

Austin R. Troy, Ph.D.

Professor

University of Colorado Denver, Department of Urban and Regional Planning

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Educational Background:

University of California, Berkeley, Department of Environmental Science, Policy and Management. Ph.D, 2001. Dissertation Title: Natural Hazard Policy and the Land Market: An Assessment of the Effects of the California Natural Hazard Disclosure Law.
Yale School of Forestry and Environmental Studies: Master of Forestry, 1995.
Yale University: B.A. 1992; major in anthropology.

Academic Appointments:

January 2022-present: Professor, University of Colorado Denver, Department of Urban and Regional Planning
August 2015-present: Professor and Department Chair, University of Colorado Denver, Department of Urban and Regional Planning
August 2013- August 2015: Associate Professor, University of Colorado, Denver, Department of Planning and Design
April 2007- August 2013: Associate Professor, University of Vermont, Rubenstein School of Environment and Natural Resources. *Promoted to Full Professor in May 2013.*
September 2001 – April 2007: Assistant Professor, University of Vermont, Rubenstein School of Environment and Natural Resources.

Directorships:

May 2020-present: Director, CU Denver Presidential Initiative on Urban and Place-Based Research (www.ucdenver.edu/urban). Funded by the CU President, the Presidential Initiative fosters excellence and preeminence in urban and place-based research and creative work at CU Denver through offering funding, coordinating faculty across campus, communicating outcomes, enabling connections with partners in the community, and serving as a resource for sharing data and best practices. In so doing, it is intended to both increase the impact of CU Denver's urban and place-based research and creative work, and to attract and fund faculty and students interested in this domain. I was asked by the Deans of CU Denver to serve as Director of this Initiative in Spring 2020. Since then, I have overseen the development and distribution of a request for proposals for seed grants, coordinated proposal reviews, and worked with the Deans to select nine recipients, totaling \$143,000. A second round of funding will occur in 2021. I will work with recipients to help them craft larger external proposals based on these projects and help build cross-unit interdisciplinary research teams focused on urban issues.

Sept 2011-July 2013: Director, University of Vermont Transportation Research Center (www.uvm.edu/trc). Employing between 9 and 14 full time staff equivalents, the TRC hosts a \$16 million University Transportation Center grant from US Department of Transportation. Since its creation in 2006, it has raised millions in additional funding, awarded 85 research projects totaling over \$8 million, funded 60 graduate research assistantships, and hosted seminars and conferences reaching over 5,500 people. It also houses the \$3.2 million New England Transportation Consortium and supports its own courses, a graduate certificate program (Certificate in Sustainable Transportation Systems and Planning), a graduate scholars program that gives full research assistantships to between six and eight graduate students per year, one of the nation's leading transportation workforce development programs, an extensive in-house research portfolio, and many other programs. As Director I was involved in almost every aspect of the Center's operations: research portfolio management, research strategy development, budget management and planning, grant writing and development, management of the graduate assistantship and certificate programs, outreach and communications, faculty relations, relations with the Vermont Agency of Transportation (VTRANS), and other state and federal relations.

Sept. 2010-May 2012: Director, University of Vermont Spatial Analysis Lab (<http://www.uvm.edu/rsenr/sal/>). As Director, I was responsible for three full time research staff plus a large number of part time workers. The SAL is one of seven university centers selected by the remote sensing software company Definiens as a Center of Excellence. As of 2012 the SAL had completed over seventy land cover mapping projects, encompassing 300 individual communities in the US and Canada as part of the USDA Forest Services Urban Tree Canopy assessment program (<http://nrs.fs.fed.us/urban/utc/>). Collectively, the SAL has issued over 40 technical reports and produced over 100 billion pixels of worth of land cover data.

Jan 2010-July 2010: Interim Managing Director, Gund Institute of Ecological Economics.

Professional and Consulting Experience:

12/99- present: Principal and Co-Founder, *Spatial Informatics Group, LLC (SIG)*, Pleasanton, CA. SIG (www.sig-gis.com) is a firm with 40+ full time employees that has conducted integrated scientific, economic and geographic consulting for dozens of clients in the public, private and non-profit sectors, including federal agencies (e.g. NASA, USAID, US Forest Service, EPA, DOD, BLM), state and local governments, foreign government agencies, non-profit conservation organizations, large landowners, and private corporations. As a founding Principal, I have been involved in several dozen consulting projects, with an emphasis on natural resource management planning and mapping and wildfire mitigation planning. I have also been involved in the growth and operations of the company. Many of these projects have resulted in publication of academic journal articles.

11/95- 8/97: Project Director, *The Liana Project/Rainforest Action Network, San Francisco/Brazil*; co-directed alternative forest products marketing project in Brazil in concert with Brazilian ministry of the environment (IBAMA).

6/95 - 9/95: Forestry Research Assistant, *Mistik Management Ltd., Saskatchewan, Canada*; conducted field research as part of a long-term forest management plan for 2 million hectares of boreal forest in northwestern Saskatchewan.

Publications

(7590+ Citations and H-index of 32 according to Google Scholar as of April 2022)

Peer Reviewed Books

Troy, A. 2012. The Very Hungry City: Urban Energy Efficiency and the Economic Fate of Cities. New Haven: Yale University Press. 384 pp. Paperback edition released 2014. Honorable Mention Recipient, New York Book Festival.

Troy, A. and R. Kennedy, editors. 2007. Living on the Edge: Economic, Institutional and Management Perspectives on Wildfire Hazard in the Urban Interface. Amsterdam: Elsevier Science Publishers. (lead-edited, wrote introductory chapter, lead authored two chapters, and co-authored a chapter; see below for list of authored chapters)

Book Reviews for Journals

Troy, A. 2015. Review of “Sustainable Urban Metabolism” by Paulo Ferrão and John E. Fernández. Journal of Planning Education and Research. 35 (3): 389-391

Peer Reviewed Work in Review

Troy, A., Munoz-Erickson, T. Campbell, L. and Romolini, M. (in review). Chapter 12, Governance in the Wildland Urban Interface. In: *Wildland Urban Interface Forests and Rangelands Under Changing Conditions*. Washington, DC, U.S. Department of Agriculture Forest Service.

Peer Reviewed Journal Articles

46 **Troy, A.**, Moghaddas, J., Schmidt, D., Romsos, S., Sapsis, D., Brewer, W., and Moody, T. Accepted. An Analysis of Factors Influencing Structure Loss Resulting from the 2018 Camp Fire. International Journal of Wildland Fire

45 Heris, M., Bagstad, K. **Troy, A.**, O’Neil-Dunne, J. 2022. Assessing the Accuracy and Potential for Improvement of the National Land Cover Database’s Tree Canopy Cover Dataset in Urban Areas of the Conterminous United States. Remote Sensing 14(5): 1219

44 Bonnell, L., **Troy, A.**, and Littenberg, B. 2021. Nonlinear relationship between nonresidential destinations and body mass index across a wide range of development. Preventative Medicine. 153

43 Heris, M., M., Bagstad, K.J., Rhodes, C., **Troy, A.**, Middel, A., Hopkins, K., and Matuszak, J. 2021. Piloting urban ecosystem accounting for the United States. Ecosystem Services. 48:101226

42 Heris, M., Fooks, N., K. Bagstad, **Troy, A.**, and Ancona, Z. 2020. A rasterized building footprint dataset for the United States. Nature Scientific Data. 7:207.

41 Poortinga, A., Nguyen, Q., Tenneson, K., **Troy, A.**, Bhandari, B., Ellenburg, W.L., Aekakkararungroj, A., Ha, L.T., Pham, H., Nguyen, G.V. and Chishtie, F., 2019.

- Linking earth observations for assessing the food security situation in Vietnam: a landscape approach. Frontiers in Environmental Science, 7: 186
- 40 **Troy, A.**, Bonnell, L. and Littenberg, B. 2018. Relationship Between the Built Environment and Body Mass Index in a Rural Context: A Cross-Sectional Study from Vermont. Cureus, 10(7).
- 39 Poortinga, A., Clinton, N., Saah, D., Cutter, P., Chistie, F., Markert, K., Anderson, E., **Troy, A.**, Fenn, M., Huong, T., Bean, B., Nguyen, Q., Bhandari., B., Johnson, G., and Towahiraporn, P. 2018. An operational before-after-control-impact (BACI) designed platform for vegetation monitoring at a planetary scale. Remote Sensing. 10(5): 760
- 38 Rosenlieb, E., McAndrews, C., Marshall, W., and **Troy, A.** 2018. Urban development patterns and exposure to hazardous and protective traffic environments. Journal of Transport Geography. 66: 125-134.
- 37 Belz, N., Aultman-Hall, L., and **Troy, A.** 2016. Roundabouts in Northern New England, 1990-2010 . Transportation Research Record. 2585: 1-10.
- 36 Harvey, C., Aultman-Hall, L., Hurley, S. and **Troy, A.** 2016. Streetscape skeleton measurement and classification. Environment and Planning B.
- 35 **Troy, A.**, A. Nunnery and Grove, J.M.. 2016. The relationship between residential yard management and neighborhood crime: An analysis from Baltimore City and County. Landscape and Urban Planning. 147: 78-87.
- 34 Littenberg, B., Bonnell, L. N., LeBruin, A. S., Lubetkin, D. A., **Troy, A.**, & Zia, A. 2015. The Relationship Between Access to Natural Environmental Amenities and Obesity. Cureus, 7(11): e377.
- 33 Harvey, C., Aultman-Hall, L., Hurley, S. and **Troy, A.** 2015. Effects of skeletal streetscape design on perceived safety. Landscape and Urban Planning. 142: 18-28.
- 32 K. Bagstad, Reed, J., Semmens, D., Sherrouse, B. and **Troy, A.** 2015. Linking biophysical models and public preferences for ecosystem service assessments: A case study for the Southern Rocky Mountains. Regional Environmental Change. 1-14.
- 31 Morse, C., Strong, A., Mendez, E. , Lovell, S., **Troy, A.**, Morris, W. 2014. Performing a New England landscape: Viewing, engaging, and belonging. Journal of Rural Studies. 36: 226-236.
- 30 Azaria, D., **Troy, A.**, Lee, B., Ventriss, C. and Voigt, B. 2013. Modeling the effects of an urban growth boundary on vehicle travel in a small metropolitan area. Environment and Planning B. 40(5): 846-864.
- 29 **Troy, A.**, Azaria, D., Voigt, B. and Sadek, A 2012. Integrating a traffic router and microsimulator into a land use and travel demand model. Transportation Planning and Technology. 35(8): 737-751.
- 28 **Troy, A.**, Grove, J.M. and O'Neil-Dunne, J.. 2012. The relationship between tree canopy and crime rates across an urban-rural gradient in the greater Baltimore region, Landscape and Urban Planning. 106: 262-270.
- 27 Locke, D., Grove, J.M., Lu, J.W., **Troy, A.**, O'Neil-Dunne, J., and Beck, B. 2011. Prioritizing preferable locations for increasing urban tree canopy in New York City. Cities and the Environment. 3(1). Electronic.

- 26 Pickett, S., Cadenasso, Grove, J.M., J.M., Boone, C.G., Irwin, E., Groffman, P., Kaushal, S., Marshall, V., McGrath, B., Nilon, C., Pouyat, R., Szlavecz, K., **Troy, A.**, Warren, P. 2011. Urban ecology systems: Foundations and a decade of progress. Journal of Environmental Management. 92: 331-362.
- 25 Liu, S., Costanza, R., **Troy, A.**, D'Agostino, J., and Mates, W. 2010. Valuing New Jersey's ecosystem services and natural capital: A spatially explicit benefit transfer approach. Environmental Management. 45(6): 1271-1285.
- 24 Liu, S., Costanza, R., Farber, S. and **Troy, A.** 2010. Valuing ecosystem services: theory, practice and the need for transdisciplinary synthesis. Annals of the New York Academy of Science. 1185:54-78.
- 23 Voigt, B., **Troy, A.**, Miles, B., and Reiss, A. 2009. Testing an integrated land use and transportation modeling framework for small metropolitan area. Transportation Research Record (Journal of the Transportation Research Board). 2133: 83-91.
- 22 Zhou, W. and **Troy, A.** 2009. Development of an object-based framework for classifying and inventorying human-dominated forest ecosystems. International Journal of Remote Sensing. 30(23):6343-6360.
- 21 Zhou, W., **Troy, A.**, Grove, J.M. and Jenkins, J. 2009. Can money buy green? Demographic and socioeconomic predictors of lawncare expenditure and lawn greenness in urban residential areas. Society and Natural Resources. 22(8):744-760.
- 20 Zhou, W., Huang, G., **Troy, A.**, and Cadenasso, M. 2009. Object-based land cover classification of shaded areas in high spatial resolution imagery of urban areas: a comparison study. Remote Sensing of Environment. 113(8):1769-1777.
- 19 Cadenasso, M. Pickett, S., Band, L., Brush, G., Galvin, M., Grove, J.M., Hager, G., Marshall, V., McGrath, B., O'Neil-Dunne, J., Stack, W., **Troy, A.** 2008. Exchanges across land-water-scape boundaries in urban systems: Strategies for reducing nitrate pollution. Annals of the New York Academy of Sciences. 1134 (1): 213-232.
- 18 **Troy, A.** and Grove, J.M. 2008. Property Values, parks, and crime: a hedonic analysis in Baltimore, MD. Landscape and Urban Planning. 87:233-245.
- 17 Zhou, W., and **Troy, A.** 2008. An Object-oriented Approach for analyzing and characterizing urban landscape at the parcel level. International Journal of Remote Sensing. 29 (11):3119-3135.
- 16 Zhou, W., **Troy, A.** and J.M Grove. 2008. Modeling residential lawn fertilization practices: Integrating high resolution remote sensing with socioeconomic data. Environmental Management. 41(5):742-752
- 15 Zhou, W., **Troy, A.** and Grove, J.M. 2008. Object-based land cover classification and change analysis in the Baltimore Metropolitan Area using multi-temporal high resolution remote sensing data. Sensors. 8: 1613-1636.
- 14 **Troy, A.**, Grove, J.M., O'Neil-Dunne, J., Cadenasso, M. and Pickett, S. 2007. Predicting opportunities for greening and patterns of vegetation on private urban lands. Environmental Management. 40(3): 394-412.

- 13 Mulder, K., **Troy, A.**, and Boumans, R.. 2007. The role of built, human, social, and natural capital in determining land values, and the influence of demographics upon this relationship. Spatial Economic Analysis. 2(2):135-156.
- 12 **Troy, A.** and Wilson, M. 2006. Mapping ecosystem services: Practical challenges and opportunities in linking GIS and value transfer. Ecological Economics 60:435-449.
- 11 Littenberg, B., Strauss, K., MacLean, C. and **Troy, A.**. 2006. The use of insulin declines as patients live farther from their sources of care: Results of a survey of adults with type 2 diabetes. BMC Public Health. 6:198 (8 pages).
- 10 Strauss, K., MacLean, C., **Troy, A.**, and Littenberg, B.. 2006. Driving distance as a barrier to glycemic control in diabetes. Journal of General Internal Medicine. 21(4):378-380.
- 9 Zhou, W., Wan, S., Zhou, Z., and **Troy, A.**. 2006. Mapping the concentrations of total suspended matter in Lake Taihu, China, using Landsat-5 TM data. International Journal of Remote Sensing. 27(6):1177-1191.
- 8 Grove, J.M., **Troy, A.**, O'Neil-Dunne, J., Pickett, S. and Cadenasso, M. 2006. Characterization of households and its implications for urban ecosystems. Ecosystems. 9(4): 578-597.
- 7 **Troy, A.** and Romm, J. 2006. An Assessment of the California Natural Hazard Disclosure Law. Berkeley, CA: California Policy Research Center. 62 pp.
- 6 Farber, S., Costanza, R., Childers, D., Erickson, J., Gross, K., Grove, J.M., Hopkinson, C., Kahn, J., Pincetl, S., **Troy, A.**, Warren, P. and Wilson, M.. 2006. Linking ecology and economics for ecosystem management: A services-based approach with illustrations from LTER sites. Bioscience. 56(2): 121-134.
- 5 Grove, J.M., Cadenasso, M. Burch, Jr., W.R., Pickett, S.T.A. , O'Neil-Dunne, J.P., Schwarz, K., Wilson, M., **Troy, A.** and Boone, C. 2006. Data and methods comparing social structure and vegetation structure of urban neighborhoods in Baltimore, Maryland. Society & Natural Resources. 19(2): 117-136.
- 4 **Troy, A.**, Strong, A., Donovan, T., Bosworth, S., Buckley, N. and Wilson, M.L. 2005. Farmer attitudes towards bird-friendly hayfield management practices. Wildlife Society Bulletin. 33(2):528-538.
- 3 **Troy, A.** and Romm, J. 2004. The Role of Disclosure in the flood zone: Assessing the price effects of the California Natural Hazard Disclosure Law (AB 1195). Journal of Environmental Planning and Management. 47(1): 137-162.
- 2 Radke, J., Cova, T., Sheridan, M., **Troy, A.**, Lan, M., and Johnson, R. 2000. Application challenges for GI science: Implications for research, education, and policy for risk assessment, emergency preparedness and response. Journal of the Urban and Regional Information Systems Association. 12(2): 15-30.
- 1 **Troy, A.**, Ashton, P.M. and Larson, B.. 1997. A protocol for measuring abundance and size of a neotropical liana, *Desmoncus polyacanthos* (Palmae), in relation to forest structure. Economic Botany 51(4):339-346.

Peer Reviewed Book Chapters

- 9 Irwin, E.G., Grove, J.M., Irwin, N., Klaiber, H.A., Towe, C. and Troy, A., 2019. Effects of disamenities and amenities on housing markets and location choices. *In: Cadenasso, M. and Grove, J.M. eds. Science for the Sustainable City: Empirical Insights from the Baltimore School of Urban Ecology. Yale University Press. pp. 92-110.*
- 8 Groffman, P.M., Grove, J.M., Locke, D., **Troy, A.**, O'Neil-Dunne, J. and Zhou, W 2019. Lawns as Common Ground for Society and the Flux of Water and Nutrients. Science for the Sustainable City: Empirical Insights from the Baltimore School of Urban Ecology. Yale University Press. p.220-235.
- 7 Voigt and **Troy, A.** 2008. Ecological models: Land use modelling. *In* Sven Jorgensen and Brian Fath (eds.), Encyclopedia of Ecology. Elsevier Science. Pp 2126-2132.
- 6 **Troy, A.** 2008. Geodemographic segmentation. *In: Shenkar, S. and Xiong, H. (eds.), Encyclopedia of Geographical Information Science. New York: Springer-Verlag. Pp.347-355.*
- 5 **Troy, A.** 2007. A tale of two policies: California programs that unintentionally promote development in wildland fire hazard zones. *In: Troy, A. and R. Kenne (eds.), Living on the Edge: Economic, Institutional and Management Perspectives on Wildfire Hazard in the Urban Interface. Amsterdam: Elsevier Science Publishers. Pp. 127-142*
- 4 **Troy, A.** and Romm, J.. 2007. The effects of wildfire disclosure and occurrence on property markets in California. *In: Troy, A. and R. Kennedy (eds.), Living on the Edge: Economic, Institutional and Management Perspectives on Wildfire Hazard in the Urban Interface. Amsterdam: Elsevier Science Publishers. Pp.10-120.*
- 3 **Troy, A.** 2007. The evolution of watershed management in the United States. J.Erickson (ed.), Sustainable Watershed Management in Theory and Practice. Amsterdam: Elsevier Science Publishers.
- 2 Ganz, D., **Troy, A.** and Saah, D.. 2007. Community involvement in wildfire hazard mitigation and management: Community Based Fire Management, Fire Safe Councils and Community Wildfire Protection Plans. *In: Troy, A. and R. Kennedy (eds.), Living on the Edge: Economic, Institutional and Management Perspectives on Wildfire Hazard in the Urban Interface. Amsterdam: Elsevier Science Publishers. Pp.143-164.*
- 1 Wilson, M., **Troy, A.**, and Costanza, R. 2004. The Geography of ecosystem services: Maximizing the value of landscapes in land use conservation. *In: M. Dietrich and J. van der Straaten (eds). Cultural Landscapes. Dordrecht, Netherlands: Kluwer Academic Publishers. Pp: 69-94.*

Magazine Publications:

- Troy, A.** 2012. ["Can America Embrace Biking the Way Denmark Has?"](#) Slate. 11/1/12.
- Troy, A.** 2012. Thirsty City. *In* Places/ Design Observer Magazine. 1/23/12.
<http://places.designobserver.com/feature/the-very-hungry-city/32058/>

Troy, A. 2011. Will Energy Efficiency be the New Competitive Advantage for Cities? European Financial Review. 12/14/2011.
<http://www.europeanfinancialreview.com/?p=2237>

Selected White Papers and Technical Reports

Follingstad, G. and **Troy, A.** 2020. Modeling Future Outdoor Water Demand in Aurora, CO. A report to the Babbitt Center for Land and Water and the Water Research Foundation.

Simons, G. Poortinga, A., Bastiaanssen, W. Saah, D. **Troy, A.**, Hunink, J., de Klerk, M. , Rutten, M., Cutter, P., Rebelo, L., Ha, L. T. , Nam, V.P. Hessel, T., Fenn, M., Bean, B., Ganz, D. Droogers, P., Erickson, T., and Clinton, N. 2017. On Spatially Distributed Hydrological Ecosystem Services. Future Water. White Paper.

Troy, A., Moghaddas, J., Gunn, J., Voigt, B., Moody, T. and Saah, D. 2014. An Assessment of Ecosystem Services Valuation on Kamehameha Schools Lands. Kamehameha Schools Land Assets Division.

Voigt, B., **Troy, A.** and Johnson, G. 2013. Mapping the off-site benefits from protected areas' ecosystem services. For Ontario Ministry of Natural Resources

Troy, A. 2012. Valuing Maine's Natural Capital. Manomet Center for Conservation Sciences. <https://www.manomet.org/publications-tools/sustainable-economies/valuing-maine%E2%80%99s-natural-capital-full-report>

Troy, A. and Bagstad, K. 2009. Estimating Ecosystem Services in Southern Ontario. A report for the Ontario Ministry of Natural Resources.
(<http://www.mnr.gov.on.ca/en/Business/LUEPS/2ColumnSubPage/279467.html>)

Troy, A., Wang, D., Capen, D., O'Neil-Dunne, J. and MacFadden, S. 2007. Updating the Lake Champlain Basin Land Use Data to Improve Prediction of Phosphorous Loading. Lake Champlain Basin Program. Technical Report #54. 121 pp.

Costanza, R., Wilson, M., **Troy, A.**, Voinov, A., Liu, S., and D'Agostino, J. 2006. The Value of New Jersey 's Ecosystem Services and Natural Capital: Part II, Ecosystem Services. For the New Jersey Department of Environmental Projection. 177 pp.
<http://www.nj.gov/dep/dsr/naturalcap/nat-cap-2.pdf>

Troy, A. 1999. The Property Value Effects of Siting a Natural Gas Power Plant: A Summary of Relevant Studies. California Energy Commission Report.

Published Conference Proceedings

Keeton, W.S. and **Troy, A.** 2006. Balancing ecological and economic objectives while managing for late-successional forest structure. Pages 21-33 *In: L. Zahoyka, (ed.) Ecologisation of Economy as a Key Prerequisite for Sustainable Development. Proceedings of the International Conference, Sept. 22 -23, 2005, Ukrainian National Forestry University, Lviv, Ukraine.*

Wilson, M. and **Troy, A.** 2005. Accounting for ecosystem services in a spatially explicit format: Value transfer and geographic information systems" *In: Proceedings of the International Workshop on Benefits Transfer and Valuation Databases, R. Iovanna (ed.). U.S. EPA, Washington DC.*

Troy, A. 2002. An assessment of the effects of fire disclosure under the California Natural Hazard Disclosure Law. *In: The Proceedings of the California 2001 Wildfire Conference*. University of California, Davis Extension. Pp.252-262.

Miscellaneous Non-Peer Reviewed Publications

Troy, A. and Zhou, W.. 2007. Creating a parcel level database from high resolution imagery. American Planning Association InfoText (the quarterly newsletter of the Information Technology Division of the APA). Fall 2006: Issue 87.

Troy, A. and R. Kennedy. 2007. Introduction: Finding solutions to the urban-wildland interface problem in a changing world. *In: Troy, A. and R. Kennedy (eds.), Living on the Edge: Economic, Institutional and Management Perspectives on Wildfire Hazard in the Urban Interface*. Amsterdam: Elsevier Science Publishers.

Press

Press Coverage of Publications and Research

The Denver Post

The Boston Globe

The Vancouver Sun

Calgary Herald

Atlantic Cities (part of The Atlantic Monthly)

The Burlington Free Press

Grist

Planetizen

Baltimore Sun

Edmonton Journal

Regina Leader-Post

Victoria Times Colonist

Western Planner

Press Interviews

Patt Morrison Show, Southern California Public Radio (KPCC)

The Enviro Show, South African Public Radio

Midday with Dan Roddicks, Maryland Public Radio (WYPR)

Vermont Edition, Vermont Public Radio

George Jarkey Show (nationally syndicated)

Where We Live, Connecticut Public Radio (WNPR)

The Thirty, WCAX TV

Venues for book reviews of The Very Hungry City

(See www.theveryhungrycity.com for text selections)

Nature

Urban Studies Journal

The Journal of Urban Affairs
Better Cities and Towns
The Global Journal
The Architect's Journal
The Council on Tall Buildings and Urban Habitat
Choice Reviews (American Library Association)
Landscape Architecture Magazine
Civil Engineering Magazine
Earth Magazine
The American Interest

Research Grants and Contracts

Current

NASA. **Troy, A.**, Principal Investigator. 2018-2021. \$354,613. Earth Observation for US Ecosystem Accounting.

Western Resource Advocates. **Troy, A.**, Principal Investigator. 2021-2022. \$21,650. Enabling Large-Scale Replacement of Non-Essential Turf Project

National Urban and Community Forestry Advisory Council. **Troy, A.**, Principal Investigator. 2018-2022. \$142,219. Deploying Sensors on Unmanned Aerial Vehicle to Aid in Urban Forest Inventory, Species Identification and Health Monitoring

Past

National Science Foundation, **A.Troy**, Co-Principal Investigator (Carrie Makarewicz, Lead PI). 2021. \$49,889. Undesigning the redline and reimagining mobility investments to equitably link jobs, affordable housing, and services.

Design Workshop (as contractor to City of Denver), **Troy, A.**, Lead, 2020-2021, \$10,000. Denver Urban Forest Rules and Regulations Rewrite. Fee for services contract.

Babbitt Center/Lincoln Institute/ Water Research Foundation, **Troy, A.**, Principal Investigator, 2018-2020. \$52,000 (services contract). Modeling Irrigation from Urban Growth in a Semi-Arid Metropolitan Area

USDA Forest Service. **Troy, A.**, Principal Investigator. 2016-2018. \$30,000. Research and Development for an Urban Ecological Field Station in the Greater Denver Region.

Gates Family Foundation. **Troy, A.**, Co-Principal Investigator. 2018-2020. \$35,000. Imagine a Great Region: The Front Range Forum on Growth (charitable foundation gift)

Denver Housing Authority/ City Craft Ventures (as charitable gift). **Troy, A.**, Principal Investigator. 2016-2018. \$25,000. West Denver Data and Research Fund.

Colorado Health Foundation. **Troy, A.**, Co-Principal Investigator (Michael Jensen, PI). 2016-2019. \$430,000. Creating Healthy Places through Transformational Education and Design.

City and County of Denver, Department of Parks and Recreation Division of Forestry. **Troy, A.**, Principal Investigator. 2016-2017. \$37,400 (services contract). Mapping urban tree canopy in Denver.

USDA Forest Service, **Troy, A.**, Principal Investigator. 2017-2019. \$25,352. Urban vegetation and its relation to flows of energy, water, and social capital.

USDA Forest Service. **Troy, A.**, Principal Investigator. 2014-2017. \$92,000. Analysis of urban metabolism as it relates to the built form, environmental design, and population characteristics of cities.

Denver Regional Council of Governments. **Troy, A.**, Co-investigator; Benoy Jacob, PI. 2014-2015. \$76,850. Outcome Assessment and Knowledge Sharing.

Vermont Agency of Transportation Research Advisory Council. **Troy, A.**, former Principal Investigator*. 2012-2013. \$89,470. Development of GIS Tools to Optimize Identification of Road Segments Prone to Flood Damage.

US Department of Transportation, Commercial Remote Sensing Division. **Troy, A.**, former Principal Investigator*. 2012-2014. \$371,750 in direct funds plus \$382,630 in private sector cost share. Rapid Exploitation of Commercial Remotely Sensed Imagery for Disaster Response & Recovery.

University of Vermont Transportation Center. **Troy, A.**, Principal Investigator. 2007-2013. \$371,747 (in direct funds). Integrated Land-Use, Transportation and Environmental Modeling: Complex Systems Approaches and Advanced Policy Applications.

National Science Foundation. **Troy, A.**, Co-Investigator (Jeff Frolik, Lead PI). \$162,315. 2012- 2013. MRI: Acquisition of a 3D Terrestrial Laser Scanner for the Temporal-Morphological Study of Manmade and Natural Structures.

USDA Forest Service cooperative agreement. **Troy, A.**, Principal Investigator**. 2011-2016. \$50,000. Assessment of the relationships among social groups, land management, and vegetation structure and processes in urban and urbanizing areas

USDA Forest Service cooperative agreement. **Troy, A.**, Principal Investigator. 2011-2013. \$11,500. Assessment of the relationships among social groups, land management, and vegetation structure and processes in urban and urbanizing areas—Bridge Grant.

NSF EPSCoR, **A Troy**, Co-Investigator (J. Van Houton Lead-PI), 2011-2016. \$20,000,000. Adaptation to Climate Change in the Lake Champlain Basin.

US Department of Transportation. **A Troy**, Co-principal Investigator (Lead PI: Lisa Aultman-Hall). 2005-2013. \$17,110,500. *UVM National Transportation Center Grant*.

USDA Forest Service cooperative agreement. **A Troy**, Principal Investigator. 2010-2012. \$25,000. Ecological Mapping in Social Transition Zones.

USDA-CSREES. **Troy, A.**, Co-Investigator (PI: Allan Strong). 2009-2013. \$381,914. Landscape context as a framework to quantify the multifunctionality of agricultural systems in the Northeast.

US Geological Survey. **A Troy**, Principal Investigator. 2011-2012. Ecosystem Services Valuation Pilot. \$76,730.

USDA Forest Service cooperative agreement. **Troy, A.**, Principal Investigator. 2006-2011. \$423,000. Development of advanced spatial analyses for examining the relationships

among social groups, land management, and vegetation structure and processes at the parcel level in urban areas.

McIntire-Stennis Research Grant. **A Troy**, Principal Investigator. 2009-2012. \$67,937. Predicting Exurban Land Use Change, Forest Fragmentation and Functional Connectivity in Vermont at Multiple Spatial Scales

National Science Foundation Human Social Dimensions Program. **Troy, A.**, Principal Investigator of UVM subaward (Cross-Institution Project PI: Christopher Boone, Arizona State University). \$161,332 (subaward amount). 2006-2011. A Longitudinal Analysis of the Social Dynamics of Environmental Equity in Baltimore.

Northeastern States Research Cooperative. **Troy, A.**, Principal Investigator. 2008-2011. \$75,497. Analysis of the drivers of urban growth and second home development in the Northern Forest Region of Vermont.

Northeastern States Research Cooperative. **Troy, A.**, Principal Investigator. 2006-2009. \$69,931. Functional Classification of Land Use across the Urban-Rural Gradient to Support Watershed Planning in the Northern Forest.

US Department of Transportation, Federal Highway Administration. **Troy, A.**, Principal Investigator. 2006-2009. \$250,500. Dynamic Transportation and Land Use Modeling.

Lincoln University. **Troy, A.**, Principal Investigator. 2007-2009. \$34,633. Ecosystem Services and Sustainable Agriculture.

National Science Foundation Biocomplexity and the Environment Program. **Troy, A.**, Principal Investigator of UVM subaward (Cross-Institution Project PI: Steward Pickett, Institute for Ecosystem Studies). 2005-2007. \$161,000 (subaward amount). Feedbacks between Complex Ecological and Social Models: Urban Landscape Structure, Nitrogen Flux, Vegetation Management, and Adoption of Design Scenarios.

USDA Forest Service cooperative agreement. **Troy, A.**, Principal Investigator. 2006-2008. \$80,000. Application of the Forest Stewardship Program's Spatial Analysis Project to Urban Areas Integrated with the Forest Opportunity Spectrum.

Gordon and Betty Moore Foundation. **Troy, A.**, Co-Principal Investigator (PI: Robert Costanza). 2006-2007. \$800,000. Ecosystem Services: Dynamics, Modeling and Valuation to Facilitate Conservation.

Lake Champlain Basin Program. **Troy, A.**, Principal Investigator. 2005-2006. \$63,000. Update of Lake Champlain Basin Land Use Data and Nonpoint Source Phosphorus Loading Analysis.

USDA McIntire-Stennis Program **Troy, A.**, Principal Investigator. 2004-2007. \$71,500. Development of an Object-oriented Framework for Classifying and Inventorying Human-dominated Forest Ecosystems.

USDA Forest Service cooperative agreement. **Troy, A.**, Principal Investigator. 2005-2006. \$22,000. GIS Tools for Applying the Forest Opportunity Spectrum (FOS) Framework for Urban & Community Forestry.

State of New Jersey. **Troy, A.**, Co-Principal Investigator (PI: Robert Costanza). 2004-2005. \$160,000. Valuing New Jersey's Natural Capital and Ecosystem Services.

Vermont Forum on Sprawl. **Troy, A.**, Principal Investigator. 2005-2006. \$6,920. Assessing Trends in Urban Growth and Residential Density in Vermont using Geographic Information Systems.

Northeastern States Research Cooperative. **Troy, A.**, Principal Investigator. 2003-2005. \$34,376. Development of Functional Ecological Indicators of Suburban Sprawl for the Northeastern Forest Landscape.

USDA National Research Initiative (NRI) Program. **Troy, A.**, Co-Principal Investigator (PI: Allan Strong). 2003-2006. \$300,000. Hayfields as Sustainable Habitat for Grassland Bird Populations: Ecological and Economic Impacts of Bird-friendly Hay.

USDA Forest Service cooperative agreement. **Troy, A.**, Principal Investigator. 2004-2006: \$20,500. An Analysis of Housing Markets and the Environment in Baltimore, MD.

USDA Forest Service cooperative agreement. **Troy, A.**, Principal Investigator. 2003-2006. \$18,000. Typology of Urban and Community Forests and Green Space for Watershed 263 and Baltimore City.

USDA Forest Service cooperative agreement. **Troy, A.**, Principal Investigator. 2003-2006. \$10,000. Spatial Analysis of Urban Ecological and Social Data for the Baltimore Ecosystem Study.

US EPA Watershed Classification Program. **Troy, A.**, Co-Principal Investigator (PI: Mary Watzin). \$664,000. Linking Land Use Change, Stream Geomorphology, and Aquatic Biodiversity in a Hierarchical Classification Scheme.

Northeastern States Research Cooperative. **Troy, A.**, Co-Principal Investigator (PI: Therese Donovan). 2002-2004. \$186,500. Land Use Change in Northern Forests: Assessments and Recommendations for Conserving Biodiversity.

Northeastern States Research Cooperative. **Troy, A.**, Co-Principal Investigator (PI: Mary Watzin). 2002-2004. \$200,000. Linking Land Use Change, Stream Geomorphology, and Aquatic Integrity in Changing Forested Landscapes.

USDA McIntire-Stennis Research Grant. **Troy, A.**, Principal Investigator. 2002-2005. \$39,000. A Model for Simulating Forest Fragmentation Due to Suburban Development in Vermont.

USDA Forest Service. **Troy, A.**, Principal Investigator. 2002. \$4,500. Summer Data Collection Mini-Project for the Baltimore Ecosystem Study.

Vermont Monitoring Cooperative Research Grant. **Troy, A.**, Co-Principal Investigator (PI: Cecilia Danks). 2002-2003. \$5,000. Economic and Institutional Feasibility of the Vermont Forest Ecosystem Management Demonstration Project.

USDA CSREES-IFAFS (Cooperative State Research, Education, and Extension Service, Initiative for Future Agriculture and Food Systems) Research Grant. **Troy, A.**, Co-Principal Investigator (Allan Strong, PI). 2001-2003. \$100,000. Hayfields as Sustainable Habitat for Grassland Bird Populations: Ecological and Economic Impacts of Bird-friendly Hay.

California Policy Research Center Grant. **Troy, A.**, Co-Principal Investigator (PI: Jeff Romm). 1999-2000. \$35,000. An Assessment of the California Natural Hazard Disclosure Law.

*PI status on grant transferred to UVM personnel at time that I left UVM

Past fellowships and scholarships

Lincoln Institute of Land Policy Doctoral Dissertation Fellowship. 1999-2000.
Environmental Science, Policy and Management Departmental Assistantship, Fall 1998.

Environmental Science, Policy and Management Departmental Fellowship, 1997-98.
Foreign Language Area Scholarship at U.C. Berkeley, 1996-97.
Gilman Ordway Scholarship, Yale School of Forestry and Environmental Studies, 1994-95.

Presentations and Meetings

Invited Presentations, Webinars and Panels:

A Spatial Analysis of Factors Influencing Structure Loss and Survival Resulting from the 2018 Camp Fire. For Forest Guild National Webinar Series. February 2020.
Imagine a Great Database. Presented to Piton Foundation/Shift Research Lab Mile High Data Day. 2019. Arvada, CO.
Microscale determinants of residential water use in the greater Denver area. Webinar given to the California State Water Resources Control Board Water Boards working group. April 2019
Mapping Tree Canopy, Tree Shade and Heat in Denver. Mayor's Sustainability Summit, Denver, CO, November 2018.
Hot Town, Data in the City, Design Workshop. May 2018.
Crime and Environmental Design. American Society and Landscape Architects Denver Chapter "Fireside talk." December 2017.
How Urban Tree Canopy Regulates Microclimate and Urban Heat Islands: A Study from Denver and Baltimore. USDA Forest Service Webinar, January 2016.
Approaches to developing urban sustainability metrics and performance indicators. Western Planners Conference, Laramie, WY, August 2015
The relationship between environmental design and crime. Western Planners Conference, Laramie, WY, August 2015
Best practices for sustainable planning and management of impaired urban watersheds. AmeriCorps VISTA Conservation Legacy Program. Regis University, Denver, CO, May 2015.
Urban Energy Metabolism: Causes, consequences and solutions for hungry cities. Invited talk at Ohio University, Athens, OH, April 2015.
The relationship between crime and urban environmental design. Invited webinar for "Green Infrastructure, Climate, and Cities," Drexell University/ Consortium for Climate Risk in the Urban Northeast (CCRUN). October 2014.
Urban Energy Metabolism, Sustainable Communities, and Economic Competitiveness. TEDx Mid-Atlantic talk, Washington, DC, October 25, 2013.
The Very Hungry City: What urban energy metabolism means for sustainability and competitiveness. Keynote address to Baltimore Ecosystem Study Annual Meeting. Baltimore, MD, October 22, 2013.
The Urban Transportation Energy Appetite: Why Some Cities Are Hungrier Than Others. Urban Dialogue on Critical Environmental Issues. Invited symposium speaker at Yale University School of Forestry and Environmental Studies. January 18, 2013

Sustainability and the City: The Shape of Things to Come. Yale University School of Forestry and Environmental Studies Symposium. One of four invited panelists. October 20, 2012.

Urban Energy Metabolism, Sustainable Communities, and Economic Competitiveness. Invited keynote speaker for Yale School of Forestry and Environmental Studies reunion and associated symposium. New Haven, CT. October 19, 2012.

The Transportation-Energy-Land Use Connection. Invited speaker for Environmental Studies seminar. Middlebury College. September 27, 2012.

Urban Energy Metabolism, Sustainable Communities, and Economic Competitiveness. Featured speaker. Yale Club of New York City. June 2012.

A review of non-market valuation methods underpinning ecosystem service valuation tools. Businesses for Social Responsibility, Webinar. June 2012.

The relationship between trees and crime across an urban-rural gradient in greater Baltimore. Alliance for Community Trees. Webinar. June 2012.

Transportation energy, peak oil and climate change. Vermont House of Representatives Climate Caucus. March 2012.

Urban Energy Metabolism, Sustainable Communities and Economic Competitiveness. Keynote address. Sustainability and the City Symposium, McGill University, March 2012.

Analysis of the drivers of urban growth and second home development in the Northern Forest Region of Vermont (with Brian Voigt). Forest Guild Webinar. March 2012.

Reflections on rising energy prices from The Very Hungry City. Association of Corporation Counsels Energy Committee Webinar. March 2012.

Seeing the Pattern for the Pixels: Extracting Meaning from Massive Spatial Data Sets. TEDx Talk, University of Vermont, October 2011.

Challenges and opportunities for using ecosystem service valuation in protected areas management. Invited Webinar presentation to Ontario Ministry of Natural Resources, March 2010

Results of an ecosystem services valuation for southern Ontario. Invited presentation to Ontario Ministry of Natural Resources, Toronto, ON, June 2009.

Integrating water quality into the planning process using a land use simulation model. Presented to EPSCoR Water Workshop, Burlington, VT. November 2008.

One amazing classroom: a UVM course works to make New York greener. (with Morgan Grove and Dan Erickson). New York City. UVM Alumni Association meeting. November 2008.

Developing an integrated land use, transportation, and environmental quality simulation model for Chittenden County. Vermont Monitoring Cooperative Annual Meeting. October 2008.

Implementing an integrated land use-transportation-environmental quality simulation model for Chittenden County. UVM Department of Computer Science Seminar Series. October 2008.

Modeling Land Use Change in Chittenden County, VT using UrbanSim (with Brian Voigt). Planners' Lunch for the Chittenden County Metropolitan Planning Organization. September 2007.

Integrating Ecosystem Service Valuation and Simulation Modeling for Environmental Management Decision Support. Presentation to the Ontario Ministry of Natural Resources in Peterborough, Canada. September 2007.

Using Next Generation Decision Support Tools for Growth Planning in La Plata County. Presentation to meeting of local and county government in Durango, CO. July 2007.

Modeling Land Use Change in Chittenden County, VT. Land Use Modeling Workshop sponsored by Vermont Agency of Transportation. August 2006.

Spatial Dynamics of Urban Vegetation Baltimore, MD. Ecological Complexity and Ecosystem Services: Opportunities for China-US Collaboration; 2nd international workshop. Burlington, VT. October 2005.

State of the Lake Workshop. Lake Champlain Basin Program. Participated in invited panel. Plattsburg, NY. March 2005.

Land Use Change Analysis in Vermont. Lake Champlain Basin Program meeting on land use and land cover mapping. Burlington, VT. October, 2004.

Projects of the University of Vermont Spatial Analysis Lab. Northeastern Forest Resource Planners Association meeting. Burlington, VT. September, 2004.

Quantifying Spatial Variability in the Valuation of Urban Environmental Amenities. Ecological Complexity and Ecosystem Services: Opportunities for China-US Collaboration; 1st international workshop. Beijing, China. May 2004.

Analyzing Spatial Nonstationarity in Multivariate Relationships with Geographically Weighted Regression. UVM Math and Statistics Department. March 2004.

New GIS Technologies for Forestry: From the Micro to the Macro. Invited presentation at Society of American Foresters Green Mountain Division Winter Meeting. Montpelier, VT. January 2003.

Comments on N. Edward Coulson and Robin M. Leichenko's paper, Historic Preservation and Neighborhood Change. Presented at invited workshop entitled Analysis of Urban Land Markets and the Impact of Land Market Regulation. Lincoln Institute of Land Policy. Cambridge, MA. July 2002.

Conference Presentations and Posters

Troy A. and G. Follingstad. Green and Leafy: trees, grass and yard irrigation in a semi-desert. Rocky Mountain Land Use Institute Conference. 2020.

Troy A. An introduction to the Denver Urban Field Station. Rocky Mountain Land Use Institute Conference. 2020

Troy A. Governance and Stewardship for the WUI: A review for the US Forest Service's upcoming National Assessment. Rocky Mountain Land Use Institute Scholar's Workshop. 2020.

Troy, A., J Moghaddas, S. Romsos, and D. Saah. A spatial analysis of factors influencing structure loss and survival resulting from the 2018 Camp Fire. 8th International Fire Ecology and Management Congress, Tucson, AZ. 2019.

Troy, A., Taylor, R., Heris, M. and Follingstad, G. Thirsty Landscape. Association of Collegiate Schools of Planners Conference, Denver 2017

- Troy, A. and Rosenlieb, E. Oct 2016. Analyzing the effects of green investments on localized crime using a difference-in-differences approach. Association of Collegiate Schools of Planners. Portland, OR.
- Troy, A and Johnson, G. Dec 2016. A framework for categorizing the spatial delivery of ecosystem services. A Conference on Ecosystem Services. Jacksonville, FL.
- Troy, A, Taylor, R and Heris, M. Nov 2015. How Urban Tree Canopy Regulates Microclimate and Urban Heat Islands: A Study from Denver and Baltimore. Partners in Community Forestry Conference. Denver, CO
- Troy, A., Littenberg, B. and Bonnell, L. October 2015. Environmental determinants of energy balance. Association of Collegiate Schools of Planners. Houston, TX
- Troy, A., Piro, R and Knott, J. September 2015. Developing and employing performance measures for urban sustainability. American Planning Association –Colorado Chapter meeting. Steamboat Springs, CO.
- Troy, A. December 2014. The challenge of applying the ecosystem services framework across the settlement spectrum. A Conference on Ecosystem Services (ACES), Washington DC.
- Troy, A. October 2014. Urban Environmental Design and Crime: A Data Analysis from Multiple Cities. Association of Collegiate Schools of Planning. Philadelphia, PA.
- Troy, A. June 2013. The Urban Transportation Energy Appetite. US Society for Ecological Economics Conference, Burlington, VT
- Troy, A. June 2013. The Water-Energy Connection in Western American Cities. US Society for Ecological Economics Conference, Burlington, VT
- Troy, A. August 2011. What Denmark did right: An assessment of the determinants of successful bicycle culture and infrastructure. Ecocities Conference.
- Troy, A. August 2011. The water-energy connection in Western American Cities.. Ecocities Conference.
- Troy and K. Bagstad. December 2010. Estimating Ecosystem Service Values in Southern Ontario. A Conference on Ecosystem Services, Phoenix, AZ
- Troy and Grove, J.M.. October 2010. Relationships between Vegetation and Crime in the Baltimore Metro Region. Baltimore Ecosystem Study Annual Meeting, Baltimore County, MD
- Troy and Grove, J.M.. June 2008. The interactive effect of parks and crime on property values in Baltimore, MD. International Symposium on Society and Resource Management, Burlington, VT.
- Troy and M Grove. October 2007. The interactive effect of parks and crime on property values in Baltimore, MD. Baltimore Ecosystem Study Annual Meeting, Baltimore, MD.
- Troy, Grove, J.M., O’Neil-Dunne, J., Cadenasso, M. and S.T.A. Picket. April 2007. Predicting opportunities for greening and vegetation patterns on urban private land. Association of American Geographers Annual Meeting. San Francisco, CA.
- Troy. July 2005. Valuation of urban vegetation in Baltimore, MD. US Society of Ecological Economics Conference, Tacoma, WA.
- Troy. July 2004. A nonstationary approach to ecosystem service valuation: the importance of spatial dependence in urban amenity valuation. International Society of Ecological Economics Biennial Conference, Montreal, QC.

Troy. July 2004. The economics of urban green space: treating natural capital as a productive asset. Sustainable Communities Conference, Burlington, VT.

Troy. Oct 2003. A Methodology for Assessing Spatial Non-stationarity in Ecosystem Service Values. Baltimore Ecosystem Study Annual Meeting, Baltimore, MD.

Troy. Sept. 2003. A Methodology for Assessing Spatial Non-stationarity in Ecosystem Service Values. Poster. NSF Long Term Ecological Research Network Conference, Seattle, WA.

Troy and Grove, J.M.. May 2003. An ecological economic framework for characterization of social and economic patches. US. Society for Ecological Economics Conference.

Troy and Romm, J.. June 2002. The Role of Disclosure in the Flood Zone. Conference paper presented at the Second World Congress of Environmental and Resource Economists.

Troy and Romm, J.. October 2001. An Assessment of the Effects of Fire Disclosure Under the California Natural Hazard Disclosure Law. 2001 California Wildfire Conference.

Troy. Feb. 2001. The Effects of Natural Hazard Disclosure Policies on California Property Markets. Conference paper, presented to the Western Regional Science Association (received honorable mention as one of top five submissions).

Troy. Nov. 2000. The Effects of Natural Hazard Disclosure Policies on California Property Markets. Conference paper, presented to the Association of Collegiate Schools of Planning Conference.

Troy. June 2000. Assessing the Effects of Natural Hazard Disclosure on Property Markets Using a Spatial Hedonic Analysis. Conference paper, presented to the University Consortium on GIS Summer Assembly (one of top five finalists for best paper).

Troy, M. Lan, and D. Ganz. June 1999. A Fire Risk Mitigation Model for Strawberry Canyon using GIS and FARSITE. Conference poster presented to the University Consortium on GIS Summer Assembly (first prize winner).

Invited Expenses-Paid Workshops :

Trees and Crime Research Summit. USDA Forest Service. 2 day expenses paid workshop. Philadelphia, PA. January 2015.

Ecosystem Service: Charting a Path to Sustainability. National Academies Keck Futures Initiative. 3-day workshop/conference with competitive application process and funded travel. Irvine, CA, November 2011.

Understanding, Valuing, and Managing Dynamic Ecosystem Services under Stress: Synthesizing across the LTER Network. At the National Center for Ecological Analysis and Synthesis. Two one week expenses-paid workshops, Santa Barbara, CA, June, 2004 and June 2005.

Ecological Complexity and Ecosystem Services: Opportunities for China-US Collaboration. Organized through Arizona State University and sponsored by the National Science Foundation and the Chinese Academy of Sciences. Two week expenses-paid workshop in China, May-June 2004. Participated in pre-planning workshop in Tempe, AZ in April 2003. Helped organize symposium for reciprocal visit of Chinese delegation to US at UVM in October 2005.

Initiating an Open Source\Content Landcover Modeling Effort Sponsors: NSF Biocomplexity Program, USDA Forest Service Northeastern Research Station, Central Arizona-Phoenix LTER, Baltimore Ecosystem Study LTER, and Boston College. Expenses-paid two day workshop. Boston, MA, August 2003.
Analysis of Urban Land Markets and the Impact of Land Market Regulation. Lincoln Institute of Land Policy. Expenses-paid two day workshop. Cambridge, MA, July 2002.

Teaching and Advising:

Courses taught:

CU Denver:

Advanced Geospatial Methods
Sprawl and Growth Management
Natural and Build Environments
Urban Sustainability
Environmental Planning and Management

UVM:

Ecosystem Management
Integrating GIS and Statistics
Land Use Economics and Policy
Forests and Fire in New Mexico (summer field course)
GIS Analysis of New York City's Ecology (field and lab course)
Fundamentals of Geographic Information Systems
Introduction to Geographic Information Systems
Land Use Planning Tools
Transitioning from Arc View Software to Arc GIS
Race and Culture in Natural Resources Seminar

Honors: Nominated twice for UVM Kroepsch-Maurice Excellence in Teaching Award, 2006 and 2012.

Graduate thesis and dissertation advisees completed: Carolyn Fahey (MURP), Tim Pede (MS), Chester Harvey (MS), Brad Lanute (MS), Holli Howard (MS), Dale Azaria (MS), Treg Christopher (PhD), Brian Voigt (PhD), Ken Bagstad (PhD), Weiqi Zhou (PhD), Molly Michaud (MS), John D'Agostino (MS), Katrin Moffroid (MS), Ashley Lidman (MS), Alexandra Reiss (MS).

Graduate committees served on: 20 PhD committees, 19 MS committees.

Departments included: RSENr, CDAE, CEE, PSS, Computer Science

Teaching grants: UVM Center for Teaching and Learning Kroepsch-Maurice Instructional Incentive Grant (PI). \$3,400. Creation of a New Web Architecture for Teaching Geographic Information Systems. Used to create course website for Introduction to Geographic Information Systems.

- 06/00-5/01: Instructor, *University of California, Berkeley Extension*; designed and taught evening extension course on GIS for working professionals.

- 5/98- 12/98: Research Specialist and Instructor, U.C. Berkeley Geographic Information Science Center; designed and taught several GIS courses.
- 8/97- 5/98: Graduate Student Instructor, U.C. Berkeley; worked as teaching assistant for Introductory Environmental Biology in the Department of Environmental Science, Policy and Management and for the undergraduate Environmental Science major's senior thesis project course.
- 9/94-12/94: Teaching Assistant, Yale University Department of Biology; worked as teaching assistant for Introductory Biology.

Service

Service to the Profession, the Community and Government:

Associate Editor/ Editorial Board for journal, *Landscape and Urban Planning*. 2016-present.

Associate Editor for journal *Remote Sensing*. 2018-present.

Co-Lead of Imagine a Great Region, 2018-present. This Initiative is a partnership with Denver Regional Council of Governments and was funded by the Gates Family Foundation. It involved numerous large stakeholder meetings, each on a different topic related to regional growth and change. Hundred participated and extensive feedback and data were gathered.

Planning Committee for USDA Forest Service National Assessment document on the Wildland Urban Interface. I was invited to be the only non-Forest Service member of this committee which planned the development for a major report to Congress. 2019.

Steering Committee member, Metro Denver Chamber of Commerce Prosper Colorado Initiative. 2019-present.

Technical Advisory Committee member, South Platte Urban Waters Partnership. 2018-present.

Core Committee, Denver Urban Field Station. Partnership initiative of US Forest Service, USGS, Metro Denver Nature Alliance, Denver Parks and CU Denver. 2017-present.

Central Region Representative, Association of Collegiate Schools of Planning Governing Board. 2017-2019

Sun Valley Healthy Living Initiative Technical Advisory Group, Denver Housing Authority, 2018-present.

Co-Principal Investigator, Baltimore Ecosystem Study (BES). BES is a long-term ecological research project (LTER) of the National Science Foundation; www.beslter.org. 2002-2019.

Affiliate, Gund Institute of Ecological Economics, University of Vermont, Burlington, VT. 2013-present

Associate Editor, *Ecosystem Health and Sustainability* (a newly formed journal of the Ecological Society of America). 2014-2018.

External Review Board Member, Cities Leading through Energy Analysis and Planning (Cities-LEAP), National Renewable Energy Labs, 2015-present.

Associate Editor, Wiley Interdisciplinary Reviews: Energy and Environment, 2013-2016.

Co-PI, Baltimore Ecosystem Study, Long-Term Ecological Research Program of the National Science Foundation. 2002-present.

Fellow, Gund Institute of Ecological Economics, University of Vermont, Burlington, VT.
2004-2013.

Steering Committee Member. "RCN-SEES: Engineering Research Collaboratory for Sustainable Infrastructure in a Changing Climate" (NSF Funded collaboratory project), 2012-2013.

Co-editor of contributed volume on wildfire and urban sprawl for Elsevier Sciences Publishers. 2007 (see Publications. above).

Member, Lake Champlain Basin Program Technical Advisory Committee, October 2004-Sept 2007.

City of Burlington Planning Commission (appointed), 6/2002 to 8/2006. Vice Chair 2005 - 2006.

Chair, City of Burlington Long Range Planning Committee, 8/2004-8/2006.

One of two faculty organizers of a two-day symposium at UVM in October 2005: Ecological Complexity and Ecosystem Services: Opportunities for China-US Collaboration. This was part of a reciprocal visit of a Chinese Academy of Sciences delegation to the US following my participation in an NSF delegation to China

Journal Article Reviewer:

Landscape and Urban Planning (journal)

Urban Forestry and Urban Greening (journal)

Urban Ecosystems (journal)

Environmental and Resource Economics (journal)

Environmental Management (journal)

Journal of Environmental Management

Journal of Environmental Planning and Management

Landscape Ecology (journal)

Ecological Economics (journal)

Transportation Research Board (for presentation at TRB meeting and submission to Transportation Research Record)

Book Reviewer:

Book reviewer for Journal of Planning Education and Research

Textbook reviewer for Houghton Mifflin

Chapter reviewer for edited volume for Cambridge University Press

Grant Reviewer:

National Center for Sustainable Transportation (UC Davis)

National Science Foundation (multiple times)

Research Council of Norway

French Foundation for Research on Biodiversity

UVM NSF EPSCoR

Vermont Water Resources and Lake Studies Center

McIntire-Stennis Program

Design Competition Reviewer:

Harvard University Dean's Design Challenge, Urban Life 2030

Society memberships:

American Planning Association (current)
Association of Collegiate Schools of Planning (current)
Association of American Geographers (past)

Service to the University

Chair of Search Committee for Professor and Chair of Architecture Department, 2018-19.
Chair of Primary Unit Committee for Reappointment, Tenure and Promotion, 2015-2018
Search Committee member for new Department of Urban and Regional Planning faculty, 2018.

Search Committee member for College of Architecture and Planning Dean. 2016
Dean's Advisory Committee on Reappointment, tenure and promotion, College of Architecture and Planning, UC Denver, February 2014

Senior advisory committee to the Associate Vice Chancellor for Research, CU Denver, 2013-present

CU Denver FAST Lab (GIS lab) faculty co-director, 2013-present.

CU Denver, Department of Planning and Design GIS Certificate, coordinator and lead on planning effort for developing new campus-wide GIS certificate, 2013-present.

Rubenstein School Faculty Standards Committee, 2010-2013 (Chair 2012-13).

Search Committee, Dean of School of Engineering and Mathematical Sciences, 2013.

Search Committee, Complex Systems Faculty Hire, 2012.

Search Committee (including 2 months as acting Chair), Director of Gund Institute of Ecological Economics, 2011

University of Vermont Faculty Senate Educational and Research Technologies Committee. 2009-2010.

Board of Advisors, University of Vermont Transportation Research Center. 2007-2011.

Rubenstein School Graduate Standards Committee. August 2006-2010 (Chair August 2008-December 2008).

Coordinator: Environment, Society and Public Affairs graduate program at the Rubenstein School of Environment and Natural Resources. June 2007-December 2009.

Committee member, UVM Clinical and Translation Science Award Transcollegial Committee. 2006-2007.

University of Vermont Faculty Senate Student Affairs Committee. Term: May 2002-2005 (Chair: 2004-2005 academic year).

University of Vermont Faculty Senate Executive Council. Sept. 2004-Aug 2005.

University of Vermont Board of Trustees Diversity Committee. Sept. 2004- Aug 2005.

Ad hoc committee to create a new proposed non-thesis, professional-track master's program for the School of Natural Resources entitled Masters in Environmental Leadership. 2001-2002.

Ad hoc committee on the SNR graduate student integration requirement. 2002-present.

Ad hoc committee on the redesign of planning and policy course curriculum for SNR. 2002-present.

Chair of *ad hoc* committee to create new GIS curriculum for SNR. 2002-present.

Search committee for new faculty member in Economics of Sustainability. 2002.

Campus-wide working group to coordinate GIS education, research and support. 2003-present.

Languages:

Portuguese (advanced), Spanish (advanced-intermediate), French (intermediate).