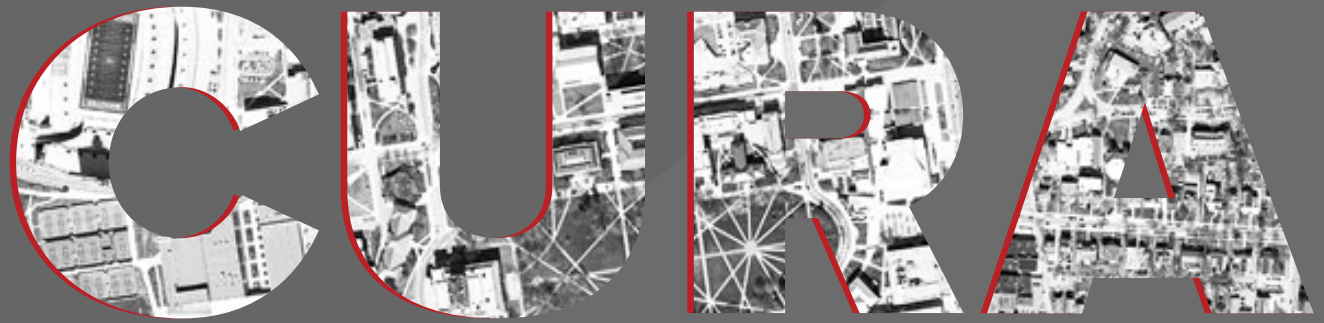
ANNUAL REPORT
2016/17



The hub for data-driven urban science.

THE OHIO STATE UNIVERSITY
CENTER FOR URBAN AND
REGIONAL ANALYSIS

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MESSAGE FROM THE DIRECTOR

HARVEY MILLER, PhD
DIRECTOR, CURA

Dear Friends of CURA—

We live in remarkable times: our cities are undergoing dramatic change at a time when humanity faces vital questions of sustainability, resilience and inclusion.

As of 2008—for the first time in human history—the majority of the world's population lives in cities. Urbanization continues to increase, with many experts expecting 80% of the world's population to be urban by the end of the 21st century. A walk through downtown Columbus as well as neighborhoods such as the Short North and Olde Towne East should be convincing of this new urban trend! Many of our neighborhoods, however, continue to face challenges of social disparity and insufficient infrastructure.

Luckily, a new, urban science is emerging that can begin to address the most pressing urban challenges. Using newly available georeferenced and dynamic data to treat a city not as a simple, aggregate object but rather as complex, dynamic network, this new science offers promise at a time when urban progress is crucial. In some of the most innovative areas of scientific inquiry, Ohio State has signaled serious commitment through the Discovery Themes initiative (discovery.osu.edu), adding new research and teaching capabilities across a wide range of interdisciplinary research domains. The university also recognizes its unique role as one of the only research-intensive, land grant university located in an major urban area. As the only interdisciplinary

center on campus at the intersection of urban data and Geographic Information Science, CURA has a central role to play in these developments.
In pursuit of bridging urban-related disciplines across the institution, CURA is actively participating in research projects across campus, involving affiliates in Geography, the College of Public Health, City and Regional Planning, the Glenn College of Public Affairs, and the Department of Civil, Environmental and Geodetic Engineering. We have also stepped up our engagement with partners in the local community, including Community Research Partners, the Columbus Housing Dialogue, the Mid-Ohio Regional Planning Commission and the City of Columbus.

CURA is also initiating new conversations about local and global urban issues through high-profile events such as public lectures by Kristin Tolle, PhD (Director of the Data Science Initiative, Microsoft Research Outreach), Prof. Martin Raubal (ETH-Zurich), and Jonathan Vespa, PhD (U.S. Census). We have also initiated new public forums such as the Future of Suburbs panel discussion in early 2016, where CURA facilitated a progressive dialogue among diverse interest groups about emerging trends in suburban development and culture.

As a 21st-century university, Ohio State is positioned to be a leader in urban science. CURA is central to the university's new mission in this emerging interdisciplinary space. There are great challenges ahead, but great universities and centers rise to meet challenges. Join us on this journey to a bright urban future in Ohio and beyond.

Regards,

Harvey J. Miller
Director

ABOUT US

The Center for Urban and Regional Analysis is an interdisciplinary research innovation hub specializing in the application of GIS, spatial analysis and geographic visualization to urban issues.

Founded in 2001, the Center for Urban and Regional Analysis (CURA) has spent more than 15 years working with partners to solve complex geographic problems. As part of the College of Arts and Sciences, CURA boasts a strong interdisciplinary nature and works with multiple departments, schools and colleges across campus.

From analyzing market potential for commercial developers to mapping all the trees on the Oval, CURA engages in a breadth of research and applied Geographic Information Systems (GIS).

Research Areas

> Development and policy
> Environment and society
> Public Health
> GIS and mapping

STUDENT ENGAGEMENT

CURA's research associates and affiliates are among the best GIS and urban science students in the world. Involvement in our research projects enhances their educational experience and provides exposure to professional GIS projects. As part of CURA's mission to support urban-related research, a number of travel grants are awarded to graduate students for participation in nationwide conferences.

SPATIAL ANALYSIS

There is power in maps! Our researchers produce high quality products for inclusion in grant projects and other publications, enhancing the impact of your research. Regardless of the subject area, the use of maps can enhance the accessibility of research questions by effectively demonstrating patterns and trends.

EDUCATION and OUTREACH

To facilitate new dialogue and introduce students and faculty to emerging scholarship in the fields of urban science and studies, CURA hosts speakers from academia and other fields throughout the year. We also work with select community partner organizations to provide mapping services and offer free training courses for basic mapping techniques.

RESEARCH SUPPORT

Do you need GIS, spatial analysis, or mapping support for your project? Consider collaborating with CURA on your grant application or any other research endeavor.
Our researchers produce high quality data for inclusion in grant projects and other publications, enhancing the impact of your conclusions.

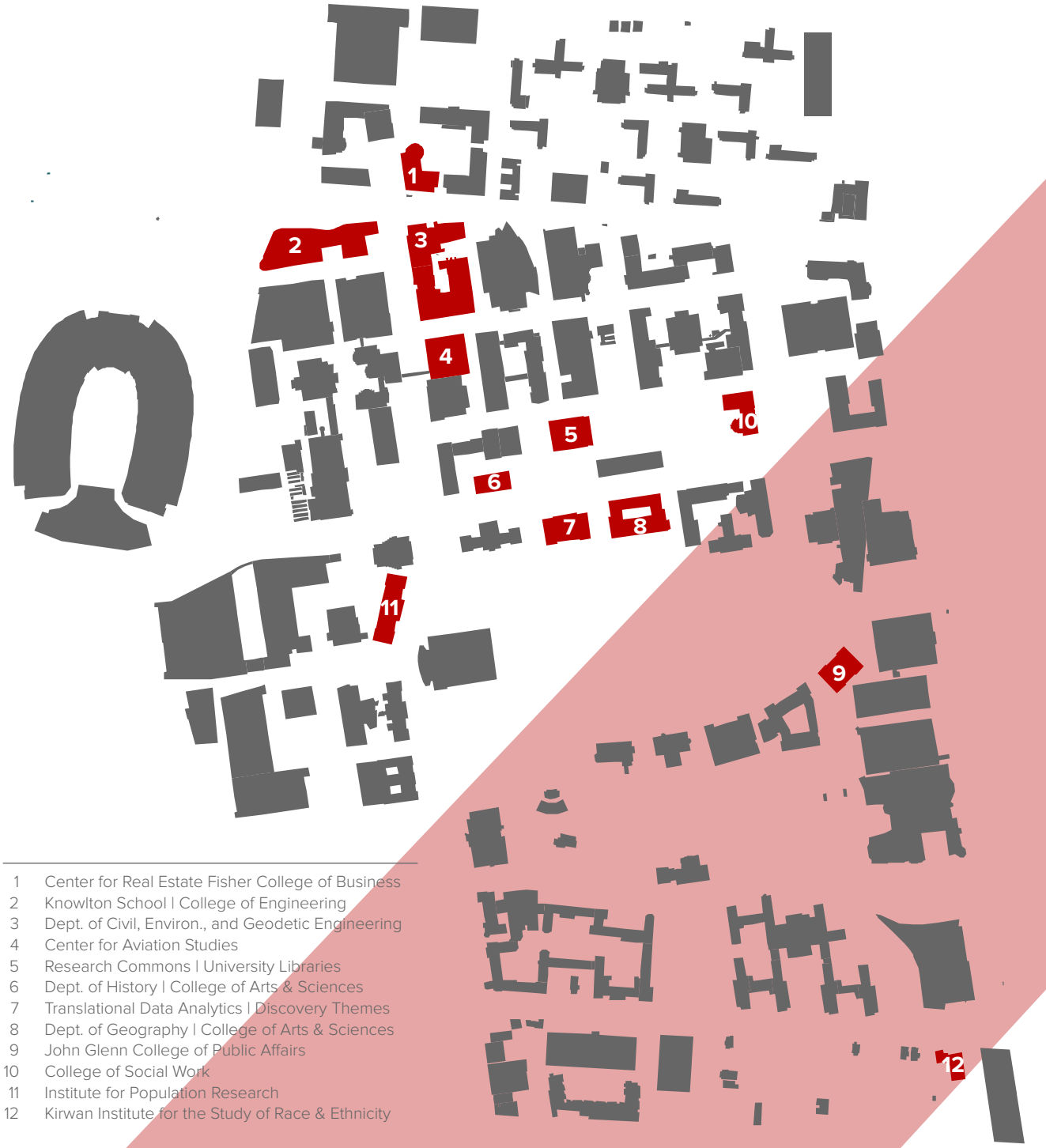
OUR NETWORK

We strive to maintain connections across departments and colleges at the university. As an interdisciplinary center, our work focuses on fostering collaboration among related—but distinct—disciplines.

In 2017, we hosted a diverse panel of academics and practitioners called “Smart City, Healthy City?” The event brought together the intellectual power of faculty in urban planning and public health with the real-world expertise of city officials and engineers. This event exemplifies CURA’s mission to bridge academia and industry.

Our center relies on our network to provide new ideas, offer direction, and suggest new project ideas. We draw from our network when planning our speaker series, when negotiating partnerships for events, and when considering possibilities for research collaboration.

As the university’s only unit focused on connecting urban-related scholars from different disciplines, CURA is committed to fostering a dialogue across campus, throughout Central Ohio, and wherever Ohio State research is occurring.



1 Center for Real Estate Fisher College of Business
2 Knowlton School | College of Engineering
3 Dept. of Civil, Environ., and Geodetic Engineering
4 Center for Aviation Studies
5 Research Commons | University Libraries
6 Dept. of History | College of Arts & Sciences
7 Translational Data Analytics | Discovery Themes
8 Dept. of Geography | College of Arts & Sciences
9 John Glenn College of Public Affairs
10 College of Social Work
11 Institute for Population Research
12 Kirwan Institute for the Study of Race & Ethnicity

SERVICES

CURA serves as an innovation hub which brings together researchers from across campus to integrate spatial modeling and Geographic Information Science (GIS) into economic, social, and public health research. We provide data management and design expertise, and we also offer web mapping and data hosting. We possess strong technical expertise in transportation, housing, and geo-demographics. If you would like to consult with us about your research project, please email cura@osu.edu or call 614/292-5930.

Our services are provided primarily to on-campus partners, but we may also work with community groups. For the Ohio State community, CURA typically charges an hourly rate and provides an estimate for the work needed to complete the client's project. For larger research endeavors such as government-sponsored grants, CURA faculty may be considered a co-investigator for the geo-visualization portion of the research.

GEOCODING

Have address data from surveys or other research outcomes that you need transformed into a map for analysis and spatial pattern recognition? CURA can accurately geo-code your data and make sure the final product is exactly what fits your research goals.

GEOSPATIAL ANALYSIS

If your research involves tracking the interaction among multiple attributes and geographic space, let researchers at CURA work to provide analytic services for your data.

CARTOGRAPHY

Whether you need print or digital mapping, CURA can assist in the production of high-quality and complex maps for a variety of research and basic needs.

WEB MAPPING

Like most technologies, mapping continues to move toward the cloud. Online-only mapping options are appropriate for a variety of skill-levels. If you need an interactive web-map or an embedded map journal, talk to us!

DATA COLLECTION

Academics know that good data is key to successful research. That's why CURA works diligently to offer comprehensive geo-databases to our clients. Whatever the area of your research, we can locate and curate the fundamental socio-economic and demographic data necessary.

GIS WORKSHOPS

CURA partners with other GIS experts on campus to provide basic training in common GIS technologies. We are planning to increase the frequency and diversity of our training offerings in the 2016-2017 academic year.

PROJECTS

CURA accepts new projects based on an evaluation of its fit with our four primary research areas:

- Development and Policy
- Environment and Society
- Public Health
- GIS and Mapping

While many of our projects are long-term, spanning one year or more, we also see the benefit of shorter term projects and recognize the need for less involved spatial analysis to support research.

The 2015-2016 academic year brought intriguing new research pathways and allowed us to build upon existing endeavors. One of our largest projects is a mobile data research grant with the Ohio Department of Transportation. This research supports a PhD student (Young Jaegal) and offers the possibility of multiple publications upon completion.

Some of our continuing projects include the Weinland Park Tree Program and the mobility analysis research. The 2016-2017 was very important for the state-funded Infant Mortality Reduction Project (IMRP), led by CURA Affiliate and Associate Professor Elisabeth Root (Dept. of Geography and College of Public Health). CURA has developed a web-mapping interface to display integrated datasets relevant to infant mortality rates to empower researchers to target initiatives based on spatial data.

MOBILITY ANALYSIS

A project funded by the Ohio Department of Transportation is investigating new methods of evaluating origin/destination flows with Ohio. If successful, the state could save millions of dollars by implementing innovative technology.

URBAN INFORMATICS

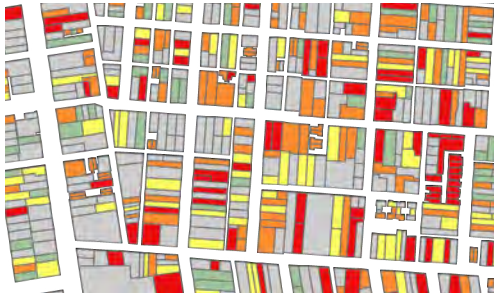
With funding from the College of Arts and Sciences, CURA is working to create an online urban data dashboard. One goal of the project is to provide the initial conceptual model for an urban observatory of Columbus.

INFANT MORTALITY

CURA has supported space-time modeling using Geographic Information Systems (GIS) software for the Infant Mortality Reduction Project, through a relationship with Dr. Elisabeth Root. A project database maps the incidence of infant mortality in the study area.

PARCEL AMENITIES

In partnership with CURA Associate Director Elena Irwin, we have been calculating distance measurements for a variety of environmental amenities and spatially joining parcel data with regional data to support research into the impact of certain amenities on land values.



OH/LEX MAPPING

Made possible by a Connect and Collaborate Grant from the Office of Outreach and Engagement, CURA is creating an interactive web-mapping service to host multiple feature layers of data pushed through the ESRI collector application as a tool for land banks in mid-sized cities across Ohio.

WEINLAND PARK TREES

Under a grant from the OSU Office of Outreach & Engagement, CURA is working with The Columbus Foundation, the Neighborhood Design Center, and the Knowlton School to evaluate the impact of trees planted in the Weinland Park neighborhood of the University District.

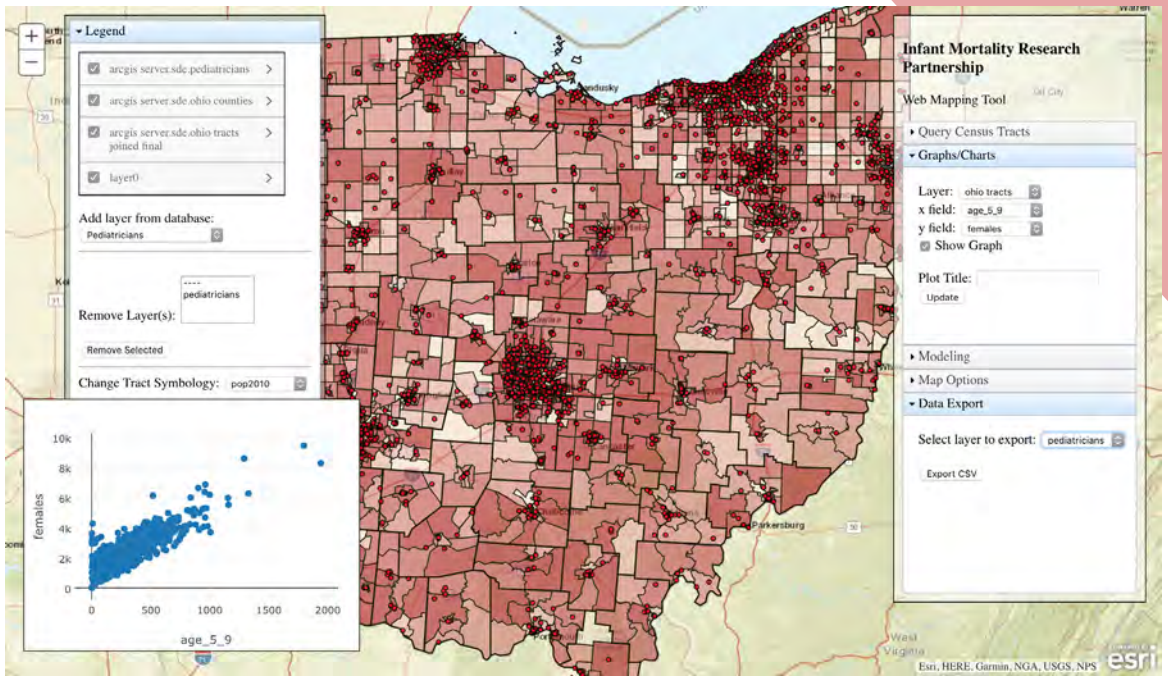
PROJECT PROFILE

INFANT MORTALITY REDUCTION PROJECT

This project identifies high risk communities in Ohio that can be targeted for intervention or allocation of resources and provides a deeper understanding of why these communities are high risk. Mapping of risk factors, statistical model results, and spatial clusters of infant mortality and preterm birth provide visual representation of the spatial inequalities in both risk factors and birth outcomes across the state. Public health officials and practitioners in high risk communities may integrate assessment of key social, economic and health systems factors when working with women of childbearing age.

Geographic Information Systems (GIS) and geospatial analysis can be used as a powerful evidence-based tool for investigating the social determinants of health. When properly used, geographic techniques can:

- inform and educate;
- empower decision-making;
- help predict outcomes and ascribe priorities in a climate of finite resources;
- assist with planning clinically and cost-effective actions;
- change practices; and
- continually monitor and analyze data



CURA created this ESRI-based interactive web-map to display and analyze relevant datasets for the IMRP team.

PARTNERSHIPS

Urban life intersects with nearly every discipline, a reality that positions CURA perfectly for collaborative projects. As the only interdisciplinary hub on campus for urban issues and mapping, the center works to bring diverse researchers together and create synergy around the study of urban and regional systems.

This broad cross-section of partners illustrates the varied ways in which spatial issues arise within many specialized domains. Nearly every research area has a geo-spatial component, from the College of Engineering to the College of Public Health. In addition to partners on campus, CURA works with community organizations off-campus. For example, one of our projects is focusing on tracking the impact of concentrated tree planting in a University District neighborhood. In conjunction with Community Properties of Ohio, the Neighborhood Design Center and The Columbus Foundation, CURA has led a program to plant and analyze new trees.

RESEARCH COMMONS

CURA's partnership with the Research Commons results in joint events and shared space. For example, CURA hosted an NSF-funded conference on mobility science in the Research Commons in May 2017. We also plan programming throughout the year and collaborate on GIS Day.

COLLEGE OF ENGINEERING

Considering CURA's focus on transportation, the center partners with faculty from the College of Engineering frequently on research projects. One example is collaboration on a grant application to become a University Transportation Center, a designation of the U.S. Department of Transporation.

TRANSLATIONAL DATA ANALYTICS

CURA has a working relationship with TDA, and has presented at the annual poster forum to share CURA's services with the data analytics community across the university. CURA also supported the creation of the Translational Data Analytics Institute (TDAI), which will be housed in the newly-renovated Pomerene Hall.

KNOWLTON SCHOOL

A relationship between urban planning and CURA is only natural—and right now there are multiple connection with the City & Regional Planning program at Knowlton. For example, CURA is developing a web-mapping portal to support the OH/LEX parcel project led by Assistant Professor Tijs Van Maasakkers.

PROGRAMS

CURA organizes multiple events each semester designed to appeal to a wide array of urban-related interests. From urban policy to time geography, the CURA event series offers engaging and enlightening content for a variety of fields. Events are open to the entire community, on campus and off. As the university's hub for GIS and urban data science, CURA seeks to bridge the campus community with professionals around Central Ohio. From panels to keynote speakers, our programming is designed to target a diverse audience, from the freshest undergraduate student to the most seasoned faculty.

COFFEE WITH CURA

Coffee with CURA is a new opportunity for students, faculty, and staff to stop in and discuss geospatial analyses with CURA staff and other interested parties. We invite researchers to stop in and discuss their ideas for project so we can help determine if and how to proceed.

Coffee with CURA is designed to be a forum for researchers at all experience levels to meet with us and each other to discuss ideas in an informal setting.

EVENTS

SAM SCHWARTZ

HEALTHY PLACES PANEL

Photo credit:
Kevin Fitzsimmons

RICHARD FLORIDA, PHD

20 SEPT 2016

Sam Schwartz Lecture, Lunch, and Roundtable
Former NYC Traffic Commissioner and
CEO of Sam Schwartz Engineering
Author of best-selling book:
Street Smart: The Rise of Cities and the Fall of Cars

21 OCT 2016

GIS For the Rest of Us Workshop
Center for Urban and Regional Analysis
Research Commons, University Libraries
Byrd Polar and Climate Research Center

27 OCT 2016

Jennifer Dill Lecture, Lunch, and Roundtable
Professor, Urban Studies and Planning
Director, Transportation Research & Education Center
Portland State University

16 NOV 2016

GIS Day 2016
Annual event celebrated internationally

18 NOV 2016

Healthy Places Panel
Designing cities for walking and biking

28 FEB 2017

Steve Liang Lecture and Roundtables
Associate Professor, University of Calgary (Canada)
Smart Citizens for Smart Cities – Opportunities and Challenges of Building Open Smart Cities and Internet of Things

22 MAR 2017

Workshop: Mapping Basics with ArcGIS Online
Center for Urban and Regional Analysis and
Research Commons, University Libraries

24 MAR 2017

Smart City, Healthy City? Panel
Co-sponsored with City and Regional Planning
Student Association.

19 APR 2017

Richard Florida, PhD
Provost's Discovery Themes Lecture
Director and Professor
Martin Prosperity Institute, University of Toronto
Author of *The New Urban Crisis*

EVENT PROFILE

Will the Smart City Challenge improve health outcomes in Columbus?

SMART CITY, HEALTHY CITY?

This panel convened an accomplished group of professionals and scholars to discuss the impact of the Smart City grant on health outcomes in the targeted geographies across the City of Columbus. Panelists discussed the critical role of transportation and mobility in providing patient care, with examples of how limited mobility negatively impacts patient outcomes. According to the initial Smart City Challenge application, program goals include improving safety, enhancing mobility, enhancing ladders of opportunity, and reducing infant mortality.

PANELISTS

- **Mysheika W. Roberts, MD, MPH**
  Assistant Health Commissioner, Columbus Public Health
- **Pam Salsberry, RN, PhD, RAAN**
  Associate Dean & Professor, College of Public Health
- **Joanna Pinkerton, PE**
  Co-Director, Honda & OSU Strategic Partnership
- **Jason Reece, PhD**
  Assistant Professor, City & Regional Planning, Knowlton School

TRAVEL GRANTS

CURA provides $1,000 grants to graduate students for conference travel each semester from any department to attend major specialized conferences related to urban and regional analysis. In line with CURA's multi-disciplinary and multi-collegiate approach, we strive to award funds to students from a diversity of fields within Ohio State. The grant program has grown in populatity, and we receive many more applications than we are able to fund. Applicants some from a variety of fields across the university and their materials are reviewed by CURA's associate directors.

CONFERENCES ATTENDED

American Association of Geographers
Boston, Massachusetts

American Society for Public Administration
Atlanta, Georgia

Society for Ecological Restoration World Conference
Foz Do Iguassu, Brazil

Urban Affairs Association
Minneapolis, Minnesota

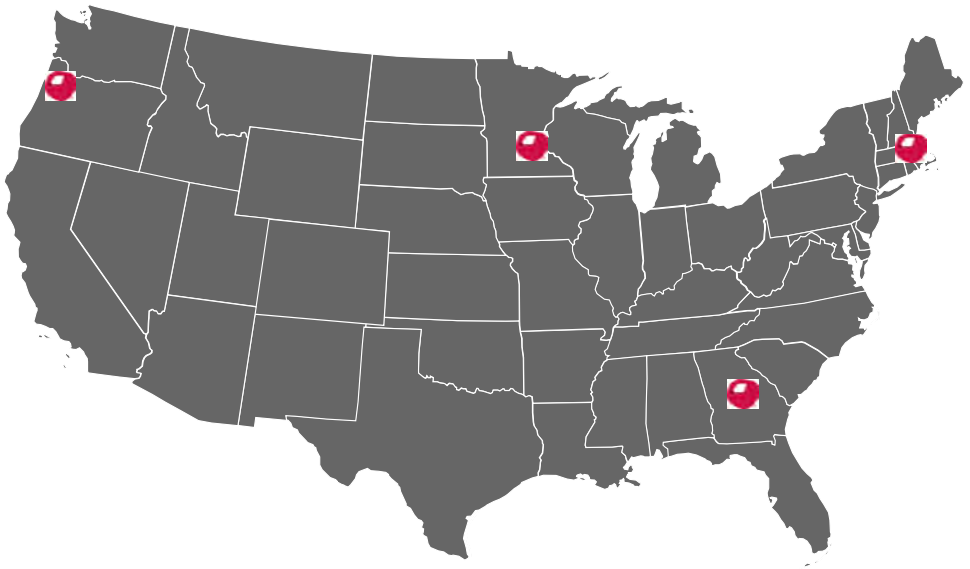
Association of Collegiate Schools of Planning
Portland, Oregon

Spring 2017

Samual Kay	Department of Geography
Aiden Irish	John Glenn College
Ryan Vogel	City and Regional Planning
Cody Price	City and Regional Planning

Autumn 2016

Seungbeom Kang	City and Regional Planning
Yu-Jen Chen	City and Regional Planning
Yujin Park	City and Regional Planning
Kailai Wang	City and Regional Planning



PEOPLE

Research Interests

- GIScience
- Mobility Science
- Sustainable Transportation

Education

1991 — PhD
Geography
The Ohio State University

1987 — MA
Geography
Kent State University

1985 — BA, Honors
Geography
Kent State University

Harvey Miller, PhD
Director and Professor

Harvey Miller earned his PhD in geography at Ohio State in 1991, returning in 2013 as the Bob and Mary Reusche Chair in Geographic Information Science in the Department of Geography. His research interests include GIS, sustainable transportation, livable cities, and the relationships between human mobility, health and social equity.

Miller is currently a member of the Mapping Science Committee of the National Research Council, US National Academies, and former chair of the GIS and Applications committee of the Transportation Research Board, and the Geographic Information Systems and Science specialty group of the Association of American Geographers. In 2015, he received the Research Award for his scholarly contributions to GIScience from the University Consortium for Geographic Information Science.

Learn more about Director Miller's personal research interests on his blog: u.osu.edu/miller.81

Matthew Adair, MCRP
Program Coordinator

A Columbus native, Matthew brings experience in the state legislature and engagement in the University District to CURA. With a passion for visual communication and community outreach, Matthew coordinates events, marketing, and client relationships for the center.

Jerry Mount, PhD
GIS Project Manager

Jerry works with prospective clients to meet their technology and cartographic needs, works with our Graduate Research Associates, and advises GIS users across campus to solve problems they may encounter when using software or even programming issues.

Suzanne Mikos, MPA
Fiscal Manager/HR

As the Department Manager for Geography, Suzanne also works closely with the CURA Director to establish the organization's budget and conduct hiring for the center. She also supports the program coordinator with purchasing and organizational development.

NEW HIRE PROFILE:
JERRY MOUNT, PhD

Jerry Mount, PhD, joined CURA as our new GIS Project Manager in October 2016. Jerry brings expertise and interest in cartography, geographical information systems and science, and advanced technology. In particular, he is interested the spatiotemporal dynamics of decision-making. His research focuses on the effects of context on pedestrian way-finding and navigation using agent-based models.

In his previous positions, Jerry managed GIS portions of projects for on-campus clients and has also worked in private-sector digital cartography. In a public university setting, Jerry collaborated with faculty, researchers and students in History, Public Health, Engineering, Hydrology, Anthropology/Archaeology, and Computer Science to fulfill their mapping and analytical needs. He also ran seminars on subjects including visualization, high performance computing (HPC), "big data" (Hadoop/Spark), sensor networks(Arduino–based), and GIS for university and community participants.

As GIS Project Manager, Jerry will work with prospective clients to discuss how CURA can meet their technology and cartographic needs.

PhD, Geography, The University of Iowa
MSc, Geography, Southern Illinois University—Carbondale
BA, Anthropology, Southern Illinois University—Carbondale

CONTACT INFORMATION
mount.95@osu.edu or 614/292.5930

STUDENT PROFILE: JINHYUNG LEE

MA, Geography
Korea University

BA, Geography
Korea University

Research Interests:

- Empirical: Accessibility, mobility and movement, sustainable transportation and social outcomes, urban science
- Methodological: Geographic information science, time geography, spatio-temporal modeling and analysis, moving object analysis

"I like working at CURA because I can participate in various research projects and play a meaningful role in the projects as a GIScientist. Also, one of the most positive experiences is getting to know how to collaborate with other researchers from various fields. I have been working with economists, public health scientists, anthropologists, and community members on real-world projects."

GRADUATE RESEARCH ASSOCIATES

Jinhyung Lee
PhD Student
Department of Geography
College of Arts and Sciences

Young Jaegal
PhD Student
Department of Geography
College of Arts and Sciences

Brett Morris
MCRP Student
City & Regional Planning, Knowlton School
College of Engineering

Shaun Fontanella
Post-Doctoral Researcher
Center for Urban and Regional Analysis

Jake Carr
PhD Student
Department of Geography
College of Arts and Sciences

ASSOCIATE DIRECTORS

Maria Conroy, PhD
Associate Director
City and Regional Planning
Knowlton School

Research Interests
- planning for sustainable development
- enhancing participation processes
- planning around sensitive and protected lands

Robert Greenbaum, PhD
Associate Director
John Glenn College of Public Affairs

Research Interests
- tax incentive policies
- economic resilience
- urban and regional economic development

Elena Irwin, PhD
Associate Director
College of Food, Agricultural, and Environmental Sciences

Research Interests
- spatial modeling land use
- influence of policies on land change patterns
- development of integrated models of land use and ecosystem services

OVERSIGHT COMMITTEE

Jan Box-Steffensmeier, PhD
Dean, Social and Behavioral Sciences
College of Arts and Sciences
Professor, Department of Political Science

Shoreh Elhami, MCRP, GISP
Citywide GIS Manager
Department of Technology
City of Columbus

Rachel Garshick Kleit, PhD
Professor and Section Head
City and Regional Planning
Knowlton School

John Casterline, PhD
Director, Institute for Population Research
Professor, Department of Sociology
College of Arts and Sciences

Dorota Grejner-Brzezinska, PhD
Professor and Chair
Dept. of Civil, Environmental, and Geodetic Engineering

David Landsbergen, PhD
Associate Professor
John Glenn College of Public Affairs

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College of Arts and Sciences

Elisabeth Root, PhD
Associate Professor
Department of Geography
College of Arts and Sciences

Shoshanah Goldberg-Miller, PhD
Assistant Professor
Department of Arts Administration, Education and Policy
College of Arts and Sciences

BECOME AN AFFILIATE

Are you interested in becoming part of CURA's network of scholars, staff, and students at the university and around Ohio?

Consider becoming an affiliate. This is a great way to stay connected with developments, events, and services offered by the center. Becoming an affiliate also introduces you to like-minded researchers in different fields, potentially creating opportunities for interdisciplinary work.

Affiliates of CURA maintain a working relationship with the Center, engaging in research and attending events throughout the academic year. As a multi-disciplinary center, CURA relies on our affiliates to maintain connections in other departments.

Faculty affiliates may approach CURA with collaborative grant proposals, research concepts, or assistance with spatial analysis components of ongoing research. CURA gives priority to projects with affiliates and with subject matter that aligns with our four core research themes.

Visit **cura.osu.edu/affiliate**
to learn more

CONNECT

Visit CURA's blog at www.cura.osu.edu/cura-blog

Connect with CURA on Twitter, Facebook and our website. We maintain a blog with frequent updates on events, research trends, student engagement opportunities, and profiles of our affiliates. Let us know if you have an idea for a blog post or an opportunity to collaborate on a project or event.

If you want to be more involved with CURA, apply to become an affiliate of the center at **cura.osu.edu/affiliate.**

To sign up for our newsletter, visit our home page, **cura.osu.edu.**

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