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RESEARCH INTERESTS | Interactions between humans and ecosystems including (1) carbon and water cycling (2) ecosystem responses to stressors (both human and climatic); (3) Atmosphere-biosphere interactions; (4) terrestrial ecology; (5) urban ecology.

ACADEMIC APPOINTMENTS | **Boston University, Boston, Massachusetts, USA**
Assistant Professor of Earth & Environment, 2009 - Present
Affiliated Faculty, Center for Information and Systems Engineering, 2013 – Present
University of Washington
Research Scientist, 2007 –2009

EDUCATION | **Harvard University, Cambridge, Massachusetts**
Ph.D., Department of Earth & Planetary Sciences, April 2007
Thesis: Carbon and Water Exchange in Amazonian Rainforests
Harvard University, Cambridge, Massachusetts
A.M., Department of Earth & Planetary Sciences, June 2006
Yale University, New Haven, CT
Graduate coursework, School of Forestry, 1998-1999
University of Washington
B.S., College of Forest Resources, Forest Ecology and Management, March 1998

CURRENT GRANTS & AWARDS | (13) CAREER: Assessing urban influences on ecosystem processes **(PI)**; National Science Foundation, DEB-1149471, 2/2012 – 1/2017.
(12) Quantifying carbon signatures across urban-to-rural gradients: Advancing the capacity for monitoring, reporting, and verification through observations, models, and remote sensing **(PI)**; NASA/NOAA Carbon Cycle, 8/2014 – 7/2017
Formally recommended for award on 3/24/14.
(11) Collaborative Research: Water and Carbon Dynamics in Tropical Peatlands: Comparison of a Forested Peat Dome with a deforested Peat Dome in Borneo **(Institutional PI)**; National Science Foundation, EAR-1114155, 9/2011 – 8/2014.
(10) Prototype Monitoring, Reporting, and Verification System for the Regional Scale: The Boston-DC Corridor (CO-PI); NASA, 8/2013 – 8/2016.
(9) Methane Inputs from Natural Gas Infrastructure in Greater Metropolitan Boston (CO-PI); Environment Defense Fund, 10/2012 – 9/2013.
(8) CNH-Ex: Shifting Land Use and Forest Conservation: Understanding the Coupling of Social and Ecological Processes Along Urban-to-Rural Gradients (CO-PI); National Science Foundation BCS-1211802, 9/1/2012 – 8/31/2014
(7) 4-D modeling of the regional carbon cycle in and around urban environments: An interdisciplinary study to advance

	<p>observational and modeling foundations (CO-PI); NASA, 7/1/2012 – 6/30/2015.</p> <p>(6) Collaborative Research: ULTRA-Ex: Metabolism of Boston (CO-PI). National Science Foundation, DEB-0948857, 9/2010-2/2012.</p> <p>(5) Urban carbon metabolism travel grant (PI); Boston University, Mary Erskine Award, 2011.</p> <p>(4) Linking CO₂ emissions to deforestation and forest degradation over tropical peat swamp forests in northwestern Borneo during 1992 – 2014. Society of Women Geographers, Pruitt Dissertation Fellowship granted to PhD advisee Ha Nguyen. 2014-2015</p> <p>(3) Estimating rates of methane leakage from Greater Metropolitan Boston (CO-PI); Environment Defense Fund, 5/2012 – 11/2012.</p> <p>(2) Carbon and nitrogen dynamics along an urbanization gradient in Boston, MA. Arnold Arboretum Deland Award granted to PhD Advisee Preeti Rao, 2011-2012.</p> <p>(1) Combating climate change through smarter urban transportation policies (Academic PI); IBM Smarter Cities, 2012.</p>
PENDING GRANTS	<p>(6) Cities by the Sea: Development, Vulnerability and Resilience in Decades to Come (CO-PI); Urban Sustainability Research Network proposal for the SEES Program; National Science Foundation, 2014-2019.</p> <p>(5) Climate Change, Environmental Stress and Ecosystem Response Across the Northeast Megaregion (CO-PI); National Science Foundation, 2015-2019.</p> <p>(4) Environmental Stress and Ecosystem Response across the Northeast Megaregion (CO-PI); National Science Foundation, 2014-2018. <u>Panel recommended for funding.</u></p> <p>(3) Preliminary Proposal-Nitrogen limitation vs. saturation in urban ecosystems: Understanding fine-scale landscape heterogeneity in N inputs, cycling, and losses (CO-PI); National Science Foundation, 2015-2018.</p> <p>(2) Particulate Matter and Related Pollutants in a Changing World (CO-PI); Environmental Protection Agency, 2014-2017.</p> <p>(1) SCOPE: A smart-city cloud-based platform and ecosystems; Partnerships for Innovation (CO-PI); National Science Foundation, 2014-2017.</p>
PUBLICATIONS	<p>PEER-REVIEWED ARTICLES & BOOK CHAPTER</p> <p><u>UNDERLINE</u> DENOTES ADVISEE</p> <p>(WEB OF SCIENCE H-INDEX = 18; GOOGLE SCHOLAR H-INDEX = 20)</p>
IN PROGRESS	<p>(50) <u>Gately, C.</u>, Hutyra, L.R., Sue Wing, I. A new gridded on-road CO₂ emissions inventory for the United States, 1980-2011. <i>Proceedings of the National Academy of Sciences of the United States of America</i> (Target Journal).</p> <p>(49) McKain, K., Wofsy, S., Down, A., Raciti, S., Budney, J., Jackson, R., Hutyra, L.R., Phillips, N., Harndon, S., Zahniser, M. Methane Emissions from Natural Gas Distribution Losses in Boston. <i>Proceedings of the National Academy of Sciences of the United States of America</i> (Target Journal).</p> <p>(48) Hutyra, L.R., Duren, R., Gurney, K., Kort, E., Larson, E., Grimm, N.B., Ehleringer, J., Urbanization and the carbon cycle: <i>Current capabilities and future outlook on observing</i></p>

- and modeling urban carbon flows. Earth's Future* (Special Issue)
- IN REVIEW (47) Romero-Lankao, P., Seto, K.C., Kennedy, C., Grimm, N., Ehleringer, J., Marcotullio, P., Pincetl, S., Feddema, J.J., Hughes, S., Chester, M.V., **Hutyra, L.R.**, Sperling, J., Runfola, D., Sanchez, L., Urbanization, Carbon Cycle and Climate Change: Towards an Integrated framework. *Earth's Future* (Special Issue)
- (46) Connolley, J.T., Pickett, S.T.A., Boone, C., Fisher, D., Grove, M., **Hutyra, L.R.**, Kaushal, S., Raciti, S.M., Svendsen, E., Welty, C., Governing for Sustainability in Megaregions: A perspective on emerging social and ecological challenges. *Proceedings of the National Academy of Sciences of the United States of America* (Target Journal).
- (45) Gurney, K.R., Ramero-Lankao, P., Seto, K.C., Kennedy, C., Grimm, N.B., Ehleringer, J., Marcotullio, P., Pincetl, S., Feddema, J.J., Hughes, S., Chester, M.V., **Hutyra, L.R.**, Sperling, J., Runfola, D., Urbanization, carbon, and climate change: The hotspots of carbon emissions and why we don't know enough to sustainably alter their trajectories. *Nature*.
- (44) Templer, P.H., **Hutyra, L.R.**, Raciti, S.M., Toll, J., Nitrogen and Carbon Export from Urban Areas Through Residential Yard Waste Management. *Frontiers in Ecology and Environment*.
- (43) Raciti, S.M., **Hutyra, L.R.**, Newell, J.D. Mapping carbon storage in urban trees with multi-source remote sensing data: Relationships between biomass, land use, and demographics in Boston neighborhoods. *Science of the Total Environment*.
- IN PRESS (42) Ng, B.J.L., **Hutyra, L.R.**, Nguyen, H.T., Cobb, A., Fuu-Ming, K., Harvey, C., Gandois, L. Carbon fluxes from an urban tropical grassland. *Environment Pollution*.
- (41) **Hutyra, L.R.** Urban nutrient cycling in Handbook on urbanization and global environmental change. Seto, K. and Solecki, W. (eds). Taylor and Francis Books.
- (40) Kong, F., Yin, H., James, P., **Hutyra, L.R.**, He, H. Effects of spatial pattern of green space on urban cooling in a large metropolitan area of eastern China. *Landscape and Urban Planning*, in press.
- (39) Rao, P., **Hutyra, L.R.**, Raciti, S.M., Templer, P.H., Atmospheric nitrogen inputs and losses along an urbanization gradient in the Boston metropolitan region. *Biogeochemistry*, in press (DOI 10.1007/s10533-013-9861-1).
- 2013 (38) Restrepo-Coupe, N., da Rocha, H.R., **Hutyra, L.R.**, da Araujo, A.C., Borma, L.S., Christoffersen, B., Cabral, O.M.R., de Camargo, P.B., Cardoso, F.L., da Costa, A.C.L., Fitzjarrald, D.R., Goulden, M.L., Kruijt, B., Maia, J.M.F., Malhi, Y.S., Manzi, A.O., Miller, S.D., Nobre, A.D., von Randow, C., Abreu Sá, L.D., Sakai, R.K., Tota, J., Wofsy, S.C., Zanchi, F.B., Saleska, S.R., What drives the seasonality of photosynthesis across the Amazon basin? A cross-site analysis of eddy flux tower measurements from the Brasil flux network. *Agricultural and Forest Meteorology*, 182-183: 128-144, 2013.
- (37) Rao, P., **Hutyra, L.R.**, Raciti, S.M., Finzi, A.C., Field and remotely sensed measures of soil and vegetation carbon and nitrogen across an urbanization gradient in the Boston Metropolitan Area. *Urban Ecosystems*, 16: 593-616, 2013.
- (36) Briber, B.M., **Hutyra, L.R.**, Dunn, A.L., Raciti, S.M., Munger, J.W., Variations in atmospheric CO₂ and carbon fluxes across a Boston, MA urban gradient. *Land*, 2(3): 304-327, 2013.
- (35) Gately, C.K., **Hutyra, L.R.**, Sue Wing, I., Brondfield, M.N., A bottom-up approach to on-road CO₂ emissions estimate: Improved spatial accuracy and applications for regional planning. *Environmental Science and Technology*, 47(5), 2423-2430, 2013.
- (34) Alberti, M. and **L.R. Hutyra**. Carbon signatures of development patterns along a gradient of urbanization in. Land Use and the Carbon Cycle: Science and Applications in Human Environment Interactions. Brown, D.G., Robinson, D.T., French, N.H.F., and B.C. Reed (eds). Cambridge University Press, ISBN: 9781107648357, 2013.
- (33) Phillips, N.G., Ackley, R. Crosson, E.R., Down, A., **Hutyra, L.R.**, Brondfield, M., Karr, J.D., Zhao, K., Jackson, R.B., Mapping urban pipeline leaks: methane leaks across Boston. *Environmental Pollution*, 173: 1-4, 2013.
- (32) Hepinstall-Cymerman, J., Coe, S., **Hutyra, L.R.** Patterns of land cover change in the central Puget Sound, Washington, 1986-2007, *Urban Ecosystems*, 16: 109-129, 2013.
- 2012 (31) Ivanov, V.Y., **Hutyra, L.R.**, Wofsy, S.C., Munger, J.M., Saleska, S.R., de Olivera, R.C., de

- Carmargo, P. Root niche separation can explain avoidance of seasonal drought stress and vulnerability of overstory trees to extended drought in a mature Amazonian forest. *Water Resources Research*, 48: doi 10.1029/2012WR011972, 2012.
- (30) Seto, K.C., B. Güneralp, **Hutyra, L.R.**, Global Forecasts of Urban Expansion to 2030 and Impacts on Biodiversity and Carbon Pools. *Proceedings of the National Academy of Sciences of the United States of America*, 109 (40): 16083-16088, 2012.
- (29) Brondfield, M.N., **Hutyra, L.R.**, Gately, C., Raciti, S.M., Peterson, S.A. Modeling and validation of on-road CO₂ emissions inventories at the urban regional scale. *Environmental Pollution*, 170: 113-123, 2012.
- (28) Raciti, S.M., **Hutyra, L.R.**, Finzi, A.C. Depleted soil carbon and nitrogen stocks under impervious surfaces. *Environment Pollution*, 164: 248-251, 2012.
- (27) Kim, Y., Knox, R.G., Longo, M., Medvigy, D., **Hutyra, L.R.**, Pyle, E.H., Wofsy, S.C., Bras, R.L., Moorcroft, P.R., Seasonal carbon dynamics and water fluxes in an Amazonian rainforest. *Global Change Biology*, 18(4): 1322-1334, 2012.
- (26) Raciti, S.M., **Hutyra, L.R.**, Rao, P., Finzi, A.C., Inconsistent definitions of “urban” result in different conclusions about the size of carbon and nitrogen stocks. *Ecological Applications* 22(3): 1015-1035, 2012.
- 2011 (25) Miller, S., Goulden, M.L., **Hutyra, L.R.**, Keller, M., Saleska, S., Wofsy, S., Figueira, A., da Rocha, H., de Camargo, P., Reduced Impact Logging Minimally Alters Tropical Rainforest Carbon and Energy Exchange *Proceedings of the National Academy of Sciences of the United States of America*, 108(48): 19431-19435, 2011.
- (24) **Hutyra, L.R.**, Yoon, B., Hepinstall-Cymerman, J., Alberti, A. Carbon consequences of land cover change and expansion of urban lands: A case study in the Seattle metropolitan region. *Landscape and Urban Planning* 103: 83-93, 2011.
- (23) **Hutyra, L.R.**, Yoon, B., Alberti, A. Terrestrial carbon stocks across a gradient of urbanization: A study of the Seattle, WA region. *Global Change Biology*, 17: 783-797, 2011.
- 2010 (22) Costa, M., Biajoli, M., Saches, L., Malhado, A.C., **Hutyra, L.R.**, Da Rocha, H.R., Aguiar, R. Atmospheric versus vegetation controls of Amazonian tropical rainforest evapotranspiration: are the wet and seasonally dry rainforests any different? *Journal of Geophysical Research - Biogeosciences*, 115, G04021, doi:10.1029/2009JG001, 2010.
- (21) van Haren, J.L.M.R., de Oliveira, C., Restrepo-Coupe, N., **Hutyra, L.R.**, de Carmargo, P.B., Saleska, S.R. Do plant species influence soil CO₂ and N₂O fluxes in a diverse tropical forest? *Journal of Geophysical Research – Biogeosciences*, doi: 10.1111/j.1365-2486.2010.02238.x, 2010.
- 2009 (20) Alberti, M. and **L.R. Hutyra**. Detecting Carbon Signatures of Development Patterns across a Gradient of Urbanization: Linking Observations, Models, and Scenarios. *Proceedings of the Fifth Urban Research Symposium 2009: Cities and Climate Change: Responding to an Urgent Agenda*, Vol.1, 1-12, 2009.
- (19) van Gorsel, E., N. Delpierre, R. Leuning, A. Black, J.W. Munger, S. Wofsy, M. Aubinet, C. Feigenwinter, J. Beringer, D. Bonal, B. Chen, J. Chen, R. Clement, K.J. Davis, A. Desai, D. Dragoni, S. Etzold, T. Grünwald, L. Gu, B. Heinesch, **L.R. Hutyra**, W.W.P. Jans, W. Kutsch, B.E. Law, M.Y. Leclerc, I. Mammarella, L. Montagnani, A. Noormets, C. Rebmann, W. Sonia, Estimating nocturnal ecosystem respiration from the vertical turbulent flux and change in storage of CO₂. *Agricultural and Forest Meteorology*, 149: 1919-1930, 2009.
- (18) Grant, R.F., **Hutyra, L.R.**, de Oliveira, R.C., Munger, J.W., Saleska, S.R., Wofsy, S.C., Modeling the carbon balance of Amazonian rainforests: Resolving ecological controls on net ecosystem productivity, *Ecological Monographs*, 79(3): 445-463, 2009.
- (17) Malhi, Y., Aragão, L.E., Metcalfe, D.B., Patiño, S., Quesada, C.A., Almeida, S., Anderson, L., Brando, P., Chambers, J.Q., Costa, A.C.L., Martins, L., **Hutyra, L.R.**, Oliveira, P., Pyle, E.H., Robertson, A.L. Comprehensive assessment of carbon productivity, allocation and storage in three Amazonian forests. *Global Change Biology*. doi: 10.1111/j.1365-2486.2008.01780.x, 2009.
- 2008 & BEFORE (16) **Hutyra, L.R.**, Munger, J.W., Pyle, E.H., Saleska, S., Restrepo-Coupe, N., de Camargo, P.B., Wofsy, S.C., Resolving systematic errors in estimates of net ecosystem exchange of CO₂

- and ecosystem respiration in a tall-stature forest: application to a tropical forest biome, *Agricultural and Forest Meteorology*, 148: 1266-1279, 2008.
- (15) Pyle, E.H., Santoni, G.W., Nascimiento, H.E.M., **Hutyra, L.R.**, de Carmago, P.B., Vieira, S., Saleska, S.R., Laurance, W.F., Wofsy, S.C., Dynamics and disequilibria of carbon, biomass, and structure in two Amazonian forests, *Journal of Geophysical Research – Biogeosciences*, 113, G00B08, doi:10.1029/2007JG000592, 2008.
- (14) Luyssaert, S., I. Inglima, M. Jung, A.D. Richardson, M. Reichstein, D. Papale, S.L. Piao, E.D. Schulze, L. Wingate, G. Matteucci, L. Aragao, M. Aubinet, C. Beer, C. Bernhofer, K.G. Black, D. Bonal, J.M. Bonnefond, J. Chambers, P. Ciais, B. Cook, K.J. Davis, A.J. Dolman, B. Gielen, M. Goulden, J. Grace, A. Granier, A. Grelle, T. Griffis, T. Grünwald, G. Guidolotti, P.J. Hanson, R. Harding, D.Y. Hollinger, **L.R. Hutyra**, P. Kolari, B. Kruijt, W. Kutsch, F. Lagergren, T. Laurila, B.E. Law, G. Le Maire, A. Lindroth, D. Loustau, Y. Malhi, J. Mateus, M. Migliavacca, L. Misson, L. Montagnani, J. Moncrieff, E. Moors, J.W. Munger, E. Nikinmaa, S.V. Ollinger, G. Pita, C. Rebmann, O. Roupsard, N. Saigusa, M.J. Sanz, G. Seufert, C. Sierra, M.-L. Smith, J. Tang, R. Valentini, T. Vesala and I.A. Janssens. The CO₂-balance of boreal, temperate and tropical forests derived from a global database. *Global Change Biology*, 13, 2509-2537, 2007.
- (13) **Hutyra, L.R.**, Munger, J.W., Saleska, S.R., Gottlieb, E.W., Daube, B.C., Dunn, A.L., Amaral, D.F., Camargo, P.B., Wofsy, S.C., Seasonal controls on the exchange of carbon and water in an Amazonian rainforest, *Journal of Geophysical Research-Biogeosciences*, 112, G03008, 2007.
- (12) Ichii, K., Hashimoto, H., White, M.A., Potter, C., **Hutyra, L.R.**, Huete, A.R., Myneni, R.B., Nemani, R.R., Constraining rooting depths in tropical rainforests using satellite data and ecosystem modeling for accurate simulation of GPP seasonality, *Global Change Biology*, 13, 67-77, 2007.
- (11) Huete, A.R., Didan, K., Shimabukuro, Y.E., Ratana, P., Saleska, S., **Hutyra, L.R.**, Yang, W., Nemani, R.R. and Myneni, R. Amazon rainforests green-up with sunlight in dry season, *Geophysical Research Letters*, 33, L06405, 2006.
- (10) Liu, W.H., Bryant, D.M., **Hutyra, L.R.**, Saleska, S.R., Hammond-Pyle, E., Curran, D., Wofsy, S.C., Woody debris contribution to the carbon budget of selectively logged and maturing mid-latitude forests, *Oecologia*, 148(1) 108-117, 2006.
- (9) **Hutyra, L.R.**, Munger, J.W., Nobre, C.A., Saleska, S.R., Vieira, S.A., Wofsy, S.C., Climatic variability and vegetation vulnerability in Amazonia, *Geophysical Research Letters*, 32, L24712, 2005.
- (8) Xiao, X.M., Moore, B., Zhang, Q., Saleska, S.R., **Hutyra, L.**, Wofsy, S.C., Frohling, S., Boles, S., Keller, M., Satellite-based modeling of gross primary production in a seasonally moist tropical evergreen forest, *Remote Sensing of Environment*, 94 (1), 105-122, 2005.
- (7) Bain, W.G., **Hutyra, L.**, Patterson, D.C., Bright, A.V., Daube, B.C., Munger, J.W., Wofsy, S.C., Wind-induced error in the measurement of soil respiration using closed dynamic chambers, *Agricultural and Forest Meteorology*, 131 (3-4), 225-232, 2005.
- (6) Vieira, S., de Carmago, P.B., Selhorst, D., da Silva, R., **Hutyra, L.**, Chambers, J.Q., Brown, I.F., Higuchi, N., dos Santos, J., Wofsy, S.C., Trumbore, S.E., Martinelli, L.A., Forest structure and carbon dynamics in Amazonian tropical rain forests, *Oecologia*, 140, 468-479, 2004.
- (5) Rice, A.H., Hammond, E.P., Saleska, S.R., **Hutyra, L.**, Palace, M., Keller, M., de Carmargo, P.B., Portilho, K., Marques, D., Wofsy, S.C., Carbon Balance and Vegetation Dynamics in an Old-growth Amazonian Forest, *Ecological Applications*, 14 (4), s55-s71, 2004.
- (4) **Hutyra, L.**, Factors controlling long- and short-term sequestration of atmospheric CO₂ in a mid-latitude forest, in *Ecological Issues in a changing world*, edited by S. Hong, Lee, J.A., Ihm, B., Farina, A., Son, Y., Kim, E., Cheo, J.C., pp. 82-84, Kluwer, Dordrecht, 2004.
- (3) Saleska, S.R., Miller, S.D., Matross, D.M., Goulden, M.L., Wofsy, S.C., da Rocha, H., de Camargo, P.B., Crill, P., Daube, B.C., de Freitas, H.C., **Hutyra, L.**, Keller, M., Kirchhoff, V., Menton, M., Munger, J.W., Pyle, E.H., Rice, A.H., Silva, H., Carbon fluxes in old-growth Amazonian rainforest: seasonality and disturbance-induced net carbon loss, *Science*, 302, 1554-1557, 2003.

	<p>(2) Barford, C.C., Wofsy, S.C., Goulden, M.L., Munger, J.W., Pyle, E.H., Urbanski, S.P., Hutyra, L., Saleska, S.R., Fitzjarrald, D., Moore, K., Factors controlling long- and short-term sequestration of atmospheric CO₂ in a mid-latitude forest, <i>Science</i>, 294, 1688-1691, 2001.</p> <p>(1) Zwieniecki, M.A., L. Hutyra, M.V. Thompson, N.M. Holbrook, Dynamic changes in petiole specific conductivity in red maple (<i>Acer rubrum</i> L.), tulip tree (<i>Liriodendron tulipifera</i> L.), and northern fox grape (<i>Vitis labrusal</i> L.), <i>Plant Cell Environment</i>, 23 (4), 407-417, 2000.</p>
OTHER PUBLICATIONS	<p>(4) Romero-Lankao, P., Gurney, K., Seto, K., Baker, L., Chester, M., Kennedy, C., Duren, R., Ehleringer, J., Feddema, J., Frost, G., Grimm, N.B., Hughes, S., Hutyra, L.R., Marcotullio, P., Patarasuk, R., Pincetl, S., Runfola, D., Sanchez, L., Shrestha, G., Sarzynski, A., Stokes, E. Towards a more Integrated Understanding of Urbanization, Carbon and Climate Change. White Paper for the Carbon Cycle Interagency Working Group, 2014.</p> <p>(3) Wismuller, S., Srivastava, B., Rudy, R., Xu, J., Miller, B., Giacomel, A., Gupta, V., Jacob, N., Osgood, C., Parker, K., Hutyra, L., A General Approach to Exploit Available Traffic Data for a Smarter City. ITS World Congress 2013.</p> <p>(2) Hutyra, L.R., Raciti, S., Phillips, N.G., Munger, J.W. Exploring Space-time Variation in Urban Carbon Metabolism, <i>Urbanization and Global Environment Change, Viewpoints</i>, IV: 11-14, 2011.</p> <p>(1) Hutyra, L.R. Carbon footprints. <i>World Book Encyclopedia</i>, 2011.</p>
INTERNATIONAL PRESENTATIONS	<p>(9) June 2014 – “CO₂ fluxes in cities” Urban Environmental Pollution (UEP 2014): Climate Change and Urban Environment, Toronto, Canada. [Invited Plenary]</p> <p>(8) January 2012 – “Lessons learned from micrometeorological measurements in the Amazon” Center for Environmental Sensing and Modeling, 5th Annual Workshop, National University of Singapore, Singapore. [Invited]</p> <p>(7) November 2009 – “Seasonal and annual controls on forest carbon exchange,” New Phytologist Symposium: Carbon cycling in tropical ecosystems. Guangzhou, China. [Invited]</p> <p>(6) June 2009 – “Detecting Carbon Signatures of Development Patterns across a Gradient of Urbanization: Linking Observations, Models, and Scenarios,” Urban Research Symposium 2009 on Cities and Climate Change: Responding to an Urgent Agenda, Marseilles, France.</p> <p>(5) January 2009 – “Validation of ecosystem carbon exchange estimates,” Workshop on monsoon Asia tropical forest dynamics and sustainability, Khon Kaen, Thailand. [Invited]</p> <p>(4) September 2007 – “Effects of disturbance on biomass, structure and carbon balance in two Amazonian Forests,” NASA LBA-ECO, Salvador, Brazil.</p> <p>(3) October 2006 – “What is the role of climate in controlling the exchange of carbon and water in an Amazonian rainforest?,” NASA LBA-ECO conference, Sao Paulo, Brazil.</p> <p>(2) November 2005 – “Climatic variance and vulnerability in Amazonia,” NASA LBA-ECO Conference, Brasilia, Brazil.</p> <p>(1) August 2002 – “Factors controlling long- and short-term sequestration of atmospheric CO₂ in a mid-latitude forest,” International Congress of Ecology & INTECOL meeting, Seoul, South Korea. [Invited]</p>
INVITED SEMINARS	<p>(18) May 2014 - “Urbanization, land cover change, and the carbon cycle,” Harvard University, Environmental Science and Engineering Seminars, Cambridge, MA.</p> <p>(17) May 2014 – “Urbanization, land cover change, and the carbon cycle,” Harvard University, Arnold Arboretum, Boston, MA.</p> <p>(16) April 2014 - “Urbanization and the carbon cycle: A critical examination of land use changes, plant responses, and anthropogenic emissions,” University of Massachusetts - Amherst, Amherst, MA.</p> <p>(15) March 2014 - “Urbanization, land cover change, and the carbon cycle,” City University</p>

- of New York, New York, NY.
- (14) March 2014 - "Urbanization, land cover change, and the carbon cycle," Worcester State University, Worcester, MA.
 - (13) October 2013 - "The Climate Crisis: Tracking Boston's Carbon Dioxide and Methane Digestion," Boston University Discovery Series lectures, Boston, MA
 - (12) May 2013 - "CO₂ in the City" Massachusetts Institute of Technology, Global Technology and Policy Research Seminar, Boston, MA.
 - (11) March 2013 - "Building a Smarter City" Smarter Cities: A Roadmap for the Future, Boston, MA.
 - (10) March 2013 - "The urban carbon cycle: Do ecosystems really matter?" Marine Biological Laboratory, Woods Hole, MA.
 - (9) February 2012 - "Cities and the carbon cycle: Do urban areas only matter in terms of emissions?" Yale University, School of Forestry & Environmental Studies, New Haven, CT
 - (8) November 2011 - "Atmosphere-biosphere carbon exchange" Guest lecture in ES268 (Chemical Kinetics, Harvard University), Cambridge, MA
 - (7) January 2011 - "Boston's Urban Metabolism" Harvard University January Term course, Reading and Conserving New England: Interdisciplinary Insights into a landscape's Past, Present, and Future, Cambridge, MA.
 - (6) November 2010 - "Impacts of disturbance and recovery dynamics in an Amazonian rainforest," Boston University Terrestrial Biogeoscience Seminar Series, Boston, MA.
 - (5) June 2010 - "Terrestrial carbon cycling across urban to rural gradients," Harvard Forest Summer Seminar Series, Petersham, MA.
 - (4) October 2009 - "Urbanization, terrestrial vegetation structure, and the carbon cycle: Results from the Seattle, WA region" King County, Land and Water Division - Fall Science Seminar. Seattle, WA.
 - (3) February 2008 - "Carbon and water exchange in Amazonian rainforests," University of Washington, Water Center Seminar, Seattle, WA.
 - (2) October 2007 - "Seasonal controls on the exchanges of carbon and water in an Amazonian rainforest," University of Washington, Program on Climate Change Seminar, Seattle, WA.
 - (1) April 2007 - "Carbon & water exchange in Amazonian rainforests," Massachusetts Institute of Technology, Hydrology Seminar Series, Cambridge, MA.

**CONFERENCE &
WORKSHOP
ORAL
PRESENTATIONS**

- (19) May 2014 - "Boston's Trees and Climate Change", Community meeting for revision of Boston's Climate Action Plan, Boston, MA. [Invited Speaker and Discussant]
- (18) April 2014 - "*4-D Modeling of the Regional Carbon Cycle in & Around Urban Environments: An Interdisciplinary Study to Advance Observational & Modeling Foundations*", NASA Land Cover, Land Use Change Science Team Meeting, Rockville, MD. [Invited]
- (17) April 2014 - "Urban carbon/climate and air quality applications of OCO₂" NASA Orbiting Carbon Observatory: Applications Workshop, Baltimore, MD. [Invited]
- (16) February 2014 - "Interdisciplinary Distributed Courses: A Hybrid Approach to Teaching" Boston University Sixth Annual Instructional Innovation Conference, Boston, MA.
- (15) December 2013 - "Impacts of Urbanization on the Carbon Cycle" American Geophysical Union Fall Meeting, San Francisco, CA. [Invited]
- (14) September 2013 - "Local science informing local policies: Opportunities in regional carbon management" Massachusetts Institute of Technology workshop on Modeling Social, Technical and Natural Systems for Policy, Boston, MA [Invited]
- (13) March 2013 - "The urban carbon cycle: Do ecosystems really matter?" Northeastern Ecosystem Research Cooperative 2013 annual conference, Saratoga Springs, NY. [Invited]
- (12) September 2012 - "Assessing urban influences on ecosystems and the atmosphere" National Atmospheric Deposition Program annual meeting, Portland, ME. [Invited]

- (11) June 2012 – “Carbon cycling across the Boston urban to rural gradient: Integrating emissions estimates and atmospheric observations” Conference on Agricultural and Forest Meteorology, Boston, MA.
- (10) March 2012 – “ULTRA opportunities to bridge ecosystems, people, and land management” Harvard Forest Long-Term Ecological Research Area Annual Meeting, Petersham, MA. [Invited]
- (9) August 2011 – “Carbon cycling across the Boston urban to rural gradient: Integrating emissions estimates and atmospheric observations” Ecological Society of America, Austin, TX.
- (8) April 2011 – “The Carbon Metabolism of Boston” International Association for Landscape Ecology Annual Meeting, Portland, OR. [Invited]
- (7) March 2011 – “Boston’s Urban Metabolism” Harvard Forest Long-Term Ecological Research Area Annual Meeting, Petersham, MA. [Invited]
- (6) February 2011 – “Coupled Human-Natural Systems: ULTRA” Boston University Earth Systems Forum, Boston, MA [Invited]
- (5) December 2010 – “Carbon dynamics across gradients of urbanization: Contrasting results from Boston and Seattle,” American Geophysical Union Fall Meeting, San Francisco, CA.
- (4) April 2010 – “Terrestrial carbon dynamics across gradients of urbanization,” Emerging Issues Along Urban-Rural Gradients, Atlanta, GA.
- (3) December 2008 – “Biodiversity in human dominated landscape: An urban ecology perspective,” Biodiversity in a rapidly changing world, 9th national conference on science, policy, and the environment, Washington DC.
- (2) May 2008 – “Impacts of alternative development patterns on aquatic ecosystems: Evidence from Puget Sound lowland sub-basins,” Western Division of the American Fisheries Societies Symposium, Portland, OR. [Invited]
- (1) April 2008 – “Discontinuities, criticality, & resilience in urban landscapes,” US-IALE Symposium, Madison, WI.

OTHER CONFERENCE PRESENTATIONS

Underline denotes Advisee Co-Author

- (23) April 2014 – DeCola, P., Wofsy, S.C., **Hutyra, L.R.**, Measurements and modeling of greenhouse gases and the planetary boundary layer for the Boston metro area and the Northeastern Megalopolis, European Geosciences Union, Vienna, Austria.
- (22) December 2013 – Valeriy Y. Ivanov; **Lucy Hutyra**; Steven C. Wofsy; J. W. Munger; Scott R. Saleska; Raimundo Cosme De Oliveira Jr.; Plinio B. Camargo; Simone Fatichi Root Niche Separation as Strategy of Avoidance of Seasonal Drought Stress in a Mature Amazonian Forest American Geophysical Union Fall Meeting, San Francisco, CA. [Invited]
- (21) December 2013 - *Steven C. Wofsy; Kathryn McKain; Jia Chen; Patricia Levi; Elaine Gottlieb; **Lucy Hutyra**; Steve M. Raciti; Nathan G. Phillips; William Callahan; Phil Decola; Taylor Jones; Jennifer D. Hegarty; Thomas Nehrkorn; Marikate Mountain; Janusz Eluszkiewicz; John Henderson; John Budney; Colm Sweeney* Measurements and modeling of CH₄ and CO₂ in the Boston Metro area and Northeastern Megalopolis, American Geophysical Union Fall Meeting, San Francisco, CA.
- (20) December 2013 - **Conor Gately; Lucy Hutyra**; Ian Sue Wing. A new gridded on-road CO₂ emissions inventory for the United States, 1980-2011, American Geophysical Union Fall Meeting, San Francisco, CA.
- (19) December 2013 - Pamela H. Templer; Preeti Rao; **Lucy Hutyra**; Steve M. Raciti Atmospheric nitrogen inputs and losses along an urbanization gradient from Boston to Harvard Forest, MA, American Geophysical Union Fall Meeting, San Francisco, CA.
- (18) December 2013 - Steve M. Raciti; **Lucy Hutyra**; Brittain M. Briber; Allison L. Dunn; Mark A. Friedl; Curtis Woodcock; Zhe Zhu; Pontus Olofsson Quantifying ecosystem carbon losses and gains following development in New England: A combined field, modeling, and remote sensing approach, American Geophysical Union Fall Meeting, San Francisco, CA.

- (17) December 2013 - **Lucy Hutyra**; Yun Yang; JiHyun Kim; Chingwen Cheng; Patrick O'Brien; Shabnam Rouhani; Ellen M. Douglas; Craig Nicolson; Robert Ryan; Crystal Schaaf; Paige Warren; Wilfred M. Wollheim Future scenarios of urbanization and its effects on water quantity and quality in three New England watersheds. American Geophysical Union Fall Meeting, San Francisco, CA.
- (16) December 2012 – Seto, K., Guneralp, B., **Hutyra, L.R.** Global Forecasts of Urban Expansion to 2030 and Direct Impacts on Biodiversity and Carbon Pools. American Geophysical Union Fall Meeting, San Francisco, CA. [Invited]
- (15) May 2012 – Yang, Y., Z. Wang, C. Schaaf, D. Tenenbaum, E. Douglas, **L. R. Hutyra, S. M. Raciti, P. Rao.** Evaluating Temperature Vegetation Dryness Index Using Various Vegetation Indices in Multiple Spatial Resolutions, Conference on Agricultural and Forest Meteorology Boston, MA.
- (14) February 2012 – Short, A., Kittredge, D., **Hutyra, L.R.** *Conservation Awareness along the Urban-Rural Gradient*, Association of American Geographers, New York, NY.
- (13) December 2012 – McKain, K., Wofsy, S.C., Budney, J., **Hutyra, L., Raciti, S.**, Briber, B., Phillips, N.G., Jackson, R.B., Down, A., Schaaf, C., Characterization of urban methane emissions in Boston, Massachusetts using an observational network and inverse modeling framework. American Geophysical Union Fall Meeting, San Francisco, CA.
- (12) December 2012 – **Raciti, S.M., Hutyra, L.R.,** McHale, M.R. Putting urban biomass on the map: contrasting case studies from three climactic zones. American Geophysical Union Fall Meeting, San Francisco, CA.
- (11) December 2012 – Phillips, N., Crossen, E., Down, A., **Hutyra, L., Raciti, S.**, Wofsy, S. The Boston Methane Project: Mapping Surface Emissions to Inform Atmospheric Estimation of Urban Methane Flux, American Geophysical Union Fall Meeting, San Francisco, CA.
- (10) August 2011 - Phillips, N, L Hutyra, M Friedl, S Gopal, R Kaufmann, J Ferreira, P Furth, DY Hollinger, DR Foster and S Wofsy. The metabolism of Boston. Ecological Society of America, Austin, TX.
- (9) August 2011 - **Raciti, SM, LR Hutyra,** P Rao and AC Finzi, Boston University. The importance of definition and scale: Soil and vegetation carbon across an urban to rural gradient. Ecological Society of America, Austin, TX.
- (8) December 2011 –**Raciti, S.M., Hutyra, L.R., Rao, P.,** Finzi, A. Soil and vegetation carbon in urban ecosystems: The importance of urban definition and scale. American Geophysical Union Fall Meeting, San Francisco, CA.
- (7) December 2011 – **Brondfield, M.N., Hutyra, L.R., Raciti, S.M.,** McCain, K., Wofsy, S.C. Comparison of Two Methods for Improving the Resolution of On-Road CO2 Emissions at a Regional Scale. American Geophysical Union Fall Meeting, San Francisco, CA.
- (6) December 2011 – Wofsy, S.C., McCain, K., **Hutyra, L., Brondfield, M., Raciti, S.,** Munger, J., Dunn, A.L., Nehrkorn, T., Eluszkiewicz, J., Ehleringer, J., Crossen, E., Wunch, D., Wennberg, P. Urban emissions of greenhouse gases and pollutants: Quantifying fluxes for the "urban dome", and impacts at the scale of the neighborhood. American Geophysical Union Fall Meeting, San Francisco, CA.
- (5) December 2011 – Ivanov, VY., Hutyra, L.R., Wofsy, S.C., Munger, J.W., Saleska, S., Olivera, R., Carmago, P., Root Niche Separation Can Explain Avoidance of Seasonal Drought Stress and Vulnerability of Overstory Trees to Extended Drought. American Geophysical Union Fall Meeting, San Francisco, CA.
- (4) December 2011 – **Rao, P., Hutyra, L.R., Raciti, S.M.,** Finzi, A. Species diversity and foliar chemistry along an urban-to-rural gradient. American Geophysical Union Fall Meeting, San Francisco, CA.
- (3) December 2010 –Yoon, B. and **Hutyra L.R.** Land cover change in the Seattle metropolitan region: An examination of spatio-temporal changes and the carbon consequences of urbanization.
- (2) December 2007 – Ivanov, V.Y., Hutyra, L.R., Wofsy, S.C. A Study of Water Uptake by a Mature Amazonian Rainforest. American Geophysical Union Fall Meeting, San Francisco, CA. American Geophysical Union Fall Meeting, San Francisco, CA.

	(1) December 2007 – Kim, Y., Moorcroft, P.M., Bras, R., Medvigy, D., Hutyra, L.R. , Pyle, E., Wofsy, S.C. Mechanistic model for light-controlled leaf phenology in the Amazon rainforests. American Geophysical Union Fall Meeting, San Francisco, CA.
TEACHING BOSTON UNIVERSITY	<p>Spring 2014 – GE/BI/ES 720: Practicum in Biogeochemistry (8 students)</p> <p>Fall 2013 – GE 475/675: Urban Ecology (8 undergraduates, 13 graduate students)</p> <p>Fall 2013 – GE/BI/ES 719: Colloquium in Biogeochemistry (7 students)</p> <p>Spring 2013 – GE 456/656: Terrestrial Ecosystems and the Carbon Cycle (5 undergraduates, 7 graduate students, 1 auditor)</p> <p>Fall 2012 – no courses taught, Family Medical Leave</p> <p>Spring 2012 – GE 104: Natural Environments: The Physical Landscape (34 undergraduates, Teaching Fellow with 3 lab sections)</p> <p>Fall 2011 – GE 456/656: Terrestrial Ecosystems and the Carbon Cycle (12 graduate students, 1 auditor)</p> <p>Spring 2011 – GE 104: Natural Environments: The Physical Landscape (25 undergraduates, Teaching Fellow with 3 lab sections)</p> <p>Fall 2010 – GE 456/656: Terrestrial Ecosystems and the Carbon Cycle (4 undergraduates, 7 graduate students)</p> <p>Spring 2010 – GE 104: Natural Environments: The Physical Landscape (22 undergraduates, Teaching Fellow with 3 lab sections)</p> <p>Fall 2009 – URBPD 498: Environmental Planning (18 students)</p>
UNIVERSITY OF WASHINGTON	
ADVISING POST-DOCTORAL FELLOWS	<p>Steve Raciti (Ph.D. Cornell Univ.) April 2010 – July 2014</p> <p>Andrew Reinmann (Ph.D. Boston Univ.) April 2014 – present</p>
GRADUATED STUDENTS	<p>2014: Evan Kuras, BS. With Honors, Geography & Environment (Senior Thesis Advisor) Thesis: <i>"Intra-neighborhood Variability in Individual Heat Exposure"</i></p> <p>2014: Andrew Reinmann, Ph.D. Biology (2nd Reader, currently post-doc in Hutyra Lab) Thesis: <i>"Effects of winter climate change on carbon and nitrogen losses from temperate forest ecosystems"</i></p> <p>2013: Preeti Rao, Ph.D. Geography & Environment (Thesis Advisor, currently post-doc at NASA Jet Propulsion Lab) Thesis: <i>"Carbon, nitrogen, and vegetation along an urbanization gradient: A Boston case study using field, remotely sensed and socioeconomic data"</i></p> <p>2013: Poliana Lemos, Ph.D. Biology (2nd Reader, currently Adjunct Professor at Santa Monica College) Thesis: <i>"A Centennial-Time Scale Analysis of New England Forests' Carbon Resiliency to the Hemlock Woolly Adelgid"</i></p> <p>2011: Max Brondfield, A.B. Harvard University (Senior Thesis Advisor; currently UCSF medical student) Thesis: <i>"Defining the urban-to-rural gradient: An analysis of CO₂ emissions inventories and patterns of spatial variation in the greater Boston area"</i></p> <p>2012: Larry Bandoni, Boston University Academy High School (Thesis Advisor, currently BU undergraduate) Thesis: <i>"The effects impervious surfaces have on soils below them and the consequences of further urbanization"</i></p> <p>2010: Jared Newell, M.S. Geography (2nd Reader; currently Environmental Consultant) Thesis: <i>"Combining multi-source remotely sensed data to model carbon budgets of urban ecosystems: A case study in Boston"</i></p>
CURRENT	Brittian Briber, Ph.D. Geography and Environment (Advisor, 2010-present)

STUDENTS	<p>Ha Nguyen, Ph.D. Geography and Environment (Advisor, 2011-present)</p> <p>Conor Gately, Ph.D. Geography and Environment (Co-Advisor, 2010-present)</p> <p>Eli Melaas, Ph.D. Geography and Environment (Reader)</p> <p>Damien Sulla-Menashe, Ph.D. Geography and Environment (Reader)</p> <p>Joshua Mantooth, Ph.D. Geography and Environment (Reader)</p> <p>Margaret Hendrick, Ph.D. Geography & Environment (Reader)</p> <p>Stephen Decina, PhD. Biology (Reader)</p> <p>Rose Abramoff, Ph.D. Biology (Reader)</p> <p>Amanda Galliant, Ph.D. Biology (Reader)</p> <p>Rebecca Sanders-Demott, Ph.D. Biology (Reader)</p> <p>Allison Gill, Ph.D. Biology (Reader)</p>
SERVICE SCIENTIFIC COMMUNITY	<p>2013-2016: North American Carbon Program Scientific Steering Committee member</p> <p>2014-2015: Urban National Ecological Observatory Network (NEON) Design Working Group</p> <p>2013: North American Carbon Program 2013 All Investigators Meeting (Scientific Steering Committee member)</p> <p>2013: National Socio-Environmental Synthesis Center (SESYNC) working group "The Megaregion as Socio-Ecological Unit"</p> <p>2010: Columbia University, Lamont-Doherty Earth Observatory, Women Faculty in Science panelist</p>
INVITED GRANT REVIEW PANELIST	<p>2014: National Aeronautics and Space Administration: New Investigator Program (NIP)</p> <p>2013: National Science Foundation, Ecosystem Science (DEB)</p> <p>2013: National Ocean and Atmospheric Administration: Climate Program (CPO)</p> <p>2012: National Science Foundation, Ecosystem Science (DEB)</p> <p>2011: Department of Defense: Strategic Environmental Research and Development Program</p> <p>2011: United States Department of Agriculture: Soils and Global Change Program</p> <p>2010: National Aeronautics and Space Administration: Terrestrial Ecology Program</p> <p>2009: National Aeronautics and Space Administration: Terrestrial Ecology Program</p>
AD-HOC GRANT REVIEWER	<p>2013: National Aeronautics and Space Administration: Post-Doctoral Fellowship</p> <p>2012: National Science Foundation: Partnerships for International Research and Education</p> <p>2012: National Aeronautics and Space Administration: Post-Doctoral Fellowship</p> <p>2011: German Research Foundation</p> <p>2011: National Science Foundation: Geography & Spatial Sciences</p> <p>2010: National Science Foundation: Climate & Large Scale Dynamics</p>
CONFERENCE SESSION CONVENER	<p>2013: Measurements, Modeling, and Evaluation of Emissions (session convener, American Geophysical Union Annual Meeting; 6 oral sessions granted)</p> <p>2012: Urbanization and Global Change (Union session convener, American Geophysical Union Annual Meeting)</p> <p>2011: Modeling and Extending Urban Metabolism (Session convener, American Geophysical Union Annual Meeting, December 2011)</p> <p>2009: Integration studies, monitoring, and modeling studies (Workshop on Monsoon Asia Tropical Forest Carbon Dynamics and Sustainability, January 2009, Khon Kaen, Thailand)</p> <p>2007: Forest Dynamics and Disturbance (NASA LBA-ECO Science Team Meeting, Salvador, Brazil)</p> <p>2006: Carbon Fluxes in Upland Ecosystems (NASA LBA-ECO Science Team Meeting, Sao Paulo, Brazil).</p>
INVITED JOURNAL REVIEWER	<p>Proceedings of the National Academy of the United States of America (PNAS), Global Change Biology; Agricultural & Forest Meteorology; Biogeochemistry (Named as 2013 Outstanding Reviewer), Climate Dynamics, Forest Ecology and Management; Ecological Applications; Journal Climate; Journal of Geophysical Research – Biogeosciences; Journal of</p>

**BOSTON
UNIVERSITY**

Geophysical Research – Atmospheres; Remote Sensing; New Phytologist; Journal of Photogrammetry and Remote Sensing.
2010 – 2014: Natural Sciences Curriculum Committee, College of Arts and Sciences
2014: Graduate Women in Science & Engineering panel discussant on career-life balance.
2013: Earth & Environment faculty search committee member (Tectonics search)
2013: Terrestrial Biogeosciences Advisory Board member
2013: Faculty Organizer for BU-IBM “Building a Smarter City” Conference
2012: Geography & Environment faculty search committee member (Remote Sensing search)
2011: Faculty Advisor for Boston University Alumni College “Sustainability in the City”
2011: Science & Engineering Day Judge
2011: New Faculty Orientation Panelist
2011: Earth Systems Forum Breakout Group Leader
2010: Geography & Environment faculty search committee member (Human Dimensions of global change search)
2010: New Faculty Orientation Panelist
2010: Science & Engineering Day Judge

**OTHER
EMPLOYMENT**

Harvard University, Cambridge, Massachusetts
Research Assistant, under Dr. Steven C. Wofsy, June 1999 – September 2002
Weyerhaeuser Co., Federal Way, Washington, USA
Environmental & Analytical Sciences Research Technician, April 1996 – May 1998