# Consortium for Scenario Planning

**2021 VIRTUAL CONFERENCE** January 13–15 tinyurl.com/scenarios21

LINCOLN INSTITUTE OF LAND POLICY

WASATCH FRONT REGIONAL COUNCIL
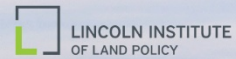
## WEDNESDAY, JANUARY 13

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| 12:00 – 12:55 p.m. | **Welcome and Keynote Address** |
| Speakers: | George W. McCarthy, President and Chief Executive Officer, Lincoln Institute of Land Policy |
| | Heather Hannon, Scenario Planning Manager, Lincoln Institute of Land Policy |
| | Rebecca Ryan, Futurist, Keynote Speaker |

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| 1:00 – 3:00 p.m. | **A Scenario Planning Legacy Region: A Look Back and a Look Forward on Envisioning Utah's Future** |
| | The host of this year's virtual conference, the Wasatch Front Regional Council has helped actively shape the practice of scenario planning in the state of Utah and nationally. Council members from state, regional, and local offices as well as Envision Utah staff will lead this presentation on how scenario planning enabled broad buy-in on the successful and widely recognized Envision Utah regional plan. The organization's use of scenario planning as a public engagement tool has helped grow the national field of scenario planning and has since become a model adopted by practitioners, academics, tool developers, and communities across the country. |
| | Presenters will detail their current work following the success of Envision Utah, which seeks to integrate Utah's land use and transportation planning with regional planning and environmental processes. The team will further discuss |

All times shown in Eastern Time

how lessons learned led to their creation of performance measures, target setting, and other exploratory scenario planning work.

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| Speakers: | Ari Bruening, President and CEO, Envision Utah |
| | Robert Grow, Founding Chair Emeritus and Former CEO, Envision Utah |
| | Ted Knowlton, Deputy Director, Wasatch Front Regional Council |
| | Teri Newell, Deputy Director of Planning and Investment, Utah Department of Transportation |

**3:15 – 3:45 p.m.**   **Lightning Talks**

Attendees can register for a two-minute slot to share recent updates, ideas, or questions with fellow attendees during lunch. Check the "lightning talk" box when registering if you would like to sign up to do a lightning talk; limited spaces may also be available day-of.

**4:00 – 5:00 p.m.**   **Networking – Show up for Good!**

Join other conference attendees in showing up for good! For each person who attends this networking event $1 will be donated to the Utah Food Bank. This networking hour will take place in Remo, an interactive networking space with tables and couches (yes, virtual couches!) where you can catch up with fellow conference attendees.

To break the ice, we'll start with a scenario planning themed trivia challenge, so keep your wits about you, take a seat at a table of fellow experts and have fun while getting to know some of the many impressive professionals attending this year's conference. If you wish to attend, but skip the trivia, not to worry - just step away from the tables and head to the couches at the side of the room to continue your conversations.

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| 10:30 – 11:00 a.m. | **Introduction to Scenario Planning** |
| | Heather Hannon and Amy Cotter of the Lincoln Institute of Land Policy will discuss how scenario planning can strengthen your planning processes and how you and your organization can get started. |
| Speakers: | Amy Cotter, Director of Climate Strategies, Lincoln Institute of Land Policy |
| | Heather Hannon, Scenario Planning Manager, Lincoln Institute of Land Policy |

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| 11:00 – 11:45 a.m. | **RFP Panel Discussion: Leading with Equity in Scenario Planning** |
| | Hear from four of the Consortium for Scenario Planning's RFP winners about how their projects take unique approaches to operationalizing and prioritizing equity considerations in scenario planning processes. See RFP project descriptions under the Resources section for additional information. |
| Speakers and Projects: | Sachi Arakawa, Principal, Cascadia Partners, "Bridging the Digital Divide: Equitable Techniques for Scenario Planning" |
| | Nancy Beaulieu, Northern Minnesota Organizer, Minnesota 350, "Just Transition Scenario Planning: Bemidji, Leech Lake, Red Lake, White Earth" |
| | Marisa Espinosa, Director of Scenario Planning, City of Vancouver Planning Department, "Vancouver Plan: Using Scenario Planning and Equitable Engagement to Inform Recovery Planning" |
| | Tim Reardon, Director of Data Services, Metropolitan Area Planning Council, "'Segregation Scenarios' and Environmental Justice Analysis" |

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| 12:00 – 12:45 p.m. | **Breakout Session I** |

**A Novel Linkage of Land Use and Hazard Planning: Using CommunityViz to Shift Development Policy after the 2018 Kīlauea Volcano Eruption**

Before Hawai'i County's current regulatory planning system was adopted in the 1960s and 1970s, established settlement patterns resulted in rapid, sustained growth in high-hazard volcanic zones. Many hazards can be mitigated—but not lava flow, which can only be avoided. Therefore, following the recent Kīlauea Volcano eruption and as part of its general plan update, the county used CommunityViz to test how land use reallocation tools could shift development patterns away from lava hazard zones in different scenarios.

This session will introduce the county's model and explain how it helps decision makers understand the trade-offs among alternative futures. Attendees will

gain a better understanding of how to use CommunityViz to model different policy choices and a better understanding of the land use policies that can alter settlement patterns and avoid natural disasters such as sea level rise or lava flow.

Speakers:    Amy DeBay, President and Planning Lead, Focused Planning Solutions LLC

Bethany Morrison, Acting Program Manager, Long-Range Planning Department, Hawaiʻi County

Ron Whitmore, Principal, Raimi + Associates

**From Scenario Planning to Implementation: A Public-Private Partnership in Ohio**

The public-private partnership between the Mid-Ohio Regional Planning Commission, Urban Land Institute Columbus, the Central Ohio Transit Authority, and the Columbus, Ohio, business community formed to study five regional corridors for their potential to support redevelopment and high-capacity transit. The results of their scenario analyses were so compelling that the local transit authority, business community, and local governments are now following up with detailed engineering and environmental studies to make the scenario a reality.

This session will detail the scenario planning process used in Columbus and consider why the analyses were so compelling. Attendees will come away with an understanding of how public-private partnerships can create buy-in for a scenario planning process.

Speakers:    Honorable Joe Begeny, Mayor, City of Reynoldsburg, Ohio

Kerstin Carr, PhD, Director of Planning and Sustainability, Mid-Ohio Regional Planning Commission

Leah Evans, Senior Vice President of Real Estate Development, Homeport

Kimberly Sharp, AICP, Senior Director of Development, Central Ohio Transit Authority

| 1:00 – 1:45 p.m. | **Breakout Session II** |

**Rebuilding for a Resilient Recovery: Planning for Wildfires in California**

Approximately one-fourth of Californians live in high-risk fire areas, with three million housing units at risk. As climate change accelerates, the state's fires are growing bigger and lasting longer—and the record-breaking 2020 fire season suggests a new normal that collides with California's ongoing construction of single-family homes in its exurban fringe and with the state's greenhouse gas reduction goals.

This session will cover specific case studies throughout the state and focus on how scenario planning can inform resilient recovery and planning processes post-wildfire. Attendees will learn how scenario planning, bolstered with modelling software such as Urban Footprint, can be used to analyze the long-term environmental, social, and economic impacts of various rebuild scenarios after a disaster.

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| Speakers: | Molly Harris, Graduate Student, University of California, Berkeley |
| | Clay Kerchof, Graduate Student, University of California, Berkeley |

**Decline, Growth, or Both: Dealing with Uncertainty in Legacy Cities**

As legacy cities—former industrial powerhouses across the Midwest and Northeast—emerge from decades of decline, what comes next? Will these cities continue their rebound, lapse into continued decline, or land somewhere in between? Join a panel of experts from Youngstown, Ohio; Cleveland, Ohio; and Pittsburgh, Pennsylvania, for an engaging discussion about their use of scenario planning tools and techniques in cities and regions where continued population and economic growth is not a given.

This session will cover how novel scenario planning techniques and forecasting frameworks help bring order to the uncertain futures of legacy cities. Attendees will come away with a sense of how to incorporate that uncertainty into population forecasting, as well as a sense of tools and techniques to incorporate multiple futures into planning.

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| Speakers: | Tom Hilde, Assistant Professor, Cleveland State University |
| | Anthony Kobak, City of Pittsburgh, Pittsburgh, Pennsylvania |
| | Hunter Morrison, Senior Fellow, Cleveland State University |
| | Alex Steinberger, Managing Partner, Cascadia Partners |

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| 2:00 – 2:45 p.m. | **Breakout Session III** |

**Interactive WaterSim: Teaching Future Decision Makers Anticipation Using Exploratory Scenarios**

Resilience is a long-term planning concept—and many of the people who will be making future decisions about resiliency are in our schools today. We know resiliency issues of high uncertainty require an anticipatory approach of exploring rather than predicting the future. Yet our current educational institutions do little to introduce anticipation as a problem-solving method in planning practices.

This session will discuss an Arizona State University project that uses an interactive classroom tool linked to a complex model to help high school and

|  | university students work with exploratory scenarios to anticipate decisions about future water sustainability. |
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| Speaker: | Ray Quay, Director of Community Engagement, Decision Center for a Desert City, Arizona State University |

**After COVID: Future Scenarios for Transportation, Housing and the Economy**

Join regional planners from Boston, Massachusetts, and state-level planners from Michigan as they discuss scenario planning efforts related to the COVID-19 pandemic. Boston's Metropolitan Area Planning Council (MAPC) has created scenarios to investigate possible mid-term (3–5 year) economic impacts of COVID-19 and to determine a range of responsive policy strategies which may be needed immediately as the economy is impacted by the pandemic or later, as the economy rebounds.

Michigan Mobility 2045 launched its forecasting and scenario planning practice just as COVID-19 struck, leaving the team with new questions about economic trajectories alongside new demand for e-commerce, telecommuting, and other technology changes. EBP used consensus building workshops to inform data analysis tasks, including travel demand model runs, which helped the agency understand how slower and faster growth and shifts in location preferences might affect network performance.

Presenters will touch on incorporating unemployment, supply chain for key industries, activity location, technology, and other areas impacted by the pandemic into scenario planning processes.

| Speakers: | Sarah Philbrick, Senior Research Analyst, Metropolitan Area Planning Council |
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|  | Kyle Schroeckenthaler, Principal, EBP |
|  | Naomi Stein, Principal, EBP |

| 3:00 – 3:30 p.m. | **Introduction to Exploratory Scenario Planning** |
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|  | Exploratory scenario planning (XSP) can help communities prepare for uncertainties posed by climate change, pandemics, automation, and other unprecedented 21st-century challenges. Through the XSP process, stakeholders envision and develop various potential futures (i.e., scenarios) and consider how to measure and prepare for each, rather than working toward a single shared vision for the future. This session will highlight content from the recent Lincoln Institute publication *How to Use Exploratory Scenario Planning (XSP): Navigating an Uncertain Future* by Jeremy Stapleton. |
| Speaker: | Heather Hannon, Scenario Planning Manager, Lincoln Institute of Land Policy |

3:45 – 4:45 p.m.        **Networking on Topic**

Attend this final networking opportunity to sit down with fellow conference attendees and discuss hot topics in scenario planning today such as COVID-19, Diversity & Inclusion, Legacy Cities and more. This networking hour will take place in Remo, an interactive networking space with tables and couches (yes, virtual couches!) where you can catch up with fellow conference attendees.

When you arrive, peruse the topics at each of the tables and choose one that interests you most and enjoy a robust discussion with fellow attendees. If you wish to attend, but skip the topics, not to worry - just step away from the tables and head to the couches at the side of the room to continue your conversations.

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| 10:30 – 10:45 a.m. | **Friday Opening Remarks** |
| | Learn about the Consortium for Scenario Planning's plans for 2021 and beyond. |
| Speaker: | Heather Hannon, Scenario Planning Manager, Lincoln Institute of Land Policy |

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| 11:00 – 11:45 a.m. | **RFP Panel Discussion: Scenario Planning for Shrinking Cities and Regions** |
| | Hear from four of the Consortium's RFP winners whose projects build on our understanding of how to adapt scenario planning tools and processes for communities facing limited economic and/or population growth or decline. See RFP project descriptions under the Resources section for additional information. |
| Speakers and Projects: | Arnab Chakraborty, Professor, University of Illinois at Urbana–Champaign, "Scenario Planning for Shrinking Regions: A Toolkit" |
| | Tom Hilde, Assistant Professor, Cleveland State University, "'Comparative Analysis of Scenario-based tools for Legacy City Planning in Youngstown, Ohio" |
| | Raul Santiago-Bartolomei, Research Associate, Center for a New Economy, "Tracking Changes in Geographies of Opportunity for Post-Disaster Legacy Cities: A Case Study of San Juan, Puerto Rico" |
| | Ian Varley, Planning Manager, City Explained, "Guidebook and Case Study for Scenario Planning in Areas of Decline and Low-Growth" |

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| 12:00 – 12:45 p.m. | **Breakout Session IV** |

**Measuring Equity Outcomes in Greenhouse Gas Mitigation Exploratory Scenario Planning for the Twin Cities**

Local governments within Minnesota's largest metropolitan region are eager to take ambitious action to address the causes of climate change in a way that also tackles persistent inequities. Greenhouse gas (GHG) mitigation scenario planning is an effective approach to designing a broader climate mitigation strategy, but communities with small sustainability operations often lack the necessary resources required for data-driven scenario planning. In collaboration with the Sustainable Healthy Cities Network, and ICLEI – Local Governments for Sustainability, the Metropolitan Council is currently codeveloping a web-based GHG mitigation exploratory scenario planning tool, engaging with local government representatives, urban and regional planners, and sustainability researchers along the way. The council intends to make this tool available to communities to reduce the technical burden of developing scenario planning.

This session will cover how academic, nonprofit, and government partners can work together to make climate mitigation planning easier at the community scale. Attendees will also learn how to incorporate equity as an output in greenhouse gas mitigation scenario planning and how to engage local governments in the process.

Speakers:                Mauricio Leon, Senior Researcher, Metropolitan Council

Dr. Anu Ramaswami, Principal Investigator, Sustainable Healthy Cities Network

Samuel Tabory, PhD Student, Harvard Graduate School of Design

**Dispatches From Alternate Futures**

The Delaware Valley Regional Planning Commission (DVRPC) uses exploratory scenario planning to assess uncertainty within a changing environment, tell better stories about the future, and inform its long-range plan development.

This session will cover the process of working with stakeholders and the public to identify and evaluate the structural forces that shape regions, creating an expansive range of extreme but plausible futures, and incorporating scenarios into a long-range plan and other strategic planning efforts. Attendees will also come away with an understanding of how the DVRPC's scenarios help planners understand different ways in which highly automated vehicles could be deployed in the Greater Philadelphia area within a broad socioeconomic framework.

Speakers:                Jackie Davis, Senior Planner, Delaware Valley Regional Planning Agency

Brett Fusco, Manager, Long-Range Planning, Delaware Valley Regional Planning Agency

| 1:00 – 1:45 p.m. | **Breakout Session V** |
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**Valley Visioning: Scenario Planning as Public Education and Engagement**

Utah County, which contains Utah's largest urban core, is one of the fastest-growing counties in the United States. This growth threatens farmland, however, and stresses geographically constrained transportation corridors. To ensure that quality of life is maintained in the face of a burgeoning population, Envision Utah partnered with the Association of Utah County Chambers of Commerce to develop a vision for the future. Scenario planning tools and modeling were paired with robust stakeholder and public engagement to generate a vision driven by the input of over 11,000 individuals.

This session will examine how a partner-driven approach to modeling and normative scenario planning for rapid growth can be used to empower the public to plan for the future and help decision makers balance long-term, regional impacts with local demands.

| Speakers: | Ryan Beck, Vice President of Planning, Envision Utah |
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| | Curtis Blair, President and CEO, Utah Valley Chamber of Commerce |
| | Cody Lutz, Associate Planner, Envision Utah |
| | Cameron Martin, Vice President of Operations and Chief of Staff, Rocky Mountain University of Health Professions |

**A Scenario Planning Toolkit for Shrinking Regions**

Scenario planning tools and practices often imply a baseline of growth and can be hard to apply in shrinking regions as they experience declining populations and economic disinvestment. These regions are often challenged by a lack of financial and organizational capacity and austere sociopolitical dynamics, and they require scenario planning processes that are flexible and practicable, and that emphasize collaborative decision making and social learning over digital tools and modeling. Arnab Chakraborty, a professor at the University of Illinois at Urbana–Champaign, and Emma Walters, a graduate student at the University of Illinois at Urbana–Champaign, are developing a draft toolkit for shrinking regions that emphasizes multi stakeholder engagement, storytelling, flexible planning horizons, and integration with programs that are common in shrinking regions.

| Speakers: | Arnab Chakraborty, Professor, University of Illinois at Urbana–Champaign |
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| | Emma Walters, Graduate Student, University of Illinois at Urbana–Champaign |

| 2:00 – 2:45 p.m. | **Breakout Session VI** |
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**From Region to Neighborhood: Scenario Planning Approaches for Anticipating Connected and Autonomous Vehicles**

Connected and autonomous vehicles (CAVs) promise to dramatically alter mobility and have profound social, economic, and environmental impacts; however, significant uncertainties surrounding CAVs and their impacts limit the ability of metropolitan planning organizations and other local agencies to plan for this technology. This introduces a critical challenge: how can neighborhood-scale planning and design be reconciled with regional-scale factors?

During this session, presenters will identify key drivers, levers, and impacts from research and practice and report on developing a scenario framework that leverages practitioner interviews and household surveys to assist planning agencies. Attendees will also learn how their approach could help facilitate scenario exercises with regional and local stakeholders and how to identify design guidelines that support community goals.

| Speakers: | Ouafa Benkraouda, Graduate Student, University of Illinois at Urbana–Champaign |
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Lindsay Braun, Assistant Professor, University of Illinois at Urbana–Champaign

Arnab Chakraborty, Professor, University of Illinois at Urbana–Champaign

Ray Lees, Planning Program Manager, Tri-County Regional Planning Commission

**Driving Sustainable Policy with Scenario Planning**

As the role of urban and community planners continues to evolve, the influence of planning professionals in municipal policy development has grown, particularly in areas related to housing (both in terms of affordability and growth capacity), homelessness, and economic development.

This session will show how two cities use web-based geospatial tools to validate policy and then translate that policy into viable development scenarios for review.

Speakers:      Keith Cooke, Industry Manager for Planning and Community Development, Esri

3:00 – 3:30 p.m.      **Unconference Session I**

Create your own participant-driven session! Ideas will be solicited at the beginning of the day on Friday via electronic whiteboard, and conference organizers will post the proposed "unconference" sessions for participants to choose from and attend. Suggest a topic or enjoy selecting from fellow conference attendees' sessions.

Make sure to check the "Unconference Session" box when registering to indicate your interest in organizing an unconference session.

3:45 – 4:15 p.m.      **Unconference Session II**

**Sachi Arakawa** is an associate at Cascadia Partners. She is an urban planner, GIS analyst, and cartographer who has done work across public, private, and non-profit sectors. Sachi works at the intersection of data and people, and is a strong believer in the combined approach of utilizing community knowledge and wisdom alongside quantitative analysis for a more nuanced understanding of complex issues. Utilizing interactive web mapping, data visualizations, and tactile print maps, Sachi specializes in creating relatable and easy to understand products for engaging diverse audiences in spatial thinking. She is a founding organizer of the Mapping Action Collective, a data visualization, mapping, and data analysis collective that uses maps and data to support grassroots organizations and individuals working towards social justice and community resilience.



**Nancy Beaulieu** is a citizen of the Minnesota Chippewa Tribe and lives on Leech Lake reservation. A delegate, precinct chair, and member of the Native Peoples Caucus of the Minnesota Democratic–Farmer–Labor Party (DFL), she is also the Northern Organizer for MN350 and leads the Bimi'ji<350 team, which advocates for environmental and racial justice and educating Americans on Treaty knowledge and obligations, as we are all Treaty people. One of her passions is to educate and uplift the Native vote and voice, and she cofounded the RISE Coalition, which operates in northern Minnesota. In her spare time, she enjoys repurposed art, gardening, and hard water fishing.



**Ralph Becker** is a resident of Salt Lake City, where he served two terms as mayor (2008–2015). He also served in the Utah State Legislature as a member of the House of Representatives for 11 years (1996–2007), including five years as House Minority Leader. In 2015, Ralph served as president of the National League of Cities. In 2018, Ralph was selected as the first executive director of the Central Wasatch Commission, an interlocal governmental entity consisting of elected leaders of jurisdictions with responsibilities for the Wasatch Mountains. He speaks internationally on governance, sustainability, climate change, and public lands and has authored numerous publications. Ralph was an adjunct professor at the University of Utah College of Architecture and Planning. He holds an undergraduate degree from the University of Pennsylvania and a J.D. and M.S. from the University of Utah. He is an FAICP planner.

**Honorable Joe Begeny** serves as mayor of the City of Reynoldsburg, Ohio. He began his four-year term on January 1, 2020. He has spent the past 16 years in public service, first as a public school teacher and Reynoldsburg City School Board President. While there are many duties a mayor must perform, Joe is focused on the redevelopment of Reynoldsburg from Olde Town to Brice Road, with a focus on connecting the entire community with improved walkability and is dedicated to attracting new jobs and opportunities to the "City of Respect."



**Ryan Beck** has served as the vice president of planning for Envision Utah since 2008. Currently, he is the project manager for Valley Visioning, a visioning effort for Utah County. Prior to working on Valley Visioning, Ryan was involved with Envision Utah's planning work for the Point of the Mountain and Your Utah, Your Future, a statewide visioning effort. His education includes a B.A. in history from the University of Utah and an M.A. in environmental law and policy from the Sturm College of Law at the University of Denver, where he specialized in land use law and policy.



**Ouafa Benkraouda** is a second year Ph.D. student in the Department of Urban and Regional Planning at the University of Illinois at Urbana–Champaign. She holds a master's degree in Urban Science and Informatics from New York University. Her research interests lie at the intersection of emerging technology, transportation, and physical design of cities. She focuses on studying technology as a tool to further make cities equitable and sustainable in the future and has coauthored several articles published in scientific journals and books. Prior to starting her Ph.D., Ouafa worked as a research engineer at Masdar Institute and at New York University, conducting research on neighborhood design and transportation. Ouafa was also an urban planner at AECOM Middle East working on urban data analysis and quantifying master plan designs.



**Curtis Blair** is a seasoned executive with a proven track record of elevating businesses to higher levels of execution and performance and has led five companies to multi-million-dollar status. Most recently, he led an international marketing company from zero to $15 million in six years and orchestrated its successful exit in 2019. Passionate about the next generation of entrepreneurs, he cofounded Hoodoo Capital, an early-stage investment firm that mentors and funds companies. He was recently selected to serve as the president and CEO of the Utah Valley Chamber of Commerce. He is a graduate of BYU's College of Humanities.

**Lindsay Braun** is an assistant professor in the Department of Urban and Regional Planning at the University of Illinois at Urbana–Champaign. Her work addresses the relationship between the built environment and travel behavior with an emphasis on active transportation, emerging technologies, public health, and social equity. Her current research projects examine planning for connected and autonomous vehicles, barriers to active transportation, the health tradeoffs of cycling, and the growing use of crowdsourced data in transportation planning, all through the lens of social equity. Lindsay received both her Ph.D. and M.C.R.P. from the University of North Carolina at Chapel Hill. Prior to earning her Ph.D., Lindsay was a transportation planning consultant in Raleigh, North Carolina, where she partnered with local, state, and federal agencies to evaluate the community impacts of transportation investments and to develop practitioner resources for community health and livability.

**Ari Bruening** has extensive experience in visioning and implementation efforts for regions, large areas, and critical growth-related topics. At Envision Utah, he helped lead the Your Utah, Your Future statewide vision that engaged 52,845 Utahns to tackle 11 different topics; the recommended State Water Strategy; the Point of the Mountain vision; the Vision for Teacher Excellence; and numerous other critical efforts. Prior to joining Envision Utah, he managed visioning and entitlement projects for the San Diego region; Laie, Hawaii; Daybreak and the 93,000-acre Kennecott Land Company project in Salt Lake County, Utah; the 175,000-acre Superstition Vistas Arizona state trust land parcel; and the 300,000-acre Deseret Ranches of Florida landholding near the Orlando International Airport. A magna cum laude graduate of Harvard Law School and the class graduation speaker at Brigham Young University, Ari is the author of several articles relating to urban planning, law, and religion. He is also coauthor of the children's book *Sweet Feet: Samantha Gordon's Winning Season* (2013).

**Armando Carbonell** is vice president of programs at the Lincoln Institute of Land Policy, where he previously chaired the Department of Planning and Urban Form. After attending Clark University and the Johns Hopkins University, Armando spent the early part of his career as an academic geographer. He went on to initiate a new planning system for Cape Cod, Massachusetts, as the founding executive director of the Cape Cod Commission. He later taught urban planning at Harvard and the University of Pennsylvania and served as an editor of the British journal *Town Planning Review*. He has consulted on master plans in Houston, Texas, and Fujian Province, China, and is the author or editor of numerous works on city and regional planning and planning for climate change, including ***Nature and Cities: The Ecological Imperative in Urban Design and Planning***. Armando was awarded a Loeb fellowship by the Graduate School of Design at Harvard University and is currently a fellow of the American Institute of Certified Planners and the Academy of Social Sciences (UK), and lifetime honorary member of the Royal Town Planning Institute (UK).

**Kerstin Carr** leads the department of planning and sustainability at the Mid-Ohio Regional Planning Commission, where she has worked for fourteen years. Her team provides and promotes collaboration, technical assistance, and regional planning initiatives related to active transportation, the natural and built environment, transportation safety, and energy to benefit MORPC members and communities in Central Ohio. Kerstin has nearly 20 years of experience in transportation and urban planning. She currently serves as vice president of the Neighborhood Design Center and chairs the Consortium for Scenario Planning. She is an active member of the Early Childhood Advisory Council and a participant of the Future 50 class of 2020. She is a 2019 graduate of Leadership Columbus and holds a Ph.D. in geography from the University of Regensburg, Germany.

**Arnab Chakraborty** is a professor of urban planning and an associate dean in the College of Fine and Applied Arts at the University of Illinois at Urbana–Champaign. His research focuses on advancing scenario analysis techniques, particularly for land use and transportation planning. He is a board member of the Consortium for Scenario Planning and an associate editor of the *Journal of the American Planning Association*. He also serves as a program reviewer for the Planning Accreditation Board. In the past, he has led two Lincoln Institute supported research projects on scenario planning—one on advancing equity in scenario analyses, which focused on social vulnerability to heat, and another on the impact of regional scenario efforts.

**Keith Cooke** is the global industry manager for Planning & Community Development at Esri. A graduate of Auburn University, he has worked as a GIS professional for planning and community development agencies at the regional and municipal level since 1994. Prior to his current role, he was an account executive at Esri working with over 100 local governments. He is a frequent speaker at GIS, community planning, and economic development events and is an active member of the American Planning Association, where he has conducted nearly 100 hands-on GIS workshops for planners at the National Planning Conference and state chapter conferences.

**Amy Cotter** is director of climate strategies at the Lincoln Institute of Land Policy, where she relates land policy in metropolitan and urbanized areas to the critical global challenges of climate change, sustainability, and spatial equality. Before joining Lincoln, Amy spent 13 years with the Metropolitan Area Planning Council in Boston, where she directed the development and strategic implementation of MetroFuture, the plan for a more sustainable and equitable metropolitan region. She has also held positions at the Tellus Institute and ICF Consulting; obtained master's degrees from the University of Michigan in environmental policy, and urban and regional planning; and received her B.A. from Tufts University.

**Jacyln Davis** is a senior planner in the Office of Long-Range Planning and Economic Development at the Delaware Valley Regional Planning Commission. She facilitates DVRPC's Futures Group, an interdisciplinary stakeholder group that uses scenario planning to analyze how future forces may reshape Greater Philadelphia, and identifies ways to respond—specifically through its Long Rang Plan. Jaclyn holds a master's degree in Urban and Environmental Planning from the University of Virginia and a B.A. in Political Science from Penn State University with a certificate in environmental studies.

**Amy DeBay** is the owner and president of Focused Planning Solutions LLC. She has over 15 years of professional experience in planning, geodesign, and engineering. Her company's mission is to bring together data, technology, and people to create more focused plans and better futures. Prior to launching her own firm in 2018, she served as the director of planning services at Placeways LLC and the Colorado office lead at City Explained, Inc., the maker of CommunityViz® software. In her professional career, she has managed dozens of projects building and customizing scenario planning tools. Her knowledge and ability to create CommunityViz applications and custom decision support tools is second to none. She has an M.S. in city design and social science from the London School of Economics and a B.S. in architectural engineering from the Milwaukee School of Engineering.

**Hallah Elbeleidy** is a social scientist that brings experience in applied research and education, with a focus on climate change and social justice. She is motivated to contribute to a global community working to address climate inaction and inequality, using evidence-based solutions. Prior to joining the Lincoln Institute, Hallah was a Park Ranger at the National Park Service, a Research Fellow with the Environmental Protection Agency working on EJSCREEN, and was awarded an ETA Fulbright Scholarship in Turkey. Hallah has dual bachelor's degrees in Middle Eastern studies and women's & gender studies from Rutgers University and a M.S. in geography from Penn State University. She is currently pursuing a M.S. in geo-information science from Salem State University.

**Marisa Espinosa** is director of scenario planning for the Vancouver Plan. In this role, she is developing the city's 30-year vision, with the City of Vancouver's Planning, Urban Design, and Sustainability Department. She also supports community resilience efforts for vulnerable populations within the City of Vancouver's COVID-19 emergency response. Marisa's career spans multiple years of public sector experience in environmental justice, transportation, operations and planning in both Canada and the United States. She is also passionate about supporting youth leadership, gender equity and environmental justice with BIPOC communities. She has a degree in American policy, politics, and economics from Stanford University and a M.U.P. from the University of California, Los Angeles.

**Leah Evans** is senior vice president of real estate development at Homeport. She oversees the financing, development, and implementation of Homeport's residential development and neighborhood revitalization strategies to support the targets of Homeport's strategic plan and increase investment and impact in Central Ohio communities. Prior to this role, she served as deputy director of planning and development for the City of Gahanna where she oversaw the building, code enforcement, land use planning, economic development, and zoning activities. Leah holds a M.C.R.P. from the Ohio State University, is trained in project management, and is a certified economic development finance professional. She has over 20 years of experience in the community and economic development fields and is committed to building and sustaining strong and inclusive communities.

**Brett Fusco** is the manager of the Office of Long-Range Planning at the Delaware Valley Regional Planning Commission, where he works collaboratively with the commission's planning partners, stakeholders, and the public to set the region's vision for growth, identify strategies to achieve the vision, and develop a long-term financial plan for transportation infrastructure. He works with the Futures Group—an interdisciplinary stakeholder, expert, and public working group—that uses scenario planning to analyze how trends and forces are reshaping the Greater Philadelphia area. He has developed long-range financial plans that use performance-based planning, asset management, and mode-neutral project evaluation criteria. He has also coauthored a variety of key policy reports, such as Preparing Greater Philadelphia for Automated Vehicle Deployment, Dispatches from Alternate Futures, and the Connections (2035, 2040, and 2045) series of long-range plans. He holds a B.A. in Mathematics from Wichita State University and a M.C.R.P. from the University of Pennsylvania.

**Jessie Grogan** is the Associate Director for the Reduced Poverty and Spatial Inequality goal area at the Lincoln Institute. She also manages the Lincoln Institute's Legacy Cities Initiative, which seeks to equip leaders of smaller legacy cities in the United States with the tools and networks they need to equitably revitalize their places. She also previously managed the Lincoln Institute's nascent Consortium for Scenario Planning. Prior to joining the Lincoln Institute in 2016, she worked as a policy analyst at the Metropolitan Area Planning Council, the regional planning agency for Greater Boston, from 2007 to 2016. At MAPC, she coauthored "The State of Equity in Metro Boston Indicators Report and Policy Agenda"; helped to draft the MetroFuture regional plan; and helped lead the creation and management of Metro Boston's Sustainable Communities Consortium, formed with a grant from HUD to implement the MetroFuture plan. She has a B.A. in political science from Simon's Rock College and a M.A. in Public Policy from the Heller School at Brandeis University.

**Robert Grow** is the founding chair emeritus and former CEO of Envision Utah, a nonprofit that engages people in creating great communities for themselves and future residents. Under Robert's leadership, Envision Utah's collaborative process for long-range visioning has been replicated in communities across Utah and has served as a model for regions across the country. Most recently, he led the statewide Your Utah, Your Future visioning process, headed Envision Utah's work for the Point of the Mountain Development Commission and Inland Port Authority, and oversaw Envision Utah's education efforts. For his work, he received a Distinguished Alumni Award from the University of Utah and was recognized as Utah's entrepreneur of the year among other national and local honors. His diverse career has also included practicing law, serving as president of a large manufacturing company, and chairing a national trade association. He also served on the Utah State Economic Development Board.

**Heather Sauceda Hannon** runs the Consortium for Scenario Planning and advances planning practices through its strategic initiatives and educational efforts. Previously, she was a transportation planner consulting for the U.S. Department of Transportation. She has also worked in regional and state planning at the Massachusetts Department of Transportation and in campus planning at Harvard University and the University of Massachusetts, Boston. She earned her A.B. in architecture from Princeton University and her M.U.P. from Harvard University's Graduate School of Design.
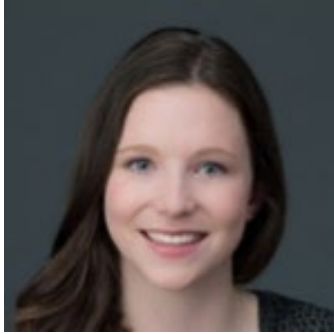
**Molly Harris** is a M.C.P. candidate in the Department of City and Regional Planning at the University of California, Berkeley. Molly is concentrating in housing, community, and economic development, with an interest in policy planning related to access to housing. Before attending Berkeley, Molly was a senior analyst at HR&A Advisors, a planning and economic development consultancy based in New York, where she supported public and private clients on real estate advisory, strategic planning, open space, and economic development projects. Molly holds a B.A. in urban geography from McGill University.

**Tom Hilde** is an assistant professor of urban planning at Cleveland State University's Levin College of Urban Affairs. He teaches graduate and undergraduate courses in land use planning, urban design, urban sustainability, and geographic information systems. His research uses spatial planning and mixed methods to support sustainable and resilient urban development, with a focus on scenario-based approaches, green infrastructure, and other enhancements for community planning and design.

**Clay Kerchof** is a M.C.P. candidate in the Department of City and Regional Planning at the University of California, Berkeley. His graduate research emphasizes how governance strategies, land use regulations, and financial tools can align to build resilience to climate change and natural hazards. Prior to graduate school he worked as a policy analyst on affordable housing, community development, and disaster resilience issues in Washington, DC, with Enterprise Community Partners. He has B.A. from the University of Virginia.

**Anthony Kobak** is a senior planner for the City of Pittsburg's Department of City Planning where he manages the citywide comprehensive planning process, ForgingPGH. Anthony has nearly 15 years of experience in legacy community planning from his varied roles as a planner in Northeast Ohio and Western Pennsylvania at the regional, city, township, and neighborhood levels. He is a graduate of the Maxine Goodman Levin College of Urban Affairs at Cleveland State University with a master's degree in Urban Studies. He also holds an undergraduate degree from Kent State University in geography with a minor in urban planning.
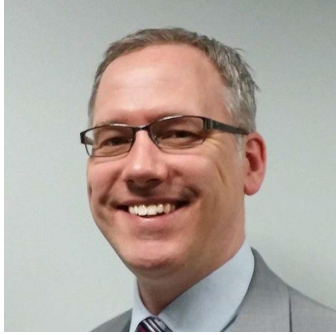
**Ted Knowlton** is deputy director at the Wasatch Front Regional Council (WFRC), the metropolitan planning organization for Utah's Salt Lake City and Ogden/Layton metropolitan areas.  He has focused his career on coordinating local placemaking with regional infrastructure planning. Prior to joining WFRC, he worked with Fregonese Associates, Envision Utah, and the Planning Center (now PlaceWorks).  His experience includes efforts in Chicago, Denver, Los Angeles, and Salt Lake City that have garnered two prestigious Daniel Burnham awards from the American Planning Association. In Utah, he lead the development of Wasatch Choice, the region's official vision. He is an adjunct professor at the University of Utah and a distinguished alumni of the College of Architecture + Planning at the University of Utah. He is the president of the Utah chapter of the American Planning Association and is the Planning Commission chair for North Salt Lake City. Ted has an M.U.R.P. from Portland State University, and he is the president of APA Utah.

**Ray Lees** is the planning program manager at the Tri-County Regional Planning Commission in the Greater Peoria region of Illinois, where he provides guidance on the development and implementation of regional approaches to issues relevant to the commission and to the Metropolitan Planning Organization. These strategies support short- and long-term transportation and related community development planning needs. He is also a leader in the commission's development of regional smart mobility infrastructure and its Connected and Autonomous Vehicles ecosystem.

**Mauricio Leon** is a senior researcher at the Metropolitan Council of the Twin Cities. His work centers around climate change mitigation and adaptation at the regional and local scales. He works primarily on greenhouse gas emissions accounting and scenario planning techniques to inform policy making for reducing the contributions of Minnesota's Metropolitan Region to climate change. He has previously worked in similar roles for the private sector. His work involves technical as well as outreach and education components. He believes that data, science, and community outreach are crucial to finding equitable solutions to climate change.

**Cody Lutz** joined Envision Utah in 2018 and has since worked on research, analysis, stakeholder, and public engagement, and land use modeling for several Envision Utah projects. He acted as the lead modeler for the Valley Visioning countywide planning process and managed the visioning and public engagement for the Blueprint Jordan River. After nearly 10 years of winter inversions in Utah, he's also been involved with several efforts to improve air quality. His background in collaborative regional planning and interest-based negotiation further informs his work at Envision Utah, and his graduate work with gateway communities in the Mountain West was recognized with the Swaner Medal for Excellence in Ecological Planning. He holds a B.S. in environmental and natural resource economics from Utah State University and a graduate certificate in sustainability and an M.C.M.P.  from the University of Utah.
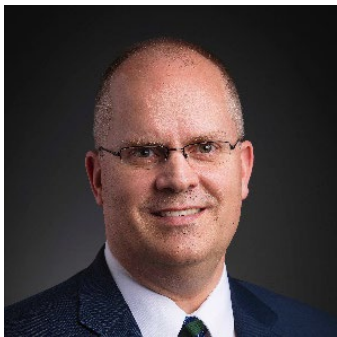
**Cameron Martin** joined Rocky Mountain University of Health Professions (RMUoHP) in August 2020 and is now the vice president of operations and chief of staff in the Office of the President, where he oversees and assists with human resources and facilities, including functioning as RMUoHP's construction liaison for its new Medical Research Education Campus (MERC) in Provo's East Bay. As chief of staff, he assists cofounder and president Richard P. Nielsen in managing the many demands of his office, including representing Nielsen and the interests of the university to internal and external constituents. Prior to joining the RMUoHP team, he was the vice president of university relations at Utah Valley University, where he oversaw and assisted with university efforts related to government affairs, community relations, public relations, marketing, campus events, economic development, and diplomatic hosting. He earned three degrees from Brigham Young University: a B.A. in political science, an M.P.A., and a Ph.D. in educational leadership.

**George "Mac" McCarthy** is president and CEO of the Lincoln Institute of Land Policy. Before joining the Lincoln Institute in 2014, Mac directed the Metropolitan Opportunity Unit at the Ford Foundation. The unit sought to alleviate poverty and reduce its concentration in metropolitan areas in the U.S. and developing countries in Asia, Africa, and Latin America by supporting regional planning and coordinated transportation and housing development. Before starting that position, Mac administered a program at Ford that focused on using homeownership to build assets for low-income families and their communities. Before joining Ford, Mac worked as a senior research associate at the Center for Urban and Regional Studies at the University of North Carolina at Chapel Hill. Mac has also worked as professor of economics at Bard College, resident scholar at the Jerome Levy Economics Institute, visiting scholar and member of the High Table at King's College of Cambridge University, visiting scholar at the University of Naples, Italy, and research associate at the Centre for Social Research in St. Petersburg, Russia. Mac received a B.A. in economics and mathematics at the University of Montana; an M.A. in economics at Duke University; and a Ph.D. in economics at the University of North Carolina at Chapel Hill.

**Bethany Morrison** is the acting long-range planning program manager for the County of Hawai'i and the project manager for the comprehensive update to the county's General Plan. She has been collaborating with colleagues and researchers across the state and the Pacific for more than 12 years to address issues such as coastal zone management, climate change adaptation, and one-water frameworks. As a long-range planner, she is passionate about collaborating and breaking down silos to ensure that Hawai'i Island land use policies and infrastructure priorities reflect the vision and goals of the island's residents. She has also worked to bring community leaders across the island together to develop and implement community-based actions that increase community resilience. She has a B.A. in political science from Fresno State University.



**Teri Newell** was named deputy director of the Utah Department of Transportation in April 2018 to help guide the department as it moves to address issues relating to Utah's growing population, advances in technology, and the evolution of the transportation industry. Prior to her current role, she served as UDOT's Region Three director for five years and was responsible for the construction and maintenance of state roads in Daggett, Duchesne, Juab, Uintah, Utah, and Wasatch Counties. Before heading up Region Three, she spent 10 years taking the Mountain View Corridor from concept through the environmental process to completion of its initial phases. Prior to joining UDOT, Teri was the operations director for Salt Lake County and held other positions in the private sector. She received her civil engineering Degree from Iowa State University.



**Sarah Philbrick** is a senior research analyst at the Metropolitan Area Planning Council in Boston. She joined MAPC's research team in 2016 to advance the agency's land use modeling program. In addition to managing MAPC's land use modeling activities, she conducts research focused on socioeconomic characteristics of the region's population. Her primary responsibility is to provide population, housing, and employment projections to help inform the agency's plans and policy objectives. She also leads the agency's scenario planning work for MAPC's next regional plan, MetroCommon 2050. She holds an M.S. in geographic information science and a B.A. in economics, both from Clark University.

**Ray Quay** is a research professional with the Decision Center for a Desert City, a unit of the Global Institute of Sustainability and Innovation at Arizona State University. Ray is involved in research on urban planning, water resources, climate change adaptation, urban heat islands, regional growth policy issues, and scenario analysis. Previously, he was the assistant director of water services and planning for Phoenix, Arizona, and assistant director of planning for Arlington and Galveston, Texas. He is a fellow of the American Institute of Certified Planners and has authored numerous books and articles on urban planning and water resources including "Anticipatory Governance: A Tool for Climate Change Adaptation" and "Managing Water Resources: The Central Issue for Sustaining Life." He coauthored *Mastering Change* with Bruce McClendon. He holds a B.S. from Baylor University, a master's degree from University of Texas at Austin, and a Ph.D. from Arizona State University.

**Anu Ramaswami** is a professor at Princeton University in India studies, civil and environmental engineering, the High Meadows Environmental Institute. She is the inaugural director of the M.S. Chadha Center for Global India at Princeton University, lead principal investigator and director of the National Science Foundation (NSF)-supported Sustainable Healthy Cities Network, and a member of the United Nations Environment's International Resource Panel and NSF's Advisory Committee for Environmental Research and Education. She is an interdisciplinary environmental engineer recognized as a pioneer and leader on sustainable urban infrastructure systems. Her work explores how seven key sectors—water, energy, food, buildings, mobility, connectivity, waste management, and green public spaces—shape human and environmental well-being. She received her B.S. in chemical engineering from the Indian Institute of Technology Madras in Chennai and her Ph.D. in civil and environmental engineering at Carnegie Mellon University.

**Timothy Reardon** is the director of data services at the Metropolitan Area Planning Council, the regional public agency for Metro Boston. He has over 20 years of experience in regional planning, with a focus on using data and technology to support informed decision making. While at MAPC, he has been responsible for socioeconomic and land use projections, local planning projects, policy-oriented technical analysis, development of new data sets, and development of novel public engagement techniques. Tim had a leading role in the development of MetroFuture, MAPC's long-range regional growth plan adopted in 2008. He earned a M.C.P. from the Massachusetts Institute of Technology.

**Rebecca Ryan** is a futurist, author, Zen priest, and entrepreneur. She is the founder of NEXT Generation Consulting and has held residencies at the Alliance for Innovation, the Governing Institute, and the Association of Government Risk Pools. She is the board chairperson and faculty member at the Institute for Zen Leadership. She is the author of *The Next Big Things: The Future of Local Government* (2015), *ReGENERATION: A Manifesto for America's Future Leaders* (2013), and *Live First, Work Second: Getting Inside the Head of the Next Generation* (2007). Her TEDx talk, *"Spring is Coming,"* was featured at TEDxBeaconStreet in 2015. She has been recognized many times for her accomplishments: she was honored as Thought Leader by CPA Practice Advisor and named one of the Top 100 Most Influential People by *Accounting Today.* She holds a B.A. in economics and international relations from Drake University and certificate in strategic foresight from University of Houston.
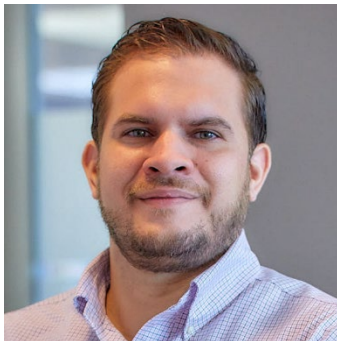


**Raúl Santiago-Bartolomei** is a research associate at the Center for a New Economy (CNE) and an adjunct professor at the Graduate School of Planning at the University of Puerto Rico. His research is focused on issues pertaining to housing, neighborhood change, community and economic development, disaster recovery, and climate change adaptation in Puerto Rico and other areas of the United States and the Caribbean. He has a Ph.D. in urban planning and development from the University of Southern California (USC); a Master's in Planning from the University of Puerto Rico, Río Piedras Campus; a Master's of Engineering degree from Cornell University; and a B.S. in civil engineering from the University of Puerto Rico, Mayagüez Campus.



**Kyle Schroeckenthaler** is a principal at EBP. He helps manage data analytics, scenario planning, and decision support work. He has extensive experience integrating data sources into an analytic framework for evaluation of transportation projects, programs, and policies. His work emphasizes the sociodemographic and economic context of transportation, as well as the impacts of system and policy changes on agencies, travelers, and communities. Kyle's recent experience focuses on how to evaluate the transportation and economic consequences of new and innovative technologies and policies, including work pertaining to ridesharing, ridehailing, mileage-based user fees, and electric and automated vehicles. He holds a B.A. in economics and an M.P.A. from the University of Wisconsin at Madison. He is based out of Minneapolis, Minnesota.

**Kimberly Sharp, AICP** is the senior director of development at the Central Ohio Transit Authority. She is responsible for planning, scheduling, and long-range forward initiatives as a community partner with local municipalities, MORPC, Franklin County, and other entities focused on moving every life forward. Previously, she was deputy director of planning and development for the City of Westerville and comprehensive planning manager for the City of Flagstaff, Arizona. Kimberly holds a Bachelors in Architecture from the Ohio State University and a M.C.R.P. from Virginia Commonwealth University.

**Naomi Stein** is a principal at EBP and works with communities to incorporate economic and community development trends, goals, and needs into their transportation and infrastructure planning and investment processes. She is passionate about using both qualitative and quantitative data to empower decision makers and believes strongly in the power of convening diverse partners to collectively solve problems. She is extensively involved in best practice research through the Transportation Research Board (TRB) cooperative research programs, as well as in collaboration with industry associations such as the American Public Transportation Association, and is a member of the TRB Standing Committee on Economic Development and Land Use. She holds a B.S.C.E. in civil engineering, an M.S. in transportation, an M.C.P., and a certificate in urban design, all from the Massachusetts Institute of Technology.

**Samuel Tabory** is a Ph.D. student in urban planning at the Harvard Graduate School of Design. His work considers the governance and negotiation of infrastructure transitions, with a focus on the evolution of urban-regional governance logics and strategies in an era of climate change. He collaborates with the Sustainable Healthy Cities Network at Princeton University to support science-policy engagement and co-production on topics of urban transitions governance and equity.

**Megan Townsend** is the community and economic development director for the Wasatch Front Regional Council. She manages the Transportation and Land Use Connection program, providing technical assistance to communities along the Wasatch Front. In addition to her work at WFRC, Megan serves as Board Treasurer for Seven Canyons Trust and is currently the Community Outreach Chair of the Utah Chapter of the Urban Lands Institute. She has a Master of City and Metropolitan Planning from the University of Utah with a graduate certificate in real estate development.

**Ian Varley** is the planning manager at City Explained, Inc., where he develops technical mapping solutions for the built environment using CommunityViz and ArcGIS software. He is skilled at creating visual planning tools for communicating knowledge and solving problems in urban and regional planning.  He has 16 years of experience creating, maintaining, and manipulating geospatial data, and his planning experience extends to transportation planning, conservation planning, green infrastructure, and climate change. He offers a wealth of experience developing and applying GIS technology to problem solving, as well as training and communicating difficult technical topics to a wide array of stakeholders. Ian holds a Master's of Environmental Management from Duke University and B.A. in geography and spanish with an emphasis in rural, town and regional planning from the University of Montana, Missoula.

**Emma Walters** is a second-year M.U.R.P. student in the Department of Urban and Regional Planning at the University of Illinois at Urbana–Champaign, where she studies housing policy and community and economic development in shrinking regions. She assists the executive director and member communities of the Central Illinois Land Bank Authority in addressing vacancy, abandonment, and substandard housing due to population loss and economic disinvestment. Previously, she was the executive director of Allston Village Main Streets in Boston, Massachusetts, where she focused on economic development and small business district revitalization.

**Ron Whitmore** is currently a principal with Raimi + Associates, a mission-driven planning, urban design, and research firm in California. He has led community planning and development initiatives for over 20 years. He has served as a manager and deputy director for public planning and development agencies, a senior municipal community planner, as a consultant, founding CEO of an urban community development corporation, and as a Peace Corps volunteer. He has also managed energy, sustainability, climate change, capital budgeting, economic development, food systems, and community, and comprehensive planning programs. He specializes in designing participatory, knowledge-driven, transparent planning processes that produce actionable plans to deliver multigoal cobenefits. He has a Ph.D. in community sustainability from Michigan State University and a B.A. from Dartmouth College.

**Jess Wunsch** is a research assistant at the Lincoln Institute of Land Policy, where she supports the Consortium for Scenario Planning and the Legacy Cities Initiative. Her primary research interests include equitable development and revitalization policy, innovative approaches to land use, and community-based research and evaluation as a tool for guiding public decision making. Prior to joining the Lincoln Institute, she served as a Hatfield Resident Fellow at the Oregon Department of Housing and Community Services, where she explored options for making homeownership programs more accessible to communities of color in Oregon. She has also held local government roles in San Francisco, Philadelphia, and Greensboro, North Carolina. She has an M.P.P. and M.U.R.P. from the University of Michigan and a B.A. in environmental studies from Ithaca College.