

Sara S. Metcalf

Assistant 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).

Peer-Reviewed Manuscripts in Refereed Journals:

Widener, M., S. Metcalf and Y. Bar-Yam. Forthcoming. "Improving Underserved Urban Residents' Access to Healthy Foods: A Mobile Produce Distribution System Approach." *Journal of Urban Health*.

Widener, M., Y. Bar-Yam, A. Gros, S. Metcalf and Y. Bar-Yam. Forthcoming. "Modeling Policy and Agricultural Decisions in Afghanistan." *GeoJournal*.

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*.
<http://dx.doi.org/10.1016/j.healthplace.2012.04.004>

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*.
<http://dx.doi.org/10.1111/j.1752-7325.2012.00313.x>

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.

- 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.
- BenDor, T., S. Metcalf and M. Paich. 2011. "The Dynamics of Brownfield Redevelopment." *Sustainability* 3(6): 914-936.
- 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.
- Metcalf, S. 2008. "Modeling Boundaries of Concern among Conflicting Stakeholders." *Leadership and Management in Engineering* 8(4): 255-262.
- BenDor, T. and S. Metcalf. 2006. "The Spatial Dynamics of Invasive Species Spread." *System Dynamics Review* 22(1): 27-50.
- 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.

Editorials, Book Chapters, and Invited Contributions:

- Metcalf, S. 2012. "A Systems Modeling Framework for the Role of Agriculture in a Sustainable Urban Ecosystem." Chapter 2 in N. Reid and J. Gatrell [eds.], *Local Food Systems in Old Industrial Regions*. London, UK: Ashgate Press.
- 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.
- 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.
- 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. 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.
- 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:

- 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 Other Publications:

- 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.
<http://arxiv.org/pdf/1111.5351v1>
- Metcalf, S. 2007. *Simulating the Social Dynamics of Spatial Disparity through Neighborhood Network Evolution*. Doctoral dissertation. Urbana, IL: University of Illinois at Urbana-Champaign.
- 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.
- Metcalf, S. 2003. Agent-based demonstration of the Schelling Segregation Model. Example AnyLogic model: http://www.xjtek.com/anylogic/demo_models/47/
- Metcalf, S. 2001. *A System Dynamics Exploration of Future Automotive Propulsion Regimes*. Masters thesis. Cambridge, MA: Massachusetts Institute of Technology.

Invited Presentations, Panels, and Workshops:

- 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:

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.

Metcalf, 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.

Metcalf, 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.

Metcalf, 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. Metcalf, 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. Metcalf. "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.

Metcalf, 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. Metcalf 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.

- Metcalf, 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.
- Metcalf, 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.
- Metcalf, 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.
- Metcalf, 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.
- Metcalf, 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:

- 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.

Honors:

- Dr. Nuala McGann Drescher Diversity award 2010
- University at Buffalo Fellowship in Civic Engagement and Public Policy for work with Massachusetts Avenue Project (MAP) on community agriculture 2010
- University Consortium for GIScience (UCGIS) Junior Faculty award 2009
- Featured Scholar on the Siebel Scholars website 2009
- Dana Meadows award for best student paper, "A Decision Support System for Emerald Ash Borer Eradication Using Spatial-Dynamic Modeling," from the System Dynamics Society 2005
- Charles S. Alexander fellowship for women in geography 2005
- NSF GK-12 teaching fellowship 2004
- Siebel Scholar award for outstanding academics and leadership 2000
- MIT Leaders for Manufacturing (LFM) fellow 1999
- 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

Research:

UNIVERSITY AT BUFFALO

Buffalo, NY

Currently Funded

2010 - 2012

NIH Award 1R21DE021187-01 for Exploratory Research 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 sub-contract to NYU (Mary Northridge, project PI), in partnership with the ElderSmile program operated by Columbia University's College of Dental Medicine. NIH funding from the Office of Behavioral Science & Social Research (OBSSR) and the National Institute for Dental & Craniofacial Research (NIDCR).

Previously Funded 2007 - 2008
NSF Award 0433165 in Human and Social Dynamics

- **Ecological Boundary-Setting in Mental and Geophysical Models.** PI of UB sub-contract 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.

UNIVERSITY OF ILLINOIS **Urbana-Champaign, IL**

Ecological Boundary-Setting in Mental and Geophysical Models
Research Assistant 2005 - 2007

- Examined sense of place in the context of shared resource concerns (e.g., brownfields, water, and urban sprawl) for stakeholders of metropolitan regions.

Land-use Evolution and impact Assessment Model (LEAM)
Research Assistant 2003 - 2004

- Developed a spatial model of the social dynamics at play in urban sprawl.

TEXAS A&M UNIVERSITY **College Station, TX**

Bioremediation Researcher 1995

- Biological degradation of neurotoxins present in chemical warfare stockpiles.

Oceanography Researcher 1993 - 1996

- Environmental contamination of tissue and sediment samples at Superfund sites.

Teaching:

UNIVERSITY AT BUFFALO **Buffalo, NY**

Assistant Professor 2007 - present

- Introduction to Human Geography (GEO 102)
- Urban Social Geography (GEO 367)
- Dynamic Modeling of Human and Environmental Systems (GEO 493/593)
- Critical Urban Issues (GEO 633)

UNIVERSITY OF ILLINOIS **Urbana-Champaign, IL**

NSF GK-12 Teaching Fellow 2004 - 2005

- Taught 9th grade Geography classes, spanning physical and human geography topics.

Teaching Assistant to Bruce Hannon 2004

- Dynamic Simulation of Natural Resource Problems (GEOG/ECON 367).

CROSS-CULTURAL SOLUTIONS **Rajgarh, Himachal Pradesh, India**

Volunteer Science Teacher 2001

- Taught science to 5th through 10th graders at the D.A.V. school in a rural village.

Industry:

Independent Consultant 2002 - 2006

- Dynamic computer modeling for business strategy. Introduced multi-method modeling approaches to several clients.

United Technologies Corporation (UTC) Fuel Cells **South Windsor, CT**
Business and Technology Development 2001 - 2002

- Explored market opportunities for alternative energy fuel cells. Liaison between marketing and engineering to identify fuel cell requirements.

General Motors (GM) Strategy Support Center **Detroit, MI**
Corporate Strategy Development 2000

- Strategic analysis of future automotive propulsion regimes for GM Powertrain using system dynamics scenarios.

Intel Corporation **Rio Rancho, NM**
Process Engineer 1997 - 1999

- Responsible for the quality of dielectric chemical deposition processes. Introduced efficiency savings with recycled test materials and simplified operational procedures.

Professional Development:

- Massachusetts Avenue Project (MAP) Growing Green Spring Urban Agriculture Training. Buffalo, NY. March 11-13, 2011
- AnyLogic Software Workshop. Chicago, IL. July 20-22, 2010
- Poverty Research Workshop. Buffalo, NY. February 26, 2010
- UIUC NSF GK-12 Alumni Workshop. Urbana, IL. August 10-11, 2009
- University Consortium for Geographic Information Science (UCGIS) Summer Assembly. Santa Fe, NM. June 21-23, 2009
- Squaring Off: A New Paradigm for Urban Change. The International Conference on Sustainable Urbanism. College Station, TX. April 1-3, 2007
- First International Dialogue of Women Leading Sustainability. Portland, OR. April 19-20, 2006
- The Nature Conservancy (TNC) Great Rivers Modeling Workshop. Dubuque, IA. August 16-18, 2005
- System Dynamics Winter Camp. Austin, TX. January 7-8, 2005
- Conducted Workshop on Modeling with AnyLogic. Savoy, IL. January 9, 2004
- AnyLogic User Training Seminar. Denver, CO. November 4-7, 2003
- System Dynamics Society (SDS) 21st Annual Conference. New York, NY. July 20-24, 2003
- University Consortium for Geographic Information Science (UCGIS). Pacific Grove, CA. June 16-19, 2003
- System Dynamics Winter Camp. Austin, TX. January 9-10, 2003
- Winter Simulation Conference. San Diego, CA. December 8-11, 2002

Affiliations:

Association of American Geographers (AAG)

- Board Member of Urban Geography Specialty Group (2012 - 2014)

System Dynamics Society (SDS)

New England Complex Systems Institute (NECSI)

University Consortium for Geographic Information Science (UCGIS)

Society for Organizational Learning (SoL) Sustainability Consortium

- Facilitator of Women Leading Sustainability (WLS) dialogue (2003 – 2008)
Western New York Environmental Alliance (WNYEA)
- Participant in the Buffalo (WNYEA) Growing coalition, which is the Food, Agriculture, and Community Gardens Working Group of WNYEA
Wilson Street Urban Farm Community Supported Agriculture (CSA) participant

Service:

UB activities:

- Faculty Senate (2011 – 2014)
- Planning committee, UB Gender Institute Engendering Gardens Initiative
- UB2020 Civic Engagement & Public Policy Fellowship with Massachusetts Avenue Project (MAP)
- Faculty Research Panel at the New Faculty Orientation
- Academic Marshall for College of Arts and Sciences graduation ceremony

UIUC activities:

- Geography Graduate Students Association (GGSA) president
- Gamma Theta Upsilon, geography honors society
- East St. Louis Action Research Project (ESLARP) volunteer

MIT activities:

- LFM/LGO Alumni “Best Thesis” Reviewer
- Sloan Alumni Class of 2001 Reunion committee member
- Women of LFM/LGO affinity group
- Sloan Student Senator
- LFM Knowledge Transfer and Internship committees
- Peer counseling volunteer with Nightline, the telephone hotline for students

Texas A&M activities:

- Society for Women Engineers (SWE) historian
- National Organization for Women

Cross-Cultural Solutions volunteer in Rajgarh, Himachal Pradesh, India (2001)