely collect extensive data streams that could greatly improve the accuracy of urban models. We will explore ways to make such datasets more readily available to modelers. *Short term outcome: 6-12 months*
- 2) Urban Remote Sensing and Modeling Integration: By bringing together experts on remote sensing and urban modeling, we will identify gaps in existing satellite- and aircraft-based data collection which, if filled, would improve the usefulness of results of computer-based urban models. *Medium-term outcome: 1-2 years*
- 3) CitySat Initiative: We will develop arguments in support of the concept of “CitySat”—one or more satellites with instrument packages customized for urban monitoring—beginning with a “Virtual CitySat” that incorporates existing satellite, airborne and ground-based data as a demonstration. *Long-term outcome: 3-6 years*

Models and Results

- 4) Comparative Urban Atlas: We will compile a set of maps, graphs and diagrams illustrating the vulnerability of London and Phoenix to climate change and natural hazards, to identify those graphics and visualization products of most value to stakeholders. This online atlas would serve as a template for similar comparative documents and websites, to help cities better learn from each other. *Short-term outcome: 6-18 months*



- 5) Web-based Urban Citizenry Feedback: Through dialogue between groups developing innovative ways of monitoring cities (cell-phone triangulation, ubiquitous sensors and flow meters, social media) and others creating web-based visualization tools, we will promote the standardization of vehicles like the Urban EcoMap and Solar Map, which can help individuals better understand and mitigate their urban environmental impacts. *Medium-term outcome: 1-2 years*
- 6) Urban Stakeholders-Modelers Discourse: Urban modelers typically produce results and then try to interest stakeholders afterwards. Can we reverse this information flow by starting with the needs of city managers, agency representatives, and politicians in order to identify those critical questions which, if addressed by computer-based models, would be most useful for informing policy? *Medium-term outcome: 1-3 years*
- 7) Urban Challenge Dialogues: Individual city experts, agencies, and consultants tend to focus on only one or a few of many distinct environmental challenges: safe water supply, affordable power, efficient transport, healthy air quality, and reduced heat island effect. Can we develop specific approaches and tools to help these groups more effectively learn from each other's experiences? *Medium-term outcome: 1-2 years*
- 8) Decision Theater Network: Based on the experience of Arizona State University's Decision Theater, and the plans and products of IT companies, government agencies, and global NGOs, can we lay out a vision for a global network of urban participatory decision-support and visualization facilities? *Long-term outcome: 3-5 years*

Stakeholder Engagement

- 9) Urban Sustainability Graduate Network: Participating graduate students will start a global network of educational initiatives on urban sustainability, including preparation of a white paper highlighting the contrasting characteristics and aspirations of different programs. *Short-term outcome: 6-12 months*
- 10) Corporate Urban Consortium: Can a safe space be created in which global IT and engineering companies (e.g., Cisco, IBM, Autodesk, Siemens, Arup, AECOM) would willingly share ideas from their competing urban initiatives in order to derive a standardized set of inter-operative approaches? *Medium-term outcome: 1-3 years*
- 11) Developing Countries Urban Toolbox: Working with groups focused on developing nations, can we identify strategies that incorporate leapfrog technologies to help the world's fastest-growing and most resource-constrained cities better plan their long-term budget allocations and urban services? *Long-term outcome: 3-10 years*