

NCSG


NATIONAL CENTER
for
SMART GROWTH

2 0 1 8 P R O G R E S S R E P O R T



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A MESSAGE FROM THE DIRECTOR:

Thank you for taking the time to read the progress report for the National Center for Smart Growth Research and Education.

A lot has happened in the past two years since our last progress report; I am very proud of the work produced by my dedicated team here at the Center, and the progress we've achieved both regionally and beyond.

The Center has had an incredibly productive two years of research. Most notable was the release of the Prospects for Regional Sustainability Tomorrow (PRESTO) report, which outlines four alternate future scenarios for the region. The report garnered a lot of attention and created a foundation for future work to identify good practice and policy in an uncertain future. This year we'll continue these efforts by developing a plan for the greater Baltimore-Washington region. We will also work with UMD faculty across campus to expand the modeling suite to include health-impact, water-quality, and parametric landscape models. In addition to PRESTO, the transportation research group engaged in several studies this year, including the expansion of a direct ridership model for the Maryland Transit Authority and an analysis of the Baltimore-Washington-Richmond megaregion.

We continue to provide extensive technical assistance, tools, and outreach to local communities, governments, and non-profit groups. PALS continues to leverage student and

faculty assets to tackle sustainability challenges in Maryland communities through tailored coursework, maintaining its place as the largest program of its kind in the nation. As a complement to PALS, Andrew Fellows launched Campus Community Connection, which works to engage students within the communities surrounding College Park. Shortly after the Maryland Transit Authority broke ground on the Purple Line Light Rail project, our four-year effort to develop an agreement with public, private and non-profit organizations that maximizes opportunity for those who live and work along the Purple Line Corridor came to fruition with the Purple Line Community Agreement signing last fall. Congressman Jamie Raskin, County Executives Ike Leggett and Rushern Baker, President Loh, and over 200 stakeholders added their signature to the agreement.



In 2017, we launched a new initiative that focuses on equitable development and equitable cities. Led by our new Director of Community Outreach, Willow Lung-Amam, the initiative develops tools and strategies in partnership with national housing authority Enterprise Community Partners to empower communities on a national level. In addition, our work on creating a Smart Cities plan for Baltimore, funded by a grant from the National Science Foundation, laid the groundwork for the city to employ technology thoughtfully and strategically to increase opportunity for low-income inner-city residents. Another initiative founded in the idea of creative place-making and led by Professor Ronit Eisenbach will examine how design can help strengthen community resilience. You can read more about all of these efforts in the following pages of this report.

Under the leadership of Scott Dempwolf, The EDA center continues its work



I am very proud of the work produced by my dedicated team here at the Center, and the progress we've achieved both regionally and beyond.

supporting economic development across the state with a particular focus on entrepreneurship and technology transfer. Based on the relationships with UM-Baltimore, NCSG opened a new office in the Lion Brothers Building in West Baltimore which will serve as the Baltimore home for the smart cities and economic development projects.

We are thrilled to welcome two new associates to the Center—Dr. Arefeh Nasri and Dr. Andrew McMillan—and were sad to say goodbye to two others this past year. Chao Liu, who most recently worked with colleague Hiro Iseki on a direct ridership model for WMATA and the MTA, relocated with her family to San Jose, CA, where she is adjunct faculty at San Jose State University. A dedicated researcher and teacher, Chao's enthusiasm and knowledge inspired legions of students and helped nurture them in their professional pursuits. Daniel Engleberg, who was integral to the development and launch of the PRESTO project, moved north by way of a cross-country biking trip and is now pursuing his Ph.D. at MIT.

Finally, this past year the State of Maryland reached a major milestone (at least in our book): the creation of a landmark strategy "The Smart Growth and Neighborhood Conservation Acts," was signed into law 20 years ago to stem the tide of urban and suburban sprawl Maryland. We marked this moment by looking to the future. In March, Governor Larry Hogan joined us and state representatives, stakeholders, and national experts in smart growth practice to examine Maryland's current policies and develop a plan for bringing them into the 21st century. That productive meeting will serve as a primer for further discussion next year with the Maryland Association of Counties, the Maryland Municipal League, The Maryland Department of Planning and several other stakeholders.

Coincidentally, next year we'll be gearing up for our 20th Anniversary in 2020. As we look to the future of our Center—and the future of our region—our commitment to smart and sustainable practice is more important than ever. We will continue to strengthen our legacy of advancing research, collaboration and engagement to forward smart and sustainable development throughout the state. We will work to enhance and innovate our research efforts, engage policymakers in thoughtful and effective policy making, and develop the tools and resources that empower communities and enhance quality of life.

As we move ahead, we will continue looking forward.

Dr. Gerrit-Jan Knaap
Director, National Center for Smart Growth

The National Center for Smart Growth is administered by the University of Maryland School of Architecture, Planning and Preservation with an advisory board that includes the Provost and the Deans of the Schools of Agriculture, Engineering, and Public Policy.



WHAT WE DO



TRANSPORTATION:

Guided by analytic and innovative modeling methods, we explore the complex relationships between transportation, land use, economic development and the environment to inform policy and develop strategies that reduce congestion and influence sustainable land use. Our transportation group has developed several projects this past two years to assist state agencies and metropolitan transit authorities, including a Maryland Statewide Transportation Model, direct transit ridership model, and an analysis of the Mid-Atlantic Megaregion.



COMMUNITY DEVELOPMENT:

Equitable, thriving communities require more than just good policy: they are built through community input, smart investment and access to opportunity. Community-centric tools—including story and opportunity mapping, public interest design, data analysis, and orchestrated outreach—compliment holistic partnerships with community and regional stakeholders and policymakers to develop strategies that influence public health, workforce development, affordable housing, and opportunity. Community partnerships, including the PALS program and Campus Community Connection, leverage campus-wide resources and expertise to assist communities throughout the state.



INTERNATIONAL PLANNING:

Our diverse research team is actively engaged with the international community on planning and urban management issues, from affordable housing and transportation to using tools such as GIS for public interest and support. In addition, examples shared across international borders shed light on new ideas and strategies that can be put to use for the regional good.

LAND USE:

Land use creates ripple effects in every facet of smart growth, driving economic development, equity, environmental sustainability and transportation policy. By imagining different land use scenarios through modeling, we can see how decisions and policy related to land use could impact economic, social and environmental health. Our projects—including the scenario-planning project, PRESTO and our work through the Purple Line Corridor Coalition—arm policymakers with sustainable strategies for informed decision making.



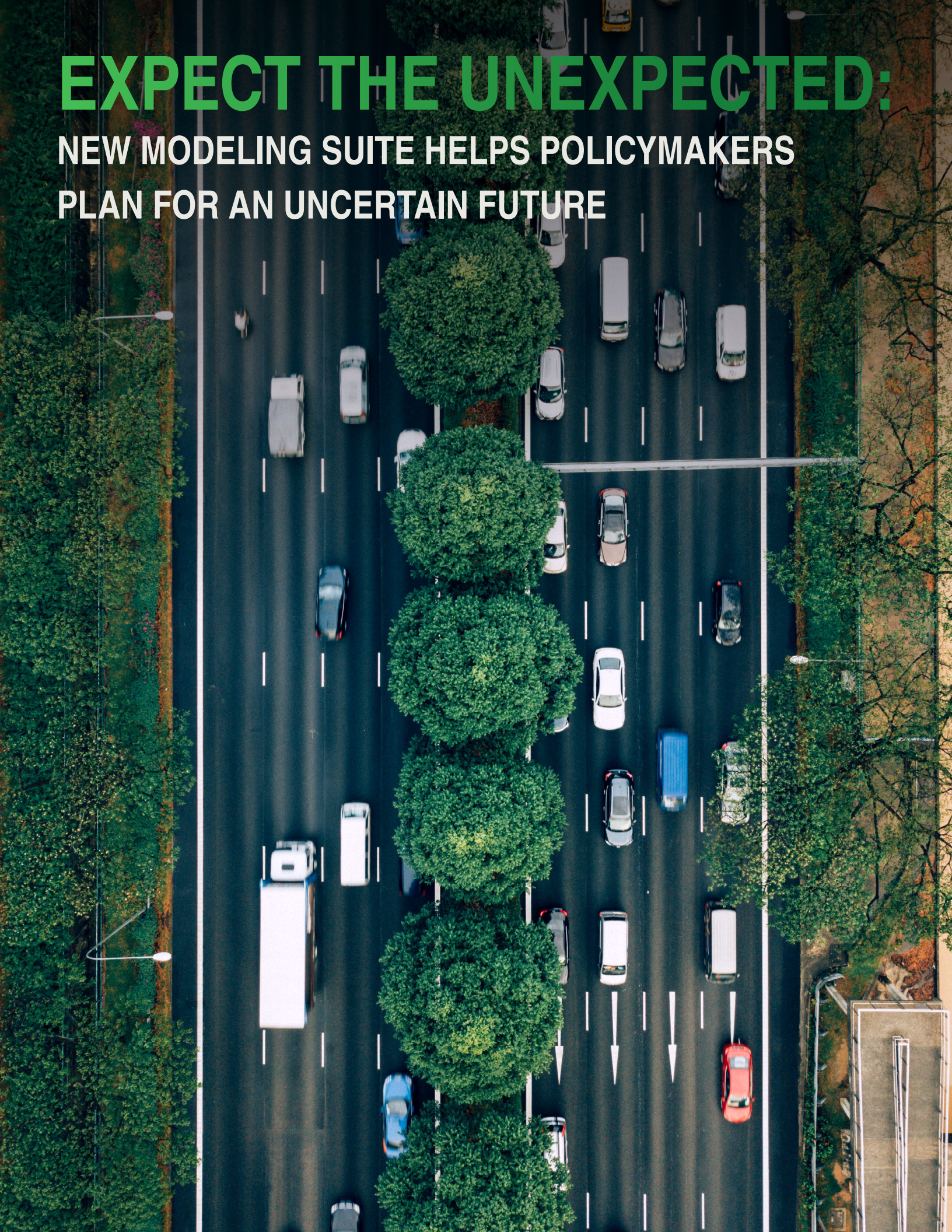
SMART CITIES:

Harnessing “smart” technology can create sustainable, connected communities; but thoughtful, equitable employment of this tech—particularly in historically underserved areas—is paramount to a holistic vision and ensuring opportunity for all. By modeling and analyzing the urban fabric, and developing tools that amplify the community voice, our Smart Cities work helps inform policy and implementation, and empowers communities on a national scale.



EXPECT THE UNEXPECTED:

NEW MODELING SUITE HELPS POLICYMAKERS
PLAN FOR AN UNCERTAIN FUTURE



When Jeff Bezos founded Amazon.com in 1994 as an on-line bookstore, few expected that within two decades it would be the largest internet retailer in the world; transforming the shopping experience, impacting retail jobs, disrupting the shipping industry, and inciting dozens of cities to economically bend over backwards as they vie for its second headquarters.

Phenomena like Amazon's "tech-volution"—or others, like climate change or autonomous vehicles—come with expected and unexpected consequences. They create ripple-effects on global, national and regional scales, impacting everything from economies and job creation to transit and traffic patterns. These uncertain factors—and more importantly, how regional policymakers respond to them—can result in very different futures for urban, suburban and rural communities.

This year, NCSG researchers released a landmark, **five-year project** that carefully analyzed the complex cause and effect of uncertain phenomena on economic, environmental, and social sustainability, outlining four possible future scenarios and how they might impact quality of life throughout the state. Called **"Prospects for Regional Sustainability Tomorrow" (PRESTO)**, the project sets its sights on Baltimore-Washington 2040, revealing the critical relationship between uncertain factors and things like land use, transportation, housing affordability, and air quality and what each can mean for regional health and growth.



MODELING VERY DIFFERENT FUTURES

Understanding how uncertainty can impact regional sustainability and growth is critical for policymakers as they try to stay ahead of changing economies, globalization, climate change, and emerging technology. Yet in 2005, it was clear to NCSG Director Gerrit Knaap that no one was making the substantial investment needed for informed decision-making.

“We had worked with the Urban Land Institute on some community exercises that explored growth and development issues,” said Knaap. “Out of those conversations, it became clear that no organization was undertaking a serious analysis of the sustainability of the Baltimore–Washington region.”

Over the next few years, and with substantial funding by the Maryland Highway Administration, Knaap and his team of researchers at NCSG collaborated with Parsons–Brinkerhoff to develop the Maryland State Transportation Model, the first transportation model to combine the state’s two major metropolitan areas into a single, comprehensive travel model, and what would become the foundation

for the PRESTO modeling suite. With additional funding and support from the Town Creek Foundation, as well as support from agencies such as the U.S. EPA, U.S. Geological Survey, National Socio–Environmental Synthesis Center and the Federal Highway Administration, more models followed, including land use, land cover, nutrient loading, and air emissions. Together, they formed a highly sophisticated, interconnected modeling suite capable of demonstrating how the region—from firms down to individual households—would respond to changes in external forces.

PRESTO’s modeling suite is one of only a handful of efforts globally to simulate future conditions by playing out how key factors, or “driving forces”, could potentially shape a region. Regionally, it is the first time that economic, land use and transportation drivers have been connected to environmental and equity outcomes, connecting the dots between commute times and greenhouse gas emissions or housing trends and nutrient loading. Focusing on land use change,

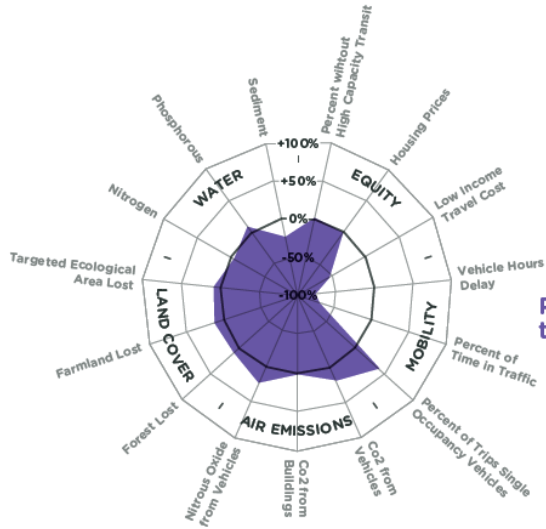
mobility, equity, and the environment, PRESTO presents a baseline scenario—which projects a continuation of current growth management—and four alternative futures that the Baltimore–Washington region may face in 2040: high-level automation (nicknamed “**Revenge of the Nerds**”), high-tech sustainability (“**Blue Planet**”), deregulation (“**Free for All**”) and scarcity (“**Last Call at the Oasis**”).

The future scenarios offer radically different outcomes for the region. The **Revenge of the Nerds** scenario envisions a region dominated by low fuel prices and new technology, as well as relaxed government regulation. The popular adoption of autonomous vehicles increases highway capacity and dramatically reduces congestion compared to the baseline. Increased mobility and relaxed regulation on development creates an exodus from city suburbs into more rural areas. **Last Call at the Oasis** shows a very different future, where high gas prices spur investments in transit and strict land use controls, concentrating both households and jobs in the inner

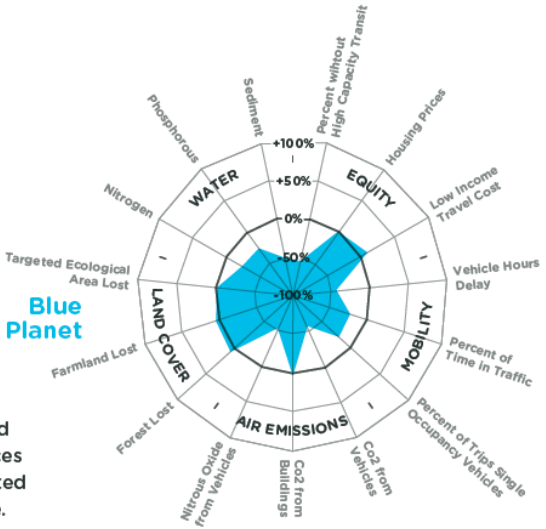
suburbs and creating lower levels of pollution. Hands-off government sets the tone in **Free for All**; low government regulation coupled with lower fuel prices results in development encroaching into farms and forests. This scenario sees an increase in housing affordability, but also air pollution and nutrient loads. **Blue Planet** provides the most sustainable scenario on many indicators, where high fuel prices, in turn, fuel investments in transit and renewable energy, spurring local governments to increase housing capacity in the inner suburbs. While each scenario presents different

outcomes, several common themes emerged. According to PRESTO researchers, the land-supply crunch is very real and where the region expands development matters; opening housing capacity—and increasing affordability—in the inner suburbs will have positive impacts on several sustainability indicators. In addition, the inevitability of emerging technologies requires a robust, well-represented group—including urban planners—at the development table to ensure that innovations, capacity, and infrastructure are properly aligned. However, both road and transit investments

must be made carefully and strategically; as the research shows, just because it is built doesn’t mean they will come. Transit investments outside the beltways, for instance, would be less impactful than within the core. Environmental impacts—such as air pollution and land preservation—look to be very complex balances and will require sound, thoughtful policy.



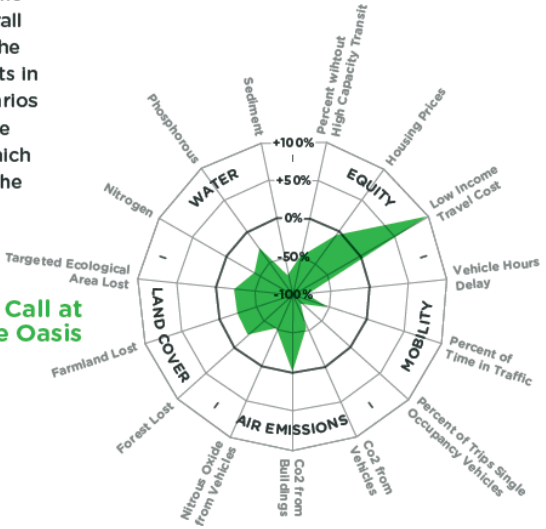
Revenge of the Nerds



Blue Planet

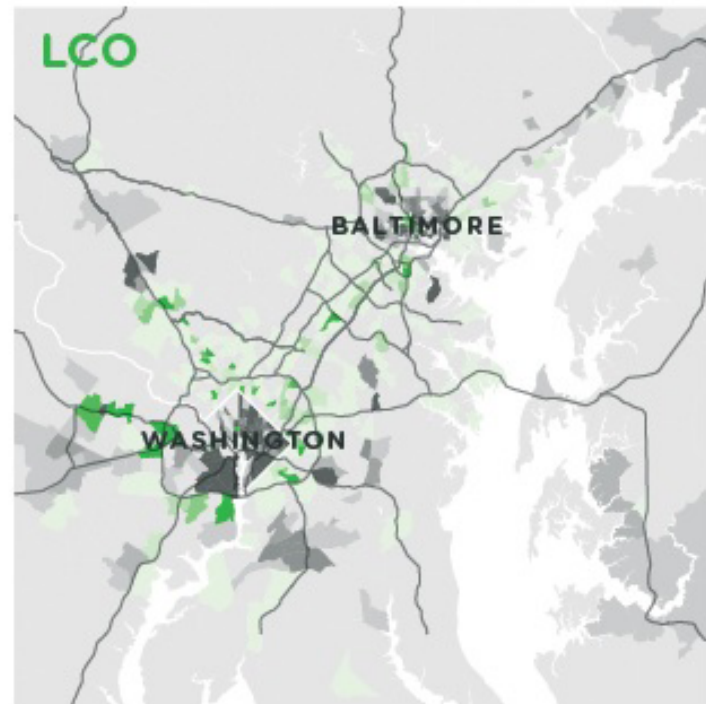
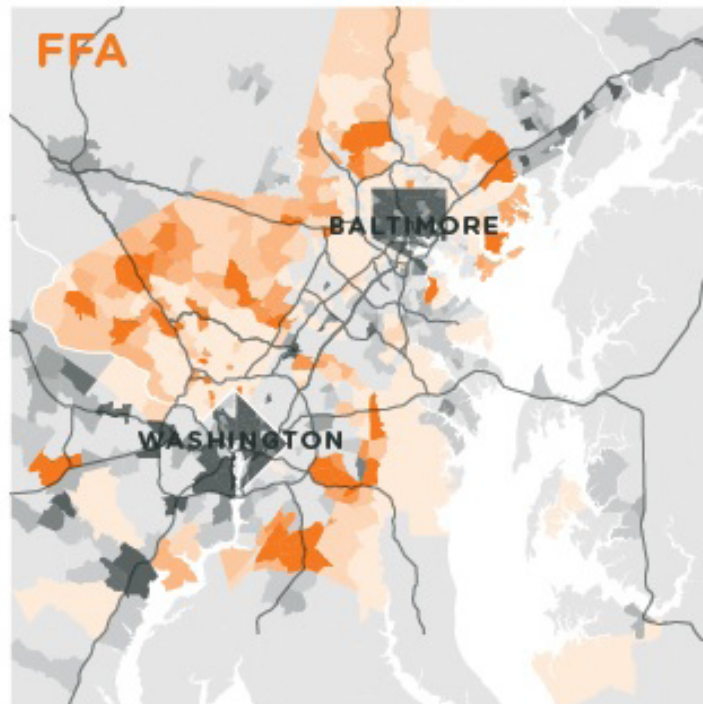
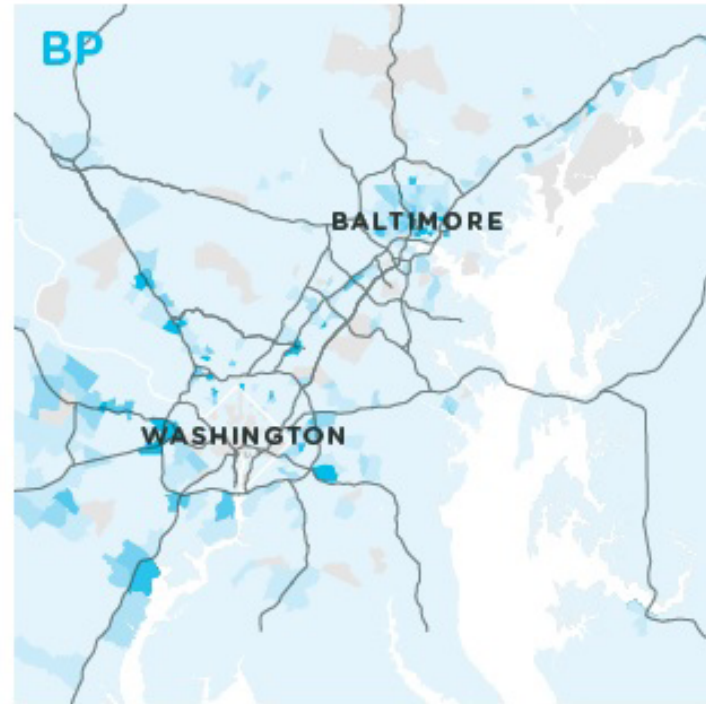
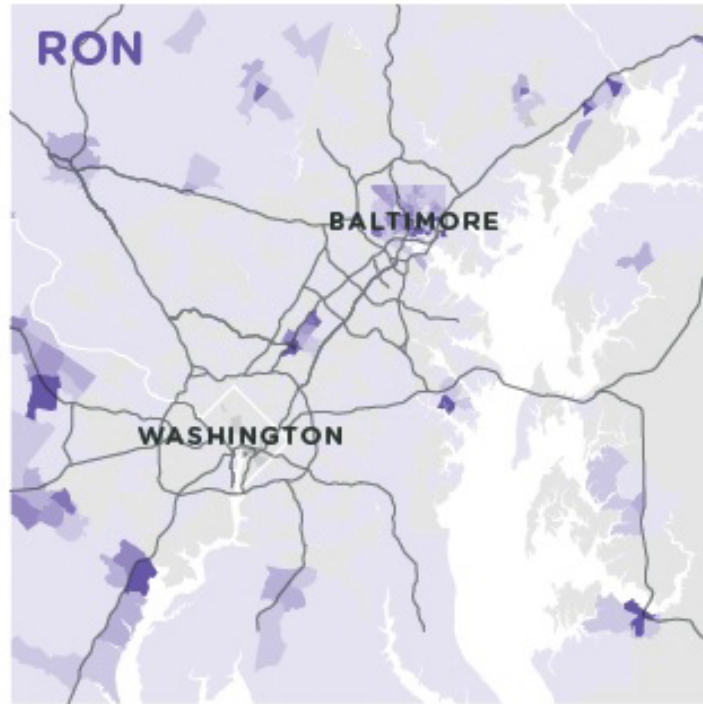


Free for All



Last Call at the Oasis

Scenario Footprints
The four diagrams show 15 selected key impacts as percentage differences from the baseline, which is represented by the darker zero percentage line. This line separates the “plus” or greater impact of any given indicator from the “minus” or lesser impact. As an overall shape, the smaller the footprint of the scenario, the less its impacts. The shifts in percentage within and between scenarios is relatively modest visually, despite strongly contrasting assumptions, which testifies to the difficulty of moving the needle on impacts in a large, mature urban region.



Households



PLANNING FOR 2040

Unlike traditional regional plans, which focus on a desired result and then develop a plan to get there, the approach taken by PRESTO researchers stresses the importance of accounting for these uncertain conditions that policymakers may encounter along the way. Researchers purposefully stretched the limits of plausible futures to create more useful, productive planning exercises.

"Because we tested some extreme infrastructure and land use options, we have gained new insights into their intended and unintended consequences," said Uri Avin, research professor at NCSG. "These are the building blocks for future strategies that are robust enough to cope with a changing world."

While the idea of PRESTO is not to predict which future will come true, researchers hope it will help guide policymakers in how they prepare. It also sets the stage for formulating alternative, more sustainable scenarios for the region, which include identifying and promoting policy decisions that could boost sustainable practice.

"PRESTO is part of a long-standing effort at the National Center for Smart Growth to promote smarter and more sustainable development using science and advanced computer models at the megaregional scale," said Dr. Gerrit-Jan Knaap, Director of the NCSG. "This allows us to go beyond micro scale issues such as walkable neighborhoods, transit-oriented development and opportunistic land preservation to larger scale systemic issues such as transportation technology, energy prices and regional development patterns."

PALS PROGRAM LAUNCHES NINTH PARTNERSHIP

Every day, thousands of people take to the vast network of trails found throughout Montgomery County, Md. to run, bike, walk their pets, or simply take in the natural beauty of the county's extensive forestland. Yet as any avid outdoorsman or weekend warrior will tell you, they would love to know some things ahead of time: are there bathroom facilities on the trail? What sort of elevation changes can I expect? Where is the nearest trail entrance with parking? Right now, these questions cannot easily be accessed. So last year, at the request of the Maryland-National Capital Park and Planning Commission (MNCP-PC), six students armed with a Google camera traversed the web of paved, dirt, and natural trails in Montgomery County to document just that. The pictures and information collected will form the skeleton of an interactive trail map; a boon to county residents and only the second time that non-roads have been documented by Google Street View in the Nation.



This innovative project was one of 27 undertaken in Montgomery and Prince George's Counties last year by the University of Maryland's Partnership for Action Learning in Sustainability (PALS), a cross-collaborative, campus-wide program that harnesses the expertise, research and ingenuity of the university to tackle economic, environmental and social sustainability issues for Maryland communities. Since launching in 2013, the program has galvanized thousands of students from nearly every college and school on UMD's College Park campus. Together with faculty guidance and the hands-on knowledge of community stakeholders, these students have put their knowledge, energy and creativity to work to create tangible, attainable strategies and to develop research critical to city and county planning.

Developed by the university's **National Center for Smart Growth**, the idea behind PALS is two-fold:

to provide students a real-world experience where they can practice skills learned in the classroom, and to put the resources of a first-class research institution to work assisting local governments saddled with dwindling budgets, overburdened staff, and mounting sustainability issues. Through interdisciplinary and cross-community collaboration, the PALS program represents an integral part of the university's land grant mission to create a more sustainable Maryland. PALS partners with one or two communities each academic year, matching customized coursework with the specific challenges described by the partner community to deliver research and recommendations on a host of sustainability challenges. With its on-the-ground civic engagement, PALS coursework provides a living case study for students, offering a rewarding community experience that best mirrors future professional interactions within their disciplines.

PALS' reach is formidable—to date, the program has engaged four counties, four of the state's largest cities, and several community associations, providing over four million dollars in project value. All told, students and faculty have engaged in over 125 projects with over 60 faculty members that address public health, neighborhood revitalization, accessibility and land use, economic opportunity, stormwater management, environmental challenges, information technology and tourism. It is the largest action-learning program of its kind in the country.

PALS initiated its first partnership with The City of Frederick, Md. in September 2014, added a second smaller collaboration with College Park in January 2015, and launched its third partnership with Howard County, Md. and the Columbia Association (CA) in September 2015. In 2016, PALS engaged Anne Arundel County and the City of Annapolis, the first time the program partnered with both a city and host





county concurrently. Last year, PALS worked concurrently in Montgomery and Prince George's County, two of the largest counties in the state, with a focus on environmental, social and health sustainability issues, and examining assets like stormwater management, parks and recreation, schools, and community engagement.

"While the word 'sustainable' is often associated with terms like 'go green,' sustainability issues go well beyond the environment," says Kimberly Fisher, PALS program director. "The projects we tackle are at the very heart of quality of life for Maryland communities."

Smaller collaborations with community partnerships in Baltimore helped create real estate development feasibility analyses for several Southwest Baltimore sites and built databases that map key features such as job opportunities, vacant housing and vehicle ownership. This fall, PALS entered into its fifth County partnership with Harford County, Md. A new feature of PALS this coming year is its work with three smaller towns concurrently, thanks to a partnership with the Maryland Departments of Planning and Housing and Community Development.

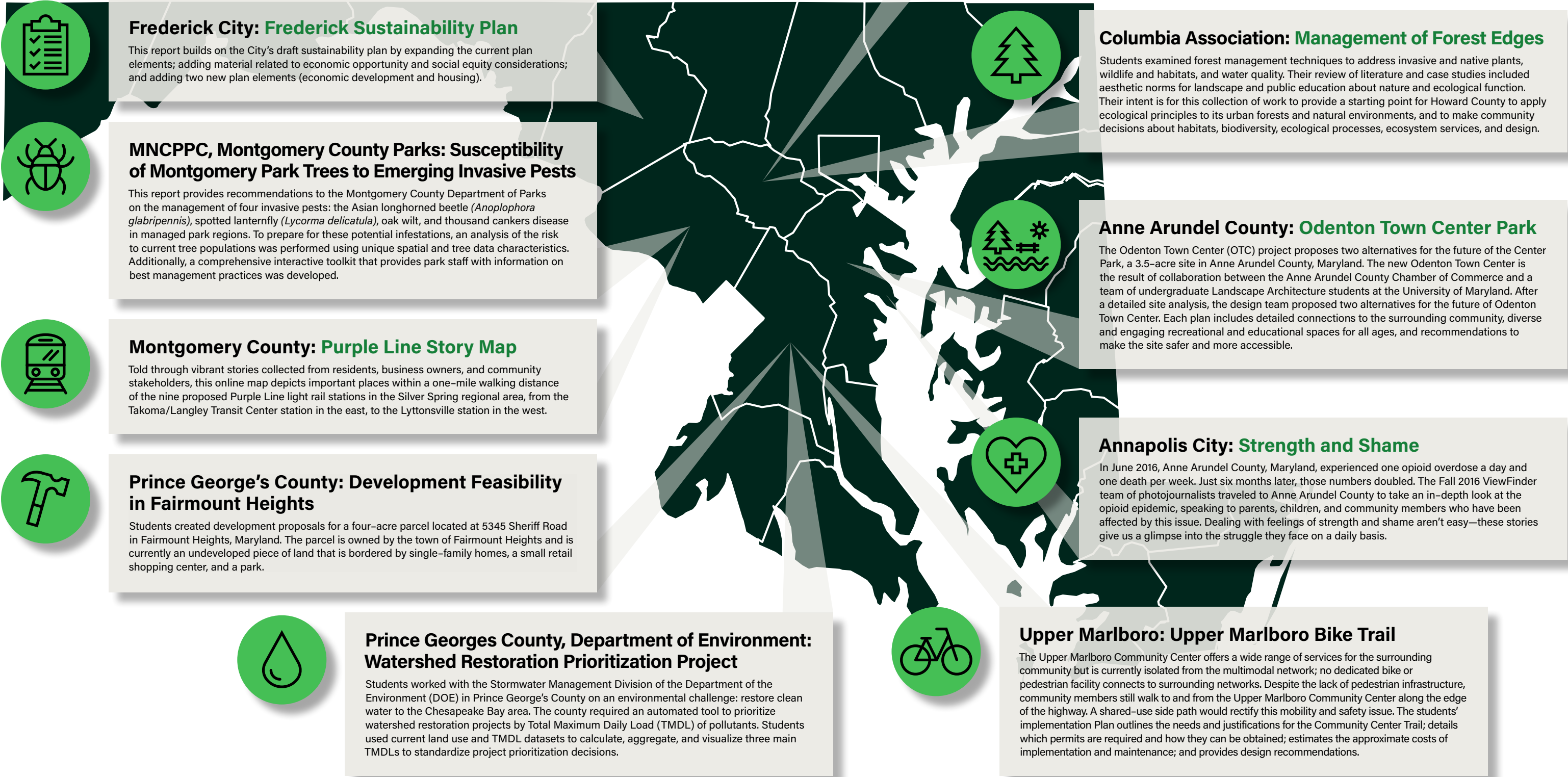
Like the MNCP-PC trail work, PALS has seen many of its projects move from theory to practice, including contributions to city master plans and collateral to boost tourism. It's a testament to both the success of university-community partnerships and a desire for more out of the box thinking.

"We have a vast amount of resources on this campus," said Uri Avin, senior advisor to the PALS program. "It has been very rewarding to see student recommendations come to life for municipalities."

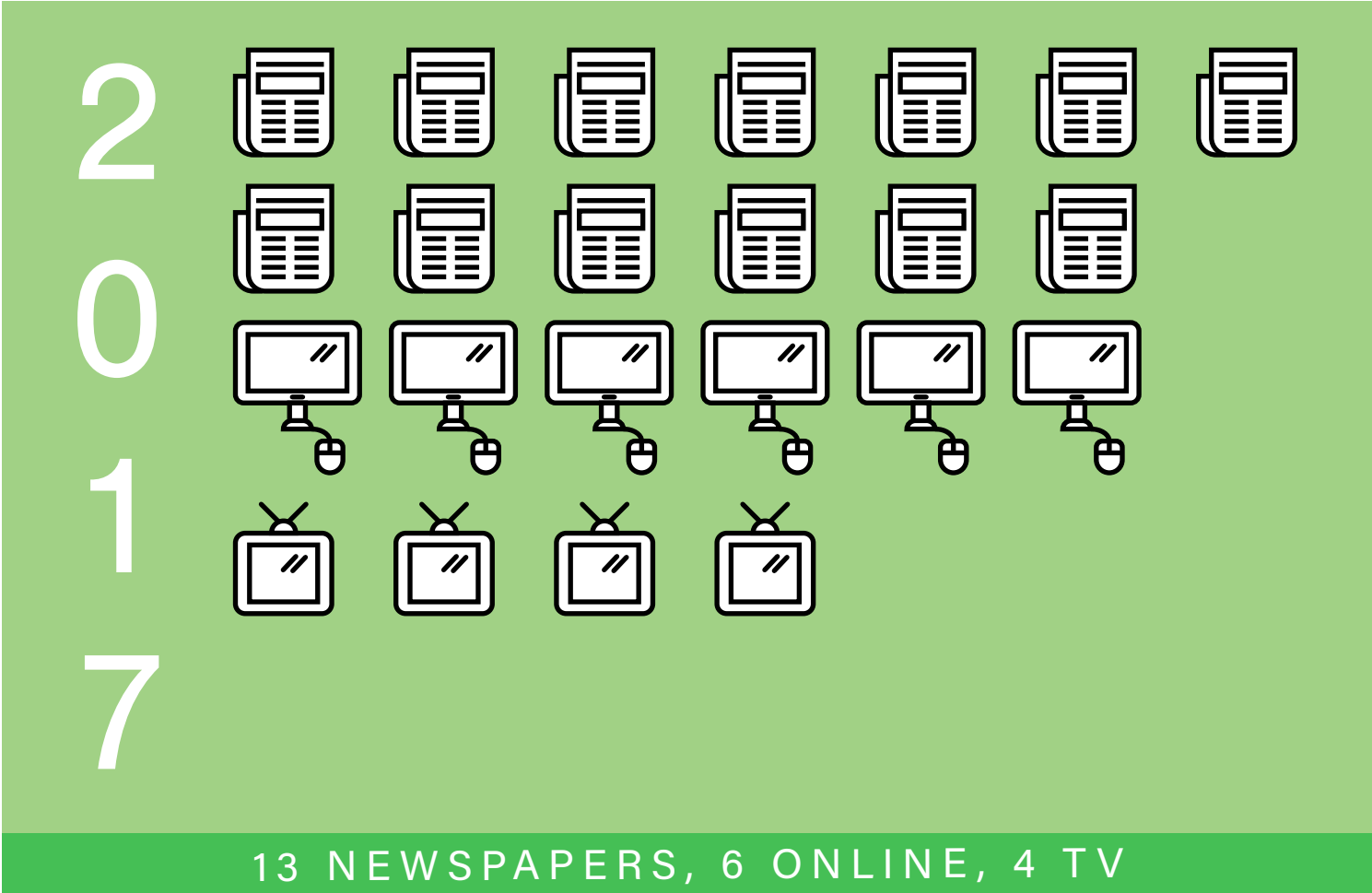


UMD INGENUITY IN ACTION: PALS PROJECT SNAPSHOT

Since 2013, PALS has helped Maryland communities navigate issues that effect their economic, social, and environmental health by providing critical research, unique insight, and innovative solutions. Here is a sample of transformative projects developed by the students and faculty:

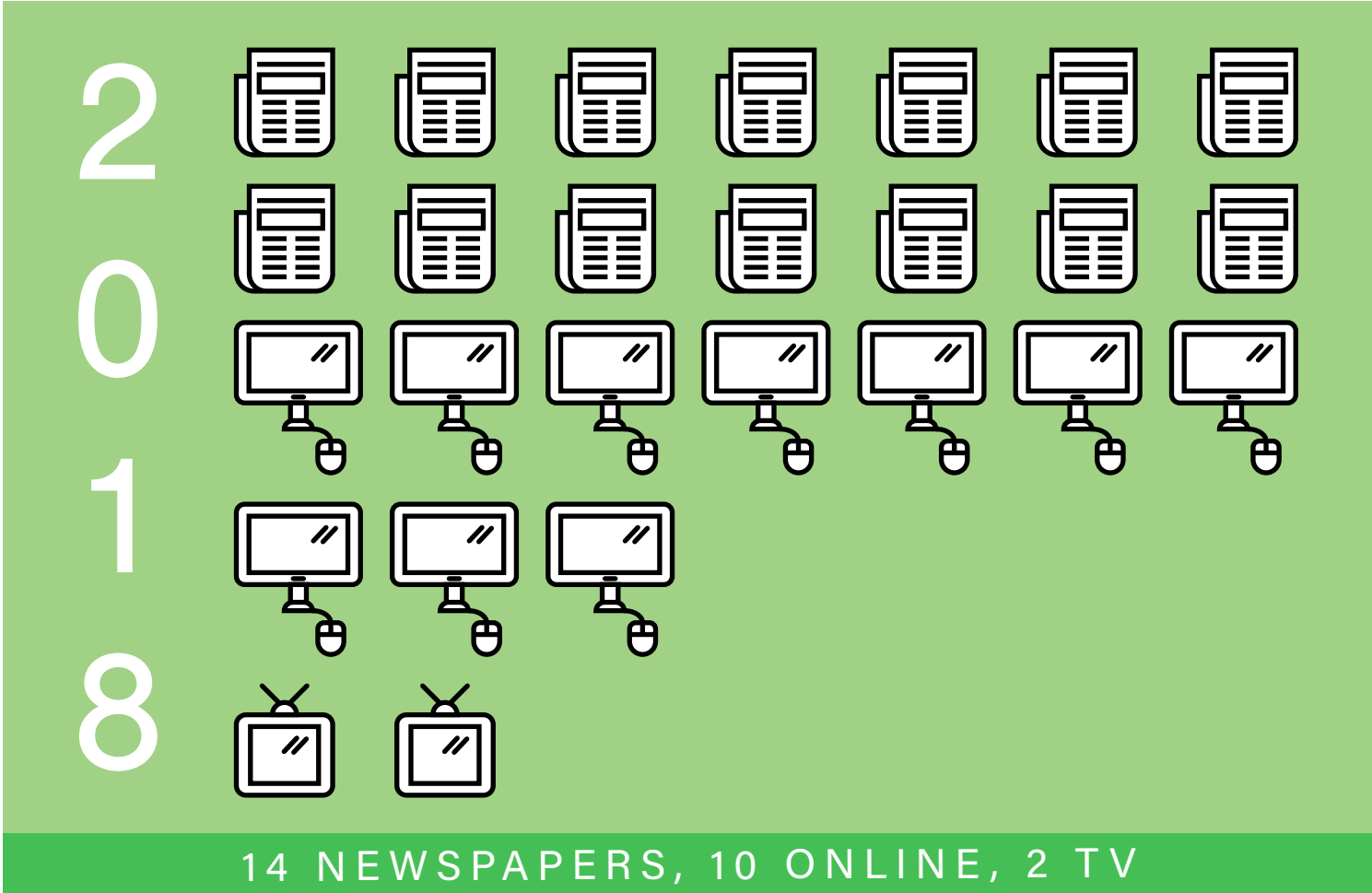


PRESS COVERAGE 2017–18



“Think traffic is bad now? If we don’t put the right infrastructure and systems in place now, it will get much worse. The planning decisions we make today will determine the future health of our communities and our economy.”

— Gerrit Knaap in a Baltimore Sun op-ed, “Smart growth is not a rural or urban issue, it’s a Maryland issue”, August 17, 2017



“This would improve the lives of the people who were born and raised here, who visit here, who educate here,” he said. “The benefits to everyone are absolutely tremendous.”

— Frank Johnson, Baltimore City’s Chief of Operations, speaking on NCSG’s Smart Cities Initiative in “Universities to study how to turn Baltimore into a “smart city” (The Baltimore Sun, October 26, 2017) Here’s how.” (The Grist, June 28, 2018)

“To figure out a good recipe for sustainable growth, the team modeled what would happen under scenarios where those factors vary.”

— Greta Jochem, “Metro areas can grow and cut emissions at the same time. Here’s how.” (The Grist, June 28, 2018)

“By providing residents with better access to both education and employment opportunities, the Purple Line has the potential to make the corridor labor market even stronger and more balanced.”

— Gustavo Torres, Director of CASA de Maryland, at the signing of the Purple Line Agreement, in “Maryland Officials Sign Agreement on Purple Line Development” (U.S. News and World Report, November 28, 2017)

“This cursory look at demographics does no justice to the burdens, primarily born by minority groups, of the dramatic increase in housing prices over the last 20 years.”

— Authors Alex Baca and Nicholas Finio speaking on the complex demographics of the Washington region in “Gentrification in DC is not just a black and white issue” (Greater Greater Washington, September 6, 2018)

RESEARCH NEWS, NEWS PROJECTS, AND INITIATIVES



1 PURPLE LINE CORRIDOR COALITION SIGNS LANDMARK AGREEMENT FOR LIGHT RAIL COMMUNITIES

Regional leaders, community stakeholders, nonprofit organizations, the University of Maryland, small businesses, and residents launched a landmark agreement in November 2017 to create pathways to opportunity for all who live, work and invest along the Purple Line Corridor. ***Pathways to Opportunity: A Community Development Agreement for the Purple Line Corridor, developed and led by the Purple Line Corridor Coalition (PLCC)***, articulates a collective vision for equitable economic and community development along the 16-mile Purple Line light rail corridor, and advances strategies to achieve that vision through the pursuit of four shared goals: support and grow local businesses; build a thriving labor market; ensure housing choices for all; and support vibrant, sustainable communities. It is the largest collaborative effort among regional leaders and public, private and community stakeholders to shape development along the corridor. The agreement was created over several years through an open, inclusive stakeholder process led by the PLCC; engaging more than 300 residents, business owners, proper-

ty owners, nonprofit leaders and public officials. November's event brought more detail to the table on the opportunities and challenges surrounding the four goals, as well as next steps to move the directives and vision forward. Prior to the agreement, NCSG researchers Willow Lung-Amam and Gerrit Knaap developed the Purple Line Community Dashboard and a Purple Line Story Map that tracks secondary housing, business, neighborhood, and labor data over time, pinpointing areas of opportunity and vulnerability. The tools are helping advocates and policy makers monitor progress toward the agreement tenets and fortify efforts to pursue support and funding.





2 MDOT PARTNERSHIP EXPLORES THE IMPACT OF TRANSPORTATION

A new three-year cooperative agreement with the Maryland Department of Transportation (MDOT) will provide the organization with intelligence on how transportation intersects with local economies, health, and land use. The agreement, which commenced in July, encompasses several projects on both state and local levels. Already underway is the development of a new system of place-type classification with relation to transportation and a data-driven process to identify areas ripe for economic development based on transportation infrastructure. Researchers are also aiming to incorporate a state-wide health impact model and investigate the economics of parks and trails.

3 NEW STUDY WILL TACKLE MID-ATLANTIC TRAFFIC CONGESTION

An upcoming study of the Washington Megaregion takes a detailed look at congestion levels and trends from Baltimore to Richmond, and will identify scenarios that might reduce congestion, based on regional cooperation that has occurred and potential future collaboration. The report, being prepared for GWP, is expected to be released in December.

4 CAMPUS COMMUNITY CONNECTION EXPANDS UNIVERSITY REACH AND IMPACT WITHIN THE GREATER COMMUNITY

A new initiative launched by NCSG and iSchool in 2016 is coordinating university engagement within the communities surrounding the College Park campus by leveraging research activities, outreach efforts, academic objectives, and service projects to enhance community resiliency. Under the leadership of former College Park Mayor Andrew Fellows, **Campus Community Connection** has since coordinated efforts with both long-standing and new programs at UMD to engage in 70 projects identified by local jurisdictions, ranging from environmental resiliency, community safety, walkability and transportation, to beautification efforts and food security. Initially funded by \$88,000 in seed money from College Park, Hyattsville, Riverdale Park and University Park, new grants from UMD's Sustainability Fund, The Chesapeake Bay Trust, and the Office of the Provost have extended the program's reach and project scope, spurring an initiative for Baltimore Avenue Smart and Connected Communities, a Knowledge Extension project that connects Prince George's County libraries with small businesses, and a Resiliency Indicators project that will help communities assess capacity and vulnerability in storm events.





5 TRANSFORMING BALTIMORE AVENUE: PAIRING UMD RESEARCH AND COMMUNITY NEEDS TO CREATE A “LIVING RESEARCH CORRIDOR”

A collaboration between the NCSG and UMD's iSchool will organize researchers across campus to tap the university's historic main thoroughfare—the Baltimore Avenue Corridor—for a “living research corridor” for smart cities technology. Sponsored by the Office of the Provost, UMD's Smart and Connected Communities Initiative will leverage university/community collaboration and smart technologies to improve the safety, engagement, accessibility and quality of life along College Park and neighboring communities along the Baltimore Avenue (Route 1) Corridor. The initiative hopes to harness the cutting-edge research taking place across campus and align it with community needs and opportunities. An initial ideas exchange in Spring 2018 brought nearly 100 stakeholders and academics to the table. Exchanges on transportation, the build environment, environmental science, urban agriculture, data analytics, the arts and disaster resilience laid the foundation to engage research with community investment.

6 NCSG'S NEW PLACEMAKING COLLABORATIVE ENGAGES COMMUNITIES THROUGH ART AND DESIGN

This year, the NCSG made a critical step to expand its reach and impact in communities by launching a new creative placemaking and placekeeping arm. NCSG's Creative Placemaking Collaborative (CPC), led by architecture professor and accomplished artist, Ronit Eisenbach, will combine the core principles and strategies of public interest design, participatory planning, and creative placemaking to help communities' weather economic, social, and environmental challenges.

By engaging community assets and spirit through physical space, initiatives of this new institute will aim to build and strengthen existing relationships in order to improve quality of life and a sense of place to communities experiencing challenges or change, continuing Eisenbach's longtime practice of creative and professional collaboration with allied campus programs and colleagues, nonprofits, and community stakeholders.

"This work—which includes site-based public art, pop-up performance, and design/build programs—involves seeking and engaging local assets and community members to stimulate new thinking, increase empowerment in the face of change and activate the public realm," says Eisenbach. "It is a form of active citizenship."

This fall, the Institute hosted the first-ever **National Placemaking Leadership Summit: National Dialogue, Local Impact: Creative Placemaking and Change**, in partnership with the National Consortium of Creative Placemaking and ArtPlace America. The event galvanizing over 250 practitioners, educators, and community stakeholders who explored and shared the how's and why's of Creative Placemaking — creative solutions to community challenges through art and design. The summit is complemented by the Kibel Gallery's Fall exhibit: **10 Sectors, 10 Solutions: Artists and Community Change**.

Also breaking ground this fall is a new urban green space in the Silver Spring, Md. community of Long Branch. **The Lightscape Garden** supports the community master plan whose goals included improving neighborhood safety and creating a sense of place. As lead designer, Eisenbach was supported by a team of UMD Architecture students and design professionals and worked in partnership with the nonprofit Arts on the Block, the satellite YMCA team, and local children and adults. The design will transform an outdated playground into a community asset, providing a much-needed beautiful and fun venue for neighborhood gatherings, education and recreation.

Coinciding with the creation of the Institute is a new architecture program seminar called "Building Abroad: Research and Practice." Co-led by Eisenbach and the student leaders who founded **Roots: Home and Abroad** (a new UMD design service organization), the undergraduate seminar will set the stage for a multi-year, ongoing community project in Leogane, Haiti led by Roots.





COMMUNITY

7 ILLUMINATING A COMMUNITY'S ASSETS

While phase one of the Lightscape of the Lightscape Garden project broke ground in August, there will be a three-month gap between its completion and the installation of the permanent illuminated bench. Rather than leave the site feeling unfinished, Eisenbach embraced this challenge as an opportunity, devising a plan to transition both the community and the physical space with a temporary furniture installation. Designed by Eisenbach and architecture student Nic Przybocki, and built by Nic with help from other Roots members, the temporary seating was crafted from recycled pallets, a nod to the project's adherence to sustainability and ecology (the forthcoming permanent structure will be constructed of a composite made from recycled plastic bottles). NCSG and UMD's Environmental Finance Center provided additional support. An early September "Paint Party" engaged local children and allowed the design team to test out colors for the permanent installation while providing the community a day of fun and critical stake in shaping the new space. "The brightly colored temporary seating is an expression of the community, but also serves as 'practice' for residents to transform an underutilized and single-purpose space into a gathering space for all," said Eisenbach. "It's an opportunity that engages change as a process of relationship building, cultural shifting and creative local agency; that's the foundation of good placemaking."

8 MAKEOVER MONTGOMERY 4 ADDRESSES SELF-DRIVING CARS, AFFORDABLE HOUSING, AND THE TRANSFORMATION OF THE AMERICAN SUBURB

Over 250 educators, practitioners, researchers, and community stakeholders attended **Makeover Montgomery (MM4)**, a biennial event bringing some of the best minds in new technology, economics, social science, architecture, development, and sustainability together to discuss the contemporary challenges and opportunities of the American suburb. Sponsored by the **National Center for Smart Growth** and the **Montgomery County Planning Department**, this year's symposium focused on the tenets of a thriving, 21st century suburb: one that is competitive, healthy, inclusive and smart. Following a dynamic keynote by founder and CEO of Reinventors and former Associate Editor of *WIRED Magazine* Peter Leyden, panels and workshops milked ideas and created strategies around a number of topics, from job growth and autonomous vehicles to walkable communities and economic opportunity.



9 ENGAGEMENT TOOLS HELP COMMUNITIES INCREASE EQUITY AND QUALITY OF LIFE

Two new tool kits developed by NCSG researchers are providing strategies to help shape neighborhood growth, expand access to opportunity, and improve quality of life. Geared toward community stakeholders and policymakers, the toolkits—which include instructions for story mapping, case studies, and other resources—offer a roadmap to capturing community input, a critical element to planning for better neighborhoods. The tools are part of an online platform called **Opportunity 360**, created by the national affordable housing nonprofit **Enterprise Community Partners**. The platform, which was constructed with the assistance of former NSCG researcher and Enterprise Bart Harvey Fellow Eli Knaap, provides datasets, case studies, tools and methodology for measuring neighborhood opportunity and improving community outcomes.

10 REVIEW OF BALTIMORE'S REGIONAL PLAN OUTLINES LESSONS LEARNED FOR THE FUTURE

This summer, the National Center for Smart Growth and Enterprise Community Partners released a **report** that examined the planning process and outcomes of Baltimore's 2015 Regional Plan for Sustainable Development, a multi-year, multi-organizational effort to break Baltimore's ongoing cycle of poverty, and even the playing field for inner-city families by coordinating investments in housing, transportation and workplace development. The report underscored both bright spots and lessons learned from Baltimore's RPSD, outlining the key components to effective planning and policy making: a diverse group of stakeholders at the table is critical for buy in; opportunity-related data and maps—such as the ones developed by the NCSG during the planning process to show areas ripe for housing, transportation and workforce investments—helps visualize the disparities for collaborative partners on a regional level; and that community engagement early in the process can grasp on-the-ground concerns and integrate them into the plan. Most notably, the report revealed that while planning efforts among the Opportunity Collaborative—a diverse group of stakeholders that authored the plan, including the NCSG—was strong, the plan's aftermath illustrated a lack of coordination and communication between local jurisdictions, ultimately stalling implementation. Political infrastructure that helps bring local governments and stakeholders to the table and connects them regionally is critical to effective, long-term policy. The researchers hope the report will offer unique insight to other cities seeking to create more equitable regions.



11 REDEFINING SMART GROWTH FOR THE 21ST CENTURY

Twenty years after former Maryland Governor Parris Glendening signed into law a landmark strategy to curb suburban sprawl, the National Center for Smart Growth gathered Governor Larry Hogan, state representatives, stakeholders, and national experts to re-open the conversation and expand the definition of "smart growth." The event, called Smart Growth @ 20, reflected on how smart growth has performed over the past twenty years and how new strategies that add social and economic sustainability issues to the fore, could shape smart and sustainable development for the future. Conversations addressed some of the state's most pressing issues, including climate change, social equity, energy conservation, economic restructuring, and technological innovation.

LEFT: Governor Larry Hogan presented a proclamation honoring the work of the National Center for Smart Growth and others in forwarding sustainable growth policies throughout the state. Hogan was joined by former Governor Parris Glendening, Salisbury mayor and UMD alumnus Jake Day, Vice President of Knowledge Impact and Strategy at Enterprise Community Partners Tiffany Manuel, Texas A&M Professor Phil Berke, and numerous smart growth experts and stakeholders. The event, hosted at the Maryland State House, was sponsored by Delegate Steve Lafferty, the Maryland Building Industry Alliance, the Town Creek Foundation, NAIOP Maryland, and 1000 Friends of Maryland.

“

Twenty years ago, we put NCSG on the map with our fervent resolve to work with stakeholders across the state to create thriving, equitable, sustainable communities. While those principles still hold true, the goal posts have moved. It's important that our policies are meeting both our long-standing and new priorities in sustainable growth.

”

— Dr. Gerrit-Jan Knaap



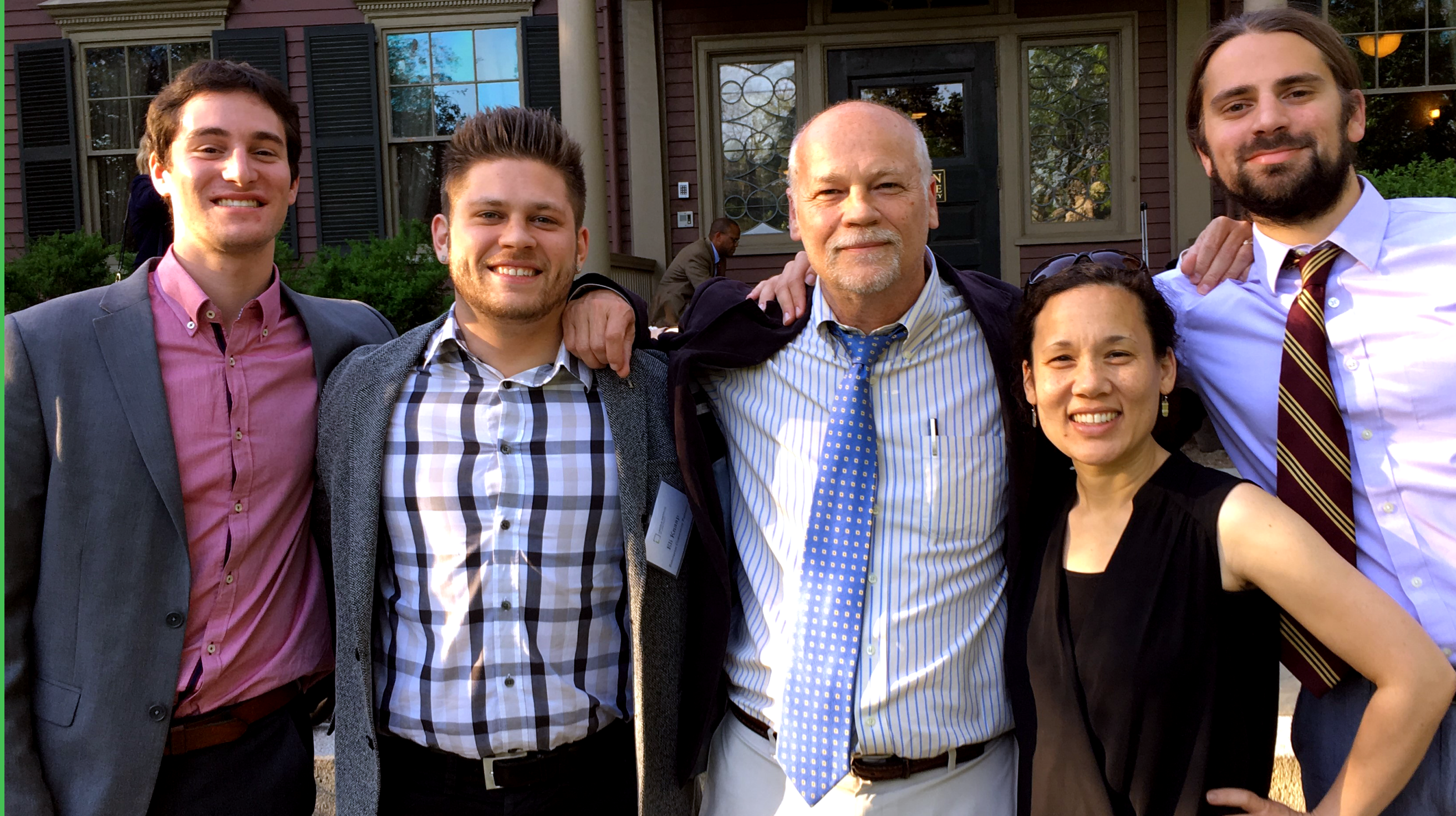
13 SPURRING INNOVATION AND ECONOMIC DEVELOPMENT IN MARYLAND

In 2011, a grant from the U.S. Economic Development Center kickstarted the University of Maryland – Morgan State Joint Center for Economic Development (EDA University Center). The center, led by Ph.D. alum Dr. Scott Dempwolf (2012) and designated under the National Center for Smart Growth, provides targeted assistance to local governments through technology transfer, commercialization and entrepreneurship, research commercialization, workforce development and business counseling services. In 2016, [MH1] the EDA University Center leveraged new funding by pooling the resources from across the University System of Maryland to address economic challenges and spur economic innovation statewide, particularly for developing innovation districts.



14 DEFINING OPPORTUNITY

While it's clear that access to opportunity—good jobs, technology, good schools, healthcare, transportation and affordable housing—is the key to safe and thriving communities, what defines opportunity is not the same for everyone. NCSG researchers continue to develop methods, data collection and mapping exercises that explore communities' unique understanding of opportunity by uncovering community barriers and existing assets. Using community forums, story and GIS mapping, and ground-level engagement with residents, researchers have collaborated with government agencies and stakeholders in Prince Georges' County, Baltimore and within Purple Line corridor communities, providing information critical to advancing policy development and equitable planning. Beyond identifying areas of opportunity, researchers are also evaluating the efficacy of the methodology with in-depth, national case studies, and by tracking resulting development plans and outcomes.



15 PRESERVING THE CHESAPEAKE BAY

In June 2017, the NCSG released the Conservation Land Use Policy Toolkit, a comprehensive guide for the 1800 local governments working to conserve the farmland, wetland and forestland that dot the Chesapeake Bay. Funded by the Chesapeake Bay Trust, the guide aims to help local governments wade through the numerous policy tools to find the best tools for their jurisdiction, drilling down into seven specific tools that address planning, zoning, subdivision ordinances, impact fees, urban service boundaries, purchase of development rights/conservation easements and transfer of development rights.

16 UNDERSTANDING EQUITY ON A GLOBAL SCALE

Ph.D. candidate Dan Kellman, Ph.D. alum Eli Knaap, **Gerrit Knaap**, **Willow Lung-Amam** and Ph.D. candidate Nick Finio joined global experts in planning, sustainability and policy at the **Lincoln Institute of Land Policy** to explore best practices for shaping urban equity on a global scale. Lung-Amam and Knaap have spend the past year examining global land use policies and comparing how land markets in the U.S., Latin America and Europe help or hinder social equity.

WHO WE ARE

Gerrit-Jan Knaap, Executive Director and Professor
Uri Avin, Research Professor, Director of the Planning Design Center and PALS Program, Senior Advisor
C. Scott Dempwolf, Assistant Research Professor
Casey Dawkins, Professor
Ronit Eisenbach, Professor and Director of Creative Placemaking
Frederick Ducca, Senior Research Scientist
Sevgi Erdogan, Assistant Research Professor
Andrew Fellows, Faculty Research Assistant
Nicholas Finio, Faculty Research Assistant
Kimberly Fisher, PALS Program Director
Hiroyuki Iseki, Associate Professor
Willow Lung-Amam, Assistant Professor
Andrew McMillan, Postdoctoral Researcher
Arefeh Nasri, Faculty Research Scientist
Kimberly Ross, Assistant Director
Jason Sartori, Special Projects Coordinator
Linda Walker, Administrative Assistant
Cynthia Williams, Research Coordinator



PH.D. ASSISTANTS

Hyunjoo Eom
Jinyhup Kim
Binbin Peng
Qiong “John” Peng
Morgan Wortham
Zhenpeng “Frank” Zou

GRADUATE ASSISTANTS

Alex Bailor
Danielle Curet
Sarah Latimer
Jack Narron
John Newman
Jerah Smith

AFFLILATES

Elijah Knaap
Li (Kerry) Fang
Anna Alberini
Matthew J. Bell, FAIA
Ralph Bennett, FAIA
Martin A. Bierbaum
Carson Bise
Mark Braza
Arnab Chakroborty
James R. Cohen
John Driscoll
Ronit Eisenbach
Charles Field
John Griffin
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Marie Howland
Seema D. Iyer
Rebecca C. Lewis
Erik Lichtenberg
Miguel González Marcos
Terry Moore
David N. Myers
Robert H. Nelson
David Newburn
Bruce Purdy
Glenn C. Robinson
Mary Corbin Sies
Yan Song
Brenda Williams

FACULTY/RESEARCHER NEWS

Sevgi Erdogan was promoted to Assistant Research Professor this past June. She recently completed the Professional Track Faculty Program sponsored by UMD’s ADVANCE program and is currently participating in the Faculty Launch Program sponsored by the Office of the Provost, where she works with colleagues to discover advanced and innovative teaching methods. She continues to teach a seminar in research design and this summer taught an independent study through the School of Public Policy. On the publication front, Sevgi collaborated with colleagues Chao Liu and Ting Ma on a book chapter on transit-oriented development in Washington, DC and Paris for *La Métropole Des Transports Collectifs. Paris – Washington, Regards Croisés*. Her article, “A Green Vehicle Routing Problem” was listed as the most-cited article and among the most downloaded articles in 2017 from *Transportation Research Part E*. She joined colleagues **Fredrick Ducca** and **Gerrit Knaap** this year as a co-principal investigator on a regional project that evaluates the Richmond–Washington–Baltimore Megaregion and served as senior scientist of the Center’s PRESTO project. Sevgi continues to share research and insights prolifically on smart growth, autonomous vehicles, ride sourcing, and more across the nation and world at conferences, invited talks, and symposia (for a full list, see the publications and talks section).

This year, **Casey Dawkins** was named Professor of Urban Studies and Planning at the University of Maryland. He continues to focus research efforts on fair and affordable housing and his work has appeared in several prominent journals,

including *Journal of Urban Affairs*, *Housing Policy Debate*, and *Cityscape*. He recently collaborated with colleagues **Uri Avin** and **Gerrit Knaap** on a housing plan for Prince George's County, sponsored by Enterprise Community Partners.

Associate Professor **Hiroiyuki (Hiro) Iseki** published two new peer-reviewed journal articles in 2018. One article, titled "The Determinants of Travel Demand between Rail Stations: A Direct Transit Demand Model Using Multilevel Analysis for Washington D.C. Metrorail System" was published in *Transportation Research Part A: Policy and Planning*, the result of work with **Dr. Chao Liu** and graduate assistants to develop direct ridership models for the rail systems in Maryland in collaboration with Maryland Transit Administration (MTA). This work also produced a tool to examine the impacts that changes in conditions in station areas have on rail ridership. Iseki also conducted a study on transportation demand management (TDM) in university settings and gave a presentation with Ph.D. student Hyunjoo Eom to the University of Maryland Student Government Association (SGA) regarding universal transit pass (U-Pass) programs. On the teaching side, Iseki co-taught an independent study-based course this past spring on public transit planning with URSP alumnus Sandy Davis and guided four URSP students to produce a report titled, "An Analysis of LANTA's Easton-Area Bus Service."

Uri Avin has spent the past two years working with several MPOs across the U.S. on their regional development and long-range plans, advising on both the approach and construction of regional scenarios. He is currently working with colleagues Gerrit Knaap and Casey Dawkins on a housing plan for Prince George's County that analyses current stock, land use supply and the county's new zoning code. Uri continues to center much of his research efforts on sustainable practice, planning and scenarios as it relates to community investment; his latest research offers a case study on the impact of the Sustainable Communities Initiative Program on transportation planning. Uri was awarded the Maryland Sustainable Growth award in 2017 for his leadership and service in sustainability practice and teaching, most notably, his development of the University's PALS program, and was awarded the APA Division Achievement Award for the Regional and Intergovernmental Planning Division's Emerging Trends in Regional Planning PAS Report.

Willow Lung-Amam joined NCSG's faculty in 2017 as Director of Community Development after three years as a Center affiliate. After the successful 2017 release of her first book, *Trespassers?: Asian Americans and the Battle for Suburbia*, Willow is at work on a second book, entitled *The Right to Suburbia: Redevelopment and Resistance on the Urban Edge*, which examines the struggles over redevelopment of low-income minority and immigrant communities in the Washington, DC suburbs, and the subject of Willow's Ford Foundation Fellowship. She remains highly engaged in housing equity and community preservation, working alongside colleagues on several projects throughout Maryland, including the Smart Cities Project in West Baltimore and equitable development along the Purple Line Light Rail. Willow was integral in the development of community tools—including cases studies for opportunity and story mapping—for leading affordable housing foundation Enterprise Community Partners; the tools help facilitate asset-based community development across the nation. Willow has presented widely on equitable development, gentrification and inclusive neighborhoods, and the digital divide at national conferences and in the media. In addition, her work to foster diversity and inclusion at UMD earned her a Nancy Weiss Malkiel Fellowship, an award supported by the Andrew W. Mellon Foundation.

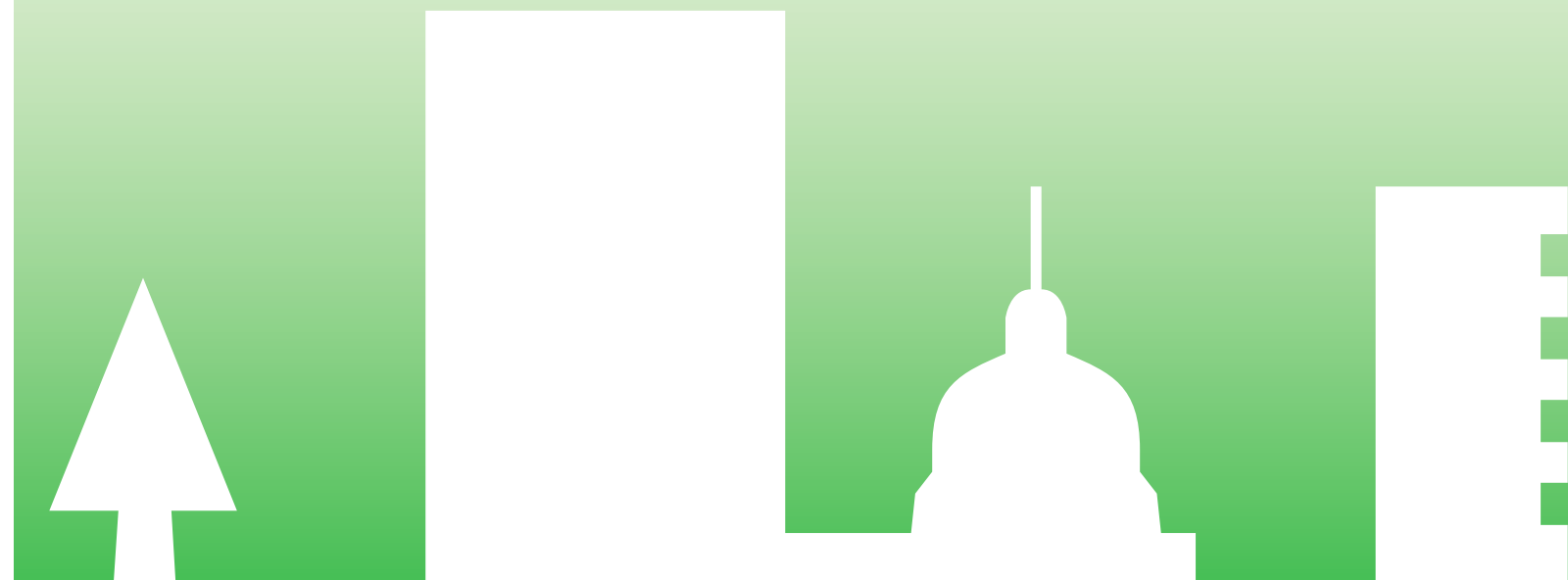
As part of a joint appointment by UMD's iSchool and the Center, **Andrew Fellows** leads UMD's Campus Community Connection, a University arm that coordinates and executes community-based projects with students, faculty, and staff. Over the past 18 months, Campus Community Connection has added an additional 20 projects, expanding its reach into neighboring communities. Andy has shared organizational work and cultivated new relationships through several speaking engagements, and a sustainability fund grant helped galvanize more members of the UMD community and boost the program's impact.

Frederick Ducca is currently collaborating with Maryland Department of Transportation on a three-year, multi-project agreement that will examine relationships between transportation and land use, public health and regional economies. He is near completion of a congestion study of the Washington Megaregion for the GWP.

NCSG WELCOMES AREFEH NASRI AND ANDREW MCMILLIAN

Dr. Arefeh Nasri joins the National Center for Smart Growth's research team this year as a faculty research scientist. A recent postdoctoral researcher with UMD's Maryland Transportation Institute, Arefeh brings expertise in transportation, travel behavior, and land use, including the development of new methods of measuring land use patterns.

Dr. Andrew McMillan joins the Center this year as a postdoctoral researcher. Originally from Cleveland, Andrew received his Ph.D. in Urban and Regional Planning from the University of Illinois at Urbana-Champaign. His research interests include spatial analysis, GIS, smart growth, and housing policy.



PUBLICATIONS AND SPEAKING ENGAGEMENTS

BOOK CHAPTERS

Dawkins, C. and Moeckel, R. (forthcoming). "Transit-Induced Gentrification in the Washington, D.C., Metropolitan Area." In *La Métropole Des Transports Collectifs. Paris – Washington, Regards Croisés* (in French). Paris: Éditions l'œil d'or.

Eisenbach, R. and Ruppert, J., "On Site: Public Art and Design." In *Public Interest Design Education Guidebook: Curricula, Strategies, and SEED Academic Case Studies*, Lisa Abendroth and Bryan Bell, eds., New York: Routledge.

Erdogan, S., Liu and C. Ma, T. (forthcoming) "The Effects of Bike Share on Transit Ridership." In *La Métropole Des Transports Collectifs. Paris – Washington, Regards Croisés* (in French). Paris: Éditions l'œil d'or.

REFEREED JOURNAL ARTICLES

Bieri, D.S. and Dawkins, C.J. (forthcoming). "Amenities, Affordability, and Housing Vouchers." *Journal of Regional Science*.

Dawkins, C. and Jeon, J.S. (2018). "Housing Cost Burden in the Housing Choice Voucher Program: The Impact of HUD Program Rules." *Cityscape: A Journal of Policy Development and Research*, 20(1), 39–62.

Dawkins, C. (2018). "Toward Common Ground in the U.S. Fair Housing Debate." *Journal of Urban Affairs*, 40(4) 475–493.

Dawkins, C. (2017). "Autonomy and Housing Policy." *Housing, Theory and Society*, 34(4) 420–438.

Dawkins, C. (2017). "Putting Equality in Place: The Normative Foundations of Geographic Equality of Opportunity." *Housing Policy Debate*, 27(6), 897–912.

Dawkins, C., Jeon, J.S., and Knaap, G.J. (2017). "Creating and Preserving Affordable Homeownership Opportunities: Does Inclusionary Zoning Make Sense?" *Journal of Planning Education and Research*, 37(4), 444–456.

Dawkins, C. and Miller, M. (2017). "The Characteristics and Unmet Housing Program Needs of Disabled HUD-Assisted Households." *Housing Policy Debate*, 27(4), 499–518.

Fan, W., Erdogan, S., Welch, T.F., Ducca, F.W. (2017). "Use of Statewide Models as a Decision Tool for Zero-Emission Vehicles Deployment." *Transportation Research Record*, 2828, 78–86.

Iseki, H., Liu, C., and Knaap, G.J. (2018). "The Determinants of Travel Demand between Rail Stations: A Direct Transit Demand Model Using Multilevel Analysis for Washington D.C. Metrorail System." *Transportation Research Part A: Policy and Practice*, 116, 635–649.

Iseki, H., and Jones, R.P. (2018). "Analysis of Firm Location and Relocation in Relation to Maryland and Washington, DC Metro Rail Stations." *Research in Transportation Economics*, 67, 29–43.

Jeon, J.S., Dawkins, C., and Pendall, R. (forthcoming). "How Vehicle Access Enables Low-Income Households to Live in Better Neighborhoods." *Housing Policy Debate*.

Knaap, G., Avin U., and Fang, K. (2017). "Driving and Compact Growth: A Careful Look in the Rearview Mirror." *Journal of the American Planning Association*, 83 (1), 32–35.

Lewis, R., Parker, R., Zou, Z., Hovekamp, W., McGowen, M., and Sherrard, R. (2018). "Voter-Approved Annexations in an Urban Growth Boundary Regime: The Impacts on Housing Values, Density, and Economic Equity: Voter Approved Annexations in Ugb Regime." *Growth and Change*, 49 (2), 286–313. doi:10.1111/grow.12235.

Lung-Amam, W. (2018). "An Equitable Future for the Washington, DC Region? A 'Regionalism Light' Approach to Building Inclusive Neighborhoods." *A Shared Future: Fostering Communities of Inclusion in an Era of Inequality*, Harvard Joint Center for Housing Studies, 192–203.

Lung-Amam, W., Knaap, E., Dawkins, C., and Knaap, G.J. (2018). "Opportunity for Whom? The Diverse Definitions of Neighborhood Opportunity in Baltimore." *City and Community*, DOI: 10.1111/cico.12318.

Lung-Amam, W.S., Knaap, E., Dawkins, C. and Knaap, G.J. "Opportunity for Whom? The Diverse Definitions of Neighborhood Opportunity in Baltimore." *City & Community*, 17(3), 636–657.

CONFERENCE PROCEEDINGS

Avin, A., Grossman, A., Bond, a., Edner, S., Denbow, R., Fisher, K., and Lombardi, D. (2018). "How is the Sustainable Communities Initiative Program Transforming Regional Transportation Planning? (Report prepared for FHWA)." Presented at the *Transportation Research Board 97th Annual Meeting*, Washington, D.C.

Eisenbach, R. (2017). "LightScape Garden: Silver Spring, Maryland." Presented at the UK Association of Architectural Educators (AAE) conference, *Architecture Connects, Strategies for the co-production of architecture knowledge*, Oxford Brookes School of Architecture, Oxford, England.

Eisenbach, R. (2017). "Making Place, Long Branch, Maryland." Presented at the UK Association of Architectural Educators (AAE) conference, *Architecture Connects: Strategies for the co-production of architecture knowledge*, Oxford Brookes School of Architecture, Oxford, England.

Eisenbach, R., Meador, C., Vrebalov, A., Wightman, J., (2017). "WaterLines: RiverBank, Chestertown, Maryland." Presented at the Association of Collegiate Schools of Architecture (ACSA) 105th Annual Meeting: Brooklyn says, "Move to Detroit," Detroit, Michigan.

Fan W., Erdogan, S., Welch, T.F., and Ducca, F.W. (2017) "Use of Statewide Models as a Decision Tool for Zero-Emission Vehicles Deployment." Presented at the *Transportation Research Board (TRB) 96th Annual Meeting*, Washington, D.C.

Iseki, H., Eom, H., and Greene, C. (2017). "Effects of the Proximity of Metro Rail Stations and Agglomeration on Firm Spatial Distribution in the Washington, D.C. Metropolitan Area." Presented at the *Transportation Research Board (TRB) 96th Annual Meeting*, Washington, D.C.

Iseki, H., Liu, C., and Knaap, G.J. (2017). "The Determinants of Travel Demand between Rail Stations: A Direct Transit Demand Model Using Multilevel Analysis for Washington D.C. Metrorail System." Presented at the *Transportation Research Board (TRB) 96th Annual Meeting*, Washington, D.C.

REPORTS, MONOGRAPHS AND CREATIVE WORKS

Avin, U. (contributor, 2017). PAS Report 586, Emerging Trends in Regional Planning. American Planning Association.

Avin, U., Ducca, F., Engelberg, D., Erdogan, S., Finio, N., Knaap, G., Moeckel, R., and Shahumyan, H. (2018). Engaging the Future: Baltimore-Washington 2040. National Center for Smart Growth Research and Education, College Park, MD.

Avin, U. (2018). The Crunch for Housing Land in Central Maryland. National Center for Smart Growth Research and Education, College Park, MD.

Dawkins, C. and Jeon, J.S. (2017). Rent Burden in the Housing Choice Voucher Program. U.S. Department of Housing and Urban Development.

Eisenbach, R., and Ellern, C., *LightScape Rain Garden Phase I*. Designed for the YMCA Community Center, Carroll Avenue/Quebec Terrace neighborhood, Maryland, October 2016–2018.

Eisenbach, R., Nic Przybocki, N., *Interim Benches, Lightscape Rain Garden*. Designed for the YMCA Community Center Carroll Avenue/Quebec Terrace neighborhood, Maryland, October 2018.

Eisenbach, R., *Spatial Drawings* site specific installation at The Haystack Mountain School, Deer Isle, Maine, June 2018.

Eisenbach, R., and Haley, K., *Table Talk*. Designed for the 1st MAPP Diversity & Inclusion Interna-

tional Lunch, University of Maryland, College Park, Maryland, May 2017.

Eisenbach, R., *HOT/COLD*. Designed for *Play Haifa Festival*. Exhibited at the *Beit Hagefen Gallery*, Haifa, Israel, December–April 2017.

Eisenbach, R., Morelewicz, P., Tai, D., Summers, H., and Bos, E., Exhibition Curator and Lead Designer, *MAPP@50, Past, Present, Future*, University of Maryland School of Architecture, College Park, MD, May 2017 to present.

Eom, H., Iseki, H., and Warner, C. (2017). The Literature Review of University Campus Transportation Demand Management Programs in the North America. The National Center for Smart Growth Research and Education, College Park, MD.

Erickson, A., and Eisenbach, R., Curators, *10 Sectors, 10 Solutions, Artists & Community Change*. Exhibited at the University of Maryland Kibel Gallery, College Park, Maryland, August 2018. Traveling 2019.

Finio, N., Lung-Amam, W., Bedford, B., Knaap, G., Dawkins, C. and Knaap, E. (2018). Toward an Equitable Region: Lessons from Baltimore's Sustainable Communities Initiative Grant. Prepared for Enterprise Community Partners by the National Center for Smart Growth Research and Education, College Park, MD.

Iseki, H., Norman, K., Warner, C., and Eom, H. (2017). The Case Study of Universal Transit Pass (U-Pass) Programs. The National Center for Smart Growth Research and Education, College Park, MD.

Iseki, H., Li, M., and Liu, C. (2018). Direct Ridership Model (DRM) Implantation Tool for Maryland Transit Administration. (1) Excel Visual Basic for Applications; (2) Technical Memo (5 pages); (3) the Instruction Manual with a video clip (PowerPoint file).

Liu, C., Iseki, H., and Wang, S. (2017). Time-of-Day Direct Ridership Model for Maryland Rail Transit. Prepared for Maryland Department of Transportation by the National Center for Smart Growth Research and Education, College Park, MD.

Lung-Amam, W., Dawkins, C., and Choquehuanca, J. (2017). Engaging Communities around Opportunity through Story Mapping. Prepared for Enterprise Community Partners by the National Center for Smart Growth Research and Education, College Park, MD.

Lung-Amam, W., Dawkins, C. and Bedford, B. (2017). Story Mapping in Action: Engaging an Immigrant Community in Planning for a New Light Rail. Prepared for Enterprise Community Partners by the National Center for Smart Growth Research and Education, College Park, MD.

Lung-Amam, W., Dawkins, C., Moreira-Smith, Z., Knaap, G.J., and Washington, A. (2017). Preparing for the Purple Line: Affordable Housing Strategies for Langley Park, Maryland. Prepared for CASA de Maryland by the National Center for Smart Growth Research and Education, College Park, MD.

The National Center for Smart Growth (2017). Purple Line Economic Development Report (Draft), Prepared for Maryland Dept. of Transportation, College Park, MD.

INVITED TALKS, LECTURES AND PRESENTATIONS

Avin, A. "Housing Affordability in Central Maryland: the Supply-Demand Cliff," presented at *Makeover Montgomery 4: Competitive, Healthy, Inclusive and Smart Communities*, Silver Spring, Maryland, May 2018.

Avin, A. "Exploratory Scenario Planning: Can it produce useful plans?" presented at *Scenario Consortium Conference*, 2017.

Avin, A. "Scenario Planning: Approaches and Tools," presented at *National TRB Webinar*, 2017.

Dawkins, C. Invited panelist, presenting "How Fair is Fair Housing? Integration and the Pursuit of Racial Justice in 21st Century America," at the *Urban Affairs Association Annual Conference*, Toronto, Canada, April 2018.

Dawkins, C. Invited panelist at *Future of Manufactured Housing Forum*, Fannie Mae, Washington, D.C., October 2017.

Dawkins, C. Invited commentator on "70 Acres in Chicago" film screening, organized by the University of Maryland Student Planning Association, 2017.

Dawkins, C. "Toward Common Ground in the U.S. Fair Housing Debate," presented at *1st MAPP of the Future Research and Creative Practice Symposium*, University of Maryland April 2018.

Dawkins, C. and Sik Jeon, J. "Housing Cost Burden in the Housing Choice Voucher Program," presented at the *Association of Collegiate Schools of Planning Conference*, Denver, Colorado, 2018.

Eisenbach, R., "Creative Placemaking and Sustainability." Presented at the *Creative Placemaking National Summit: Creative Placemaking & Change: National Dialogue, Local Impact*, University of Maryland, College Park, Maryland, October 2018.

Eisenbach, R., "Creative Placemaking, Change & The Necessity of Generosity." Presented at *Generosity & Architecture conference*, Cardiff University, Cardiff, Wales, UK, June 2018.

Eisenbach, R., "Lightscape Garden: Improving Literacy, Stewardship & Community through Design." Presented at *Makeover Montgomery 4: Competitive, Healthy, Inclusive and Smart Communities*, Silver Spring, Maryland, May 2018.

Eisenbach, R., "*Temporary, Public, Planful: Art, Design and Community Change*." Presented at the *1st MAPP + D Research and Creative Practice Symposium*, University of Maryland, April 2018.

Eisenbach, R. Invited panel participant, "Spatial Agency: Ephemeral Work, Lasting Impacts???" Presented at the *AIA Women in Architecture 2018 Lecture Series: Architecture, Design and Cultural Space, Torpedo Factory Art Center*, Alexandria, Virginia, April 2018.

Eisenbach, R., "Engaging Communities in Flux through Ephemeral Public Art and Design." Presented at *The MIKSER Festival*, Belgrade, Serbia, June 2017.

Eisenbach, R., "Embodied: Water and Sustenance." Presented at the *Just Food International Symposium*, Ottakring, Vienna, Austria, June 2017.

Eisenbach, R., Chair and Panel Participant, "Engaging Communities-In-Flux Thru Public Art + Design: Practice + Pedagogy." Presented at the *Thriving Together Creative Placemaking Leadership Forum*, The National Consortium for Creative Placemaking, NJIT, May 2017.

Eisenbach, R., "Performing Transitional Place: What role for temporary design?" Presented at *Structures for Inclusion 17: Building on the Common Ground, Structures*, Portland State University, Portland, Oregon, April 2017.

Engelberg, D., Erdogan, S., and Knaap, G.J. "Modeling the Land Use Impacts of Autonomous Vehicles," presented at the *Association of Collegiate Schools of Planning Conference*, Denver, Colorado, October 2017.

Erdogan, S. "An Overview of Smart Growth in Maryland," presented in Kyoto Prefecture, Japan, October 2017.

Erdogan, S., Capar, I., Capar, I., and Nejad, M., "Planning for Electric Vehicles: Maryland Case Study," presented at *INFORMS Annual Meeting*, Phoenix, Arizona, November 2018.

Erdogan, S., Engelberg, D., Knaap, G.J., and Ducca, F.W. "Modeling Autonomous Transit Service in Statewide Transportation Networks," presented at the *16th TRB National Transportation Planning Applications Conference*, Raleigh, North Carolina May 2017.

Erdogan, S., Engelberg, D., Knaap, G.J., and Ducca, F.W. "An Integrated Land Use and Transportation Model for Anticipating Impacts of Autonomous Vehicles On Location Choices," presented at the *16th TRB National Transportation Planning Applications Conference*, Raleigh, North Carolina May 2017.

Erdogan, S. Invited participant, *Imagine the Future: Conceptualizing Infrastructure Systems for an Interconnected World*, George Mason University, October 2017.

Finio, N. "Gentrification with a white picket fence: neighborhood upgrading in Montgomery County and Presentations US inner suburbs, 1980–2015," presented at *Makeover Montgomery 4: Competitive, Healthy, Inclusive and Smart Communities*, Silver Spring, Maryland, May 2018.

Finio, N. "Gentrification with a white picket fence: neighborhood upgrading in US inner suburbs, 1980–2015," presented at the *Association of American Geographers Annual Conference*, New Orleans, Louisiana, April 2018.

Finio, N. "Equity, Opportunity, and the Regional Planning Process," presented at the *Association of Collegiate Schools of Planning Annual Conference*, Denver, Colorado. October 2017.

Hughes, P. and Eisenbach, R., "Temporary Interventions and Community Change." Organized field workshop and presented at the *Creative Placemaking National Summit: Creative Placemaking & Change: National Dialogue, Local Impact*, Washington, DC, October 2018.

Iseki, H., Eom, H., Warner, C., and Normal, K. "The Case Study of Seven Universal Transit Pass (U-Pass) Programs in the US," presented at the *1st MAPP + D Research and Creative Practice Symposium*, University of Maryland, April 2018.

Iseki, H., Eom, H., Warner, C., and Normal, K. "The Case Study of Seven Universal Transit Pass

(U-Pass) Programs in the US," presented at for the 57th Annual Conference of the Association of Collegiate Schools of Planning, Denver, Colorado, October 2017.

Iseki, H., Liu, C., and Knaap, G. "The Determinants of Travel Demand between Rail Stations: A Direct Transit Demand Model Using Multilevel Analysis for Washington D.C. Metrorail System," presented at the Transportation Research Board (TRB) 96th Annual Meeting, Washington, D.C., January 2017.

Knaap, G.J., Avin, U., Engelberg, D., Erdogan, S., Ducca, F.W., Shahumyan, H., and Moeckel, R. "Demographic Change, Autonomous Vehicles, & Energy Price Volatility: An Exploratory Scenario Exercise for a Sustainable Baltimore–Washington Region," presented at the Association of Collegiate Schools of Planning Conference, Denver, Colorado, 2017.

Lung–Amam, A. Panel participant, at *Sharing Space: Examining African American and Latino Intercultural Exchanges in Dynamic Neighborhoods* workshop, presenting "Latinos, African-Americans, and the District of Columbia," American University, May 2018.

Lung–Amam, W. "Right to Suburbia: Redevelopment and Resistance on the Urban Edge," presented at *American Studies Brown Bag Series*, University of Maryland, April 2018.

Lung–Amam, W. Invited panel organizer and participant at *Association of Community Design, annual meeting*, presenting "Diversity and Inequality in Suburbia: Design Causes and Consequences," June 2018.

Lung–Amam, W. "Promoting Safe and Healthy Housing in Langley Park, Maryland," presented

with Alonzo Washington at *Makeover Montgomery 4: Competitive, Healthy, Inclusive and Smart Communities*, Silver Spring, Maryland, May 2018.

Lung–Amam, W. "Somos de Langley Park: The Battle for Equitable Suburban Development along Maryland's Purple Line," presented at *Urban Affairs Association annual meeting*, April 2018.

Lung–Amam, W. "Reflections on Being an Activist Scholar," presented at special conference session, *Urban Affairs Association annual meeting*, April 2018.

Lung–Amam, W. "Shifting the Landscape of Metropolitan Equity and Opportunity through Mapping: Case Studies of Five U.S. Metros," presented at *Association of American Geographers annual meeting*, April 2018.

Lung–Amam, W. "An Equitable Future for the Washington, DC Region?: A Regional Approach to Strategies Building Inclusive Neighborhoods," presented at *Association of Collegiate Schools of Planning annual meeting*, October 2017.

Lung–Amam, W. "The Not–So New South: Asian Immigration and the Politics of School Integration in the Chapel Hill, NC," presented at *Society of City and Regional Planning Historian biannual meeting*, October 2017.

Lung–Amam, W. "Planning and Policing," presented as part of Planners of Color Interest Group special roundtable at *Association of Collegiate Schools of Planning annual meeting*, October 2017.

Lung–Amam, W. Panelist organizer and participant, "Other Geographies of Gentrification," at *Association of Collegiate Schools of Planning annual meeting*, October 2017.

Wu, J., Hong, L., Javkar, K., Nair, S., Iseki, H., and Frias–Martinez, V. "Cycling safety maps: a data–driven approach to cycling safety," presented at *1st MAPP + D Research and Creative Practice Symposium*, University of Maryland, April 2018.

Yevoo, E.K., Iseki, H., and Hu, M. "Analyzing V2H, V2V, and V2G Technologies with a Focus on Applications and Benefits to Sustainable Development," presented at the *Ronald E. McNair Post-Baccalaureate Achievement Program*, University of Maryland, July 2018.

Zou, Z. "Are Neighborhoods for Neighbors? The Impacts of Airbnb on Property Owners in Washington D.C.," presented at the *57th Annual ACSP Conference*, Denver, CO, 2017.

Zou, Z. and Erdogan, S. "Examining the Rideshare Market in the U.S. Using NHTS 2017," presented at the *2018 TRB–NHTS Workshop*, Washington D.C., 2018.

Zou, Z., Erdogan, S., "Examine the U.S. Ride-sourcing Market Using 2017 NHTS," presented at the *Association of Collegiate Schools of Planning Conference*, Buffalo, NY, October 2018.

