Overview

Karen Lightman

Executive Director, Metro21: Smart Cities Institute

Carnegie Mellon University
Mission
Develop 21st century solutions to the challenges facing metropolitan regions.
Metro21 Quick Facts

Formed in 2014, Metro21 spun out of Traffic21, Carnegie Mellon's successful transportation institute and two USDOT National University Transportation Centers.

Metro21 is a university-wide institute.

Metro21's backbone is its strong partnerships with government agencies, the private sector and the non-profit sector.
Metro21 – Core Leadership

• **Director:** Dr. Raj Rajkumar, George Westinghouse Professor of Electrical and Computer Engineering
• **Executive Director:** Karen Lightman
• **Distinguished Fellow:** Rick Stafford, Distinguished Service Professor of Public Policy and former Director of the Traffic21 Institute
• Stan Caldwell, **Executive Director**, Traffic21 Institute
• Chelsea Cavlovic, **Senior Administrative Coordinator**
Key Takeaways from Metro21: Smart Cities Institute Launch Event, March 1-2

• Over 150 registrants (135 attendees); 1/3 CMU; 1/3 non-profit/government partners; 1/3 industry partners
• Filmed proceedings and testimonials – all online on Metro21 website and CMU YouTube channel
• Good press coverage (local and national press in attendance)
Metro21 Concept

CMU Expertise

World Problems

Seed Funding
Carnegie Mellon University

College of Fine Arts

Dietrich College of Humanities and Social Sciences

College of Engineering

Heinz College

Mellon College of Science

School of Computer Science

Tepper School of Business
Executive Committee

Robert Dammon, Dean, Tepper School of Business
Rebecca Doerge, Dean, Mellon College of Science

James Garrett, Dean, College of Engineering
Farnam Jahanian, President, Carnegie Mellon University

Ramayya Krishnan, Dean, Heinz College
Dan Martin, Dean, College of Fine Arts

Andrew Moore, Dean, School of Computer Science
Richard Scheines, Dean, Dietrich College of Humanities and Social Sciences
Metro21 Partners at CMU

Block Center for Technology and Society

Center for the Future of Work

Remaking Cities Institute

Wilton E. Scott Institute for Energy Innovation
A Smart City: A “System of Systems”

Far greater than an assembly of technologies and data

- Safe mobility
- Net zero energy
- Clean air and water
- Economic prosperity
- Safe and healthy citizens
- Smart buildings and infrastructure
- ...
Pillars of Metro21

**Inter-disciplinary** focus:
people, technology and policy

**Intellectual** core:
scholarship, science and education

**Solutions to real-world problems:**
Research, Development and Deployment (RD&D)
Camera Positioning on Street Light/Traffic Light Poles

Compute/networking node: Small cabinet at ~6ft (contains processing + accepts power)

Plan is to perform dense, high-resolution capture of busy intersections. (Approximately 10-20 cameras observing a single intersection from different angles.)
Fire Risk Analysis

- Historical fire incident and inspection data
- Predictive models of structure fire risk
- Prioritize commercial properties at greatest risk
Smart Cities Institute

Wireless Infrastructure Enabling Smart Cities

Advanced wireless testbed
Public and private sectors
Advanced at-scale wireless infrastructure
Metro21 has built momentum that has launched several startups

- ottomatika
- Rapid Flow
- RoadBotics
Summary

• The Metro21: Smart Cities Institute will leverage innovations in technology, policy and their interplay to have a positive impact on metropolitan societies.

• Metro21 aims to solve real-world problems assisted by an intellectual core of scholarship, education and expanding knowledge.

• Metro21 seeks to develop a science of smart cities.

• Metro21 will work closely with government, private sector and non-profit partners.
Partner with CMU to stay on the forward edge of smart city solutions. Contact our world-renowned leaders and join us on the road to our best future.

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Follow us: @Metro21CMU