



NATIONAL CENTER FOR SMART GROWTH RESEARCH AND EDUCATION

2015-2016 Progress Report





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A MESSAGE FROM OUR DIRECTOR

Thank you for taking time to read the progress report of the National Center for Smart Growth Research and Education. As I write this in September 2016, the Center is near the end of its 16th year, its 14th since I joined the Center in 2002.

We now have six faculty with joint appointments in the Urban Studies and Planning program, six professional staff and two administrative staff. We were sad to lose Rolf Moeckel to Technical University Munich and to see Harut Shabhumyan return to the University College Dublin, but of course we wish them both well. At the same time, we were pleased to welcome Kim Fisher, formerly with the Transportation Research Board, and Andy Fellows, former Mayor of College Park. We anticipate they will make major contributions to the mission of the Center.

Since the last progress report, the NCSG has continued its work to create a more sustainable, vibrant and enhanced quality of life for communities across the globe. From the beginning, the NCSG has worked to advance the notion that research, collaboration, engagement and thoughtful policy development hold the key to a smarter and more sustainable approach to urban and regional development. This remains evident in our work over the past period. Highlights include the following:

The Transportation Policy Research Group continued

its work in collaboration with the Maryland Department of Transportation and its sister agencies on a variety of transportation and transportation -related research projects. Many involved the exercise of the Maryland State Transportation Model, but other projects involved place typing, freight analysis, and a newly developed Direct Ridership Model for the Washington Metropolitan Area Transit Administration. PRESTO, perhaps now its signature project funded by the Socio-Environmental Synthesis Lab and the Town Creek Foundation, has continued to advance the science of model integration and provide new insights into the sustainability of the Baltimore-Washington area.

The Housing Strategies Group helped the Opportunity Collaborative complete the Baltimore Regional Plan for Sustainable Development by providing an important foundation through its opportunity mapping work and assisting on the housing element of the plan. The Housing Strategies Group also worked extensively in Langley Park developing story maps, helping the predominantly Latino

neighborhood prepare for the anticipated Purple Line.

The Purple Line Corridor Coalition (PLCC) continued its work in the tumultuous Purple Line corridor. After the Hogan administration gave the green light on the project, the PLCC led the development of a consensus Purple Line Corridor Agreement, formerly known as the Purple Line Compact. The formal signing of the Agreement, however, was delayed by a court case that has once again held up the entire project.

The Partnership for Action Learning in Sustainability (PALS), still the largest program of its kind in the country, continued to strengthen and grow. After very successful engagements in The City of Frederick and Howard County, PALS recently engaged some 25 courses in Anne Arundel County and the City of Annapolis. PALS also engaged a few courses in Baltimore, partnering with non-profit organizations in the beleaguered west side of Baltimore.

In April, we once again collaborated with the Montgomery County Department of Planning for Makeover Montgomery 3. The two-day

symposium brought nearly 300 design and development professionals, academics, students and citizens together with some of the nation's brightest minds in planning, design, economics and development to discuss strategies for balancing change in America's suburbs.

More detail on all these projects is presented in the pages that follow. Again, thank you for taking time to read our progress report. All of us at the Center welcome your feedback and hope you will contact us if you need more information. Without such dialog between the Center and its external constituencies, we cannot succeed at facilitating a smarter and more sustainable approach to urban and regional growth.



Gerrit Knaap
Executive Director

“ From the beginning, the NCSG has worked to advance the notion that research, collaboration, engagement and thoughtful policy development hold the key to a smarter and more sustainable approach to urban and regional development. ”



OUR RESEARCH CENTERS



Planning & Design Center

The Planning & Design Center assists local, regional and state agencies on a wide range of projects, including land use planning, urban design, integrated land use/ transportation planning, economic analysis, agricultural preservation, housing and environmental issues.



Housing Strategies Group

The Housing Strategies Group advances research and public education around housing affordability, matching housing with employment opportunities, and expanding housing choices, while making connections to smart growth.



Partnership for Action Learning in Sustainability

The Partnership for Action Learning in Sustainability is a campus-wide initiative that harnesses the expertise of UMD faculty and the energy and ingenuity of UMD students to help Maryland communities become more environmentally, economically, and socially sustainable. PALS is designed to provide innovative, low-cost assistance to local governments while creating real-world problem-solving experiences for University of Maryland graduate and undergraduate students.



Transportation Policy Research Group

The Transportation Policy Research Group partners with state and local officials to explore new transportation policy approaches that give citizens economically and environmentally sustainable mobility choices which promote sound urban development.

PRESS

2014-2016

THIRTY SEVEN ARTICLES

2014



2015



2016 - so far



“Delivering the promise of the Purple Line”
- **The Washington Post**, May 2, 2014

“Defining opportunity in Baltimore”
- **The Baltimore Sun**, August 3, 2015

“Businesses deliver the most coveted perk: a better commute” - **The Guardian**, August 15, 2015

“How Baltimore’s housing voucher program almost gets it right” - **Citylab**, January 5, 2016

“Long distance Metro passengers offset ridership losses from fare hikes, study finds”
- **The Washington Post**, January 12, 2016



PALS Program makes the Community the Classroom

New Sustainability Program pairs UMD assets with the needs of Maryland jurisdictions

In 2013, Gerrit Knaap, director of the National Center for Smart Growth, attended a Conference at the University of Oregon that showcased the U of O's Sustainable City Year Program (SCYP). Launched in 2009, SCYP was created to assist Oregon communities with tackling challenges in sustainability by leveraging the knowledge of the university.

"The SCYP program combined an active learning environment, community engagement... really everything that creates an inspiring and meaningful educational experience," recalls Knaap. "It represented a vision for what we could do—both as a land grant institution and a world class research university—for our own state."

This type of action learning program addressed two very distinct, yet connected, challenges: a lack of "real world," experiential opportunities for students to practice classroom skills, and the contemporary struggle local governments face with dwindling budgets, overburdened staff and mounting sustainability issues. It also represented a unique opportunity for the National Center for Smart Growth to leverage its location at the state's land grant institution and its familiarity with local governments—bridging academia and community to promote sustainable quality of life in a novel way.

Within six months, Knaap had organized a symposium with SCYP program

administrators, UMD faculty, community stakeholders and nationally-recognized educators to lay the groundwork for a similar program at UMD. By late 2013—less than a year since the pivotal conference in Oregon—**PALS was off the ground.**

Now in its fourth year, the Partnership for Action Learning in Sustainability has engaged over 1,000 students, 40 faculty, 5 jurisdictions and countless community stakeholders in developing fresh approaches to economic, social and environmental sustainability challenges facing Maryland communities. PALS concentrates on one or two jurisdictions each year, entering collaborative partnerships that match coursework with faculty, oversee logistics and streamline the community-university partnership. Since its inception, PALS has worked with the cities of Salisbury, College Park and Frederick, as well as Howard County, the Columbia Association and the Southwest Partnership in Baltimore.

Its most recent collaboration with Howard County makes it the largest action-learning program in the country. Through coursework spanning virtually every discipline campus-wide, the program has resulted in millions of dollars of value for Maryland jurisdictions.

Beyond sheer numbers, PALS has created several tangible results for communities that have sparked new partnerships, sustainability initiatives,





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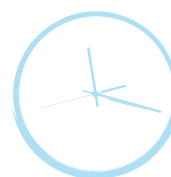
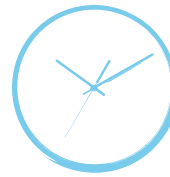
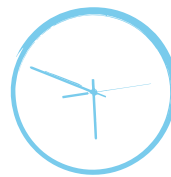
Students created public art exhibits in College Park as part of the PALS program. Public art installations are used to further social sustainability, empower and enliven communities, and spurs dialogue in periods of uncertainty or change.



OVER
1,350 STUDENTS
PARTICIPATING



11 COLLEGES
SCHOOLS & PROGRAMS
PARTICIPATING IN
THE PALS PROGRAM
SINCE 2013



OVER 120,000 HOURS
of student work equal
THREE AND A HALF YEARS
in



Working in
SEVEN JURISDICTIONS
across the State of Maryland

PARTNERHIP FOR A

PALS 2014

HOURLS

ivalent to almost

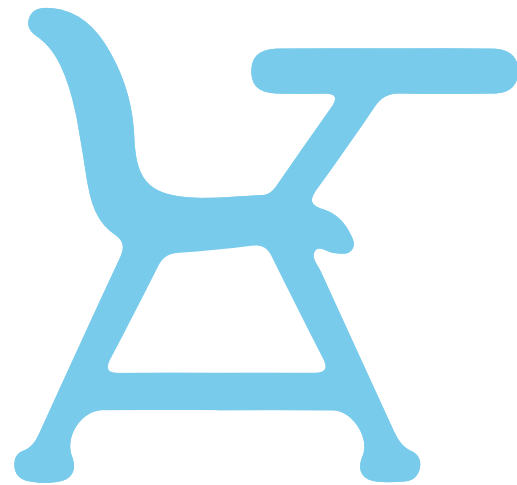
MILLION DOLLARS

consultant fees



ACTION LEARNING

PALS uses innovative teaching methods that bring real world problems to the classrooms



91 COURSES

customized specifically toward challenges and goals specified by the cities and jurisdictions

ACTION LEARNING IN SUSTAINABILITY

13 - 15



inspiration and community empowerment. A beta test in Salisbury, which paired architecture students and community stakeholders in a “participatory design” studio, resulted in extensive revitalization plans to address the regular flooding that besets the bayside city. A year later, the finished concepts formed the foundation for the city’s 20-year Master Plan, which is now entering the execution phase.

In addition to an architectural walking guide developed for Frederick, several other initiatives—from a greenhouse gas emission study to plans for a shared use path—have been incorporated into the City’s sustainability agenda. Revitalization plans created by architecture students for Ellicott City, which were translated into an interactive website by UMD’s Computer Science program, will serve as a key fundraising tool for the city.

PALS is administrated by the NCSG, with the support of the university’s School of Architecture, Planning and Preservation, the Office of Sustainability, the Office of the Provost and a diverse advisory committee. Leading PALS for the past four years is Uri Avin, a 40-year veteran of community and urban planning, and a research professor at the university. This summer, the NCSG brought on transportation and planning expert (and UMD alum) Kimberly Fisher to act as the program’s manager and oversee its expansion as PALS heads into its fifth partnership this fall, this time with Anne Arundel County and the City of Annapolis.

The partnership with Anne Arundel County and Annapolis is the first time PALS has collaborated with both a city and county concurrently. The combined jurisdiction, over half a million people, is nearly double the size of PALS’ latest



efforts in Howard County; the size and scope of work has allowed the program to target a wide range of topics for both undergraduate and graduate school courses, some of which will also foster inter-jurisdictional collaboration. Coursework will run the gamut of disciplines and tackle a variety of issues, from enhancing transportation support for vulnerable populations, design solutions to protect Annapolis' historic waterfront from coastal storm surges, examine heroin use and suicide prevention strategies, and create paths to connect local farms to communities.

"Every local jurisdiction in Maryland could benefit from having a partnership with the PALS organization," said Allan Kittleman, Howard County Executive. "All our county executives want to make our communities more sustainable, and I think that the PALS program helps do that in an efficient and effective way."

Adjacent Page, Left: A student examines invasive species in Frederick's watershed; Right: Community design workshop in Salisbury

Above: "The work product from the PALS classes delivers some of the best bang for the buck." -Alderman Kerry Russell, City of Frederick



National Center for Smart Growth Launches Purple Line Corridor Coalition

In 2013, the National Center for Smart Growth launched [The Purple Line Corridor Coalition \(PLCC\)](#), the first major initiative in the National Capital Area that guides the efforts and expertise of community, government and private business leaders active in planning for the Purple Line light rail project, which is poised to shape the growth and character of the region for decades. Comprising over 30 invested community, business, nonprofit, education, philanthropic and government organizations, the PLCC leverages the NCSG's analytical capacities—such as mapping, forecasting, research and partnerships with other cities—to help communities along the corridor capitalize on opportunities while ensuring that investment in the Purple Line creates vibrant neighborhoods that preserve existing

community assets. A 2014 spring workshop and two community forums resulted in an agreement that will help to steer community and economic development along the corridor. Entitled “Pathways to Opportunity: A Community Development Agreement for the Purple Line Corridor,” the agreement is expected to be signed before construction begins. With a focus on housing, small business, the labor market and neighborhood identity, it represents a pledge to work together to leverage Maryland's largest 21st century transit investment.

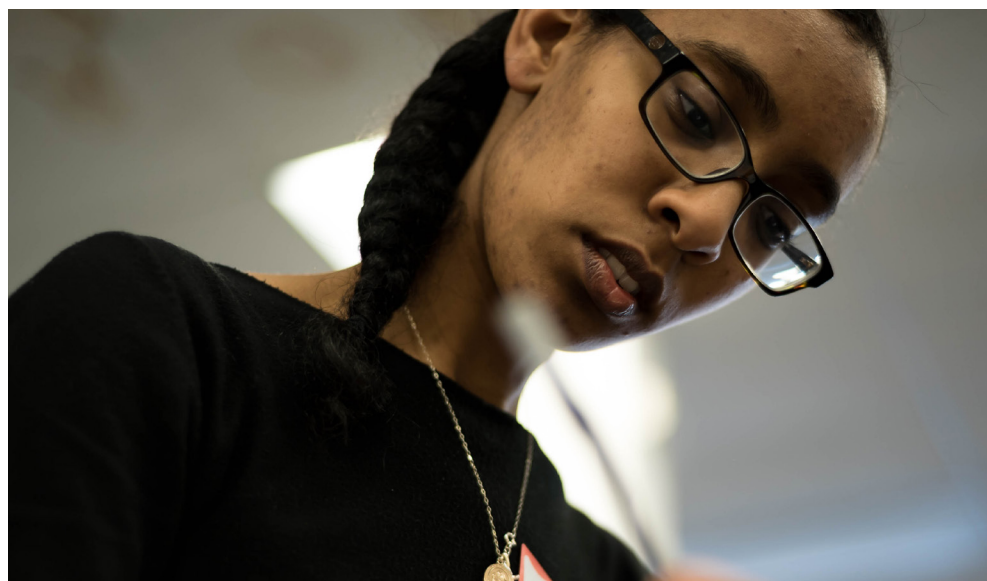
Above left: The Purple Line Corridor Coalition's inaugural regional workshop, “Beyond the Tracks,” brought over 250 government, non-profit, public and private representatives together for collaboration and idea exchange. It was the largest assembly of community stakeholders since the Maryland Transit Authority announced plans to build the proposed 16-mile light rail system that will connect Montgomery and Prince George's Counties.



“Opportunity Maps” Create Foundation for First-Ever Regional Plan

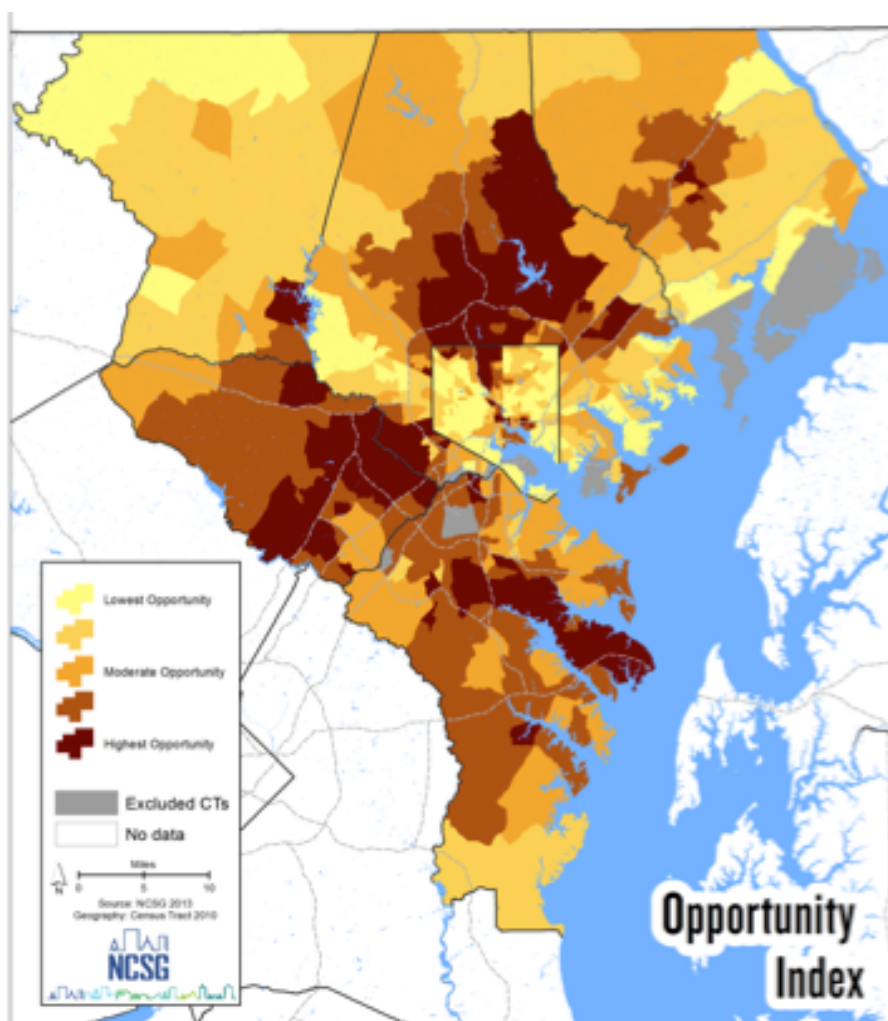
A series of maps developed for [Baltimore's Opportunity Collaborative](#) that illustrate disparities in opportunity was the basis for Baltimore's first-ever comprehensive regional plan to create strong, sustainable communities and break the continuous cycle of poverty for many inner-city families. The largest and most comprehensive snapshot of equity and opportunity in Baltimore's history, The Baltimore Regional Plan for Sustainable Development (RPSD) is a comprehensive roadmap to help the region coordinate investments in housing, transportation and workforce development, reduce disparities and increase quality of life for the entire Baltimore metropolitan area.

The mapping project was a three-year effort of data collection and analysis, using over 100 indicators—



from infant mortality to transit access—to illustrate where economic, social and environmental strengths and weaknesses lie in the Baltimore metropolitan region. Most notably, the maps confirmed what many experts consider to be a root cause of the recent Baltimore riots; a wide disparity between parts of the region—particularly in housing, safety, health, and education—with the City of Baltimore lagging grossly behind its suburban counterparts in most areas.

Right Image: Opportunity Maps of the Baltimore Region show the wide disparities in housing, health and education. In addition, focus groups, held by the NCSG and the Baltimore-based non-profit Citizens' Planning and Housing Association, discovered what opportunity means for different groups of people; the results served as inspiration for a paper co-authored by Dr. Willow Lung-Amam, Eli Knaap, Gerrit Knaap, and Casey Dawkins, as well as an op-ed in the Baltimore Sun.





Planning for Uncertainty Key to Thriving Region

New research from the National Center for Smart Growth suggests planning for uncertainties—from federal job growth to behavioral assumptions—is essential for a more thriving Baltimore-Washington region. The "millennial factor" and autonomous vehicles are examples of several large-scale phenomena currently studied by NCSG researchers to craft a sustainable development strategy for the Baltimore-Washington area

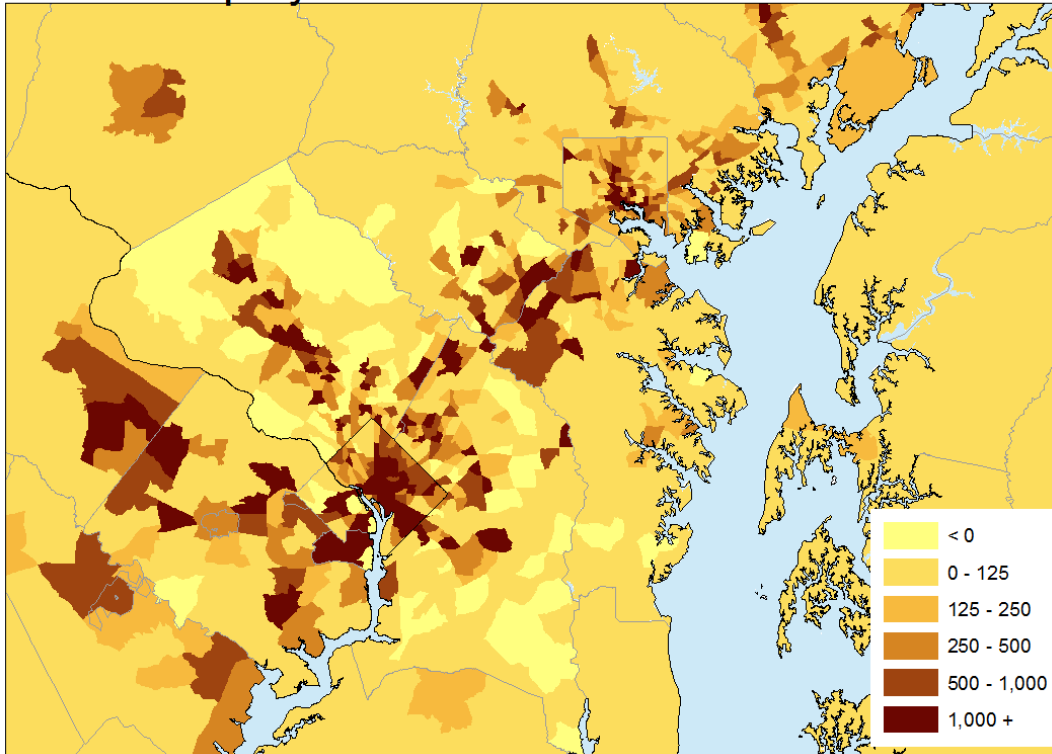
[The Plan for Regional Sustainability Tomorrow, or PRESTO](#), will help determine where industry and business hubs would thrive, whether there will be the housing, infrastructure and transportation inventory to support it, and—ultimately—how to create a

sustainable region by the year 2040. The on-going project, supported by the Town Creek Foundation, Socio-Environmental Synthesis Lab, and the European Union, focuses on identifying the key factors, or "driving forces," that will shape the Baltimore-Washington region, using the center's suite of highly developed data and analytic tools to develop baseline scenarios, as well as alternative, most sustainable scenarios to help guide policymakers in mapping the region's future.

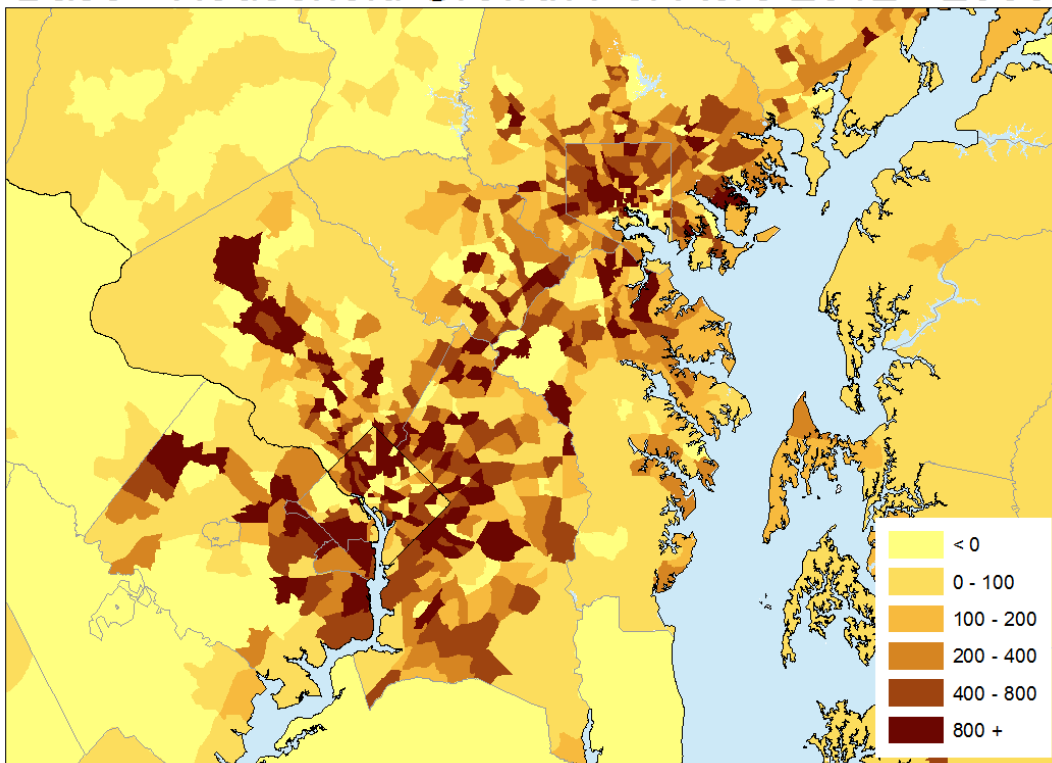
Above : Under the direction of Dr. Chao Liu, 20 urban planning students created a series of mapping tools that illustrate trends in crime, housing, safety and street "wellness," workforce development and job accessibility in Southwest Baltimore to aid the Southwest partnership with their revitalization efforts. The new mapping tools can generate a variety of maps that show progress, areas of need, opportunity and correlations.

The maps (right) show scenario building and information gathering undertaken with PRESTO to help inform jurisdictions prepare for the future.

Base - Employment Growth Per Acre 2012 - 2030



Base - Household Growth Per Acre 2012 - 2030





Students propose design ideas for the downtown Columbia waterfront as part of the PALS program. PALS launches its fourth partnership with Anne Arundel County and the City of Annapolis this fall. To learn more about the program, watch the PALS video, [here](#).

NCSG Lends Expertise on Worldwide Infrastructure Challenges

The National Center for Smart Growth (NCSG) has joined global infrastructure service authority Louis Berger to assist the [U.S. Agency for International Development \(USAID\)](#) in providing vital architecture and engineering (A&E) services worldwide, as part of a five-year, \$600 million indefinite delivery, indefinite quantity (IDIQ) contract won by Berger in 2015.

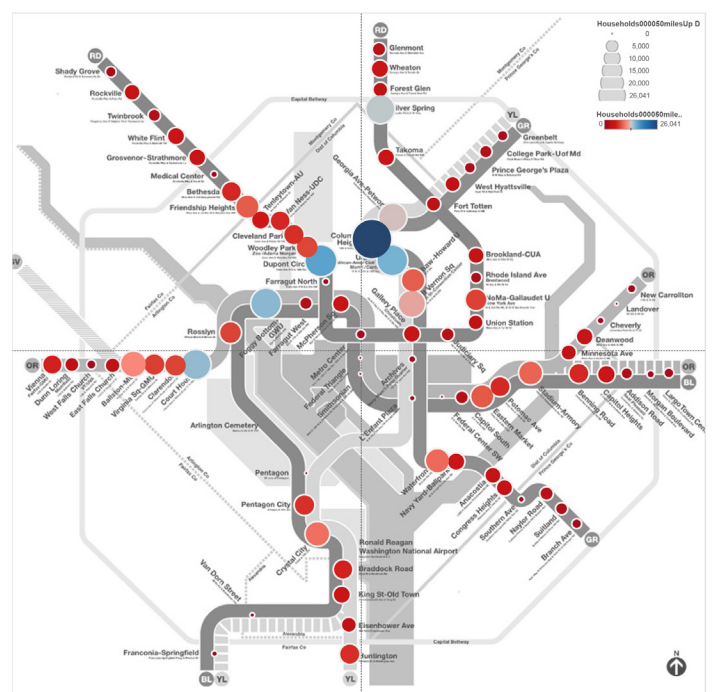
Under the auspices of the partnership, UMD faculty will join the Berger team to bring knowledge and expertise to bear on a host of infrastructure challenges worldwide. Work will encompass strengthening transportation, water and energy infrastructure and lending expertise in the areas of environment, vertical structures and telecommunications.

SEED Reports Examine Avenues to Economic Growth

A series of reports released by the NCSG show that the keys to economic and sustainable growth in Maryland lie in development from the ground up: education, job training and clear paths to opportunity for the state's most vulnerable residents. The reports are the culmination of three years of research, the result of a Sustainable and Equitable Economic Development (SEED) grant in 2011 from the Surdna and Abell Foundations' ["Employment Centers and Agglomeration Economies: Foundations of a Spatial Economic Development Strategy"](#) and ["Polycentrism as a Sustainable Development Strategy: An Empirical Analysis from the State of Maryland,"](#) both released in 2014, suggest that, to stimulate job growth and economic development, state and local governments should target incentives to existing "employment centers" within Maryland. The studies identified 23 job hubs—defined as areas

with a large concentration of jobs per square mile—that have the greatest growth potential and regional accessibility, serving as economic engines for Maryland's economy. A third report released in 2015, ["Beyond Smart Growth: An Economic Development Strategy for 21st Century Maryland,"](#) suggests a path for the State of Maryland's role in continued economic growth, including what many economists claim is critical to long-term prosperity: addressing economic, social, and environmental challenges—the triple bottom line. While Maryland boasts a strong economic foundation, it must respond to 21st century challenges—like aging infrastructure, a diverse population and regional economic disparities—if it wants to ensure long-term success.

Specifically, the report stresses the importance of opportunity in breaking the cycle of poverty for the state's poorest residents, an issue that can be improved with pathways to education, workforce training and more affordable housing in high opportunity areas.



Ridership Model Forecasts for a Changing Washington-Area

A landmark transit ridership model developed by NCSG researchers Dr. Hiro Iseki, Dr. Chao Liu and Dr. Gerrit Knaap suggests that the location of job and households, the level of transit service, the cost of travel by different modes, and the level of transit fares all fundamentally shape the demand for ridership on Washington's Metrorail system, Metro. Developed specifically for the Washington Metropolitan Area Transit Authority (WMATA) in 2015, the Origin-Destination Land

Use Ridership Model (OD-LURM) shows that fare “elasticity,” or the change of ridership demand in response to transit fares, varies substantially by travel distance. Short distance trips, for which there are many alternatives to Metro—including walking, biking, taxis, Uber and other car sharing options—tend to be more sensitive to fares. However, trips longer than six miles, where alternatives are limited to driving or buses, are less sensitive to fares. “As long as the majority of households remain in the suburbs and jobs are concentrated in the city,” the study explains, “the demand for long distance ridership on Metro will remain strong, and relatively resistant to fare changes.”

Graphics Above: The WMATA study confirms the importance of

transit-oriented development in generating Metro ridership. Among the findings, the team saw a 10 percent increase in households located within a half-mile walk of a station area increases transit boardings by 2.7 percent during the morning peak; similarly, a 10 percent increase in jobs located within a half-mile walk of a station area was found to increase transit alightings by 8.8 percent in the morning peak.

“Our study implies that in order to maintain robust ridership numbers, WMATA must make sure to connect sound pricing policies with improvements in rider experience with service quality, connectivity, and response to the needs of its riders,” said Dr. Hiro Iseki.

NCSG joins USA Sustainable Cities Initiative

In 2015, [the National Center for Smart Growth \(NCSG\)](#) announced a partnership with the [University of Baltimore, the United Nations Sustainable Development Solutions Network \(SDSN\)](#) and [Climate Nexus](#) to envision a path to sustainable development for the City of Baltimore. [The USA Sustainable Cities Initiative \(USA-SCI\)](#), a new program established by the United Nations, will provide a collaborative plan to develop strategies in the city of Baltimore—one of three pilot U.S. cities—to achieve newly adopted Sustainable Development Goals (SDGs), a series of global aspirations and priorities designed to take on major sustainable development challenges.

Efforts will include community dialogue to articulate city-specific goals, including poverty, health, education, jobs and environmental protection, as well as identify best practices for achieving them.

“Targeted” Housing Policy the Key to Preventing Transit-Induced Gentrification

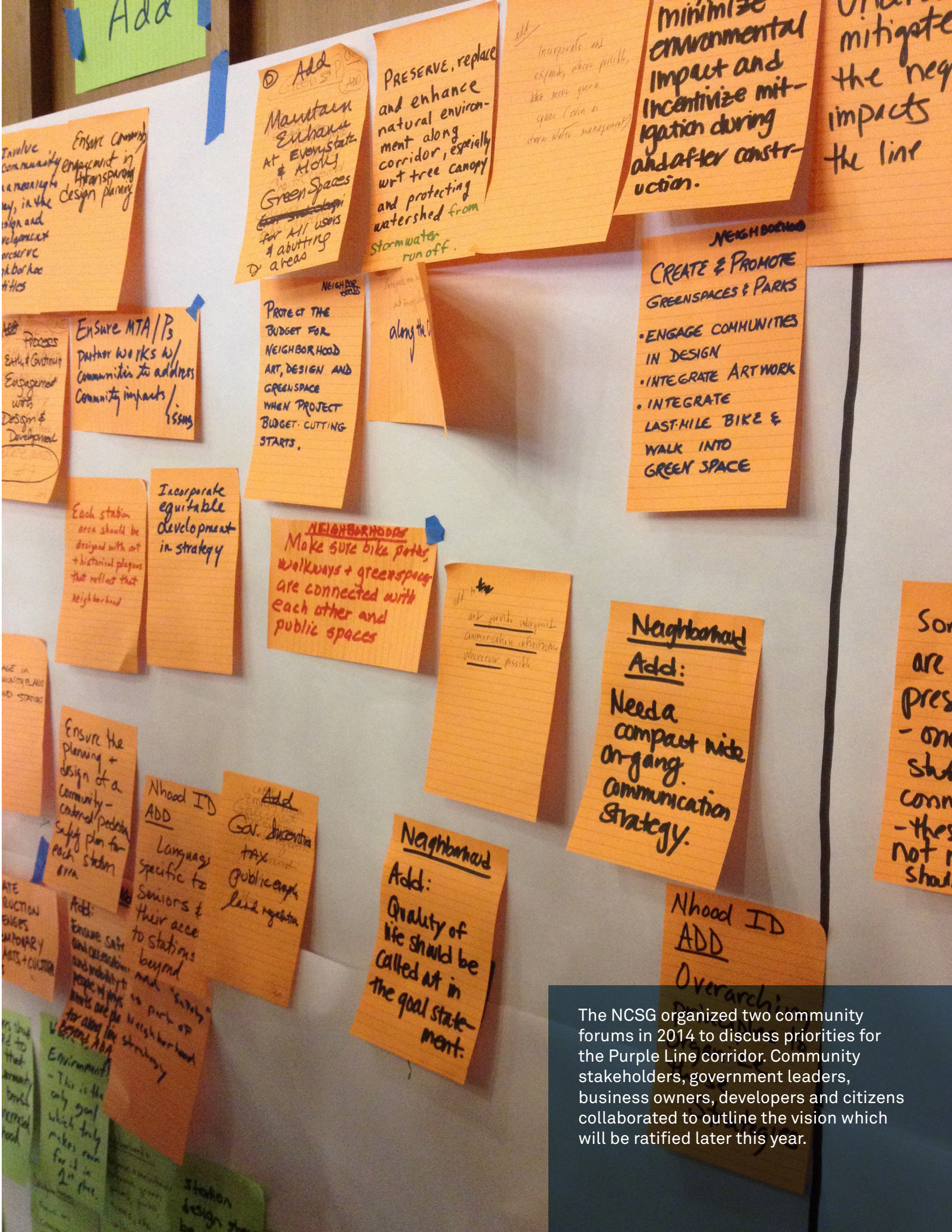
NCSG researchers leveraged an innovative land use model to predict how different policies surrounding Transit Oriented Development, or TOD, will affect housing, gentrification and opportunity in the Washington, D.C. region. The study, [“Transit-Induced Gentrification: Who Will Stay, and Who Will Go?”](#) suggests that affordable housing requirements, specifically targeting new construction surrounding TODs, will result in less gentrification and a more diverse, dynamic mix of incomes within the community. To simulate the scenarios and measure their impact on the housing market, the researchers integrated the Maryland Statewide Transportation Model (MSTM) with the Simple Integrated Land Use Orchestrator (SILO), an open-source micro-simulation model that can account for “real world” constraints—like travel time and housing costs—particularly those faced by low-income households.

The results show that supply-side policies, such as requiring a percentage of new construction to be low-income housing, have more effect on mitigating transit-induced gentrification than programs like rental vouchers. The results also show that affordable housing policies targeted towards transit were significantly more effective than a region-wide approach.

Rethinking America’s Suburb: Makeover Montgomery

As metropolitan areas across the country grapple with the profound economic, demographic and environmental shifts of the 21st century, they also face the demand for a vastly different American suburb—one that is more urbanized, sustainable and diverse. In 2011, the NCSG, in partnership with the [Montgomery County Department of Planning](#) and the University of [Maryland Urban Planning Program](#) hosted the inaugural Makeover Montgomery, a three-day deep-dive into the challenges and opportunities of the changing suburban landscape. Now, every two years, NCSG gathers some of the brightest minds in planning, development, design and policy to continue the conversation, using Montgomery County as a springboard.

In 2014, MM2 tackled topics like aging infrastructure and aging populations. In 2016, MM3 examined three specific challenges facing the contemporary suburb—the shared economy, beyond transit-oriented development and equity and opportunity.



Add

① Add
Maintain
at EVERY station
& ALONG
Green Spaces
for ALL users
& abutting
areas

PRESERVE, replace
and enhance
natural environ-
ment along
corridor, especially
wrt tree canopy
and protecting
watershed from
stormwater
run off.

add
incorporate and
expand, where possible,
the more green
space. (also in
stormwater management)

minimize
environmental
impact and
incentivize mit-
igation during
and after constr-
uction.

mitigate
the neg
impacts
the line

Involve
community
in a meaningful
way, in the
design and
implementation
process
to preserve
neighborhood
character

Ensure MTA/PS
partner works w/
community to address
community impacts/
issues

NEIGHBORHOODS
PROTECT THE
BUDGET FOR
NEIGHBORHOOD
ART, DESIGN AND
GREENSPACE
WHEN PROJECT
BUDGET CUTTING
STARTS.

NEIGHBORHOODS
CREATE & PROMOTE
GREENSPACES & PARKS
• ENGAGE COMMUNITIES
IN DESIGN
• INTEGRATE ARTWORK
• INTEGRATE
LAST-MILE BIKE &
WALK INTO
GREEN SPACE

Each station
area should be
designed with art
& historical plaques
that reflect that
neighborhood

Incorporate
equitable
development
in strategy

NEIGHBORHOODS
Make sure bike paths,
walkways + green spaces
are connected with
each other and
public spaces

add
add private relevant
communication infrastructure
wherever possible

Neighborhood
Add:
Need a
compact wide
on-going
communication
strategy.

Some
are
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Ensure the
planning +
design of a
community-
centered pedestrian
safety plan for
each station
area

Nhood ID
ADD
Language
specific to
Seniors &
their acce
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beyond
and "safety"
as part of
the neighborhood
strategy

ADD
Gov. incentives
tax
public eng
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Neighborhood
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Quality of
life should be
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Nhood ID
ADD
Overarching

The NCSG organized two community forums in 2014 to discuss priorities for the Purple Line corridor. Community stakeholders, government leaders, business owners, developers and citizens collaborated to outline the vision which will be ratified later this year.

Measuring Sustainability on a Global Scale: Paris Seminar

In the spring of 2015, researchers and faculty from the NCSG and [University of Maryland's School of Architecture, Planning and Preservation](#) traveled to Paris for a three-day exploration of the changes and challenges facing the world's metropolises.

Co-sponsored by the NCSG, the event was the second part of a bilateral international seminar on urban transit issues and development. The group first met in Washington, D.C., in 2014. The dual-city seminar operated under the premise that global metropolitan cities must attain equivalent measures to ensure sustainability, long-term growth and prosperity, and that these measures—including transit oriented development, green infrastructure and architecture—transect regions and cultures.

Engaging practitioners and academics from urban planning, architecture, engineering and social science, the seminar used the cities of Paris and Washington as urban laboratories for exploring contemporary development challenges. Using these two historically steeped, methodically planned cities sparked meaningful conversations about the future of modern cities around the world.

Below Left: NCSG researchers test out Parisian transit during a cross-continental workshop in 2015

Below Middle : Makeover Montgomery continues to examine the evolution of the American suburb as communities struggle to keep up with 21st century changes, such as an aging population, new technologies and the demand for walkable living.

Below Right: NCSG continues to host a roster of experts through its Brown Bag Webinar Series, which livestreams on the center's website. Greater Greater Washington's Dave Alpert discussed how blogs influence planning in a 2013 talk.

Housing Assessment Offers insight in Baltimore Housing Crisis

Associate Professor Casey Dawkins led a team of researchers in creating a Fair Housing Equity Assessment (FHEA), a birds-eye view of the state of housing in the region, for the [Opportunity Collaborative's](#) housing strategy for the Baltimore region. Dawkins' research documented the dearth of affordable housing in the area, identified concentrations of minority households living in poverty, and examined the historical factors perpetuating the cycle of segregation and poverty.

By combining the FHEA with Opportunity Maps for the Baltimore region, the researchers offered a basis for the plan recommendations. With the obstacles clearly defined, the committee was able to develop specific objectives and strategies that serve as a solid foundation for the housing plan.

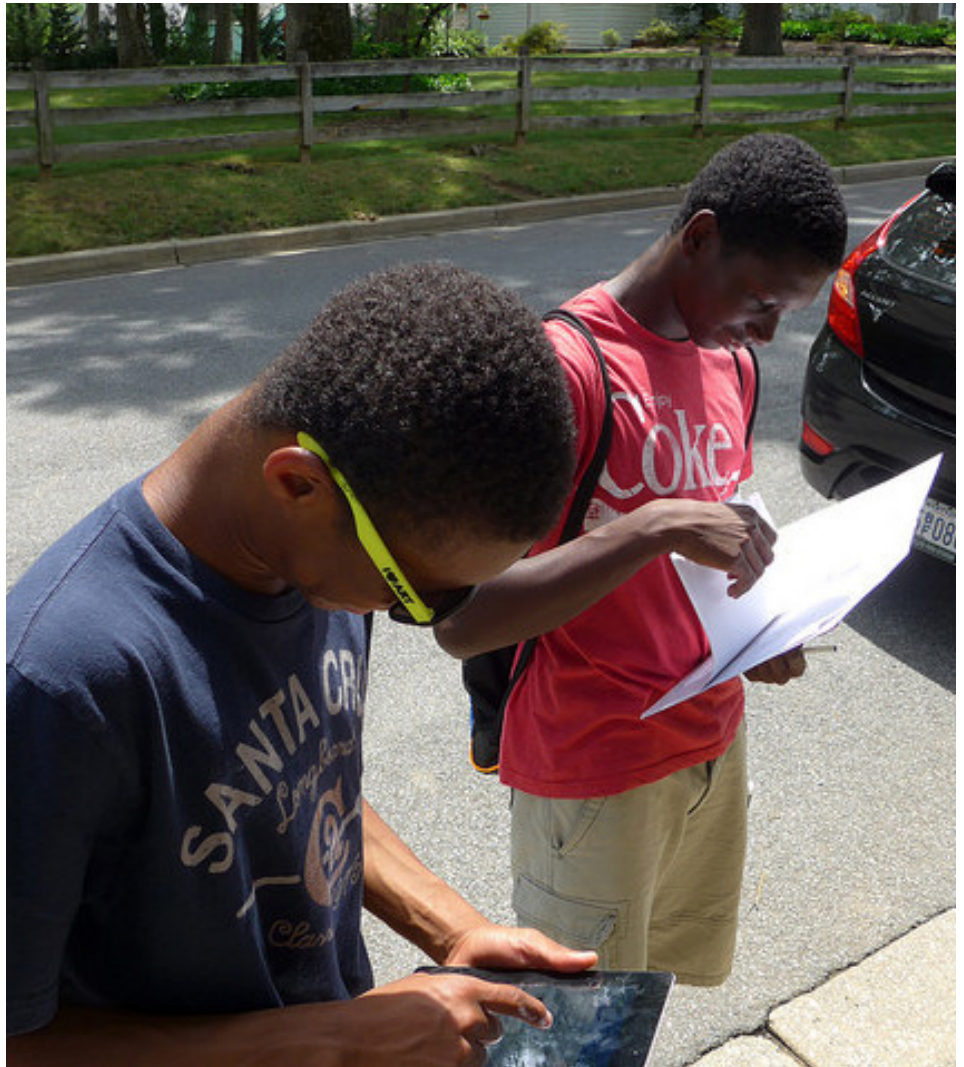


High School Students learn GIS through NCSG Partnership

NCSG's GIS Internship led seven high school students on a six-week internship in partnership with the City of College Park, creating safer streets using Geographic Information Systems technology. Named "Building Communities through Technology," the internship provided students an unparalleled experience that combined skill acquisition and community service.

"Quentin's trajectory would not have been possible without the 2014 GIS Internship," shared one parent, whose son is now considering a career in planning. "Quentin matured and gained clarity on his career direction at a young age."

*Right above and right below:
High school students with the NCSG
GIS Internship.*



FACULTY AT THE CENTER

Dr. Gerrit-Jan Knaap

is the Director of the National Center for Smart Growth, Associate Dean of Faculty Development and Creativity, and a Professor of Urban Studies at the University of Maryland. Gerrit is also an ex officio member of Governor O'Malley's Smart Growth Sub-Cabinet. He has authored nearly 100 articles and seven books on state and local land use planning and economics. His research interests include the economics and politics of land use planning, and efficacy of economic development instruments, and impacts of environmental policy. Gerrit serves on a number of state workgroups and committees, and has spearheaded partnerships with nonprofits and stakeholders throughout the state to develop equitable, sustainable development initiatives. He has spoken extensively on the subject internationally. Gerrit earned his M.S. and Ph.D. from the University of Oregon, and received post-doctoral training at the University of Wisconsin-Madison, all in economics.

Hiroyuki (Hiro) Iseki

is a research faculty with the NCSG and an Assistant Professor of Urban Studies and Planning. His research focuses on balancing efficiency, effectiveness, and equity in public policy and planning with a special attention to transportation, environment, and land use. Hiro has been involved in a series of studies on built environment, transit facilities, and crime incidents in Los Angeles, and developed a new GIS analysis method to incorporate the presence of slopes and intersections in identifying the size of bikeshed, using energy consumption as travel impedance. He has developed a number of studies and reports on transit issues for the Transportation Research Board, MDOT and WMATA. Hiro holds a Master of Art and a Ph.D. in Urban Planning from UCLA, as well as the Master of Engineering degree from University of Tokyo.

C. Scott Dempwolf

is Assistant Research Professor in the Urban Studies and Planning Program at the University of Maryland, College Park, and Director of the UMD – Morgan State Center for Economic Development. His research examines relationships between innovation, manufacturing and economic development in global and regional contexts. Scott practiced community and economic development for over 20 years at the neighborhood, city, county and regional levels prior returning to academia. Scott earned his PhD in Urban and Regional Planning at UMD and a Masters in Community and Regional Planning at Temple University.

Uri Avin

is the Director of the Planning and Design Center (PDC), a research professor with the Urban Studies and Planning Program and founding director of the University-wide Partnership for Action Learning in Sustainability, which provides planning and design services to jurisdictions in the Mid-Atlantic and beyond. With over 40 years of practical experience in both private and public sectors, including planning director for three Maryland counties, Uri has devised several smart growth plans, including Sector and Comprehensive Plans, Corridor Plans and Multi-jurisdictional plans. He is a Charter Fellow of the American Institute of Certified Planners, serves on several smart growth committees and has published several articles, papers and books related to Smart Growth and Scenario Planning with international reach. He holds master's degrees in community planning and architecture from UPENN and a Master of Architecture from the University of Cape Town.

Dr. Casey J. Dawkins

is the Director of the Urban Studies and Planning Program, and associate professor and a Research Associate with the NCSG. His research focuses on U.S. housing policy; metropolitan housing market dynamics; the causes, consequences, and measurement of residential segregation; and the link between land use regulations and housing affordability. He has authored two books, numerous journal articles and book chapters on these topics. Casey was awarded an Urban Scholars Fellowship from the U.S. Department of Housing and Urban Development to examine the impact of racial segregation on racial disparities in the transition to first-time homeownership. His research has been funded by several organizations, including the General Services Administration, Fannie Mae Foundation, the Brookings Institution, and several other governmental, private, and nonprofit organizations within Chicago, Virginia, and the District of Columbia.

FACULTY AT THE CENTER

Dr. Chengri Ding

is a Professor of Urban Studies at the University of Maryland and the founding director for the Lincoln Institute of Land Policy's China Program. He specializes in urban economics, urban and land policies, urban planning and policy, and China studies, contributing to scores of articles, papers and books both in the United States and abroad. He has consulted for a number of organizations, including the World Bank, Global Business Network, the United Nations Food and Agriculture Organization (FAO), and many leading Chinese agencies such as the National Development and Reform Commission (NDRC). He serves on the advisory Board for the International Institute of Property Taxation. Chengri holds a masters in Geographic Information System Applications and a Ph.D. in urban planning from the University of Illinois/ Urbana-Champaign.

Dr. Frederick W. Ducca

is a research faculty member with the National Center for Smart Growth and Director of the NCSG's Transportation Research Policy Group. His research activities focus on travel forecasting including advanced network analyses and the use of time dependent networks in analyzing transportation issues. With more than 25 years of experience in travel forecasting, he works extensively with the FHA, SHA and MDOT in the analysis of traffic patterns, economic impact, transit infrastructure, travel and other transportation issues, as well as travel scenario projection. Fred holds an MBA from the Wharton School of the University of Pennsylvania, and a Ph.D. in City Planning from the University of Pennsylvania.

Dr. Chao Liu

is a Faculty Research Associate at the National Center for Smart Growth. Her research is concentrated in transportation planning, sustainable land use and transportation policy, transportation energy and emission modeling, equity planning, as well as the application of GIS and statistical models in these fields. Chao is actively involved in NCSG's Sustainable and Equitable Economic Development (SEED) Initiative efforts, the Sustainable Community Initiative for BMC ([Opportunity Mapping](#)), as well as several projects for MDOT and WMATA. With expertise in structural equation modeling, Dr. Liu spearheads data integration for the Center, improving the modeling practice for project development. She holds a master's in Human Geography from the Beijing Normal University, and a Ph.D. from the School of Architecture, Planning and Preservation of the University of Maryland.

Daniel Engelberg

is a Research Associate at the NCSG. His research focuses on long-range planning for regional sustainability and scenario planning. He leads research on the Plan for Regional Sustainability Tomorrow, a project that utilizes exploratory scenarios to envision a more sustainable Baltimore-Washington region. He has presented on the process of conducting exploratory scenarios and the results of the PRESTO project. Daniel earned his Master's in Community Planning from the University of Maryland and a B.A. in Mathematics from Bates College.

Dr. Sevgi Erdoğan

is Faculty Research Associate at the NCSG. She has collaborated on several projects at the Center for MDOT, the Maryland Department of Environment, the Transportation Research Board and the Strategic Highway Research Program. She is the author of several publications on alternative and public transportation options, highway performance and land use. Her research interests include network modeling and optimization, dynamic traffic assignment and its applications, dynamic O-D demand estimation, TDM strategies focusing on congestion pricing, emissions reduction strategies, alternative fuels, vehicles and fleet operations, and alternative transportation modes. Sevgi earned her M.S. in Civil Engineering from Istanbul Technical University, and Ph.D. in Civil Engineering from the University of Maryland. She also holds an M.S. degree in Operations Research from University of Delaware.

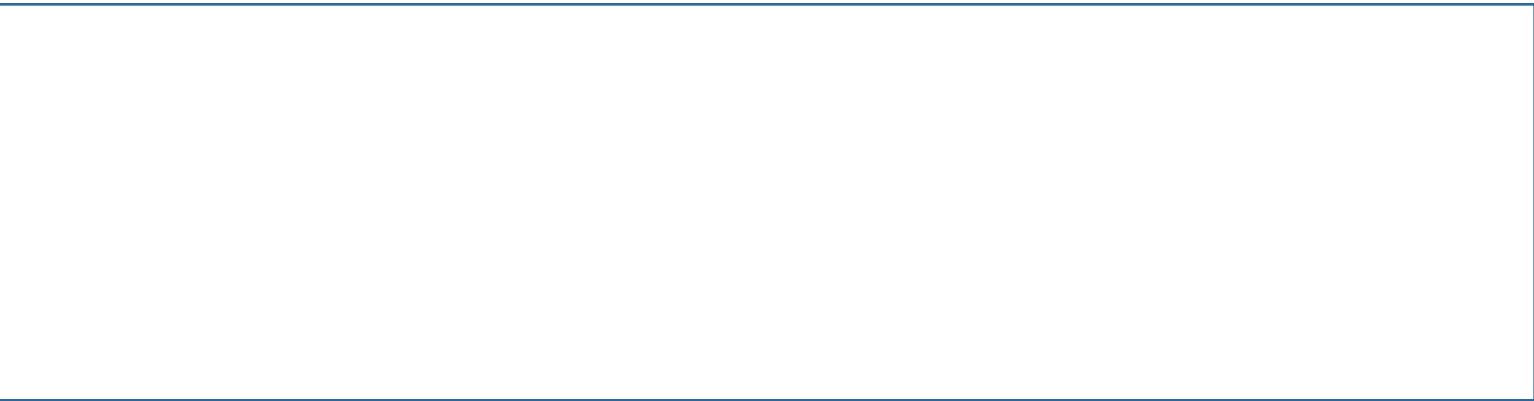
VISITING RESEARCHERS

Dr. Harutyun Shahumyan

joined NCSG as a visiting scholar to conduct park-and-ride planning research for the state of Maryland. Dr. Fan is currently working on a project of evaluating the environmental impacts of highway extension in Frederick, Maryland. His research interests also include transit-oriented development, value/congestion pricing, and tradable mobility credits in congestion management. Prior to working with NSCG, he researched and taught at Southwest Jiaotong University in China. Dr. Fan has presided over a number of transportation planning projects in China, which were funded by the cities of Chengdu, Leshan, and Pengzhou.

Wenbo Fan

has over 12 years of experience specializing in Geographic Information Systems (GIS), geo-spatial analysis and modelling, data analysis and data management with a focus on land use, urban modelling, cellular automata and spatial decision supporting systems. After gaining MS degree in Applied Mathematics and Ph.D. in Engineering in Armenia, Harut studied at the University of Cambridge, simultaneously working as a GIS Consultant in different leading international organizations including USAID, Emerging Markets Group, PA Consulting and Development Alternatives Inc. Dr. Shahumyan has worked at the University College Dublin as a post-doctoral Researcher and joined the NCSG in 2014 to continue his research project, GeoSInPo. He is an author of more than 20 research papers and is a reviewer of European Science Foundation.



STAFF

Kimberly Fisher

joined the NCSG this year as Director of the Partnership for Action Learning in Sustainability (PALS) program. An alumna of UMD's Master of Engineering Program, Kimberly brings a versatile list of experience to the NCSG. Her expertise in working with governments and municipalities, and her success in organizing and managing complex programs will be leveraged by the center to grow university-community partnerships through PALS. Kimberly will also collaborate on select transportation-related research and projects. She was most recently the Associate Director of the Technical Activities Division of the Transportation Research Board, part of the National Academy of Sciences, where she staffed approximately 20 standing committees, worked on planning conferences and provided technical assistance on planning and forecasting issues.

Kimberly M. Ross

is a consultant currently serving as Assistant Director for the National Center for Smart Growth Research and Education at the University of Maryland where she conducts fundraising and proposal development, provides management consulting and helps to incubate new programs, and develops workshops. Her current work is focused on creating and incubating the [Purple Line Corridor Coalition](#) to help future investments in the Purple Line Corridor achieve the maximum possible economic, social and environmental benefits to the residents and businesses of the corridor. With over twenty years of management experience, Ross has led the strategic design and implementation of highly-valued information services, partnerships, and research organizations, including the Center for Integrative Environmental Research and the Center for Public Policy & Private Enterprise.

Jason Sartori

is the NCSG's Associate Director of to the NCSG, where he leads research efforts, grant procurement and project management. He has helmed several key projects for the center, including ["Smart Growth Indicators in Maryland,"](#) Barriers to Development in Priority Funding Areas and the center's [Opportunity Mapping](#) efforts. Jason is also the lead organizer for the Makeover Montgomery Series and other Center conferences. Prior to the NCSG, he managed a variety of stakeholder participation, strategic planning and research initiatives for corporations in the private sector, government agencies, and non-profit organizations. Jason obtained his Master of Community Planning degree from the University of Maryland's School of Architecture, Planning and Preservation, where he specialized in economic development.

Cynthia Williams

has been the grants contracting officer for the NCSG and School of Architecture Planning and Preservation since 2008. Cynthia has worked for the University of Maryland for 19 years as an accountant in the Contract Grant Accounting Office (2005-2008); a business service specialist in the Department of Criminology and Criminal Justice (1999-2005); and as manager of operational accounting and staff accountant at the Center for Institutional Reform (1994-1999). Ms. Williams has a Bachelor's Degree from the University of Maryland University College.

Alyson D'Apice

works as an Accounting Associate for the National Center for Smart Growth and School of Architecture Planning and Preservation. She began work at the University of Maryland in 2013. She assists the research coordinator and performs administrative duties for the Center.

PUBLICATIONS AND SPEAKING ENGAGEMENTS

INVITED TALKS, LECTURES AND CONFERENCE PRESENTATIONS

Avin, A. Cities 101- Basics for the University Action Learning Interface. Presented at the National EPIC-N Conference, Minneapolis, MN, April 2015.

Avin, U. Evaluating Action Learning Programs – the UMD Experience. Presented at the National EPIC-N Conference, Minneapolis, MN, April 2015.

Avin, U. The Partnership for Action Learning in Sustainability. Presented at the National Smart and Sustainable Campuses Conference, University of Maryland, College Park, MD, April 2015

Avin, U. Teaching the Future to Urban Planners in Graduate School. Presented at the World Futures Conference, San Francisco, CA, July 2015.

Avin, U. Scenarios in Urban Planning. Presented at the AMPO Annual Conference, Las Vegas, NV, October 20-23, 2015.

Avin, U. A Framework for Tools in Scenario Planning. Presented at the Open Planning Tools Group Symposium, Austin, TX, 2015.

Avin, U. A conceptual structure for relating scenario building and tools. Presented at the TRB Scenario Conference, Portland, OR, August 14-19, 2016.

Avin, U. Geodesignhub: a new, process-supportive scenario sketch tool. Presented at the TRB Scenario Conference, Portland, OR, August 14-19, 2016.

Dawkins, C. Commentary, Transit, Transit Oriented

Development, and Urban Form: A Bi-National Symposium. Paris, France, 2015.

Dawkins, C. Invited Panelist, Gentrification: The Perceptions and Realities of Changing Communities. Urban Land Institute, Washington, D.C., 2016.

Ducca, F. Mega Regions: Surfing the Wave of the Future. Presented at Beijing University of Technology, Beijing China, November 2015.

Engelberg, D. and H. Shahumyan. Integrating Models for Regional Sustainability Planning. Paper presented at the 2nd Innovations on Collaborative Modeling Conference in East Lansing, MI., 2016.

Engelberg, D. S. Erdogan, H. Shahumyan, R. Moeckel, D. Yang, F. Ducca, and G. Knapp. Transportation Model Integration to Measure Sustainability. Presented at the 6th Transportation Research Board Conference on Innovations in Travel Modeling (ITM), Denver, CO, May, 1-4, 2016.

Erdogan, S., K. Patnam, F. Ducca, D. Zuxuan, D. Yang, X. Wang and S. Mahapatra. Statewide Dynamic Traffic Routing For Transportation Planning: Maryland Case. Presented at the 94th Annual Meeting of the Transportation Research Board, Washington, D.C. January 12-16, 2015.

Erdogan, S. Advancing the Statewide Transportation Planning and Analysis: Statewide Dynamic Traffic Assignment (DTA) and Agent-Based Models (ABM). Presented at the 94th Annual Meeting of the Transportation Research Board, Washington, D.C., January 12-16, 2015

Erdogan, S., X. Zhou and J. Liu. A Simplified Dynamic Traffic Assignment Framework for Statewide Traffic Modeling. Presented at the 94th Annual Meeting of the Transportation Research Board, Washington, D.C. January 12-16, 2015.

Erdogan, S., K. Patnam, X. Zhou, F. Ducca, S. Mahapatra Z. Deng and J. Li. Dynamic Traffic Assignment Approaches for Statewide Transportation Planning and Operations: Maryland Case. The 15th Transportation Research Board, Planning Applications Conference, Atlantic City, NJ, May 17-21, 2015.

Erdogan, S. Environmental impact models BEM (Building Emissions Model) and MEM (Mobile Emissions Model). Presented at SESYNC Project 2nd Workshop, Annapolis, MD, August 3-5, 2015.

Erdogan, S. Pathways to Green Logistics: Past, Present and Future of the Green Vehicle Routing Problem (GVRP). Invited session talk in the Transportation Science and Logistics (TSL) track for the INFORMS (the Institute for Operations Research and the Management Sciences) Conference, Philadelphia, PA, November 1-4, 2015.

Erdogan, S., W. Fan, J. Liu and X. Zhou. How to Design an Effective Off-hour Delivery (OHD) Program: A Network Design Perspective. Presented at the INFORMS Annual Conference, Optimization/Network Optimization Cluster, Philadelphia, PA, November 1-4, 2015.

Erdogan, S. Smart Growth, Sustainable Cities: the US Approach. Seminar given to Beijing Commission of Urban Planning Group, organized by the UMD Maryland China Initiative, College Park, MD, November 11, 2015.

Erdogan, S., F. Ducca, K. Sadabadi, T. Jacobs and S. Mahapatra. Value of Travel Time Reliability and its Use in Transportation Decision Making: A Data-Driven Approach. Presented at NATMEC 2016: Improving Traffic Data Collection, Analysis, and Use Conference, Miami, FL, May, 1-4, 2016

Fan, W., S. Erdogan and T. Welch. Assessing HOV to HOT Lane Conversion: A Multi-Scale Analysis in Maryland. The 95th Annual Meeting of the Transportation Research Board, Washington, D.C. January 10-14, 2016.

Fan, W., S. Erdogan, X. Jiang and Y. Sun. Modeling and Evaluating FAIR Highway Performance and Policy Options. The 95th Annual Meeting of the Transportation Research Board, Washington, D.C. January 10-14, 2016.

Fan, W., S. Erdogan, X. Jiang and W. Gu. Land-use Policy for Transit Station Areas: Park-and-ride versus Transit-oriented Development. The 95th Annual Meeting of the Transportation Research Board, Washington, D.C. January 10-14, 2016.

Iseki, H. and R. Ali. Fixed Effects Panel Data Analysis of Gasoline Prices, Fare, Service Supply, and Service Frequency on Transit Ridership in Ten U.S. Urbanized Areas. The Transportation Research Board (TRB) 94th Annual Meeting, Washington, D.C., January 2015.

Iseki, H. Analysis of Firm Location and Relocation in Relation to Metro Rail Stations in the Washington Metropolitan Area. The Association of American Geographers Annual Meeting, Chicago, April 2015.

Iseki, Hiroyuki. Analysis of Firm Location and Relocation in Relation to Metro Rail Stations in the Washington Metropolitan Area. Presented at the Association of American Geographers Annual Meeting, Chicago, Illinois, April 2015.

Iseki, H., C. Greene*, and R. Jones. Analysis of the Geographic Distribution of Firms in Relation to Metro Station Accessibility: Case Study of the Washington Metropolitan Area Transit Authority Metro Service Area. Presented at the XIII Network on European Communications and Transport Activities Research (NECTAR) International Conference, University of Michigan, Ann Arbor, Michigan, June 2015.

Iseki, H., R. Jones*, and C. Greene. An Analysis of the Relationship between Firm Location Patterns and Public Transportation Infrastructure in the Washington, D.C. Metropolitan Area, presented at the XIII Network on European Communications and Transport Activities Research (NECTAR) International Conference, University of Michigan, Ann Arbor, Michigan, June 2015.

Iseki, H., C. Liu, and G. Knaap. WMATA Origin-Destination Land Use Ridership Model. Presentation to the Washington Metropolitan Area Transit Authority directors, managers, and staff members, Washington, D. C., December 21st, 2015.

Iseki, H., and R. Ali. Short-term, Long-term, and Non-linear Effects of Gasoline Prices on Transit Ridership in Ten US Urbanized Areas, Using Fixed Effects Panel Data Analysis. Transportation Research Board (TRB) 95th Annual Meeting, Washington, D.C., January, 2016.

Iseki, H. Transit Oriented Development and Other Research on Transportation and Land Use in the US. National Center for Smart Growth Research and Education, University of Maryland for the First Secretary of the Economic Section of the Embassy of Japan and the attaché from Ministry of Land, Infrastructure, Transport

and Tourism, May 2016.

Iseki, H., and R. Ali, Short-term, Long-term, and Non-linear Effects of Gasoline Prices on Transit Ridership in Ten US Urbanized Areas, Using Fixed Effects Panel Data Analysis. Presented at the 13th World Conference on Transportation Research (WCTR), Shanghai, China, July, 2016.

Iseki, H., and R. Ali. Fixed Effects Panel Data Analysis of Gasoline Prices, Fare, Service Supply, and Service Frequency on Transit Ridership in Ten U.S. Urbanized Areas. Presented at the 13th World Conference on Transportation Research (WCTR), Shanghai, China, July, 2016.

Iseki, H., H. Eom, and C. Greene (with R. Jones). Analysis of Agglomeration Effects in the Proximity of Metro Rail Stations in the Washington, D.C. Metropolitan Area. Presented at the 13th World Conference on Transportation Research (WCTR), Shanghai, China, July, 2016 (abstract refereed).

Li, Z., C. Ding and Y. Niu. Agglomeration economies and regional industrial structure in China: An analysis of firm-level productivity. Paper presented at the 62nd Annual North American Meetings of the Regional Science Association International, Portland, OR, USA, November 11-14, 2015.

Li, Z., and C. Ding. Consumption and city size: Evidence from China. Paper presented at the 55th Annual Meetings of the Southern Regional Science Association, Washington, D.C., March 2016.

Liu, C. and Iseki, H. Exploring Factors Affecting Metrorail Ridership in Washington D.C.: an Application of Geographically Weighted Regression. Presented at the GIS in Transit, Washington D.C., 2015.

Liu, C., T. Ma and S. Erdogan. Bikesharing Effect on Transit Ridership: A Time-Series Analysis of the Capital Bikeshare Program (CaBi). Presented at the GIS in Transit, Washington D.C., 2015.

Liu, C., E. Knaap and G. Knaap. Improve Social and Economic Equity in Maryland. Presented at the 14th Annual New Partners for Smart Growth Conference Tech Fair. Baltimore, MD, 2015.

Liu, C., T. Ma and S. Erdogan. Bicycle Sharing and Transit: Does Capital Bikeshare Affect Metrorail Ridership in Washington, D.C.? Presented at the 94th Annual Meeting

of the Transportation Research Board (TRB), Washington, D.C., 2015.

Liu, C., Y. Cui, and H. Iseki. An Empirical Study of Travel Time Allocation: A Structural Equation Modeling Approach Using 2001 National Household Travel Survey Baltimore Add-on Data. Presented at the 14th World Conference of Transport Research. Shanghai, China, July 10-15, 2016.

Liu, C. and H. Iseki. Exploring Factors Affecting Metrorail Ridership in Washington D.C.: An Application of Geographically Weighted Regression. Presented at the 14th World Conference of Transport Research. Shanghai, China, July 10-15, 2016.

Liu, C., T. Ma, and S. Erdogan. Bikesharing Effect on Transit Ridership: A Time-Series Analysis of the Capital Bikeshare Program (CaBi). Presented at the 14th World Conference of Transport Research. Shanghai, China, July 10-15, 2016.

Liu, C., H. Shahumyan, B. Williams, and G. Knaap. How to define “Sustainable Neighborhoods”? A comparative study of Baltimore, United States, and Dublin, Ireland. Association of American Geographers’ (AAG) Annual Meeting (forthcoming, 2016).

Niu, Yi. and C. Ding. Market Size, Competition, and Firm Productivity. The 10th Urban Economics Annual Conference, Portland, OR, November 2015.

Niu, Yi. and C. Ding. Market Competition and Productivity of Cities: Evidence from Chinese Cities. The 55th European Regional Science Association Congress, August, Lisbon, Portugal, 2015.

Niu, Y. and C. Ding. City size, regional protectionism, and firm productivity. The 42nd annual meeting of the Eastern Economics Association, Washington D.C., February 26—27, 2016.

PUBLICATIONS

Books:

Ding, C. (2015). Growth of World Megacities: Trend, Challenge, Growth Policy and Effectiveness. Beijing, China: The China Engineering and Construction Press.

Knaap, G., Z. Nedovic-Budic, and A. Carbonnel (Eds.) (2015). *Planning for States and Nation States in the U.S. and Europe*. Cambridge, MA: Lincoln Institute of Land Policy.

Zhang, M. Y. Sun, and C. Ding (2015). *Land Use and Transit Integrated Development (TID) based Urban Development*. Beijing, China: The China Engineering and Construction Press.

Book Chapters:

Ding, C. (2015). Interviewed and contributor. In Kenneth S.H. King and Kellogg H. Wong, *Vertical city: A Solution for Sustainable Living*. Beijing, China: China Social Science Press (Chinese and English).

Ding, C. (2015). Roles of Transit Integrated Development (TID) and Transit Oriented Development (TOD). In Zhang, Sun, and Ding, *Land Use and Transit Integrated Development based Urban Development*. Beijing, China: The China Engineering and Construction Press.

Knaap, G., R. Lewis, and A. Brown (2015). Rezoning Montgomery: People Politics, and Place. In Emily Talen (Ed.), *Retrofitting Sprawl*. Athens, GA: University of Georgia Press.

Knaap, G. (2015). Using Incentives to Combat Sprawl: Maryland's Evolving Approach to Smart Growth. In Gerrit-Jan Knaap, Zorica Nedovic-Budic, and Armando Carbonell, (Eds), *Planning for States and Nation-States in the US and Europe* Cambridge, MA: Lincoln Institute of Land Policy.

Knaap, G., Z. Nedovic-Budic, and A. Carbonnel (2015). Introduction. In Gerrit-Jan Knaap, Zorica Nedovic-Budic, and Armando Carbonell, (Eds), *Planning for States and Nation-States in the US and Europe* Cambridge, MA: Lincoln Institute of Land Policy.

Knaap, G., Z. Nedovic-Budic, and A. Carbonnel (2015). Conclusion. In Gerrit-Jan Knaap, Zorica Nedovic-Budic, and Armando Carbonell, (Eds), *Planning for States and Nation-States in the US and Europe* Cambridge, MA: Lincoln Institute of Land Policy.

Refereed Journal Publications:

Bieri, D., and C. Dawkins (forthcoming, 2016). Quality of Life, Transportation Costs, and Federal Housing Assistance: Leveling the Playing Field. *Housing Policy Debate*.

Dawkins, C., J.S. Jeon and R. Pendall. (2015). Transportation Access, Rental Vouchers, and Neighborhood Satisfaction: Evidence from the Moving to Opportunity Experiment. *Housing Policy Debate*, 25(3): 497-530.

Dawkins, C., J.S. Jeon and R. Pendall. (2015). Vehicle Access and Exposure to Neighborhood Poverty: Evidence from the Moving to Opportunity Program. *Journal of Regional Science*, 55(5): 687-707.

Dawkins, C. and R. Moeckel (2016). Transit-Induced Gentrification: Who Will Stay, and Who Will Go? *Housing Policy Debate*, 26 (4-5): 801-818.

Dawkins, C. (forthcoming, 2016). Preparing Planners: The Role of Graduate Planning Education. *Journal of Planning Education and Research*.

Dawkins, C., J.S. Jeon, and G. Knaap. (forthcoming). Creating and Preserving Affordable Homeownership Opportunities: Does Inclusionary Zoning Make Sense? *Journal of Planning Education and Research*, 36 (3): 1-13.

Dawkins, C. (forthcoming). Putting Equality in Place: The Normative Foundations of Geographic Equality of Opportunity. *Housing Policy Debate*.

Ding, C., and Y. Niu (2015). Land Price, Housing Price, and Urban Spatial Structure: The Case of Beijing, Urban and Environmental Research, No. 4:3-15.

Ding, C., X., Duan, and Y. Niu (2015). Megacity in the World: Growth, Challenge, and Appreciation, *International Urban Planning*, No. 3: 1-13.

Ding, C., Y. Wang, J. Yang, C. Liu, and Y. Lin (2015). Spatial heterogeneous impact of built environment on household auto ownership levels: evidence from analysis at traffic analysis zone scales. *Transportation Letters: The International Journal of Transportation Research*. DOI:1942787515Y.

Ding, C., X. SHI, Z. LI, and Y. Niu (2015). Applying an Extended Input-Output Model to Investigate Impacts of Growth Control Policies of Population and Industries in Beijing, *Urban Insight* (forthcoming).

Ding, C., Y., Niu, L. He, and Z. Li (2016). Applying Seemingly Unrelated Regression with Constraints to Estimate the Relationship between Economic Sectors and Urban Land Uses, *Urban Insight*, No. 2; 76-87

Ding, C., X. Shi, Y. Nui, and C. Cui (2016). City Population Projection and Its Planning Implications: The Case of Beijing (2020), City Planning Review (forthcoming)

Erdogan, S., C. Cirillo and J.M. Tremblay (2015). Ridesharing as a Green Commute Alternative: A Case Study at the University of Maryland Campus. International Journal of Sustainable Transportation, 9 (5): 377-388.

Fan, W., X. Jiang, S. Erdogan and Y. Sun (2016). Modeling and Evaluating FAIR Highway Performance and Policy Options. Transport Policy, 48: 156-168.

Fan, W., S. Erdogan and T. Welch (under review). Assessing HOV to HOT Lane Conversion: A Multi-scale Analysis in Maryland. Transport Policy.

Fan, W., X. Jiang, S. Erdogan and W. Gu (under review). Land-use Policy for Transit Station Areas: Park-and-Ride versus Transit-Oriented Development. Transportation Research Record.

Fan, W., S. Erdogan, T. Welch, F. Ducca (under review). Network-scale Evaluation of Zero-Emission Vehicles in Maryland. Transportation Research Part: D.

Feng, J., E. Lichtenberg, C. Ding (2015). Balancing Act: Economic Incentives, Administrative Restrictions, and Urban Land Expansion in China, China Economic Review, Vol.36, 184-197.

Hopkins, L. and G. Knaap (forthcoming). Autonomous Planning: Using Plans as Signals. Planning Theory.

Iseki, H. and R. Ali (2015). Fixed Effects Panel Data Analysis of Gasoline Prices, Fare, Service Supply, and Service Frequency on Transit Ridership in Ten U.S. Urbanized Areas. Journal of the Transportation Research Board, 2537: 71-80

Iseki, H. Equity in Regional Public Transit Finance: Trade-offs between Social and Geographic Equity. Journal of Urban Planning and Development.

Iseki, H., and R. Ali (under review). Short-term, Long-term, and Non-linear Effects of Gasoline Prices on Transit Ridership in Ten US Urbanized Areas, Using Fixed Effects Panel Data Analysis. Transport Policy.

Iseki, H., and R. Jones (under review). Analysis of Firm Location and Relocation in Relation to Maryland and Washington, DC Metro Rail Stations. *Research in*

Transportation Economics.

Knaap, E., C. Ding, Yi Niu, and S. Mishra (2015). Polycentrism as a Sustainable Development Strategy: Empirical Analysis from the State of Maryland, Journal of Urbanism: International Research on Placemaking and Urban Sustainability, May, 1-20.

Knaap, E., G. Knaap, and C. Liu (under review). Mapping Opportunity: A Critical Assessment. Submitted to the Housing Policy Debate.

Liu, C., S. Erdogan, T. Ma, and F. Ducca (online 2016). How to Increase Ridership in Maryland? Direct Ridership Models (DRMs) for Policy Guidance. Journal of Urban Planning and Development

Liu, C. (under review). A trip-based Model or a tour-based Model for the Analysis of Connections among Built Environment, Travel Behavior and Energy consumption? Transportation.

Ma, T., C. Liu and S. Erdogan (2016). Bicycle Sharing and Transit: Does Capital Bikeshare Affect Metrorail Ridership in Washington, D.C.? Transportation Research Record, 2534: 1-9.

Nedovic-Budic, Z., G. Knaap, B. Williams, H. Shahumyan and A. Slaev (2016). Measuring urban form at community scale: Case study of Dublin, Ireland. Cities, 55: 148-164.

Nelson, A.C., C. Dawkins, K. Kittrell and R. Ewing. (forthcoming, 2016). The Link between Professional Performing Arts and Knowledge Class Growth: Implications for Metropolitan Economic Development. Economic Development Quarterly.

REPORTS + MONOGRAPHS

Niu, Y., and C. Ding (2015). Unemployment Matters: Improved Measures of Labor Market Distress in Mortgage Default Analysis, Journal of Regional Science and Urban Economics, Vol. 52, 27-38.

Pendall, R., C. Hayes, A. George, C. Dawkins, J.S. Jeon, E. Knaap, E. Blumenberg, G. Pierce, and M. Smart (2015). Driving to Opportunities: Voucher Users, Cars, and Movement to Sustainable Neighborhoods. Cityscape: A Journal of Policy Development and Research, 17(2): 57-87.

Yi, N, C. Ding, and G. Knaap (2015). Employment Centers and Agglomeration Economies: Foundation of a Spatial Economic Development Strategy, Economic Development

Quarterly, 29, 14-22.

Avin, U. (2015). The Crunch for Housing Land in Central Maryland. National Center for Smart Growth, College Park, MD.

Dawkins, C., and M. Miller (2015). A Picture of Disability and Designated Housing. U.S. Department of Housing and Urban Development, Washington, D.C.

Dawkins, C. and M. Miller. (2015). The Timing of Inclusionary Zoning Adoption. Center for Housing Policy, Washington, D.C.

Erdogan, S., W. Fan and F. Ducca (2015). Modeling Support for Local Jurisdictions. Maryland Department of Environment.

Knaap, G. (2015) Beyond Smart Growth: An Economic Development Strategy for 21st Century Maryland. National Center for Smart Growth, College Park, MD.

Iseki, H., C. Liu, and G. Knaap, (2016). Origin-Destination Land Use Ridership Model for Fare Policy Analysis. NCSG-WMATA report. National Center for Smart Growth, College Park, MD.

Liu, C (2015). Accessibility Mapping Technical Memorandum. MDOT – TPRG 2015 Annual Report.

Liu, C (2015). Transportation Place Type Technical Memorandum. MDOT – TPRG 2015 Annual Report.

Liu, C (2015). Shifting Freight Movement from Truck to Rail. MDOT – TPRG 2015 Annual report.

Liu, C. (2016). Transportation Economic Impact Analysis-Evaluation of Three Software Packages. MDOT – TPRG 2016 Annual Report.

Liu, C. (2016). Freight Warehouse Distribution Center Analysis. MDOT – TPRG 2016 Annual Report.

Iseki, H., G. Knaap, and C. Liu (2015). "Ask the Professors – How Local Land Use Decisions Impact Metrorail Ridership," PlanItMetro, Metro's Planning Blog, Washington Metropolitan Area Transit Authority, available at <http://planitmetro.com/?s=Metrorail+Rider>

COMMENTARIES + GUEST BLOGS

Dawkins, C. (2015). Placed-Based Housing Assistance and Access to Opportunity: Implications for Fair Housing in the Twin Cities. Housing Policy Debate. 25, 3: 644-648.