

Sara S. Metcalf

Associate Professor of Geography, University at Buffalo

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Education:

UNIVERSITY OF ILLINOIS Urbana-Champaign, IL
Ph.D. in Geography. 2003-2007

Advisor: Bruce Hannon. Committee: Sara McLafferty, Lan Mu, Mark Paich, Jim Westervelt.

Thesis: *Simulating the social dynamics of spatial disparity through neighborhood network evolution.*

SANTA FE INSTITUTE Santa Fe, NM
Complex Systems Summer School. 2004

Projects: *Modeling ourselves: social selection and development in a substantially novel network;*
and: *A postmodern critique of complexity sciences.*

MASSACHUSETTS INSTITUTE OF TECHNOLOGY Cambridge, MA
M.S. degrees in Management and Chemical Engineering. 1999-2001

Advisors: Charles Fine and Jefferson Tester. Siebel Scholar, Leaders for Manufacturing (LFM).

Thesis: *A system dynamics exploration of future automotive propulsion regimes.*

TEXAS A&M UNIVERSITY College Station, TX
B.S. degrees in Chemical Engineering and Biochemistry. 1993-1996

Magna cum Laude, University and Foundation Honors, Engineering Scholars Program (ESP).

Professional Experience:

UNIVERSITY AT BUFFALO Buffalo, NY
Associate Professor of Geography 2013 - present
Assistant Professor of Geography 2007 - 2013

UNIVERSITY OF ILLINOIS Urbana-Champaign, IL
GRA on NSF-HSD grant to study Ecological Boundary Setting 2005 - 2007
NSF GK-12 Teaching Fellow 2004 - 2005
GRA for LEAM (Land-use Evolution & impact Assessment Model) 2003 - 2004

SIMLEARNING
Consultant, modeling for business strategy 2002 - 2003

UTC FUEL CELLS South Windsor, CT
Business and Technology Development 2001 - 2002

GENERAL MOTORS Detroit, MI
Graduate Student Fellow, Strategy Support Center 2000

INTEL CORPORATION Rio Rancho, NM
Process Engineer 1997 - 1999

TEXAS A&M UNIVERSITY College Station, TX
Bioremediation Research Fellow 1995
Oceanography Research Assistant 1993 - 1996

Honors and Awards:

- Faculty Fellow and Proposal Finalist, UB Food Equity Ideas Lab 2017
- Reviewer of the Year, *American Journal of Public Health* 2012
- Dr. Nuala McGann Drescher Diversity award 2010
- UB Civic Engagement and Public Policy (CEPP) Research Fellowship, “Participatory Modeling for Community Agriculture,” with Massachusetts Avenue Project 2010
- University Consortium for GIScience (UCGIS) Junior Faculty award 2009
- Dana Meadows award for best student paper, System Dynamics Society 2005
- Charles S. Alexander fellowship for women in geography 2005-2006
- NSF GK-12 teaching fellowship 2004-2005
- Siebel Scholar award for outstanding academics and leadership 2000
- MIT Leaders for Manufacturing (LFM) fellow 1999-2001
- Texas A&M University and Foundation Honors (magna cum laude) 1996
- Jameson Prize for outstanding essay in Women’s Studies 1996
- GE Faculty of the Future research fellow 1995
- National Merit Semifinalist 1992
- Society of Women Engineers' certificate of merit (science and math) 1992

Professional Service:

American Association of Geographers (AAG)

- Board Member, Urban Geography Specialty Group (2012 – 2014)

Society for Organizational Learning (SoL) Sustainability Consortium

- Facilitator of Women Leading Sustainability (WLS) group

System Dynamics Society (SDS)

- Publications Committee Member
- Publications Strategy Development Team

STEW-MAP (Stewardship Mapping and Assessment Project)

- Advisory Board for New York City 2017 survey

University at Buffalo

- Faculty Senator
- Steering Committee Member, Food Equity Ideas Lab
- Engendering Gardens planning committee, Gender Institute
- External Advisory Board, Institute for Sustainable Transportation & Logistics

University Consortium for Geographic Information Science

- Research Award Committee

Courses Taught:

- Introduction to Human Geography (GEO 102)
- Urban Social Geography (GEO 367)
- Transportation and Society (GEO 419/519)
- Dynamic Modeling of Human and Environmental Systems (GEO 493/593)
- Systems Science Methods for Geography Research (GEO 503)
- Critical Urban Issues (GEO 633)

Research Projects:

Currently Funded Projects

NIH(NIDCR) U56 Award DE027447 in Implementation Science

- **Implementing a Participatory, Multi-level Intervention to Improve Asian American Health.** PI of multi-investigator grant with PIs Drs. Mary Northridge (NYU College of Dentistry) and Chau Trinh-Shevrin (NYU School of Medicine). This study combines community-based participatory research with dynamic modeling to inform implementation of an intervention that leverages community health workers and electronic health records to improve oral health outcomes for Chinese Americans living in New York City. NIH support is provided by the National Institute for Dental & Craniofacial Research (NIDCR). 2017-2019.

National Institute for Mathematical and Biological Synthesis (NIMBioS) & Socio-Environmental Synthesis Center (SESYNC)

- **Integrating Human Risk Perception of Global Climate Change into Dynamic Earth System Models.** This project links models of human risk perceptions of climate change with dynamic earth system models. Effects of these risk perceptions are modeled as they impact human behaviors and governance that affect greenhouse gas emissions. The effects of these emissions on global warming and related extreme events are modeled as they feed back to influence human risk perception. This interdisciplinary working group is developing simulation models using system dynamics, agent-based modeling, and other approaches. A project summary is here: http://www.nimbios.org/workinggroups/WG_risk. Funding from NIMBioS and SESYNC supports travel for working group members to convene 1-2 times per year in Annapolis, MD (SESYNC) and Knoxville, TN (NIMBioS). 2013-2018.

Previously Funded Projects

NIH(NIDCR/OBSSR) R01 Award DE023072 in Systems Science

- **Integrating Social and Systems Science Approaches to Promote Oral Health Equity.** PI of multi-investigator grant with PIs Mary Northridge (NYU) and Carol Kunzel (Columbia University). Responsible for systems science modeling effort integrating system dynamics, agent-based modeling, social networks, and GIScience. Group model-building workshops were held to leverage the interdisciplinary expertise of our research team. Dynamic models were informed by insights from qualitative data consisting of key informant interviews with senior center staff and affiliates of the ElderSmile outreach program, as well as focus group interviews with older racial/ethnic minority adults living in northern Manhattan. NIH support provided by the Office of Behavioral Science & Social Research (OBSSR) and the National Institute for Dental & Craniofacial Research (NIDCR). 2012-2018.

USDA Forest Service Joint Venture 12-JV-11242309-095

- **Integrating the Grey and the Green to Improve Health and Well-Being for Urban Populations.** System dynamics consultant to Mary Northridge (NYU) and Erika Svendsen (USFS). This project supported development of our research program on health benefits from environmental stewardship activities. Specifically, a series of

conceptual models were constructed to frame how grey and green infrastructure may be harnessed to produce community health benefits. 2012-2014.

NIH(NIDCR/OBSSR) R21 Award DE021187 in Systems Science

- **Leveraging Opportunities to Improve Oral Health in Older Adults: A System Dynamics Model for Developing and Prioritizing Interventions, Programs, and Policies.** PI of UB subaward to NYU (Mary Northridge, project PI), in partnership with the ElderSmile program operated by Columbia University's College of Dental Medicine. NIH support from the Office of Behavioral Science & Social Research (OBSSR) and the National Institute for Dental & Craniofacial Research (NIDCR). 2010-2012.

NSF Award 0433165 in Human and Social Dynamics

- **Ecological Boundary-Setting in Mental and Geophysical Models.** PI of UB subaward to Georgia Tech (Bryan Norton, project PI). Examined problem bounding in the context of ecological concerns held by regional stakeholders. Constructed agent-based model to simulate beliefs as mental and cultural models. 2007-2008.

Publication Record

Refereed Journal Articles:

39. Northridge, M., B. Chakraborty, S. Mirzaei Salehabadi, S. Metcalf, C. Kunzel, A. Greenblatt, L. Borrell, B. Cheng, S. Marshall, and I. Lamster. N.D. "Does Medicaid Coverage Modify the Relationship Between Glycemic Status and Teeth Present in Older Adults?" *Journal of Health Care for the Poor and Underserved*. In Press.
38. Kum, S., M. Northridge, and S. Metcalf. 2018. "Using Focus Groups to Design Systems Science Models that Promote Oral Health Equity." *BMC Oral Health* 18(1): 99-110. <http://dx.doi.org/10.1186/s12903-018-0560-0>
37. Jin, Z., M. Northridge, and S. Metcalf. 2018. "Modeling the Influence of Social Ties and Transportation Choice on Access to Oral Healthcare for Older Adults." *Applied Geography* 96: 66-76. <http://dx.doi.org/10.1016/j.apgeog.2018.05.005>
36. Zhang, Q., M. Northridge, Z. Jin, and S. Metcalf. 2018. "Modeling Accessibility of Screening and Treatment Facilities for Older Adults using Transportation Networks." *Applied Geography* 93: 64-75. <http://dx.doi.org/10.1016/j.apgeog.2018.02.013>
35. Northridge, M., S. Metcalf, S. Yi, Q. Zhang, X. Gu, and C. Trinh-Shevrin for the *Implementing a Participatory, Multi-level Intervention to Improve Asian American Health* Research Team. 2018. "A Protocol for a Feasibility and Acceptability Study of a Participatory, Multi-level, Dynamic Intervention in Urban Outreach Centers to Improve the Oral Health of Low-income Chinese Americans." *Frontiers in Public Health* 6 (article 29): 1-20. <http://dx.doi.org/10.3389/fpubh.2018.00029>
34. Estrada, I., C. Kunzel, E. Schrimshaw, A. Greenblatt, S. Metcalf, and M. Northridge. 2018. "'Seniors Only Want Respect': Designing an Oral Health Program for Older Adults." *Special Care in Dentistry* 38(1): 3-12. <http://dx.doi.org/10.1111/scd.12265>

33. Beckage, B., L. Gross, K. Lacasse, E. Carr, S. Metcalf, J. Winter, P. Howe, N. Fefferman, T. Franck, A. Zia, A. Kinzig, and F. Hoffman. 2018. "Linking Models of Human Behaviour and Climate Alters Projected Climate Change." *Nature Climate Change* 8(1):79-84. <http://dx.doi.org/10.1038/s41558-017-0031-7>
32. Tidball, K., S. Metcalf, T. Bain, and T. Elmqvist. 2018. Community-Led Reforestation: "Cultivating the Potential of Virtuous Cycles to Confer Resilience in Disaster Disrupted Social-Ecological Systems." *Sustainability Science* 13(3): 797-813. <http://dx.doi.org/10.1007/s11625-017-0506-5>
31. Chakraborty, B., M. Widener, S. Mirzaei Salehadabi, M. Northridge, S. Kum, Z. Jin, C. Kunzel, H. Palmer, and S. Metcalf. 2017. "Estimating Peer Density Effects on Oral Health for Community-based Older Adults." *BMC Oral Health* 17(1): 166-178. <http://dx.doi.org/10.1186/s12903-017-0456-4>
30. Northridge, M., A. Schenkel, S. Birenz, I. Estrada, S. Metcalf, and M. Wolff. 2017. "'You Get Beautiful Teeth Down There': Racial/Ethnic Minority Older Adults' Perspectives on Care at Dental Schools." *Journal of Dental Education* 81(11): 1273-1282. <http://dx.doi.org/10.21815/JDE.017.085>
29. Greenblatt, A., I. Estrada, E. Schrimshaw, S. Metcalf, C. Kunzel, and M. Northridge. 2017. "Acceptability of Chairside Screening for Racial/Ethnic Minority Older Adults: A Qualitative Study." *JDR Clinical & Translational Research* 2(4): 343-352. <http://dx.doi.org/10.1177/2380084417716880>
28. Northridge, M., M. Shedlin, E. Schrimshaw, I. Estrada, L. De La Cruz, R. Peralta, S. Birdsall, S. Metcalf, B. Chakraborty, and C. Kunzel. 2017. "Recruitment of Racial/Ethnic Minority Older Adults through Community Sites for Focus Group Discussions." *BMC Public Health* 17: 563-572. <http://dx.doi.org/10.1186/s12889-017-4482-6>
27. Northridge, M., I. Estrada, E. Schrimshaw, A. Greenblatt, S. Metcalf, and C. Kunzel. 2017. "Racial/Ethnic Minority Older Adults' Perspectives on Proposed Medicaid Reforms' Effects on Dental Care Access." *American Journal of Public Health* 107(S1): S65-S70. <http://dx.doi.org/10.2105/AJPH.2016.303640>
26. Northridge, M., E. Schrimshaw, I. Estrada, A. Greenblatt, S. Metcalf, and C. Kunzel. 2017. "Intergenerational and Social Interventions to Improve Children's Oral Health." *Dental Clinics of North America* 61: 533-548. <http://dx.doi.org/10.1016/j.cden.2017.02-003>
25. Northridge, M. and S. Metcalf. 2016. "Enhancing Implementation Science by Applying Best Principles of Systems Science." *Health Research Policy and Systems* 14: 74. <http://dx.doi.org/10.1186/s12961-016-0146-8>
24. Northridge, M., S. Kum, B. Chakraborty, A. Port Greenblatt, S. Marshall, H. Wang, C. Kunzel, and S. Metcalf. 2016. "Third Places for Health Promotion with Older Adults: Using the Consolidated Framework for Implementation Research to Enhance Program Implementation and Evaluation." *Journal of Urban Health* 93(5): 851-870. doi: <http://dx.doi.org/10.1007/s11524-016-0070-9>

23. Metcalf, S., S. Birenz, C. Kunzel, H. Wang, E. Schrimshaw, S. Marshall, and M. Northridge. 2015. "The Impact of Medicaid Expansion on Oral Health Equity for Older Adults: A Systems Perspective." *Journal of the California Dental Association* 43(7): 369-377. http://www.cda.org/Portals/0/journal/journal_072015.pdf
22. Marshall, S., E. Schrimshaw, C. Kunzel, S. Metcalf, A. Port Greenblatt, L. De La Cruz, and M. Northridge. 2015. "Evidence from ElderSmile for Diabetes and Hypertension Screening in Oral Health Programs." *Journal of the California Dental Association* 43(7): 379-387. http://www.cda.org/Portals/0/journal/journal_072015.pdf
21. Kum, S., H. Wang, P. Wang, Z. Jin, L. De La Cruz, M. Northridge, C. Kunzel, S. Marshall, and S. Metcalf. 2015. "The ElderSmile [TimeMap](#): Benefits of Connecting Statistics with Time and Place." *American Journal of Public Health* 105(9): 1748-1750. <http://dx.doi.org/10.2105/AJPH.2015.302730>
20. O'Sullivan, D., T. Evans, S. Manson, S. Metcalf, A. Ligmann-Zielinska, and C. Bone. 2015. "Strategic Directions for Agent-based Modeling: Avoiding the YAAWN Syndrome." *Journal of Land Use Science* 11(2): 177-187. <http://dx.doi.org/10.1080/1747423X.2015.1030463>
19. Northridge, M., C. Yu, B. Chakraborty, A. Port, J. Mark, C. Golembeski, B. Cheng, C. Kunzel, S. Metcalf, S. Marshall, and I. Lamster. 2015. "A Community-based Oral Public Health Approach to Promote Health Equity." *American Journal of Public Health* 105(S3): S459-S465. <http://dx.doi.org/10.2105/AJPH.2015.302562>
18. Zia, A., B. Norton, S. Metcalf, P. Hirsch, and B. Hannon. 2014. "Spatial Discounting, Place Attachment, and Environmental Concern: Toward an Ambient-based Theory of Sense of Place." *Journal of Environmental Psychology* 40: 283-295. <http://dx.doi.org/10.1016/j.jenvp.2014.08.001>
17. Widener, M., M. Northridge, B. Chakraborty, I. Lamster, S. Kum, and S. Metcalf. 2014. "Patterns of Chronic Conditions in Older Adults: Exploratory Spatial Findings from the *ElderSmile* Program." *American Journal of Preventive Medicine* 46(6): 643-648. <http://dx.doi.org/10.1016/j.amepre.2014.01.013>
16. Metcalf, S. 2014. "Modeling Social Ties and Household Mobility." *Annals of the Association of American Geographers* 104(1): 40-59. <http://dx.doi.org/10.1080/00045608.2013.846152>
15. Metcalf, S., M. Northridge, M. Widener, B. Chakraborty, S. Marshall, and I. Lamster. 2013. "Modeling Social Dimensions of Oral Health among Older Adults in Urban Environments." *Health Education and Behavior* 40(1S): 63S-73S. <http://dx.doi.org/10.1177/1090198113493781>
14. Widener, M., S. Metcalf and Y. Bar-Yam. 2013. "Agent-based Modeling of Policies to Improve Urban Food Access for Low-income Populations." *Applied Geography* 40: 1-10. <http://dx.doi.org/10.1016/j.apgeog.2013.01.003>
13. Svendsen, E., M. Northridge and S. Metcalf. 2012. "Integrating Grey and Green Infrastructure to Improve the Health and Well-being of Urban Populations." *Cities and the Environment (CATE)* 5(1). <http://digitalcommons.lmu.edu/cate/vol5/iss1/3>

12. Widener, M., S. Metcalf and Y. Bar-Yam. 2012. "Developing a Mobile Produce Distribution System for Low-Income Urban Residents in Food Deserts." *Journal of Urban Health* 89(5): 733-745. <http://dx.doi.org/10.1007/s11524-012-9677-7>
11. Widener, M., M. Horner and S. Metcalf. 2012. "Simulating the Effects of Social Networks on a Population's Hurricane Evacuation Participation." *Journal of Geographical Systems* 15(2): 193-209. <http://dx.doi.org/10.1007/s10109-012-0170-3>
10. Widener, M., Y. Bar-Yam, A. Gros, S. Metcalf and Y. Bar-Yam. 2012. "Modeling Policy and Agricultural Decisions in Afghanistan." *GeoJournal* 78(4):581-599. <http://dx.doi.org/10.1007/s10708-012-9453-y>
9. Widener, M., S. Metcalf, M. Northridge, B. Chakraborty, S. Marshall and I. Lamster. 2012. "Exploring the Role of Peer Density in the Self-reported Oral Health Outcomes of Older Adults: A Kernel Density Based Approach." *Health and Place* 18(4): 782-788. <http://dx.doi.org/10.1016/j.healthplace.2012.04.004>
8. Northridge, M., B. Chakraborty, C. Kunzel, S. Metcalf, S. Marshall and I. Lamster. 2012. "What Contributes to Self-rated Oral Health among Community-dwelling Older Adults? Findings from the ElderSmile Program." *Journal of Public Health Dentistry* 72(3): 235-245. <http://dx.doi.org/10.1111/j.1752-7325.2012.00313.x>
7. BenDor, T., S. Metcalf and M. Paich. 2011. "The Dynamics of Brownfield Redevelopment." *Sustainability* 3(6): 914-936. <http://dx.doi.org/10.3390/su3060914>
6. Widener, M., S. Metcalf and Y. Bar-Yam. 2011. "Dynamic Urban Food Environments: A Temporal Analysis of Access to Healthy Foods." *American Journal of Preventive Medicine* 41(4): 439-441. <http://dx.doi.org/10.1016/j.amepre.2011.06.034>
5. Metcalf, S. and M. Widener. 2011. "Growing Buffalo's Capacity for Local Food: A Systems Framework for Sustainable Agriculture." *Applied Geography* 31(4): 1242-1251. <http://dx.doi.org/10.1016/j.apgeog.2011.01.008>
4. Metcalf, S., E. Wheeler, T. BenDor, K. Lubinski and B. Hannon. 2010. "Sharing the Floodplain: Mediated Modeling for Environmental Management." *Environmental Modelling and Software* 25(11): 1282-1290. <http://dx.doi.org/10.1016/j.envsoft.2008.11.009>
3. Metcalf, S. 2008. "Modeling Boundaries of Concern among Conflicting Stakeholders." *Leadership and Management in Engineering* 8(4): 255-262. [http://dx.doi.org/10.1061/\(ASCE\)1532-6748\(2008\)8:4\(255\)](http://dx.doi.org/10.1061/(ASCE)1532-6748(2008)8:4(255))
2. BenDor, T. and S. Metcalf. 2006. "The Spatial Dynamics of Invasive Species Spread." *System Dynamics Review* 22(1): 27-50. <http://dx.doi.org/10.1002/sdr.328>
1. BenDor, T., S. Metcalf, L. Fontenot, B. Sangunett and B. Hannon. 2006. "Modeling the Spread of the Emerald Ash Borer." *Ecological Modelling* 197(1-2): 221-236. <http://dx.doi.org/10.1016/j.ecolmodel.2006.03.003>

Book Chapters:

- Metcalf, S., E. Svendsen, L. Knigge, H. Wang, H. Palmer, and M. Northridge. 2016. "Urban Greening as a Social Movement." Ch. 15 of *Part 3. Socio-Political Change & Adaptation* in J. Gatrell, R. Jensen, N. Hoalst Pullen, and M. Patterson [eds.], *Urban Sustainability: Policy and Praxis*. Springer series on Geotechnologies and the Environment, vol. 14. pp. 233-248.
- Knigge, L., J. Brimlow, and S. Metcalf. 2016. "Food Hubs: Connecting Small Farmers to Local and Regional Markets." Ch. 11 of *Part 2. Economic Change, Industry, & Sustainable Local Alternatives* in J. Gatrell, R. Jensen, N. Hoalst Pullen, and M. Patterson [eds.], *Urban Sustainability: Policy and Praxis*. Springer series on Geotechnologies and the Environment, vol. 14. pp. 169-184.
- Metcalf, S. 2012. "A Systems Modeling Framework for the Role of Agriculture in a Sustainable Urban Ecosystem." Chapter 2 in N. Reid, J. Gatrell, and P. Ross [eds.], *Local Food Systems in Old Industrial Regions*. London, UK: Ashgate Press. pp. 6-28.
- Bradbury, H. with S. Simington, S. Metcalf, A. Burke, C. Grey, D. Winslow, S. Severn, C. Page, D. Kalule, C. Bragdon, S. Schley, C. Greener, S. Boughan, J. LaValle. 2004. "Webs Rather than Kevlar: Designing Organizational Systems." Chapter 14 in R.J. Boland and F. Collopy [eds.], *Managing as Designing*. Stanford, CA: Stanford University Press. pp. 113-120.

Editorials and Invited Contributions:

- Metcalf, S. and M. Northridge. 2017. Engaging in Systems Science to Promote Health Equity. *SAGE Research Methods Cases*. <http://dx.doi.org/10.4135/9781526410993>
- Metcalf, S. and S. Kum. 2016. "System Dynamics." In N. Castree, M. Goodchild, W. Liu, A. Kobayashi, R. Marston, and D. Richardson [eds.], *International Encyclopedia of Geography: People, the Earth, Environment, and Technology*. Wiley-Blackwell and the American Association of Geographers. <http://dx.doi.org/10.1002/9781118786352.wbieg0936>
- Svendsen, E., G. Baine, M. Northridge, L. Campbell, and S. Metcalf. 2014. "Recognizing Resilience." *American Journal of Public Health* 104(4): 581-583. <http://dx.doi.org/10.2105/AJPH.2013.301848>
- Metcalf, S. and L. Knigge. 2014. Sustainable Agriculture. In B. Warf [ed.], *Oxford Bibliographies Online: Geography*. New York: Oxford University Press. <http://www.oxfordbibliographies.com/view/document/obo-9780199874002/obo-9780199874002-0042.xml>
- Metcalf, S. 2012. Book review of "Reconnecting Markets: Innovative Global Practices in Connecting Small-Scale Producers with Dynamic Food Markets," edited by E. Bienabe, J. Berdegue, L. Peppelenbos, and J. Belt. *Economic Development Quarterly* 26(4): 373-374. <http://dx.doi.org/10.1177/0891242412457484>
- Metcalf, S., M. Northridge and I. Lamster. 2011. "A Systems Perspective for Dental Health in Older Adults." *American Journal of Public Health* 101(10): 1820-1823. <http://dx.doi.org/10.2105/AJPH.2011.300321>

- Northridge, M., M. Glick, S. Metcalf and D. Shelley. 2011. "Public Health Support for the Health Home Model." *American Journal of Public Health* 101(10): 1818-1820. <http://dx.doi.org/10.2105/AJPH.2011.300309>
- Metcalf, S. 2010. "[Models and Modeling](#)." Entry in B. Warf [ed.], *Encyclopedia of Geography*. Thousand Oaks, CA: Sage Publications.
- Bradbury, H. with S. Simington, S. Metcalf, A. Burke, C. Grey, D. Winslow, S. Severn, C. Page, D. Kalule, C. Bragdon, S. Schley, C. Greener, S. Boughan, J. LaValle. 2003. "Webs not Kevlar: Designing Sustainable Organizations." *Reflections: Journal for the Society for Organizational Learning*. Special Issue on Women's Leadership. Summer 4(4): 65-68.

Refereed Proceedings:

- Beckage, B., L. Gross, K. Lacasse, E. Carr, S. Metcalf, J. Winter, P. Howe, N. Fefferman, T. Franck, A. Zia, A. Kinzig, and F. Hoffman. 2018. "Modeling the Importance of Spatial Discordance in Greenhouse Gas Emissions and Climate Impacts on Future Climate Change using a Coupled Climate and Social Model." *Proceedings of the 36th International Conference of the System Dynamics Society*. Reykjavik, Iceland: System Dynamics Society.
- Zia, A., M. Widener, S. Metcalf, and C. Koliba. 2017. "Modeling Voting Decisions in Governance Networks for Agents with Heterogeneous Mental Models and Alternate Network Structures." *Proceedings of the annual conference of the Computational Social Science Society of the Americas*. Santa Fe, NM: Computational Social Science (CSS) Society of the Americas.
- Wang, H., M. Northridge, C. Kunzel, Q. Zhang, S. Kum, J. Gilbert, Z. Jin, and S. Metcalf. 2016. "Modeling Social Capital as Dynamic Networks to Promote Access to Oral Healthcare." *Lecture Notes in Computer Science* Volume 9708, Chapter 12. Washington, DC: International Conference on Social Computing, Behavioral-Cultural Modeling & Prediction and Behavior Representation in Modeling and Simulation (SBP-BRiMS). http://dx.doi.org/10.1007/978-3-319-39931-7_12
- Kum, S., H. Wang, Z. Jin, W. Xu, J. Mark, M. Northridge, C. Kunzel, S. Marshall, and S. Metcalf. 2015. "Boundary Objects for Group Model Building to Explore Oral Health Equity." *Proceedings of the 33rd International Conference of the System Dynamics Society*. Cambridge, MA: System Dynamics Society. <http://www.systemdynamics.org/web.portal?P1302+0>
- Metcalf, S., H. Wang, S. Kum, Z. Jin, P. Wang, M. Widener, C. Kunzel, S. Marshall, and M. Northridge. 2013. "Modeling Social Factors of Oral Health Equity for Older Adults." Extended abstract for poster in R. Pasupathy, S. Kim, A. Tolk, R. Hill & M. Kuhl (Eds.), *Proceedings of the 2013 Winter Simulation Conference*, 3994-3995. Washington, DC: Informs Simulation Society. <http://informs-sim.org/wsc13papers/includes/files/389.pdf>
- Widener, M., M. Horner and S. Metcalf. 2012. "Simulating the Effects of Social Networks on People's Hurricane Evacuation Rates." Proceedings of the 91st Annual Meeting of the TRB, *Transportation: Putting Innovation and People to Work*. Washington, DC: Transportation Research Board.

- Metcalf, S., M. Widener, M. Northridge, M. Paich, S. Marshall and I. Lamster. 2011. "Modeling the Dynamics of Dental Health among Older Adults." *Proceedings of the 29th International Conference of the System Dynamics Society*. Washington, DC: System Dynamics Society.
<http://www.systemdynamics.org/conferences/2011/proceed/papers/P1307.pdf>
- Widener, M., S. Metcalf and Y. Bar-Yam. 2011. "Modeling Food Preference within Urban Environments." In *International Conference on Complex Systems*. Quincy, MA: New England Complex Systems Institute (NECSI).
- Zia, A., C. Koliba, S. Metcalf, M. Widener and J. Sheade. 2011. "Agent Based Models of Cross-Jurisdictional Governance Networks: Simulating the Emergence of Project Prioritization Patterns Under Alternate Policy Regimes and Network Structures." In *COMPACT Work: Challenges Of Making Public Administration and Complexity Theory Work*. Rotterdam, the Netherlands: The American Society for Public Administration (ASPA), Section on Complexity and Network Studies (SCNS), and Erasmus University Rotterdam, research group Governance of Complex Systems (GOCS).
- Metcalf, S. 2010. "Agent-based Simulation of Intra-urban Social Network Structures and Household Mobility." In *Getting to Scale: Planning in Multi-Scale, Functionally Integrated Environments*. Minneapolis, MN: Association of Collegiate Schools of Planning (ACSP).
- Zia, A., S. Metcalf, B. Norton, P. Hirsch and B. Hannon. 2010. "An Ambit Base for Sense of Place: Where We (C)are?" In *Getting to Scale: Planning in Multi-Scale, Functionally Integrated Environments*. Minneapolis, MN: Association of Collegiate Schools of Planning (ACSP).
- Metcalf, S., M. Widener and J. Baker. 2010. "A Systems Modeling Framework for Sustainable Urban Agriculture: Benchmarking Buffalo." In *Local Food Systems in Old Industrial Regions*. Toledo, OH: International Geographical Union (IGU) Commission on the Dynamics of Economic Spaces.
- Metcalf, S. and M. Paich. 2005. "Spatial Dynamics of Social Network Evolution." *Proceedings of the 23rd International Conference of the System Dynamics Society*. Boston, MA: System Dynamics Society.
<http://www.systemdynamics.org/conferences/2005/proceed/papers/METCA487.pdf>
- BenDor, T., S. Metcalf, L. Fontenot and B. Sangunett. 2005. "A Decision Support System for Emerald Ash Borer Eradication Using Spatial-Dynamic Modeling." *Proceedings of the 23rd International Conference of the System Dynamics Society*. Boston, MA: System Dynamics Society.
<http://www.systemdynamics.org/conferences/2005/proceed/papers/BENDO192.pdf>
- BenDor, T. and S. Metcalf. 2005. "Conceptual Modeling and Dynamic Simulation of Brownfield Redevelopment." *Proceedings of the 23rd International Conference of the System Dynamics Society*. Boston, MA: System Dynamics Society.
<http://www.systemdynamics.org/conferences/2005/proceed/papers/BENDO191.pdf>
- BenDor, T., S. Metcalf, V.G. Pallathucheril and B. Hannon. 2005. "The Spread of the Emerald Ash Borer: Modeling the Impacts of Changing Land Use Patterns." In *Beyond the City Beautiful*. Kansas City, MO: Association of Collegiate Schools of Planning (ACSP).

Reports and Non-Refereed Proceedings:

- Ford, D., S. Metcalf, K. Stave, S. Howick, and L. Malczynski. 2016. "System Dynamics Society Publications Strategy." Report of the Publications Strategy Development Team to the Policy Council of the System Dynamics Society. Albany, NY: System Dynamics Society.
- Metcalf, S. and M. Northridge. 2016. "Systems Science Introductory Module." New York, NY: NYU College of Dentistry.
- Widener, M., Y. Bar-Yam, A. Gros, S. Metcalf and Y. Bar-Yam. 2011. "Modeling Policy and Agricultural Decisions in Afghanistan." arXiv:1111.5351. NECSI Report 2011-11-02. Cambridge, MA: New England Complex Systems Institute.
- Bradbury, H., S. Metcalf and S. Schley. 2006. "When Isis Flies: Women Leading Sustainability Through Learning and Intelligent Connection." *Proceedings of the First International Women Leading Sustainability Dialogue*. Portland, OR: SoL Sustainability Consortium.
- Metcalf, S. 2005. "Observer's Report." *Proceedings of Confluence I: Seeking Common Ground for Floodplain Functionality and Development*. Dubuque, IA: The Nature Conservancy.
- Metcalf, S. and J. Clemens. 2005. "After Santa Fe: Updated Connections of a Geographically Dispersed Social Network." Followup study with participants of the 2004 Complex Systems Summer School. Santa Fe, NM: Santa Fe Institute.
- Metcalf, S. and J. Clemens. 2004. "Modeling Ourselves: Social Selection and Development in a Substantially Novel Network." *Proceedings of the 2004 Complex Systems Summer School*. Santa Fe, NM: Santa Fe Institute.
- Champion, B., M. Rodriguez, J. Blakeslee and S. Metcalf. 2004. "A Postmodern Critique of Complexity Sciences." *Proceedings of the 2004 Complex Systems Summer School*. Santa Fe, NM: Santa Fe Institute.
- Metcalf, S. 2004. "LEAM Social Model." Report of the Land-use Evolution and impact Assessment Model. St. Louis, MO: East-West Gateway.

Invited Presentations, Panels, and Workshops:

- Behdad, S., M. Bohm, S. Metcalf, L. Mu, T. Pham, E. Thomas, and S. Muldoon (moderator). Panel on Building Sustainable Solutions. Women in STEM Summit, University at Buffalo. Buffalo, NY: April 18, 2018.
- Freudenheim, J., S. Metcalf, S. Neelamegham, L. Epstein, and L. Bian (moderator). NIH panel hosted by the National Center for Geographic Information and Analysis, and the Office of Research Advancement, University at Buffalo. Buffalo, NY: August 24, 2015.
- Metcalf, S. Qualitative Modeling in Systems Science. Invited talk at the NYU Center for Drug Use and HIV Research. New York, NY: September 18, 2014.
- Ligmann-Zielinska, A., C. Bone, L. Fernandez, M. Zellner, S. Metcalf, D. Brown, and D. O'Sullivan (discussant). Panel on "Learning from Models" as part of the Land Systems Science Symposium. 109th Annual Meeting of the Association of American Geographers. Los Angeles, CA: April 9-13, 2013.

- Metcalf, S. "Agent-Based System Dynamics: Hybrid Models of Urban Health." UB Applied Mathematics Seminar Series. Buffalo, NY: February 26, 2013.
- Metcalf, S. "Buffalo's Local Food and Urban Agriculture Movements." UB Undergraduate Academies. Buffalo, NY: October 4, 2012.
- Metcalf, S. "Integrating the Social and Spatial Dynamics of Older Adults' Participation in an Oral Health Outreach Program." Guest lecturer in the System Dynamics track at the 2012 Institute on Systems Science and Health (ISSH). Social System Design Lab, Brown School of Social Work. Washington University. St. Louis, MO: June 14, 2012.
- Metcalf, S. "The Role of Urban Agriculture in a Local Food System." Invited talk at the Research Roundtable panel on *Rebuilding Community Food Systems: Opportunities for Multidisciplinary Research*, organized by S. Raja with S. Robert, L. Epstein and M. Conard during the Buffalo Food Policy Summit. Buffalo, NY: September 21, 2011.
- Metcalf, S. "Modeling Social Structures to Support Healthy Aging." Invited talk for *Understanding Social Determinants of Health and Reducing Health Inequities*. Third Annual Workshop on Dynamic Modeling for Health Policy. University of Saskatchewan. Saskatoon, Saskatchewan, Canada: July 18-20, 2011.
- Metcalf, S. "Modeling the Local Food Movement: A Civic Engagement with the Massachusetts Avenue Project (MAP)." UB Civic Engagement and Public Policy (CEPP) research fellowship presentation with D. Picard, S. Raja and L. Schneekloth as a discussion panel. Buffalo, NY: November 16, 2010.
- Metcalf, S. "The Treason of Images and the Radical Non-Innocence of 'Just Looking.'" Invited talk and panel session at the *Representing Reality* conference for GIS-IGERT participants. Buffalo, NY: May 15, 2010.
- Dsouza, E., M. Stevens, J. Stevens, E. Sharkey and S. Metcalf. "Urban Agriculture." Panel session with Massachusetts Avenue Project and the Wilson Street Urban Farm at the UB *Power Shift* conference for engaged student citizenship and action to address climate change. Buffalo, NY: April 18, 2010.
- Metcalf, S. "An Agent-Based Exploration of Social Influence on Household Mobility." Civil Engineering Seminar Series, University of Toronto. Toronto, Ontario: March 12, 2010.
- Metcalf, S. "Systems Modeling for Sustainable Cities." UB Environmental Engineering Seminar Series. Buffalo, NY: December 4, 2009.
- Metcalf, S. "Boxes, Bodies, and Botany: Building Agents with Stock-Flow Structures in Models of Human-Environment Interaction." Spatial Analysis Seminar Series, Department of Geography, McMaster University. Hamilton, Ontario, Canada: November 6, 2009.
- Metcalf, S. "Social Interaction and Shifts Toward Sustainable Transportation." Invited talk at the Workshop on *Frontiers in Transportation: Social Interactions*. Niagara-on-the-Lake, Ontario, Canada: August 27-29, 2009.
- Metcalf, S. "Ecological Boundary-Setting in Mental and Geophysical Models." University at Buffalo (UB) GIS-IGERT Seminar Series. Buffalo, NY: February 8, 2008.
- Metcalf, S. "Networks and Neighborhoods." MIT Sloan Operations Management and System Dynamics Seminar Series. Cambridge, MA: March 13, 2006.

- BenDor, T. and S. Metcalf. “A Decision Support System for Emerald Ash Borer Eradication Using Spatial-Dynamic Modeling.” Invited plenary presentation at the 23rd International Conference of the System Dynamics Society. Boston, MA: July 17-21, 2005.
- McDonnell, G., A. Borshchev, N. Osgood, S. Metcalf, H. Rahmandad, M. Heffernan and C. Johnson. “Agent Based Modeling: Why Bother?” Panel workshop at the 23rd International Conference of the System Dynamics Society. Boston, MA: July 17-21, 2005.
- Metcalf, S. “Champions of Sustainability.” Plenary panel conversation at the SoL Forum for Business Innovation in Sustainability. Dearborn, MI: October 11-14, 2004.
- Metcalf, S. with H. Bradbury and S. Schley. “Women Leading Sustainability.” Meeting at the SoL Forum for Business Innovation in Sustainability. Dearborn, MI: October 11-14, 2004.
- Bradbury, H., S. Metcalf and S. Schley. “Women Leading Sustainability.” Concurrent conversation at the SoL Forum for Business Innovation in Sustainability. Dearborn, MI: October 11-14, 2004.
- Metcalf, S. “Women Leading Sustainability.” Facilitated dialogue at the *SoL Sustainability Consortium*. Albany, NY: April 13-15, 2004.
- Metcalf, S. “Future Propulsion Regimes: Thinking About ‘Green’ Powertrain Technologies in an Uncertain World.” *International Motor Vehicle Program (IMVP)*. Cambridge, MA: September 29-30, 2000.

Conference Presentations:

- Jin, Z., M. Northridge, and S. Metcalf. “Modeling Effects of Patients’ Cumulative Experiences with Dental Care on Future Care-Seeking Behaviors.” 114th Annual Meeting of the American Association of Geographers. New Orleans, LA: April 10-15, 2018.
- Gilbert, J., M. Northridge, and S. Metcalf. “Using Qualitative Data to Develop an Agent-Based Model of Oral Health Care for Racial/Ethnic Minority Older Adults.” 114th Annual Meeting of the American Association of Geographers. New Orleans, LA: April 10-15, 2018.
- Zhang, Q., M. Northridge, S. Yi, and S. Metcalf. “Modeling Social Factors to Promote Oral Health Equity.” Annual Meeting of the Middle States Division of the American Association of Geographers. Geneseo, NY: October 20-21, 2017.
- Metcalf, S., L. Knigge, E. Svendsen, H. Palmer, H. Wang, and M. Northridge. “An Integrated Approach to Modeling Adolescent Engagement with Environmental Stewardship Programs.” 113th Annual Meeting of the American Association of Geographers. Boston, MA: April 5-9, 2017.
- Gilbert, J. and S. Metcalf. “Modeling the Social Dynamics of Community Gardens.” 113th Annual Meeting of the American Association of Geographers. Boston, MA: April 5-9, 2017.
- Jin, Z. and S. Metcalf. “Developing Ontology for Agent-Based Modeling.” 113th Annual Meeting of the American Association of Geographers. Boston, MA: April 5-9, 2017.

- Kum, S., M. Northridge, and S. Metcalf. "A Qualitative Systems Science Approach to Agent-based Model Validation." 113th Annual Meeting of the American Association of Geographers. Boston, MA: April 5-9, 2017.
- Zhang, Q., J. Gilbert, Z. Jin, M. Northridge, H. Wang, C. Kunzel, and S. Metcalf. "Modeling the Dynamics of Oral Health Disparities in Aging Adult Populations." 113th Annual Meeting of the American Association of Geographers. Boston, MA: April 5-9, 2017.
- Jin, Z., J. Gilbert, S. Kum, Q. Zhang, H. Wang, C. Kunzel, M. Northridge, and S. Metcalf. "Modeling Multi-Scalar Factors of Oral Health Equity for Older Adults." 112th Annual Meeting of the American Association of Geographers. San Francisco, CA: March 29 - April 2, 2016.
- Zhang, Q. and S. Metcalf. "Modeling the Accessibility of Healthcare Facilities to Older Adults in Urban Areas." 112th Annual Meeting of the American Association of Geographers. San Francisco, CA: March 29 - April 2, 2016.
- Zia, A., N. Fefferman, P. Howe, S. Metcalf, T. Franck, K. Lacasse, F. Hoffman, J. Winter, A. Schlosser, B. Beckage, and L. Gross. "Modeling the Effects of Heterogeneous Climate Change Risk Perceptions on Energy Consumption and Greenhouse Gas (GHG) Mitigation Behaviors: An Agent Based Model of US Population, 2010-2030." SwarmFest 2015: Agent-based Simulation and the Study of Complexity. Columbia, SC: July 10-12, 2015.
- Jin, Z., M. Northridge, H. Wang, C. Kunzel, S. Kum, and S. Metcalf. "The Influence of Social Support and Transportation on Older Adults' Access to Oral Healthcare." 110th Annual Meeting of the Association of American Geographers. Chicago, IL: April 21-25, 2015.
- Metcalf, S. "Modeling Urban Health and Behavior at the Intersection of Social, Natural, and Built Environments." 109th Annual Meeting of the Association of American Geographers. Los Angeles, CA: April 9-13, 2013.
- Widener, M., M. Northridge, B. Chakraborty, S. Marshall, I. Lamster, S. Kum, and S. Metcalf. "Detecting Spatial Patterns of Diabetes and Hypertension in Older Adults using Oral Screening Data." 109th Annual Meeting of the Association of American Geographers. Los Angeles, CA: April 9-13, 2013.
- Metcalf, S. "Modeling Disparities in Urban Health Access at Multiple Scales." System Dynamics Winter Camp. Austin, TX: January 4-5, 2013.
- Metcalf, S., M. Widener, M. Northridge, S. Marshall and I. Lamster. "Modeling Social Dimensions of Oral Health among Older Adults in Urban Environments." The 108th Annual Meeting of the Association of American Geographers. New York City, NY: February 24-28, 2012.
- Zia, A., C. Koliba, S. Metcalf and M. Widener. "Agent Based Models of Cross-Jurisdictional Governance Networks: Simulating the Emergence of Project Prioritization Patterns Under Alternate Policy Theoretical Frameworks and Network Structures." The 11th Biannual *Public Management Research Association Conference*. Maxwell School of Citizenship and Public Affairs, Syracuse University, Syracuse, NY. June 2-4, 2011.

- Metcalfe, S., M. Widener, M. Northridge, B. Chakraborty, S. Marshall and I. Lamster. "Simulating Access to Oral Health Intervention Opportunities for Urban Seniors." Presented at the 107th Annual Meeting of the Association of American Geographers. Seattle, WA: April 12-16, 2011.
- Metcalfe, S., M. Widener, M. Northridge, B. Chakraborty, S. Marshall and I. Lamster. "Modeling Ways to Improve Oral Health in Older Adults." Presented at the *System Dynamics Winter Camp*. Austin, TX: January 7-8, 2011.
- Metcalfe, S., M. Widener, M. Northridge, B. Chakraborty and I. Lamster. "Systems Modeling to Identify Oral Health Interventions for Older Adults." Presented at *Modeling for Public Health Action: From Epidemiology to Operations*. Atlanta, GA: December 9-10, 2010.
- Widener, M., S. Metcalfe, M. Northridge, B. Chakraborty, I. Lamster and S. Marshall. 2010. "A Systems Modeling Approach for Improving Oral Health Outcomes in Older Adults." Presented at the System Dynamics Society PhD Colloquium. Albany, NY: October 29, 2010.
- Widener, M. and S. Metcalfe. "Planting Place: Examining Spatial Meanings in Post-Industrial Cities through Reactions to Urban Agriculture." Presented at the Urban Agriculture session of the 106th Annual Meeting of the Association of American Geographers. Washington, DC: April 14-18, 2010.
- Metcalfe, S. and M. Widener. "S(t)imulating (S)pace: Cultivating a Postmodern Geographic (Con)science." Presented at the Complexity session of the 106th Annual Meeting of the Association of American Geographers. Washington, DC: April 14-18, 2010.
- Zia, A., S. Metcalfe and M. Widener. "Management of Complex Governance Networks: Opportunities and Challenges for Agent Based Models of Policy Analysis." Presented to the *American Society for Public Administration*. San Jose, CA: April 9-13, 2010.
- Metcalfe, S. "Moving Beyond Automata: Critical Thinking and Computer Models." Presented at the 105th Annual Meeting of the Association of American Geographers. Las Vegas, NV: March 22-27, 2009.
- Metcalfe, S. and M. Paich. "A Retrospective Assessment of Insights from a Model of the Transition to Alternative Vehicle Propulsion Technologies." Presented at the *System Dynamics Winter Camp*. College Station, TX: January 9-10, 2009.
- Metcalfe, S., D.-J. Kim, Y. Yang and P. Hirsch. "Modeling Mental and Cultural Models of Shared Resource Concerns." Presented at the 104th Annual Meeting of the Association of American Geographers. Boston, MA: April 15-19, 2008.
- Metcalfe, S. "Designing a Network of Women Leading Sustainability to Confront Uncertainty." Presented at the 14th Annual MIT *Leaders for Manufacturing (LFM) Alumni Conference*. Seattle, WA: October 10-11, 2007.
- Metcalfe, S. "Networks and Neighborhoods: Calibrating an Agent-Based Model of Social Influence on Community Structure." Presented at the 103rd Annual Meeting of the Association of American Geographers. San Francisco, CA: April 17-21, 2007.

- Metcalf, S. "Networks and Neighborhoods: Calibrating Agents to Create Robust System Dynamics of Community Structure." Presented at the *System Dynamics Winter Camp*. Austin, TX: January 5-6, 2007.
- Metcalf, S. "Exploring Spatial Disparity with an Agent-Based Model of Neighborhood Network Evolution." Presented at the 102nd Annual Meeting of the Association of American Geographers. Chicago, IL: March 7-11, 2006.
- Metcalf, S. "With Space in Mind: Simulating Social Influence on Perceptions of Place." Presented at the 101st Annual Meeting of the American Association of Geographers. Denver, CO: April 5-9, 2005.
- Metcalf, S. "Beyond Automata: The Challenge of Modeling Ourselves." Presented at the 11th Annual *Critical Geography Mini-Conference*. Terra Haute, IN: October 2-3, 2004.
- Metcalf, S., T. BenDor, B. Deal and V.G. Pallathucheril. "Regional Modeling and the Role of Brownfields Redevelopment in Land-Use Transformation." Educational session at *Brownfields 2004: Gateway to Revitalization*. St. Louis, MO: September 20-22, 2004.
- Metcalf, S. "Dynamics of Urban Decline: Spatial Analysis of the Patterns of Decline in the St. Louis Metropolitan Area." Presented at the 100th Annual Meeting of the Association of American Geographers. Philadelphia, PA: March 14-19, 2004.

Poster Presentations:

- Zhang, Q., M. Northridge, S. Yi, and S. Metcalf. "Modeling Multi-Level Factors to Promote Oral Health Equity for Chinese Americans." 114th Annual Meeting of the American Association of Geographers. New Orleans, LA: April 10-15, 2018.
- Zhang, Q. and S. Metcalf. "Sensitivity Analysis of an Agent-Based Model of Healthcare Accessibility." ABM 2017: Agent-Based Models in the Social, Human-Environment, and Life Sciences. San Diego, CA: April 20-22, 2017.
- Jin, Z. and S. Metcalf. "Using Ontology for Structural Validation of Agent-based Models." ABM 2017: Agent-Based Models in the Social, Human-Environment, and Life Sciences. San Diego, CA: April 20-22, 2017.
- Northridge, M., I. Estrada, E. Schrimshaw, A. Greenblatt, S. Metcalf, and C. Kunzel. "The Views of Older Adults on Medicaid Reforms are Critical." 2017 IADR/AADR/CADR General Session & Exhibition. San Francisco, CA: March 22-25, 2017.
- Northridge, M., C. Kunzel, and S. Metcalf. "How a Systems Science Perspective Expands our Ability to Investigate Social Dimensions of Health-Seeking Behaviors that Promote Oral Health Equity for Older Adults." NIH Office of Behavioral and Social Sciences Research (OBSSR) 20th Anniversary Celebration. Washington, DC: June 24-25, 2015.
- Kunzel, C., B. Cheng, M. Northridge, S. Metcalf, E. Lalla, S. Marshall, and I. Lamster. "Identifying Seniors with Unrecognized Diabetes at Community-based Oral Health Screenings." IADR/AADR/CADR General Session and Exhibition. Boston, MA: March 11-14, 2015.

- Kum, S., M. Northridge, H. Wang, C. Kunzel, S. Marshall, M. Widener, P. Wang, Z. Jin, and S. Metcalf. "Spatial Systems Science for Oral Health Promotion among Older Adults." Annual Meeting of the American Public Health Association. New Orleans, LA: November 15-19, 2014.
- Northridge, M., C. Yu, B. Chakraborty, A. Port, J. Mark, C. Golembeski, B. Cheng, C. Kunzel, S. Metcalf, S. Marshall, and I. Lamster. "A Community-based Oral Public Health Approach to Promote Health Equity." Annual Meeting of the American Public Health Association. New Orleans, LA: November 15-19, 2014.
- Widener, M., M. Northridge, P. Wang, S. Kum, Z. Chen, S. Marshall, and S. Metcalf. "Using Agent-based Modeling to Develop Strategies for Maximizing Participation in an Oral Health Screening Program for Older Adults in Northern Manhattan." 15th International Symposium in Medical/Health Geography. Lansing, MI: July 7-12, 2013.
- Metcalf, S., T. BenDor, E. Wheeler, K. Lubinski and B. Hannon. "Process as Product: Seeking Common Ground for Floodplain Functionality and Development." Presented at the *International Conference of Rivers and Civilization: Multidisciplinary Perspectives on Major River Basins*. LaCrosse, WI: June 25-28, 2006.
- Whiting, R., S. Metcalf and E. Lyon. "The Grain Game: Learning by Doing." Presented at the 102nd Annual Meeting of the Association of American Geographers. Chicago, IL: March 7-11, 2006.
- Metcalf, S. "Forces That Drive Us Apart: Simulating the Mutual Influence of Mental Maps and Social Networks on Neighborhood Choice." Presented at the 23rd International Conference of the System Dynamics Society. Boston, MA: July 17-21, 2005.
- Metcalf, S. "Changing St. Louis: An Exploration of St. Louis Regional Demographic Shifts from 1970 to 2000." Presented at the 4th Annual UIUC *Earth Research Review*. Urbana, IL: April 29, 2005.
- Metcalf, S. "LEAM Social Model." Presented for the Land-use Evolution and impact Assessment Model at the East-West Gateway. St. Louis, MO: May 21, 2004.