Moira Zellner

Professor, School of Public Policy and Urban Affairs

Director of Participatory Modeling and Data Science, College of Social Sciences and Humanities

Co-Director of the NULab for Digital Humanities and Computational Social Science

Northeastern University

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Education

University of Michigan, Ann Arbor

Ph.D. in Urban, Technological and Environmental Planning — 2005

Certificate in the Study of Complex System — 2003

Master's in urban and Regional Planning — 2000

Centro de Altos Estudios de Ciencias Exactas, Buenos Aires, Argentina

Licenciatura in Biology, Specialization in Ecology — 1995

Experience

Selected Sponsored Research

Northeastern University — Boston, MA

Collaborative Research: Understanding cascading feedbacks between human decision making and delta morphodynamics with community-engaged modeling. In collaboration with Andrew Moodie (lead), Texas A&M University, and Paola Passalacqua, ETH Zurich, and Louisiana Coastal Protection and Restoration Authority (CPRA). Funded by NSF Geoinformatics ($986,688/$386,964). (Principal Investigator). — 2025 - 2028

Data Theatre for Civic Deliberation. In collaboration with Dani Snyder-Young, Michael Arnold Mages, Rahul Bhargava, Jonathan Carr, Antonio Ocampo-Guzman, Laura Perovich, and Angelique Motunrayo Folasade Akiya C-Dina. Funded by Andrew Mellon Foundation ($500,000) (Co-Investigator). — 2025 - 2028

Green Finance for Arctic Futures: Innovating for Sustainability and Indigenous Empowerment. In collaboration with Mikhail Oet, Youngbok Ryu and Gabriela Garcia. Funded by Northeastern University, Tier 1 program ($50,000) (Co-Investigator). — 2024 - 2025

EPA STAR: Community-Engaged Co-Design for a Just and Sustainable Energy Transition. In collaboration with Krista Harper, Camille Barchers and others (UMass-Amherst). Funded by the US Environmental Protection Agency ($1,111,418/$50,314) (Senior personnel). — 2023 - 2025

Data Theatre Forum on Gentrification & Greenway Development. In collaboration with Dani Snyder-Young, Rahul Bharghava, Michael Arnold Mages, Jonathan Carr, Laura Perovich. Funded by Northeastern University Humanities Center ($1,500) (Co-Investigator). — 2023 - 2024

Collaborative Research: Equitable resilience to heat: Modeling the consequences of community coordination and heat policy in two coastal cities. In collaboration with Asaf Levanon, Tally Katz-Gerro and Maya Negev (U. of Haifa), and Laura Kuhl. Funded by BSF ($177,000/$89,855) (Principal Investigator). — 2023 - 2026

Advancing Community Climate Resilience Planning by Leveraging the Caribbean Islands Higher Education Resilience Consortium (CIHERC). In collaboration with Steve Flynn (PI), Rebecca Riccio, University of West Indies, University of Hawai'i. Funded by USAID ($1,000,000) (Co-Investigator) — 2023 - 2025

Common SENSES (Standards for ENacting Sensor networks for an Equitable Society): Community-Led, Science-Driven Climate Resilience in Boston, MA. In collaboration with Dan O'Brien (PI), Michelle Laboy, Amy Mueller, City of Boston, Project RIGHT and other institutions. Funded by NSF SC&C ($2,499,464) (Co-Investigator) — 2023 - 2026

Collaborative Research: Facility: CSDMS: Engaging a thriving community of practice in Earth-surface dynamics. In collaboration with CSDMS and Tulane University. Funded by NSF Geoinformatics ($6,000,057/$529,471) (Principal Investigator) — 2022 - 2027

CommonSENSES: Standards for ENacting Sensor networks for an Equitable Society. In collaboration with Michelle Laboy (PI), Dan O'Brien and Amy Mueller. Funded by AIA College of Fellow Latrobe Prize ($100,000) (Co-Investigator) 2022 - 2025

Measuring Sustainable Consumption with Transaction-level Environmental Accounting. In collaboration with Yakov Bart and Matthew Eckelman. Funded by Northeastern University, Tier 1 program ($47,754) (Co-Investigator) 2022 - 2025

Planning Transformational Coastal Adaptation with a Climate Justice Lens. In collaboration with Laura Kuhl and Julia Hopkins. Funded by Northeastern University, Tier 1 Mentoring program ($49,997) (Co-Investigator) 2022 - 2024

Initiative for Energy Justice in Building Decarbonization. Bloomberg's Capacity Building Service award to Mill Cities Community Investment. Funded by Justice40 Capacity Building Fund (J40 Fund) ($30,000) (Principal Investigator) 2022

University of Illinois at Chicago — Chicago, IL

A Conversational Interface for Democratizing Visual Analysis. In collaboration with Andrew Johnson (PI), Barbara Di Eugenio, Jason Leigh (University of Hawai'i). Funded by NSF CHS ($333,000) (Co-Investigator) 2020-2023

Sustainable Urban-Regional Modeling Network (SURe Modeling). In collaboration with John Murphy (Northern Illinois University, PI), Sybil Derrible. Funded by the Illinois Innovation Network ($18,148) (Co-Investigator) 2020-2021

Census Data Research and GIS Visualization Pilot Project (Phase 1 + 2). In collaboration with Janet Smith, Kathleen Yang-Clayton. Funded by the Illinois Department of Human Services ($1,295,281) (Principal Investigator) 2019-2021

Robbins Renewal and Resiliency Project Management. In collaboration with the Metropolitan Water Reclamation District of Greater Chicago and the Village of Robbins. Funded by Searle Funds at the Chicago Community Trust ($50,000) (Principal Investigator) 2017-2018

Simulating the process of urban social exclusion. In collaboration with Nebiyou Tilahun (PI), and Vonu Thakuriah. Funded by ESRC (EU) ($331,538) (Co-Investigator) 2014-2018

Workshops on Big Data and Urban Informatics: e-Infrastructure for Social Science Research on Sustainable Urban Systems. In collaboration with Vonu Thakuriah and Nebiyou Tilahoun. Funded by the National Science Foundation ($179,822) (Co-Investigator) 2012-2015

Building Urban Resilience and Sustainability (BURST): Integrating Adaptive Infrastructure Systems with Institutional and Ecological Functions. In collaboration with Thomas Theis (Institute for Environmental Science and Policy, PI), Isabel Cruz (Computer Science) and others. Funded by UIC Vice-Chancellor for Research Areas of Excellence Award ($250,000) (Co-Investigator) 2012-2014

From farm-level management to governance of landscapes: Climate, water and land use decisions in the plains of Southern South America. In collaboration with Universidad de Buenos Aires, Universidad de San Luis, Instituto Nacional del Agua, Asociación Argentina de Consorcios Regionales de Experimentación Agrícola (AACREA) (Argentina); Universidad Nacional de Asuncion (Paraguay); Universidad de la Republica, Instituto Nacional de Investigacion Agropecuaria (Uruguay); University of Miami, Manhattan College, Argonne National Lab (US). Funded by the Inter-American Institute for Global Change Research ($299,723), by the NSF CHNS ($1,425,000), and by UIC Provost and CUPPA Under-Represented Faculty Recruitment Program ($30,000) (Co-Investigator) 2011-2017

Effects of Automated Transit and Pedestrian/Bicycling Facilities on Urban Travel Patterns. In collaboration with Jonathan Levine and Maria Arquero (University of Michigan) and Yoram Shiftan (Technion University). Funded by the Federal Highway Administration ($819,343) (Co-Investigator) 2010-2013

Integrated study of natural resources, human impact, and environmental policy: Making complex systems accessible for secondary learners. In collaboration with Leilah Lyons (Learning Sciences/Computer Science) and Emily Minor (Biological Sciences). Funded by the NSF REESE Program ($299,225) (Co-Investigator) 2010-2013

Participatory Modeling and Planning for Sustainable Water Management in the Chicago Region. In collaboration with Leilah Lyons (Learning Sciences/Computer Science), Charles Hoch (Urban Planning and Policy), Joshua Radinsky (Curriculum and Instruction/Learning Sciences), Andrew Johnson (Electronic Visualization Lab), Emily Minor (Biological Sciences), and William Dieber (Urban Data Visualization Lab). Funded by Great Cities Institute ($16,000), Urban Planning and Policy ($30,000), IPCE ($5,000), Chancellor's Discovery Fund ($40,000) and Provost and CUPPA Under-Represented Faculty Recruitment Program ($30,000) (UIC), and by NSF CI-TEAM ($249,953) (Principal Investigator) 2009-2019

Coupled natural-human systems in the Chicago Wilderness: Evaluating the biodiversity and social outcomes of different models of restoration planning. In collaboration with DePaul University, University of Illinois at Urbana-Champaign, US Forest Service, and the Field Museum. Funded by NSF Coupled Natural Human Systems Program ($1,500,000) (Co-Investigator) 2009-2014

Green Infrastructure Plan for Illinois. In collaboration with Chicago Center for Neighborhood Technology, Chicago Metropolitan Agency for Planning, and Illinois-Indiana Sea Grant College Program. Funded by Illinois Environmental Protection Agency ($300,000) (Co-Investigator) 2009-2010

Selected Teaching Experience

Northeastern University — Boston, MA **2021 - present**
Professor

PPUA 5261/CIVE 5261 System Dynamics Modeling for Environmental Decision Making

INSH 6101 Agent-based Modeling for Applied and Social Science

PPUA 5246 Participatory Modeling for Collaborative Decision-Making

University of Illinois at Chicago — Chicago, IL **2006 - 2020**
Associate Professor
Assistant Professor

US 230 Practices in Urban Sustainability

UPP 463 Complexity-based Modeling for Planning and Public Policy

UPP 506 Plan Making Studio

UPP 570/554 Introduction to Environmental Planning

UPP 571/537 Economics and Environmental Planning

UPP 572 Systems Methods for Environmental Planning and Policy

Community Surface Dynamics Modeling System (CSDMS) — Boulder, CO **2021, 2023-5**
Instructor/Co-Instructor

Clinic on Fora.ai: A participatory modeling platform to reshape how we collaborate for climate and social impact, Annual CSDMS Conference 2023, 2024, 2025.

Clinic on Decision Framing (with Robert Lempert, RAND Corp), Annual CSDMS Conference 2021

Michigan State University — Detroit, MI **2019, 2021, 2022**
Invited Instructor and co-organizer

Innovations in Collaborative Modeling, Participatory Modeling Field School

Universidad de la República — Montevideo, Uruguay **2018**
Invited Instructor and co-organizer

Multi-Agent Systems Modeling for environmental science and policy: Introductory workshop to Netlogo and Cormas

Inter-American Institute for Global Change Research — Antigua, Guatemala and Panama City, Panama **2014**
Invited Instructor and co-organizer

Professional Development Seminar on Modeling Strategies and Decision-Support Tools for the Management of Complex Socio-Ecological Systems: Interdisciplinary research conceptualization, and agent-based simulations

Publications

Refereed Journal Articles

Quinn, N. W. T.; Sridharan, V. K.; Babbar-Sebens, M.; **Zellner, M.;** Lott, C.; Guzmán, S.M.; Kumar, S.; Ahmadisharaf E.; Rabby, S.H.; Helgeson, J. (2026). “Improving the Integration of Diversity, Equity, Inclusion, and Justice Goals in Total Maximum Daily Load Model Implementation for Water Quality Management.” Journal of Environmental Engineering 152(1): 03125004. https://doi.org/10.1061/JOEEDU.EEENG-8218.

Zellner, M.; Massey, D.; Laboy, M.; O'Brien, D.; Mueller, A.; Engelberg, D.; 2025. "Enhancing digital twin technology with community-led, science-driven participatory modeling: A case in green infrastructure planning." Environment and Planning B: Urban Analytics and City Science, 0(0). https://doi.org/10.1177/23998083251323671.

Rozhkov, A.; **Zellner, M.**; Murphy, J. T.; Massey, D.; 2025. "Identifying leverage points for sustainable transitions in urban – rural systems: Application of graph theory to participatory causal loop diagramming." Environmental Science & Policy 164 (2025) 103996. https://doi.org/10.1016/j.envsci.2025.103996.

Sosa, B.; **Zellner, M.**; Chiale, C.; Achkara, M.; 2025. "Explaining woody invasions in riparian systems with agent-based simulations: implications for conservation management." Forest Ecology and Management 576, 15 January 2025, 122363. https://doi.org/10.1016/j.foreco.2024.122363

Bhattacharya, A.; Di Eugenio, B.; Grosso, V.; Johnson, A.; Tabalba, R.; Kirshenbaum, N.; Leigh, J.; **Zellner, M.**; 2024. "A Conversational Assistant for Democratization of Data Visualization: A Comparative Study of Two Approaches of Interaction." Statistical Analysis and Data Mining 17(6): https://doi.org/10.1002/sam.11714.

Zellner, M.; 2024. "Participatory modeling for collaborative landscape and environmental planning: From potential to realization." Landscape and Urban Planning 247 (2024) 105063. https://doi.org/10.1016/j.landurbplan.2024.105063

Zellner, M.; Massey, D.; 2024. "Modeling benefits and tradeoffs of green infrastructure: Evaluating and extending parsimonious models for neighborhood stormwater planning." Heliyon 10(5), 15 March 2024, e27007.https://doi.org/10.1016/j.heliyon.2024.e27007

Snyder-Young, D., Arnold Mages, M., Bhargava, R., Carr, J., Perovich, L., Talmadge, V., Wason, O., **Zellner, M.,** C-Dina, A., Birnholz, R., Brockett, H., et al.; 2024. "Viewpoints/Points of View: Building a Transdisciplinary Data Theatre Collaboration in Six Scenes." Arts 13:37. https://doi.org/10.3390/arts13010037

Borah, D, K; Zhang, H. X.; **Zellner, M.**; Ahmadisharaf, E.; Babbar-Sebens, M.; Quinn, N.; Kumar, S.; Sridharan, V. K.; Leelaruban, N.; Lott, C.; 2024. "Advances in Total Maximum Daily Load Implementation Planning by Modeling Best Management Practices and Green Infrastructures." Journal of Environmental Engineering 2024, 150(7): 03124003.

Rozhkov, A.; Zandiatashbar, A.; Massey, D.; Shin, J.; Smith, J.; **Zellner, M.**; 2023. "Effectiveness variation of different census outreach activities: An empirical analysis from the state of Illinois using machine learning and user interface technologies for participatory data collection." Applied Geography 154 (2023): 102928. DOI: https://doi.org/10.1016/j.apgeog.2023.102928.

Zellner, M.; Massey, D.; Rozhkov, A.; Murphy, J. T.; 2023. "Exploring the Barriers to and Potential for Sustainable Transitions in Urban-Rural Systems through Participatory Causal Loop Diagramming of the Food-Energy-Water Nexus." Special Issue: Towards Sustainable Land-Water Interactions in the Anthropocene: The Role of Stakeholder Engagement and Participatory Modelling, Land 2023, *12*(3), 551; https://doi.org/10.3390/land12030551.

Zellner, M.L.; Milz, D.; Lyons, L.; Hoch, C.; Radinsky, J.; 2022. "Finding the Balance Between Simplicity and Realism in Participatory Modeling for Environmental Planning." Environmental Modelling & Software 157 (2022): 105481. DOI: https://doi.org/10.1016/j.envsoft.2022.105481.

Shin, J.; Zandiatashbar, A.; Massey, D.; Rozhkov, A.; Smith, J.; **Zellner, M.**; 2022. "Intrastate applicability of National Census Response Rate Models: The case of the 2020 Census in the state of Illinois, United States." Population, Space and Place, e2608. https://doi.org/10.1002/psp.2608.

Tilahun, N.; Persky, J.; Shin, J.; **Zellner, M.**; 2021. "Childhood Poverty, Extended Family and Adult Poverty," Journal of Poverty, DOI: 10.1080/10875549.2021.2010860

Tilahun, N.; Persky, J.; Shin, J.; **Zellner, M.**; 2021. "Place Prosperity and the Intergenerational Transmission of Poverty." The Review of Regional Studies (2021) 51: 208-220. DOI: 10.52324/001c.27974.

Hedelin, B.; Gray, S.; Woehlke, S.; BenDor, T.K.; Singer, A.; Jordan, R.; **Zellner, M.**; Giabbanelli, P.; Glynn, P.; Jenni, K.; Jetter, A.; Kolagani, N.; Laursen, B.; Leong, K.M.; Schmitt Olabisi, L.; Sterling, E.; 2021. "What's left before participatory modeling can fully support real-world environmental planning processes: A case study review." Environmental Modelling & Software **143**(2021): 1364-8152. https://doi.org/10.1016/j.envsoft.2021.105073.

Campbell, S. D.; **Zellner, M.**; 2020. "Wicked Problems, Foolish Decisions: Promoting sustainability through urban governance in a complex world." Special Issue on Governing Wicked Problems, Vanderbilt Law Review **73**(6): 1643-1685.

Zellner, M.; Garcia, G. A.; Bert, F.; Massey, D.; Nosetto, M.; 2020. "Exploring reciprocal interactions between groundwater and land cover decisions in flat agricultural areas and variable climate." Environmental Modelling & Software 126(2020): 104641. https://doi.org/10.1016/j.envsoft.2020.104641

Heneghan, L.; Westphal, L. M.; Ross, K. A.; Watkins, C.; Gobster, P. H.; Iannone, B. V.; Tudor, M.; Vining, J.; Wali, A.; **Zellner, M.**; Wise, D. H.; 2019. "Institutional Diversity in the Planning Process Yields Similar Outcomes for Vegetation in Ecological Restoration." Society & Natural Resources. https://doi.org/10.1080/08941920.2019.1703062

Elsawah, S.; Filatova, T.; Jakeman, A.J.; Kettner, A.J.; **Zellner, M. L.**; Athanasiadis, I.N.; Hamilton, S.H.; Axtell, R.L.; Brown, D.G.; Gilligan, J.M.; Janssen, M.A.; Robinson, D.T.; Rozenberg, J.; Ullah, I.I.T.; Lade, S.J.; 2019. "Eight grand challenges in socio-environmental systems modeling." Socio-Environmental Systems Modeling 2(2020): https://doi.org/10.18174/sesmo.2020a16226.

McCary, M.; **Zellner, M.**; Wise, D. H.; 2019. "The role of plant-mycorrhizal mutualisms in deterring plant invasions: Insights from an individual-based model." Ecology and Evolution 2019(9):2018–2030. DOI:10.1002/ece3.4.

Sterling, E.; **Zellner, M.**; Jenni, K.E.; Leong, K.; Glynn, P.; BenDor, T.; Bommel, P.; Hubacek, K.; Jetter, A.; Jordan, R.; Schmitt Olabisi, L.; Paolisso, M.; Gray, S.; 2019. "Try, try again: Lessons learned from success and failure in participatory modeling." Elementa: Science of the Anthropocene **7**(1), p.9. DOI: https://doi.org/10.1525/elementa.347.

Voinov, A.; Jenni, K.; Gray, S.; Kolagani, N.; Glynn, P.; Bommel, P.; Prell, C.; **Zellner, M.**; Paolisso, M.; Jordan, R.; Sterling, E.; Schmitt Olabisi, L.; Giabbanelli, P.; Sun, Z.; Le Page, C.; Elsawah, S.; BenDor, T.; Hubacek, K.; Laursen, B.; Jetter, A.; Basco Carrera, L.; Singer, A.; Young, L.; Brunacini, J.; Smajgl, A.; 2018. "Tools and methods in participatory modeling: selecting the right tool for the job." Environmental Modelling and Software 109(2018):232-255. https://doi.org/10.1016/j.envsoft.2018.08.028.

Jordan, R.; Gray, S.; **Zellner, M.**; Glynn, P.; Voinov, A.; Hedelin, B.; Sterling, E.; Leong, K.; Schmitt-Olabisi, L.; Hubaceck, K.; Bommel, P.; BenDor, T.; Jetter, A.; Laursen, B.; Singer, A.; Giabbanelli, P.; Kolagani, N.; Basco-Carrera, L.; Jenni, K.; Prell, C.; 2018. "Twelve questions for the participatory modeling community." Earth's Future 6:1046–1057. https://doi.org/10.1029/ 2018EF000841.

Levine, J.; **Zellner, M.**; Arquero, M. J.; Shiftan, Y.; Massey, D.; 2018. "The Impact of Automated Transit, Pedestrian, and Bicycling Facilities on Urban Travel Patterns." Transportation Planning and Technology 41(1): 463-480. <www.tandfonline.com/doi/full/10.1080/03081060.2018.1468968>.

Gray, S; Voinov., A.; Paolisso, M.; Jordan, R.; BenDor, T.; Bommel, P.; Glynn, P.; Hedelin, B.; Hubacek, K.; Introne, J.; Kolagani, N.; Laursen, B.; Prell, C.; Schmitt-Olabisi, L.; Singer, A.; Sterling, E.; **Zellner, M.**; 2018. "Purpose, Processes, Partnerships, and Products: 4Ps to advance Participatory Socio-Environmental Modeling." Ecological Applications 28(1): 46-61.

Milz, D.; **Zellner, M.L.**; Hoch, C.; Radinsky, J.; Pudlock, K.; Lyons, L.; 2017. "Reconsidering Scale: Using GIS To Inform Spatial Planning Talk." Planning Practice & Research 60(7): 1296-1323.

Radinsky, J.; Milz, D.; **Zellner, M.L.**; Pudlock, K.; Witek, C.; Hoch, C.; Lyons, L.; 2016. "How Planners and Stakeholders Learn With Visualization Tools: Using Learning Sciences Methods to Examine Planning Processes." Journal of Environmental Planning and Management, 1-28.

Zellner, M.; Massey, D.; Minor, E.; Gonzalez-Meler, M.; 2016. "Exploring the Effects of Green Infrastructure Placement on Neighborhood-Level Flooding via Spatially Explicit Simulations." Computers, Environment and Urban Systems 59(2016): 116-128.

Zellner, M.L., Massey, D.; Shiftan, Y.; Levine, J.; Arquero, M. J.; 2016. "Overcoming the last-mile problem with transportation and land-use improvements: An agent-based approach." International Journal of Transportation, Special Issue on Agent Based Modeling in Transportation Planning and Operations, 4 (1): 1-26 <http://www.sersc.org/journals/IJT/vol4_no1.php>

Zellner, M.L.; Campbell, S.; 2015. "Planning for Deep-Rooted Problems: What Can We Learn from Aligning Complex Systems and Wicked Problems?" Planning Theory and Practice 16 (4): 457-478.

Mallavarapu, A.; Lyons, L.; Shelley, T.; **Zellner, M.**; Minor, E.; Slattery, B.; 2015. "Developing Computational Methods to Measure and Track Learners' Spatial Reasoning in an Open-Ended Simulation." JEDM-Journal of Educational Data Mining, 7(2), 49-82.

Hoch, C. J.; **Zellner, M. L.**; Milz, D. C.; Radinsky, J.; Lyons, L.; 2015. "Seeing is not believing: cognitive bias and modelling in collaborative planning." Planning Theory and Practice 16 (3): 319-335.

Tendick-Matesanz, F.; Ahonen, E.Q.; **Zellner, M.L.**; Lacey, S.E.; 2015. "Applying evaluative thinking to a community-engaged safe drinking water project in peri-urban Guatemala." International Journal for Service Learning in Engineering, Humanitarian Engineering and Social Entrepreneurship, 10 (1): 59-79.

Hicks, A.; Theis, T. L.; **Zellner, M. L.**; 2015. "Emergent effects of residential lighting choices: prospects for energy savings." Journal of Industrial Ecology, Special Issue on Advances in Complex Adaptive Systems and Industrial Ecology, 19 (2): 285-295.

Zellner, M.; Watkins, C.; Massey, D.; Westphal, L.; Brooks, J.; Ross, K.; 2014. "Advancing Collective Decision-Making Theory with Integrated Agent-Based Modeling and Ethnographic Data Analysis." Journal of Artificial Societies and Social Simulation 17 (4) 11: <http://jasss.soc.surrey.ac.uk/17/4/11.html>.

Iannone III, B. V.; **Zellner, M.L.**; Wise, D. H.; 2014. "Modeling the impacts of life-history traits, canopy gaps, and establishment location on woodland shrub invasions." Ecological Applications 24(3): 467-483.

Gonzalez-Meler, M.A.; Cotner, L.A.; Massey, D.A.; **Zellner, M.L.**; Minor, E.S.; 2013. "The Environmental and Ecological Benefits of Green Infrastructure for Stormwater Runoff in Urban Areas. JSM Environmental Science and Ecology 1 (2): 1007.

Watkins, C.; Massey, D.; Brooks, J.; Ross, K.; **Zellner, M.**; 2013. "Understanding the mechanisms of collective decision-making in ecological restoration: An agent-based model of actors and organizations." Ecology and Society 18 (2): 32. [online] URL: http://www.ecologyandsociety.org/vol18/iss2/art32/.

Zellner, M.L., Reeves, H. W.; 2012. "Examining the contradiction in 'sustainable urban growth': An example of groundwater sustainability." Journal of Environmental Planning and Management, 55 (5): 545-562.

Zellner, M.L., Lyons, L.; Hoch, C. J.; Weizeorick, J.; Kunda, C.; Milz, D.; 2012. "Modeling, Learning and Planning Together: An Application of Participatory Agent-Based Modeling to Environmental Planning." URISA Journal, GIS in Spatial Planning Issue, 24 (1): 77-92.

McDonnell, S., **Zellner, M. L.**; 2011. "Exploring the Effectiveness of Bus Rapid Transit: A Prototype Agent-Based Model of Commuting Behavior." Transport Policy 18 (6): 825-835.

Mahesh, A.; **Zellner, M. L.**; Zielinski, S.; 2011. "Emerging Private Sector Roles in Urban Transport: Case Study of an Innovative Telecom-GIS Solution in Bangalore." Journal of Urban Technology, 18 (3): 67-80.

Zellner, M. L., Reeves, H. W.; 2010. "Integrating land-use and groundwater modeling: Opportunities, challenges and implications for policy analysis." International Journal of Operations and Quantitative Management, Special Issue on Decision Making in Complex Systems, 16 (4): 389 - 414.

Reeves, H. W.; **Zellner, M. L.**; 2010. "Linking MODFLOW with an Agent-Based Land-Use Model to Support Decision Making." Ground Water, Special Issue on MODFLOW and More 2008, 48 (5): 649 - 660.

Zellner, M. L.; Riolo, R.; Rand. W.; Brown, D. G.; Page, S. E.; Fernandez, L. E.; 2010. "The Problem with Zoning: Nonlinear Effects of Interactions between Location Preferences and Externalities on Land Use and Utility." Environment and Planning B 37 (3): 408-428.

Zellner, M. L.; Page, S. E.; Rand, W.; Brown, D. G.; Robinson, D. T.; Nassauer, J.; Low, B.; 2009. "The Emergence of Zoning Games in Exurban Jurisdictions." Land Use Policy 26 (2009): 356-367.

Lu, Y.; Kawamura, K.; **Zellner, M. L.**; 2008. "Exploring the Influence of Urban Form on Work Travel Behavior with Agent-Based Modeling." Journal of the Transportation Research Record (2082): 132-40.

Zellner, M. L.; 2008. "Embracing Complexity and Uncertainty: The Potential of Agent-Based Modeling for Environmental Planning and Policy." Planning Theory & Practice 9 (4): 437-457.

Zellner, M. L.; Theis, T. L.; Karunanithi, A. T.; Garmestani, A. S.; Cabezas, H.; 2008. "A New Framework for Urban Sustainability Assessments: Linking Complexity, Information and Policy." Computers, Environment and Urban Systems, Special Issue on Geocomputation: Modeling with Spatial Agents 32 (6): 474-488.

Brown, D.G.; Robinson, D.T., An, L.; Nassauer, J. I.; **Zellner, M. L**; Rand, W.; Riolo, R.; Page, S. E.; Low, B.; Wang, Z.; 2008. "Exurbia from the bottom-up: Confronting empirical challenges to characterizing a complex system." Geoforum 39 (2): 805-818.

Zellner, M. L.; 2007. "Generating Policies for Sustainable Water Use in Complex Scenarios: An Integrated Land-Use and Water-Use Model of Monroe County, Michigan." Environment and Planning B, Planning and Design 34 (4): 664-686.

Brown, D. G.; Page, S. E.; Riolo, R.; **Zellner, M. L.**; Rand. W.; 2005. "Path dependence and the validation of agent-based spatial models of land use." International Journal of Geographical Information Science, Special Issue on Land Use Dynamics 19 (2): 153-174.

Book Chapters

Zellner, M.; Forthcoming. **"**Modelado participativo de sistemas complejos para el abordaje colaborativo de problemas socio-ambientales: Enmarcando la práctica en la teoría de Matus." In Oscar Varsavsky y Carlos Matus: Diálogos interdisciplinarios sobre ciencia, planificación y gobierno de problemas complejos; edited by Rodriguez Zoya, L. G.; Universidad de Buenos Aires, Argentina. ISBN 978-987-48927-8-2.

Zellner, M.; Boria, E. S.; Massey, D.; Keller, J.; Forthcoming. "Building Social and Environmental Capital through Participatory Modeling: The case of the Robbins Renewal and Resilience Project." In Social Justice and Community Disparities, University of Illinois Press.

Zellner, M.; Forthcoming. **"**Agent-based modeling." In The SAGE Encyclopedia of Environmental Justice. Sage Publications.

Zellner, M.; Campbell, S. D.; 2020. "Planning with(in) complexity: pathways to extend planning with complex systems modeling." In Handbook on Planning and Complexity; edited by De Roo, Yamu, and Zuidema, C.; Edward Elgar Publisher, Cheltenham.

Zellner, M.; Lyons, L.; Milz, D.; Shelley, J.; Hoch, C.; Massey, D.; Radinsky, J.; 2020. "Participatory Complex Systems Modeling for Environmental Planning: Opportunities and Barriers to Learning and Policy Innovation." In Innovations in Collaborative Modeling: Transformations in Higher Education; edited by Porter, Zhao, Schmitt Olabisi, and McNall; Michigan State University Press.

Zellner, M. L.; 2016. "It is easier to be smart than to be green." In Remaking the Urban Social Contract: Health, Energy, and the Environment; edited by M. Pagano; University of Illinois Press, pp 87-90.

Thakuriah, P., Tilahun, N.; **Zellner, M.**; 2016. "Big Data and Urban Informatics: Innovations and Challenges to Urban Planning and Knowledge Discovery." In Seeing Cities through Big Data: Research Methods and Applications in Urban Informatics, edited by P. Thakuriah, Tilahun, N.; Zellner, M.: Springer.

Zellner, M. L.; Hoch, C. J.; Welch, E. W.; 2011. "Leaping Forward: Building resilience by communicating vulnerability." In Collaborative Resilience: Moving From Crisis to Opportunity, edited by B. E. Goldstein: MIT Press, pp 39-59.

Zellner, M. L.; 2011. "Planificación urbana y complejidad: El potencial de los modelos multiagentes." In Ciudad Holograma: Ocho enfoques sobre complejidad urbana, edited by M. C. J. M. J. Aragón Palacios and G. Vázquez Rodríguez: Universidad Autónoma de Nuevo León.

Edited Books

Thakuriah, P., Tilahun, N.; **Zellner, M.** (editors); 2016. Seeing Cities through Big Data: Research Methods and Applications in Urban Informatics. Springer.

Conference Proceedings

Laboy, M.; **Zellner, M.**; O'Brien, D.; Mueller, A.; Massey, D.; 2024. "Decentralizing infrastructure: expanding architectural practice towards equity and health." ACSA 112th Annual Meeting: Disrupters on the Edge. Vancouver, BC, March 2024.

Bhattacharya, A; Kumar, A.; Di Eugenio, B.; Tabalba, R.; Aurisano, J.; Grosso, V.; Johnson, A.; Leigh, J.; **Zellner, M.**; 2023. "Reference Resolution and New Entities in Exploratory Data Visualization: From Controlled to Unconstrained Interactions with a Conversational Assistant." Proceedings of SIGDIAL 2023, the 2023 Meeting on Discourse and Dialogue. Prague, Czech Republic, September 2023.

Borah, D. K.; Zhang, H.; **Zellner, M.**; Ahmadisharaf, E.; Babbar-Sebens, M.; Quinn, N.; Kumar, S.; Leelaruban, N.; Lott, C.; 2023. "Total Maximum Daily Load Implementation Modeling, Planning, and Design: A Synthesis of Resources for Watershed Stakeholders." Proceedings of the World Environmental & Water Resources Congress 2023, May 21-24, 2023, Henderson, NV. ASCE EWRI, Reston, VA.

Tabalba, R.; Kirshenbaum, N.; Leigh, J.; Bhatacharya, A.; Johnson, A.; Grosso, V.; Di Eugenio, B.; **Zellner, M.;** 2023. "An Investigation into an Always Listening Interface to Support Data Exploration." In Proceedings of the 28th Conference on Intelligent User Interfaces (IUI '23). Association for Computing Machinery, NSW, Australia.

Thakuriah, P.; Tilahun, N.; **Zellner, M.**; 2015. "Proceedings of the Workshop on Big Data and Urban Informatics." University of Illinois at Chicago, August 2014, Chicago, IL. URL: https://urbanbigdata.uic.edu/proceedings/.

Lyons, L., Minor, E., **Zellner, M.**, Slattery, B., & Shelley, T.; 2012. Parsing patterns: Developing metrics to characterize spatial problem solving strategies within an environmental science simulation. Paper presented at the 2012 annual meeting of the American Educational Research Association (AERA 2012), Vancouver, BC, Canada.

Slattery, B.; Dasgupta, C.; Shelley, T.; Lyons, L.; **Zellner, M.**; Minor, E.; 2012. "Understanding How Learners Grapple with Wicked Problems in Environmental Science." Proceedings of the 10th International Conference of the Learning Sciences, International Society of the Learning Sciences Sydney, Australia.

Shelley, T.; Lyons, L.; Minor, E.; **Zellner, M.**; 2011. "Evaluating a Paper-Based TUI for Spatially-Explicit Simulations." In 29th international conference on Human factors in computing systems (CHI EA '11).

Shelley, T.; Lyons, L.; Shi, J; Minor, E.; **Zellner, M.**; 2010. "Paper to parameters: designing tangible simulation input." 12th ACM international conference adjunct papers on Ubiquitous computing, Sept. 26 – 29, 2010, Copenhagen, Denmark.

Dasgupta, C.; Lyons, L.; **Zellner, M. L.**; Greenle, A.; 2010. "Designing for an Informal Learning Environment: Towards a Participatory Simulation Design Process for Public Policy Planning." International Conference of the Learning Sciences (ICLS), Chicago, IL 2010.

Rand, W.; Brown, D. G.; Page, S. E.; Riolo, R.; Fernandez, L. E.; **Zellner, M. L.**; 2003. "Statistical Validation of Spatial Patterns in Agent-Based Models." Proceedings of Agent Based Simulation 2003, CIRAD, France.

Rand, W.; **Zellner, M. L.**; Page, S. E.; Riolo, R.; Brown, D. G.; Fernandez, L. E.; 2002. "The Complex Interaction of Agents and Environments: An Example in Urban Sprawl." Proceedings of Agent 2002, A Workshop on Social Agents: Ecology, Exchange and Evolution, University of Chicago.

Selected Professional Publications

Laboy. M.; Mueller, A.; O'Brien, D.; **Zellner, M.;** 2025. "2022 Latrobe Prize Update: CommonSENSES, Standards for Enacting Sensor Networks for an Equitable Society." The AIA College of Fellows Quarterly Q4 2025 (Dec 14, 2025), p. 12 – 15. https://issuu.com/aiacollegeoffellows/docs/the_aia_college_of_fellows_quarterly_q4_2025

Selected Working Papers and Technical Reports

Bhargava, R., Purdue, S. K., Perovich, L., Snyder-Young, D., Issak, A., Arnold Mages, M., **Zellner, M.**, Massey, D. Herrera, G.. Data Theatre as Input Visualization: Building Community Voice and Cohesion. 2025 IEEE Vis Input Visualization Workshop. http://doi.org/10.17605/OSF.IO/XPQCF

Zellner, M.; Massey, D.; 2022. "Initiative for Energy Justice in Building Decarbonization." Report to Mill Cities Community Investments, for Justice40 Capacity Building Fund, Bloomberg Philanthropies. Northeastern University. 86pp.

Zellner, M.; Keller, J.; Massey, D.; 2018. "Robbins Renewal and Resiliency Project Management." Report to the Chicago Community Trust, Chicago, IL: University of Illinois at Chicago. 53pp.

Westphal, L. M.; Watkins, C.; Gobster, P. H.; Heneghan, L.; Ross, K.; Ross, L.; Tudor, M.; Wali, A.; Wise, D. H.; Vining, J.; **Zellner, M.**; 2014. "Social science methods used in the RESTORE Project." Gen. Tech. Rep. NRS-138. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 116 pp.

Levine, J.; **Zellner, M.**; Shiftan, Y.; Arquero, M.; Diffenderfer, A.; 2013. "Effects of Automated Transit, Pedestrian, and Bicycling Facilities on Urban Travel Patterns." Report to the Federal Highway Administration. Ann Arbor, MI: University of Michigan.

Jaffe, M.; **Zellner, M.**; Minor, E.; Gonzalez-Meler, M.; Cotner, L.; Massey, D.; Ahmed, H.; Elberts, M.; Wise, S.; Sprague, H.; Miller, B.; 2010. "Using Green Infrastructure to Manage Urban Stormwater Quality: A Review of Selected Practices and State Programs." Springfield; Illinois EPA (Final Report, October 2010). 146 pp.

Selected Internet Tools

Zellner, M.; Massey, D.; 2024. Fora.ai participatory modeling platform.

Zellner, M.; Zandiatashbar, A.; Shin, J.; Rozhkov. A.; Massey, D.; Carlson, K.; Kreuzer; M.; Leffert, W.; 2020. Map the count Census outreach reporting application and mapping tools. https://mapthecount.uic.edu/

Selected Software

Author of "L-GrID-WQ: Landscape Green Infrastructure Design – Water Quality." Northeastern University and University of Illinois at Chicago. Copyright 2024. NU License.

Author of "L-GrID: Landscape Green Infrastructure Design." Northeastern University and University of Illinois at Chicago. Copyright 2022. NU License.

Author of "Hydroman: Hydrology + Human reciprocal relationships in flat agricultural regions." University of Illinois at Chicago. Copyright 2019. Licensed through OpenABM.

Author of "CoDMER v. 1 and 2: Collective Decision-Making for Ecological Restoration." University of Illinois at Chicago. Copyright 2012. Licensed through OpenABM.

Author of "Last Mile Commuter Behavior Model." University of Michigan and University of Illinois at Chicago Copyrigh 2014. Licensed through OpenABM.

Author of "SOME-GW: Exurban land-use change and groundwater." University of Illinois at Chicago. Copyright 2010, 2011, 2014.

Author of "WULUM: Water-Use Land-Use Model." University of Michigan and University of Illinois at Chicago. Copyright 2008.

Author of "WULUMOD: WULUM – MODFLOW integrated model." University of Illinois at Chicago. Copyright 2008.

Co-author of "DEED: Dynamic Ecological Exurban Development." Project SLUCE (Spatial Land-Use Change and Ecological effects), University of Michigan. 2004.

Co-author of "SOME: Sluce's Original Model for Exploration." Project SLUCE (Spatial Land-Use Change and Ecological effects), University of Michigan. 2002.

Presentations

Selected Invited Talks

Zellner, M.L.; "Realizing the potential of community-led, science-driven, participatory modeling: A case in green infrastructure planning." Complexity Coffee Speaker Series, Santa Fe Institute; October 2025.

Zellner, M.L.; "Realizing the potential of community-led, science-driven, participatory modeling: A case in green infrastructure planning." International Workshop on Collaborative and Participatory Modeling (CoPaMo), Grand Rapids, MI; October 2025.

Zellner, M.L.; "Participatory modeling for collaborative and equitable planning." Invited Seminar Speaker, ProSocial World; December 2024.

Zellner, M.L.; "Including all voices in decision-making through collaborative modeling and planning." Invited Meet the Scientist Speaker, Museum of Science Hispanic & Latinx Celebration Weekend, Boston, MA; October 2024.

Zellner, M.L.; "Participatory complex systems modeling for collaborative and equitable planning." Invited Inspiration Speaker, European Social Simulation Association (ESSA) Social Simulation Festival 2024; May 2024.

Zellner, M. L.; "Participatory modeling for collaborative and equitable planning: From potential to realization." Invited keynote, 2024 Annual Modeling and Simulation Conference. Washington, DC; May 2024.

Borah, D.; Zhang, H.; Zellner, M.; 2024. Total Maximum Daily Load Implementation Modeling, Planning, and Design: A Synthesis of Resources for Watershed Stakeholders. EWRI TMDL Analysis & Modeling Task Committee. Invited Speaker, EWRI St. Louis Monthly Speaker Series; March 2024.

Laboy, M.; Mueller, A.; O'Brien, D.; Zellner, M. L.; "Common SENSES: Advancing equity in architecture through data science and participatory modeling." Invited panelist, DnA Hawaii: Design + Architecture; October 2022.

Zellner, M. L.; "Participatory Modeling to Address Socio-Environmental Problems." Invited webcast presenter, Socio-Environmental Synthesis Center (SESYNC); September 2022.

Zellner, M. L.; "Participatory socio-ecological systems modeling for policy design and democratic decision-making." Invited keynote, 50thAnnual Conference for Science and the Environment, Israel Society of Ecology and Environmental Sciences (ISEES); July 2022.

Zellner, M. L.; "Participatory modeling and collaborative decision making for climate and social justice: From Potential to Realization." Invited speaker, Scholars Seminar, Institute for Social Science Research. University of Massachusetts Amherst; March 2022.

Zellner, M. L.; "Playing, Learning and Planning Together: Addressing Big Questions with Participatory Modeling." Guest speaker, GeneConvene Global Collaborative. Foundation for National Institute of Health (FNIH); December 2021.

Zellner, M. L.; "How Effective is Green Infrastructure for Stormwater Management?" Invited speaker, Perspectives on Urban Flood Resilience Seminar. Consortium of Universities for the Advancement of Hydrologic Science, Inc. (CUAHSI); September 2021.

Zellner, M. L.; "Playing, Learning and Planning Together: Addressing Big Questions with Participatory Modeling." Keynote speaker, Participatory Modeling Field School. Michigan State University; August 2021.

Zellner, M.; "Participatory modeling for collaborative decision-making." Invited panelist to the Center for Spatial Analytics and Visualization (SAVi) Talk #4: "Applications of Data Science for Collaborative Decision-making." San Jose State University, CA; April 2021.

Zellner, M., S. "Campbell; Planning With(in) Complexity: Pathways to Extend Collaborative Planning, Incremental Planning, and Big Data With Complex Systems Modeling." Online seminar by AESOP's thematic group on Planning & Complexity: "Social Disruption and Urban Complexity: Reflective thoughts on how Covid-19 transforms cities and their planning." November 2020.

Campbell, S.; Zellner, M. L.; "Wicked Problems, Foolish Decisions: Promoting sustainability through urban governance in a complex world." Symposium on "Governing Wicked Problems," Vanderbilt Law School; October, 2019.

Zellner, M. L.; "Integrated socio-ecological models for decision-making: Addressing Big Questions with Data, Models, and Participatory Exploration." Invited speaker and participant, AIMES-GLP Workshop; Arizona State University; September 2019.

Zellner, M. L.; "Modeling, Learning and Planning Together: Addressing Big Questions with Data, Models, and Participatory Exploration." Invited speaker and participant, NSF SUS Workshop "Challenges to and Opportunities for Resilience in Rapidly Developing Urban Corridors;" University of Texas - Austin; August 2019.

Zellner, M. L.; "Designing Resilient Green Infrastructure Plans." Invited speaker and participant, Workshop "Fighting Urban Heat with Green: Adaptation and Mitigation Strategies." University of Chicago Mansueto Institute for Urban Innovation; May 2019.

Zellner, M. L.; "Participatory complex systems modeling for environmental planning." Environmental Studies Lunch & Learn Series; Tufts University; April 2019.

Zellner, M. L.; "How Effective is Green Infrastructure for Stormwater Management?" Zube Lecture Series; University of Massachusetts - Amherst; April 2019.

Zellner, M. L.; "Participatory complex systems modeling for environmental planning: Opportunities and barriers to learning and policy innovation." Yi-Fu Tuan Lecture Series; University of Wisconsin - Madison; February 2019.

Zellner, M. L.; "Exploring reciprocal interactions between water table dynamics and land use cover decisions in flat agricultural areas." Guest speaker, Department of Ecoregion Science; Tokyo University of Agriculture and Technology, Japan; September 2018.

Zellner, M. L.; "Participatory complex systems modeling for environmental planning: Opportunities and barriers to learning and policy innovation." Keynote speaker to International Conference on Spatial Analysis and Modeling; University of Tokyo, Japan; September 2018.

Zellner, M. L. (with Erica Goldman, Xenia Morin, and Craig Hood); "Teaching and Leading on Science in Times of Uncertainty." Invited panelist, 2018 Council of Environmental Deans and Directors Summer Meeting, National Council for Science and the Environment; Chatham University, PA; June 2018.

Zellner, M. L.; " Participatory complex systems modeling for environmental planning: Opportunities and barriers to learning and policy innovation." Keynote speaker, CSDMS 2017 Annual Meeting: Modeling Coupled Earth and Human Systems – The Dynamic Duo, Boulder, CO; May 2017.

Zellner, M. L.; "Participatory modeling for stormwater management and planning." Invited speaker and exhibitor to the Tech Zone, American Planning Association National Conference, New York City, NY; May 2017.

Zellner, M.L.;" Participatory modeling for stormwater management and planning." Invited speaker to the US EPA Urban Sustainability Assessment and Management Workshop; US EPA Region 5, Chicago, IL; July 2016.

Zellner, M. L. (with Stephen Gray, Laura Schmitt-Olabisi, Renee Wallace); "Common Systems Modeling Tools and Contexts of Application." Plenary speaker, Innovations in Collaborative Modeling; East Lansing, MI; June 2016.

Zellner, M. L.; "Participatory Modeling of the Effectiveness of Green Infrastructure
for Stormwater Management." Invited speaker to the Geography, Environment and Spatial Sciences Colloquium Series; Michigan State University, East Lansing, MI; April 2016.

Zellner, M.L.;" Participatory Agent-Based Modeling." Invited speaker to the Participatory Modeling for Action-Oriented Outcomes; SESYNC, Annapolis, MD; February 2016.

Zellner, M.L.;" Perspectives From India & Chicago: Citizen Empowerment for Human Rights." Invited panelist to the Art Works Project for Human Rights; Chicago, IL; January 2016.

Zellner, M.L.;" Smart Cities: Is it easy to be green?" Invited panelist to the UIC Urban Forum; Chicago, IL; September 2015.

Zellner, M. L.; "Participatory Complex Systems Modeling for Environmental Planning: Opportunities and Barriers to Learning and Policy Innovation." Plenary speaker, Innovations in Collaborative Modeling; East Lansing, MI; June 2015.

Zellner, M. L.; "Big Data, Big Questions." Invited panelist to Applied Economics, Regional and Urban Studies Conference (AERUS); Lafayette, IN; April 2015.

Zellner, M. L.;" How can we make agent-based models more relevant?" Invited panelist to AAG special complexity session; Tampa, FL; April 2014.

Zellner, M. L.; "Playing, Learning and Planning Together: Applications of Agent-Based Modeling to Environmental Planning." Invited speaker to Workshop on Complex Adaptive Systems and Homeland Security Risk; Homeland Security Studies and Analysis Institute, Arlington, VA; July 2011.

Zellner, M. L.; "Applying complexity theory and methods to environmental planning." Invited speaker to University of Maryland – Baltimore County Center for Urban Environmental Research and Education (CUERE) Seminar Series; Baltimore, MD; May 2011.

Zellner, M. L.; "Enhancing participatory resource management and planning: Learning with LUCC-ecological models." Invited speaker to Inter-American Institute for Global Change Research Training Workshop; Asuncion, Paraguay; April 2011.

Zellner, M. L." Complexity-based Methods for Environmental Planning." Invited speaker to Illinois Institute of Technology Engineering Sustainable Cities Seminar; Chicago, IL; November 2009.

Zellner, M. L.; Hoch, C. J.; Welch, E. W.; "Leaping Forward: Building resilience by communicating vulnerability." Invited speaker at Symposium on Enhancing Resilience To Catastrophic Events Through Communicative Planning; Virginia Tech, Blacksburg, VA; November 2008.

Zellner, M. L.; "Generating policies for sustainable water use: Applications of agent-based modeling to resource and land-use policy." Invited speaker to International Joint Commission for the Great Lakes Biennial Conference; Chicago, IL; June 2007.

Zellner, M. L.; "Planning With(in) Complexity: Using Agent-Based Models to Cope with Uncertainty in Water Management." Invited speaker to Environmental Protection Agency (EPA); Cincinnati, OH; February 2007.

Selected Conferences, Panels, and Workshops

Zellner, M. "Pedagogical Approaches to Participatory Modeling and Decision-Making: Cultivating Mindful, Creative, and Analytical Skills." ACSP 2025; Minneapolis, MN; October 2025.

Lim, T.; Currans, K.; Zellner, M.; William, S.; "Planning Ethics and AI: Moving beyond a 'problems with the technology' framing." Pre-conference workshop on AI in Planning, ACSP 2025; Minneapolis, MN; October 2025.

Laboy, M.; Zellner, M.; Mueller, A.; O'Brien, D.; Allen, K.; "Common SENSES: building equity through sensor data and participatory modeling." AIA 25 Conference on Architecture and Design; Boston, MA; June 2025.

Zellner, M.; "Fora.ai: Reshaping collaboration for climate and social impact." Workshop for the Intermountain Sustainability Summit; Ogden, UT; March 2025.

Zellner, M.; "Modelado participativo de sistemas complejos para el abordaje colaborativo de problemas socio-ambientales: Enmarcando la práctica en la teoría de Matus." Symposium on "Oscar Varsavsky y Carlos Matus: Diálogos interdisciplinarios sobre ciencia, planificación y gobierno de problemas complejos," Universidad de Buenos Aires, Argentina; October 2024.

Zellner, M.; "Realizing the potential of community-led, science-driven participatory modeling: A case in green infrastructure planning." Inaugural Conference of the National Sustainability Society, Seattle, WA; September 2024.

Zellner, M.; Allen, K.; "Realizing the potential of community-led, science-driven participatory modeling: A case in green infrastructure planning." Boston Area Research Initiative (BARI) Conference, Cambridge, MA; April 2024.

Zellner, M.; "Realizing the potential of community-led, science-driven modeling for collaborative planning and policy." Association of Collegiate Schools of Planning Conference, Chicago, IL; October 2023.

Zellner, M.; Kalantzi, E.; Tavantzis, I.; "Strengthening Community Involvement In Boston's Decision-Making: The Role Of Participatory Modeling." Boston Area Research Initiative (BARI) Conference, Cambridge, MA; April 2023.

Zellner, M.; "Participatory modeling for collaborative planning: From potential to realization." Association of Collegiate Schools of Planning Conference, Toronto, ON; November 2022.

Zellner, M.; "Fora.ai: Reshaping How to Collaborate for Climate and Social Impact." Workshop for the 53rd Annual International Conference of the International Simulation and Gaming Association (ISAGA). Boston, MA; July 2022.

Leverich, M.; Jacob, N.; Modestino, A.; Zellner, M.;" Finding Complementarity and Partnership among Multiple Strategies of Community-Engaged Scholarship." MetroLab 2022 Summit; June 2022.

Zellner, M.; Ruf, S.; Sohns, A. "Incorporating Mindfulness and Improvisation in the Pedagogy of Participatory Modeling," Conference for Advancing Evidence-Based Learning, Northeastern University, Boston, MA; April 2022.

Drill, S.; Rojas, J.; Butler, E.; Zellner, M.; Streetwyze; "Engaging Communities to Strengthen Resilience: Participatory Modelling and Collaborative Mapping." The Nature of Cities Festival 2022; March 2022.

Zellner, M.; "Fora.ai: Reshaping How to Collaborate for Climate and Social Impact." Myra Kraft Open Classroom Spring 2022 Series, Northeastern University; March 2022.

Zellner, M.; Wallace, R. V.; Milz, D. C.; McNall, M.; Lyons, L.; "Participatory modeling and collaborative decision making for climate and social justice: From Potential to Realization." Myra Kraft Open Classroom Spring 2022 Series, Northeastern University; March 2022.

Milz, D.C.; Miller, E.; Campbell, S.; Zellner, M. L.; "A New, Rougher Era of Conflict? Expanding the Planner's Toolkit for Collaborative Planning in the Face of Growing Polarization, Fragmentation and Inequality." Association of Collegiate Schools of Planning Conference (online); November 2021.

Campbell, S.; Zellner, M. L.; "Wicked Problems, Foolish Decisions: Promoting sustainability through urban governance in a complex world." Association of Collegiate Schools of Planning Conference (online); November 2020.

Zellner, M. L.; Schmitt Olabisi, L.; Gray, S.; Wallace, R.; Jordan, R.; "Participatory Modeling to Inform Environmental Planning and Policy." National Council for Science and the Environmental Annual Conference, Washington, DC; January 2020.

Zellner, M. L. , Campbell, S.; "Planning With(in) Complexity: Pathways to Extend Collaborative Planning, Incremental Planning, and Big Data With Complex Systems Modeling." Association of Collegiate Schools of Planning Conference, Greenville, SC; October 2019.

Zellner, M. L. (with Justin Keller, Dominick Argumendo, Richard Fisher). Panel: "Robbins Renewal and Resiliency." American Planning Association Illinois Chapter 2019 conference; Evanston, IL; September 2019.

Zellner, M. L.; "Participatory modeling for stormwater planning and economic development." Association of Collegiate Schools of Planning Conference, Buffalo, NY; October 2018.

Zellner, M. L.; "Participatory modeling for stormwater planning and economic development." Participate!, Chicago, IL; September 2018.

Zellner, M. L.; Lyons, L.; Hoch, C.; Shelley, J.; Massey, D.; Milz, D.; Radinsky, J.; "Participatory complex systems modeling for environmental planning: Opportunities and barriers to learning and policy innovation." Association of American Geographers Annual Meeting, New Orleans, LA; April 2018.

Zellner, M. L.; "Enhancing Community Resilience with Participatory Visualization of Coupled Human and Hydrological Systems." 2017 Joint ISIE-ISSST 2017 Conference, Chicago, IL; June 2017.

Bert, F.; Zellner, M.; Massey, D.; Podesta, G. "Simulating Coupled Land-Cover Decisions and Water Table Dynamics in Flat Agricultural Landscapes." Association of Collegiate Schools of Planning Conference; Portland, OR; November 2016.

Bert, F.; Zellner, M.; Massey, D.; Podesta, G. "Simulating Coupled Land-Cover Decisions and Water Table Dynamics in Flat Agricultural Landscapes." Innovations in Collaborative Modeling; East Lansing, MI; June 2016.

Zellner, M.; Lyons, L.; Hoch, C.; Shelley, J.; Massey, D.; Milz, D.; Radinsky, J. "A Participatory Simulation Protocol for Collaborative Environmental Planning." Association of Collegiate Schools of Planning Conference, Houston, TX; October 2015.

Bert, F.; Zellner, M.; Massey, D.; Podesta, G. "Simulating Coupled Land-Cover Decisions and Water Table Dynamics in Flat Agricultural Landscapes." Conference on Complex Systems, Tempe, AZ; October 2015.

Zellner, M.L., Massey, D.; Shiftan, Y.; Levine, J.; Arquero, M. J. "Overcoming the last-mile problem with transportation and land-use improvements: An agent-based approach." Association of Collegiate Schools of Planning Conference, Philadelphia, PA, October 2014.

Zellner, M.L., Campbell, S.; "New Tools for Deep-Rooted Problems: Using Complex Systems to Decode and Plan for Wicked Problems in Socio-Ecological Systems." Wicked Problems in Socio-Ecological Systems Symposium & Workshop, Berkeley, CA, October 2013.

Zellner, M.L., Massey, D.; Shiftan, Y.; Levine, J.; Arquero, M. J. "Overcoming the last-mile problem with transportation and land-use improvements: An agent-based approach." Conference on Agent-Based Modeling in Transportation Planning and Operations, Blacksburg, VA, September 2013.

Zellner, M. L.; Hoch, C.; Milz, D.; Lyons, L.; Radinsky, J.; Domoracki, L.; Weizeorick, J.; Schneider, A.; "Visualization for participatory environmental planning: How stakeholders (cannot) resolve the dissonance between complexity and beliefs." Association of American Geographers, Los Angeles, CA, April 2013.

Zellner, M. L.; Hoch, C.; Milz, D.; Lyons, L.; Radinsky, J.; Domoracki, L.; Weizeorick, J.; Schneider, A.; "Visualization for participatory environmental planning: How stakeholders (cannot) resolve the dissonance between complexity and beliefs." Association of Collegiate Schools of Planning Conference, Cincinnati, OH, November 2012.

Zellner, M. L.; Hoch, C.; Milz, D.; Domoracki, L.; Lyons, L.; Radinsky, J.; "Visualization for participatory environmental planning: How stakeholders (cannot) resolve the dissonance between complexity and beliefs." Illinois Water Conference, Urbana-Champaign, IL, September 2012.

Zellner, M. L.; Campbell, S.; "New Tools for Deep-Rooted Problems: Using Complex Systems to Decode Wicked Problems." Association of Collegiate Schools of Planning Conference, Salt Lake City, UT, October 2011.

Zellner, M. L.; Lyons, L.; Hoch, C.; Weizeorick, J.; Kunda, C.; Milz, D.; "Playing, Learning and Planning Together: An Application of Participatory Agent-Based Modeling to Environmental Planning." Association of Collegiate Schools of Planning Conference, Salt Lake City, UT, October 2011.

Zellner, M. L.; Lyons, L.; Hoch, C.; Weizeorick, J.; Kunda, C.; Milz, D.; "Resilience in Groundwater Management: Learning and Planning through Participatory Modeling." Resilience, Phoenix, AZ, March 2011.

Silva Ardila, D.; Zellner, M.L.; Aguilera, A.; Fernandez, L.; "Informal Land Markets in Urban Peripheries in Latin America: Agent Behavior, Price Formation and Land Use Changes." Global Land Project Open Science Meeting, Tempe, AZ, 2010.

Zellner, M. L.; Reeves, H. W.; "Examining the contradiction in 'sustainable urban growth': An example of groundwater sustainability." Global Land Project Open Science Meeting, Tempe, AZ, 2010.

Massey, D.; Zellner, M. L.; et al.; "How Effective is Green Infrastructure for Stormwater Management?" Association of Collegiate Schools of Planning Conference, Minneapolis, MN, October 2010.

Zellner, M. L.; Aguilera, A.; "A Conceptual Framework for the Study of Land Use Change in Mexican Cities." Association of American Geographers Annual Meeting, Washington, DC, April 2010.

Zellner, M. L.; Hoch, C. J.; Welch, E. W.; "Leaping Forward: Building resilience by communicating vulnerability." Panelist at special session on Planning For Resilience to Catastrophic Events: Resilience and Communicative Action, Association of Collegiate Schools of Planning Conference, Crystal City, VA, October 2009.

Zellner, M. L.; Reeves, H. W.; "To Couple or Not To Couple: Integrating Land-Use and Groundwater Modeling for Policy Analysis." University Consortium on Water Resources Conference, Chicago, IL, July 2009.

Zellner, M. L.; Hoch, C. J.; Welch, E. W.; "Leaping Forward: Building resilience by communicating vulnerability." Urban Affairs Conference, Chicago, IL, March 2009.

Zellner, M. L., Reeves, H. W.; "To Couple or Not To Couple: Integrating Land-Use and Groundwater Modeling for Policy Analysis." ACSP/AESOP Planning Congress, Chicago, IL, July 2008.

Zellner, M. L., Reeves, H. W.; "Policy implications of urbanization impacts on groundwater sustainability." Association of American Geographers Annual Meeting, Boston, MA, April 2008.

Zellner, M. L., T. L. Theis, A. T. Karunanithi, A. S. Garmestani, and H. Cabezas; "New Frameworks for Urban Sustainability Assessments: Linking Complexity, Information and Policy." Association of Collegiate Schools of Planning Conference, Milwaukee, WI, October 2007.

Zellner, M. L.; Theis, T. L.; "New Frameworks for Urban Sustainability Assessments: Linking Complexity, Information and Policy." International Society for Industrial Ecology, Toronto, Canada, June 2007.

Zellner, M. L.; "Planning With(in) Complexity: Using Agent-Based Models to Cope with Uncertainty in Water Management." Association of Collegiate Schools of Planning Conference, Ft. Worth, TX, November 2006.

Zellner, M. L.; "Planning With(in) Complexity: Using Agent-Based Models to Cope with Uncertainty in Water Management." Illinois Water, Urbana-Champaign, IL; October 2006.

Zellner, M. L.; "Generating policies for sustainable water use: An application of agent-based modeling to integrated resource-use planning." Association of American Geographers Annual Meeting, Chicago, IL; March 2006.

Zellner, M. L.; "Generating Policies for Sustainable Water Use in Complex Scenarios: An Integrated Land-Use and Water-Use Model of Monroe County, Michigan." Association of Collegiate Schools of Planning Conference, Kansas City, MO; October 2005.

Zellner, M. L.; "Generating Policies for Sustainable Water Use in Complex Scenarios: An Agent-Based Model of a Monroe County, Michigan." GeoComputation, Ann Arbor, MI; August 2005.

Zellner, M. L.; Page, S. E.; Rand, W.; Brown, D. G.; Nassauer, J., Robinson, D.; "The emergence of zoning policy games in exurban jurisdictions." Association of American Geographers Annual Meeting, Denver, CO; April 2005.

Zellner, M. L.; "Generating Policies for Sustainable Water Use in Complex Scenarios: A Simple Agent-Based Model of a Michigan County." Association of Collegiate Schools of Planning Conference, Portland, OR; October 2004.

Zellner, M. L.; Rand, W.; Brown, D. G.; Nassauer, J.; Low, B.; An, L.; Riolo, R. L.; Page, S. E.; Robinson, D. T.; "The Effects of Heterogeneous Development Density Regulations on Exurban Development." Association of American Geographers Centennial Meeting, Philadelphia, PA; March 2004.

Service

Selected Service to the Profession

External advisor

TMDL Analysis and Modeling Task Committee of the American Society of Civil Engineers Environmental and Water Resource Institute (ASCE-EWRI) — 2022 - present

Scientific committee for First Virtual LatinAmerican Simposium of Computational Social Science and Complexity — 2023

Scientific Committee Member, Ibero-American Symposium on Computational Sociology, Ibero-American Network of Computational Sociology — 2021

Scientific Committee Member, Agent-Based Modeling Conference 2017 — 2017

Co-Chair, Human Dimensions Focus Research Group of the Community Surface Dynamics Modeling System (CSDMS) — 2016 - present

Elected Executive Committee Member, Network for Computational Modeling for SocioEcological Science (ComSES) — 2016 - present

Conference, workshop, and seminar organizer

Annual CSDMS Conference — 2023

- Conference organizational committee member

National Council for Science and the Environment Winter Conference — 2019

- Co-organizer of session on Participatory Modeling

European Conference on Complex Systems — 2015 - 2016

- Co-organizer of session on Agricultural Landscapes as Complex Systems
- Co-organizer of session on The Anthropogenic Earth System

Inter American Institute for Global Change Research — 2014

- Co-organizer and Instructor of Professional Development Seminar on Modeling Strategies and Decision-Support Tools for the Management of Complex Socio-Ecological Systems, Guatemala and Panama.

UIC Big Data Workshops — 2013 - 2014

- Co-organizer, co-editor and reviewer of Big Data Urban Informatics workshops.

American Planning Association — 2013, 2019

- Co-organizer of complexity session in APA Conference, and panel on Robbins project (IL Chapter)

Illinois Water Association — 2012

- Co-organizer and chair of New Tools, Data and Protocols for Water Planning: Opportunities and Challenges

Association of American Geographers — 20006 – 2009, 2018

- Co-organizer of complexity sessions and special panels

Invited workshop participant

Performing Public Participation (Social Science and Humanities Research Council of Canada, SSHRC): Reinvigorating a Critical Research Agenda for Urban Planning and Public Policy, Toronto Metropolitan University.	2022
Urban Sustainability workshops (NSF) • Northwestern University, IL Center for Urban Resilience and Sustainability • University of Texas - Austin	2019
University of Chicago Mansueto Institute for Urban Innovation, Fighting Urban Heat with Green: Adaptation and Mitigation Strategies	2019
SESYNC Modeling Socio-Environmental Systems	2018
Agent-Based Modeling Conference 2017	2017
US EPA Urban Sustainability Assessment and Management Workshops	2016
SESYNC Participatory Modeling for Action-Oriented Outcomes	2016 - 2018
Data science approaches and challenges to understand and innovate for FEW Nexus (NSF)	2015
Spatial Land Use Change and Ecological Effects: Land Markets, Land Management, and Land Carbon in Exurban Environments (NSF)	2014
The Aberdeen Global Land Project, SLUCE 2 (NSF)	2009

Book and book chapter reviewer

Wiley & Sons	2014
Routledge	2012 – 2013

Grant reviewer

NJ Sea Grant	2025
Iowa Water Center	2020
University of Wisconsin Water Resource Institute (WRI)	2013
National Science Foundation, SBE and CISE programs	2010, 2011, 2014, 2015, 2019, 2023, 2024
Research Foundation National, South Africa	2010
Central Michigan University, Early Career Investigator	2010

University Service

Northeastern University — Boston, MA

Co-Director of NULab for Digital Humanities and Computational Social Science	2022 - present
Program Director of Master of Science in Urban Informatics, School of Public Policy and Urban Affairs	2022 - present
NU representative, Global Council for Science and the Environment (GCSE) Leaders Alliance	2021 - present
NU primary contact, University Consortium for Geographic Information Science (UCGIS)	2021 - present
Director of Participatory Modeling and Data Science, College of Social Sciences and Humanities	2021 - present

University of Illinois at Chicago — Chicago, IL

Member, UIC Provost's Data Science Committee	2018-2020
UIC representative, IL Center for Urban Sustainability (IL CURES)	2017-2020
UIC representative, National Council for Science and the Environment (NCSE) Council of Environmental Deans and Directors	2017-2020
Steering Committee member, UIC Stormwater Planning	2017-2020
Director, Urban Data Visualization Lab	2016-2020
Committee member, Chancellor's Committee on Sustainability and Energy	2016-2020
Steering Committee member, Sustainability Strategic Thinking	2012-2014
Member, Vice Chancellor for Research's Urban Resilience and the Global Environment Advisory Council	2010-2011
Steering Committee member, Institute for Environmental Science and Policy	2006-2020
Steering Committee member, Landscape, Ecological, Anthropogenic Processes (NSF-IGERT)	2006-2011

Selected Service to the Community

Participatory Action Research Network — Boston

Member 2025 - present

Voceros Program — City of Buenos Aires, Argentina

Honorary Spokesperson, Boston 2021 - 2024

Honorary Spokesperson, Chicago 2017 - 2020

Metropolitan Water Reclamation District of Greater Chicago

Member, Advisory Committee for Stormwater Master Planning 2018-2020

Calumet Stormwater Collaborative

Member, Advisor to Modeling Group and to Policy and Planning 2014 - 2020

Chicago Metropolitan Agency for Planning

Alternate/Member, Environmental and Natural Resources Committee 2007 - 2015

American Planning Association

Advisory Committee Member, Incorporating Local Climate Science to Help Communities Plan for Climate Extremes 2016 - 2018

Selected Speaking and Training Invitations

"Modeling, Learning and Planning Together for Socio-Environmental Transformation." Invited speaker, Participatory Action Research Network – Boston; October 2025.

"Participatory modeling for collaborative and equitable planning: From potential to realization." Invited speaker, MITRE Corporation; September 2024.

"Participatory socio-ecological systems modeling for policy and infrastructure design." Invited speaker, ASCE Technical Committee; August 2023.

"Climate Action Program." Invited panelist, Earth Day 50 United Nations Association Chicago; April 2020.

"Participatory complex systems modeling for environmental planning: Opportunities and barriers to learning and policy innovation." Dept. of Interior Webinar; September 2019.

"How Effective is Green Infrastructure for Stormwater Management?" Invited speaker; Chicago Build Expo, Chicago, IL; September 2019.

"Climate, Biodiversity and People." Invited panelist, French-American Climate Talk – Biodiversity (FACT-B); Chicago, IL; June 2019.

"Designing and implementing a green infrastructure plan for the UIC Campus." Calumet Stormwater Collaborative; Chicago, IL; May, 2019. With Dean Massey.

"The Landscape Green Infrastructure Design (L-GrID) Model." Christopher B. Burke Engineering; Rosemont, IL; March, 2019. With Dean Massey.

"Participatory modeling for stormwater planning and economic development" Calumet Stormwater Collaborative; Chicago, IL; October 2018.

"How Effective is Green Infrastructure for Stormwater Management?" Stormwater Management Training for Practical Implementation, Delta Institute, Hazel Crest, IL; March 9, 2018.

"Collaborative Modeling and Planning for Water Resources Management." Northwest Water Planning Alliance; Elgin, IL; January, 2017.

"How Effective is Green Infrastructure for Stormwater Management?" US Army Corps of Engineers; Chicago, IL; April, 2017.

"Participatory modeling for stormwater management and planning." Invited speaker to the Sea Grant Stormwater/Green Infrastructure Community of Practice Webinar; April 2016.

"How Effective is Green Infrastructure for Stormwater Management?" Chicago Metropolitan Agency for Planning, Chicago, IL, September 2015.

"How Effective is Green Infrastructure for Stormwater Management?" Calumet Stormwater Collaborative, Chicago, IL, August 2015.

"Overcoming the last-mile problem with transportation and land-use improvements: An agent-based approach." Invited speaker to NEPA Workshop for Illinois Association of Environmental Professionals; Chicago, IL; November 2014.

"Improving the environment doesn't take *that* much..." Pint of Science; Chicago, Illinois, May, 2014.

"Participatory Modeling and Planning for Sustainable Water Management in McHenry County." Invited Panelist to Workshop on Groundwater Protection: Sustainability in the Face of Development, Delta Institute; Woodstock, IL; May 2011.

Editorial Service

Journal reviewer

Advances in Water Resources
BioScience
Cities and the Environment
Computers, Environment and Urban Systems
Current Opinion in Chemical Engineering
Current Opinion in Environmental Sustainability
Ecological Modelling
Ecology and Society
Environment and Planning B
Environmental Modelling and Software
Environmental Planning and Management
Environmental Science and Policy
International Journal of Geographic Information Science
International Journal of Society Systems Science
International Journal of Environmental Research and Public Health
International Journal of Transportation
Journal of the American Water Resources Association
Journal of Artificial Societies and Social Simulation
Journal of Applied Geography
Journal of Ecological Economics
Journal of Environmental Development
Journal of Environmental Engineering
Journal of Hydrology
Journal of Planning Education and Research
Journal of Planning Literature
Journal of Urban Technology
Land
Landscape and Urban Planning
Landscape Research
Land Use Science
Nature Cities
Papers in Regional Science
PLOS ONE
Progress in Human Geography
Socio-Environmental Systems Modelling (SESMO)
The Open Environmental Sciences
Transportation
Urban Affairs Review
URISA

Editorial boards and Guest editorship

Comunidad Editora Latinoamericana
Environment and Planning B
Land
Landscape and Urban Planning
The International Journal of Society Systems Science

Selected Awards, Scholarships and Distinctions

Northeastern University

Heart of CommUNITY Collaboration Award: Data Theater Collaborative with LivableStreets Alliance 2024

American Institute of Architects

College of Fellows Latrobe Prize: CommonSENSES Project 2022

American Planning Association

Inaugural Academic Tech Innovator Award: Eco-Collage Participatory Modeling 2017

University of Illinois at Chicago

Great Cities Institute Scholar 2009 - 2010

University of Michigan

Rackham Graduate School Dissertation Fellowships 2004 - 2005

Academic Achievement Award, Master's in Urban Planning 2000

Jorge M. Perez Fellowship, Urban and Regional Planning Program 1998

City of Miami Beach

Mayor's Certificate of Appreciation for the Indian Creek Greenway Project 1999

Argentine Ministry of Culture and Education

Office of International Cooperation Scholarship 1998 - 2000

Other Competencies

Foreign Languages

Bilingual English / Spanish speaker

Understanding of Italian, Portuguese and French