

# LUCY R. HUTYRA

BOSTON UNIVERSITY  
DEPARTMENT OF EARTH & ENVIRONMENT  
685 COMMONWEALTH AVENUE  
BOSTON, MA 02215 USA  
(617) 353-5743 – LRHUTYRA [AT] BU.EDU  
HTTP://SITES.BU.EDU/HUTYRA/

## RESEARCH INTERESTS

Interactions between humans and ecosystems including (1) carbon, water, & energy cycling (2) ecosystem responses to stressors (both human and climatic); (3) terrestrial ecology; (4) cities.

## ACADEMIC APPOINTMENTS

### **Boston University, Boston, Massachusetts, USA**

Professor of Earth & Environment, 2021 – Present  
Director Biogeosciences Program, 2021 – present  
Associate Director, Initiative on Cities, 2023 – present  
Associate Director, Urban NRT Program, 2017 – present  
Affiliated Faculty, Center for Information and Systems Engineering, 2013 – Present  
Interim Director, Initiative on Cities, 2021 – 2022  
Co-Director, Urban Climate Research Initiative, 2018 – 2022  
Associate Professor of Earth & Environment, 2015 – 2021  
Assistant Professor of Earth & Environment, 2009 – 2015

### **Harvard University**

Associate, Department of Earth & Planetary Sciences, 2016 – present  
Associate of the Arnold Arboretum of Harvard University, 2015 – Present  
Charles Bullard Fellow, 2016 – 2017

### **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

## HONORS, AWARDS, & DISTINCTIONS

2023 – 2024: Visiting Faculty Fellow, Google.  
2017 – present: NASA Federal Advisory Committee on Earth Sciences  
2022 Dean's Award for Excellence in Graduate Education, College of Arts & Sciences, Boston University  
2019 – 2022: Contributing Author to IPCC WGIII, AR6 Climate Change in 2021: Mitigation of Climate Change  
2016-2017 Charles Bullard Fellowship, Harvard University  
2016 National Academy of Sciences, Kavli Fellow (Early Career Award)  
2015 Templeton Award for Excellence in Student Advising  
2012 National Science Foundation CAREER Award

**GRANTS &  
AWARDS**

- (39) From grasses to trees to forest fragments – Improving our understanding and modeling of biogenic fluxes in cities. National Institute of Standards and Technology **(PI)**. 10/1/2023 – 9/30/2026
- (38) Application of continuous ground-based remote sensing to analysis of OCO-2/3 XCO<sub>2</sub> and SIF data in mosaic landscapes (CO-PI, Institutional PI). 7/2021 - 06/2024
- (37) Understanding methane changes in cities affected by COVID-19 shutdowns. NOAA (CO-PI, institutional PI). 9/1/2021-8/31/2023
- (36) Application of continuous ground-based remote sensing to analysis of OCO-2/3 XCO<sub>2</sub> and SIF data in mosaic landscapes; NASA (Co-PI). 7/2021-7/2024
- (35) Quantifying spatial and temporal variations in urban biogenic C fluxes: measurements, models and remote sensing from the leaf to the forest scale; NIST **(PI)**. 8/1/2020-7/31-2024
- (34) CO<sub>2</sub>-Air Quality Urban Synthesis and Analysis ("CO<sub>2</sub>-AQ USA") Project: Trends & Drivers of Urban Emissions from Past, Present, to Future; NOAA (CO-PI). 9/1/2020-8/31/2024
- (33) Calibration & validation of XCO<sub>2</sub> and SIF for urban targets; NASA **(PI – Science Component of the award)**. 9/1/19 – 2/28/22
- (32) A pantropical monitoring system of carbon emissions and removals from forest degradation, deforestation, and forest expansion and growth; NASA (CO-PI) 9/1/19-8/31/22
- (31) PREEVENTS Track 2: Land-atmosphere feedbacks over urban terrain under heat waves; NSF (CO-PI)
- (30) Re-envisioning Urban Infrastructure to Address Climate Change: A Comprehensive Regional Framework for Sustainability; NSF **(PI)** 5/1/19-10/30/19
- (29) Calibration & validation of XCO<sub>2</sub> and SIF for urban targets; NASA **(PI – Instrumentation Component of the award)**. 3/1/19-2/29/20
- (28) Vegetation Photosynthesis & Respiration Modeling for Toronto; Environment Canada **(PI)** 12/1/19-3/31/19
- (27) LTER: From Microbes to Macrosystems: Understanding the response of ecological systems to global change drivers and their interactions; NSF (CO-I) 1/1/2019-12/31/2024
- (26) Mitigation of Boston heat island effect with urban canopy, Boston University Pardee Center seed grant **(PI)**
- (25) Fluorescence Based Constraints on Urban Biogenic CO<sub>2</sub> Fluxes from OCO-2, OCO-3, and CLARS; NASA (CO-PI) 5/22/2018-5/21/21
- (24) NRT: Boston UniverCity - Partnering Graduate Students and Cities to Tackle Urban Environmental Challenges (CO-PI); NSF 8/1/2017-7/31/2022
- (23) CO<sub>2</sub> Urban Synthesis and Analysis ("CO<sub>2</sub>-USA") Network **(Institutional PI)**: NOAA 8/2017-7/2020
- (22) Coastal Hypoxia Analysis and Risk Tracking (CHART) through Remote Sensing and Process-based Modeling in South and Southeast Asia **(Institutional PI)**: NASA 9/2017-8/2020
- (21) Urban net ecosystem productivity: Solar induce fluorescence as a tool for productivity assessment **(PI)**; NIST 3/2017-2/2020
- (20) Fragmentation effects on forest productivity across managed ecosystem gradients **(PI)**; USDA 6/2017-5/2020
- (19) Coupled Carbon and Nitrogen Cycling under Changing Land Cover and Air Quality: Improving Regional Estimates of Carbon Dynamics for the Northeastern U.S. (CO-PI); USDA 3/2017-2/2020
- (18) Prototype Regional Carbon Monitoring Systems for Urban Regions **(Institutional PI)**; NASA 9/2016-8/2019
- (17) Tracking carbon emissions and removals by time series analysis of the land surface: prototype application in tropical MRV systems compliant with IPCC Tier 3 (CO-PI); NASA 9/2016-8/2019
- (16) Validation and Application of OCO-2 data in US Northeast Corridor **(Institutional PI)**; NASA, 4/2015-3/2018.

- (15) RCN: Coordinating the Development of Terrestrial Lidar Scanning for Aboveground Biomass and Ecological Applications (CO-PI); NSF, 6/2015-5/2020
- (14) CAREER: Assessing urban influences on ecosystem processes (**PI**); National Science Foundation, DEB-1149471, 2/2012 – 1/2017.
- (13) Quantifying carbon signatures across urban-to-rural gradients: Advancing the capacity for monitoring, reporting, and verification through observations, models, and remote sensing (**PI**); NOAA, 8/2014 – 7/2017
- (12) SCOPE: A smart-city cloud-based platform and ecosystems; Partnerships for Innovation (CO-PI); National Science Foundation, 8/2014 – 7/2017.
- (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 – 8/2015.
- (10) Prototype Monitoring, Reporting, and Verification System for the Regional Scale: The Boston-DC Corridor (CO-PI); NASA (NNH13CK02C), 9/2013 – 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 – 8/31/2015
- (7) 4-D modeling of the regional carbon cycle in and around urban environments: An interdisciplinary study to advance observational and modeling foundations (CO-PI); NASA (NNX12AM82G), 7/1/2012 – 6/30/2015.
  
- (6) Collaborative Research: ULTRA-Ex: Metabolism of Boston (CO-PI). National Science Foundation, DEB-0948857, 9/2010-2/2012.
- (5) Urban carbon metabolism travel grant (**PI**); Boston University, Mary Erskine Award, 2011.
- (4) Linking CO<sub>2</sub> 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
- (3) Estimating rates of methane leakage from Greater Metropolitan Boston (CO-PI); Environment Defense Fund, 5/2012 – 11/2012.
- (2) Carbon and nitrogen dynamics along an urbanization gradient in Boston, MA. Arnold Arboretum Deland Award granted to PhD Advisee Preeti Rao, 2011-2012.
- (1) Combating climate change through smarter urban transportation policies (Academic PI); IBM Smarter Cities, 2012.

**NASA  
SCIENCE  
TEAMS**

- (3) NASA Orbital Carbon Observatory – 3 2018 – present
- (2) NASA Orbital Carbon Observatory – 2 2015-2018
- (1) NASA Carbon Monitoring System 2013 – 2020

**PUBLICATIONS**

**PEER-REVIEWED ARTICLES & BOOK CHAPTER**

UNDERLINE DENOTES ADVISEE

(**WEB OF SCIENCE H-INDEX = 48; SUM OF CITATIONS 9,962**)

IN REVIEW

- (114) Pitt, J.R., Lopez-Coto, I., Karion, A., Hajny, K.D., Tomlin, J., Kaeser, R., Jayarathne, T., Stirm, B.H., Floerchinger, C.R., Loughner, C.P., Commane, R., Gately, C.K., **Hutyra, L.R.**, Gurney, K.R., Roest, G.S, Liang, J., Gourджи, S., Mueller, K.L, Whetstone, J.R., Shepson, P.B., New York City methane emissions: what are we missing?, *Environmental Science & Technology*, in review.
- (113) Smith, I.A., Templer, P.H., **Hutyra, L.R.** Water sources for street trees in mesic urban environments, *Science of the Total Environment*, in review.
- (112) Morreale, L., Thompson, J., Pasquarella, V., **Hutyra, L.R.** Edge cases: Fragmentation in temperate forest landscapes, *Frontiers in Ecology and Environment*, in review.

- (111) Winbourne, J.B., Palazzoli, I., Schifman, L., Gately, C.K., Smith, I.A., **Hutyra, L.R.** Spatial and seasonal trends in biogenic and fossil fuel carbon dioxide fluxes among three metropolitan regions, *Elementa*, in review.
- IN PRESS (110) Jones, T.S., Logan, B.C., Reblin, J.S., Bombard, D.M., Ross, B.P., Allen, D.W., Marrs, J.K., **Hutyra, L.R.** Stress-induced Changes in Photosynthesis and Proximal Fluorescence Emission of Turfgrass. *Environmental Research Letters*, in press.
- 2023 (109) Tatsumi, C., Atherton, K.F., Garvey, S.M., Conrad-Rooney, E., Morreale, L., **Hutyra, L.R.**, Templer, P.H., Bhatnagar, J.M. Urbanization and edge effects interact to drive mutualism breakdown and the rise of unstable pathogenic communities in forest soils. *Proceedings of the National academy of Sciences*, 120(36): e2307519120, 2023.
- (108) Jimenez, R.B., Bozigar, M., Janulewicz, P., Lane, K.J., **Hutyra, L.R.**, Fabian, P.M. School greenness and student-level academic performance: Evidence from the Global South, *Geohealth*, 7(8): e2023GH000830, 2023.
- (107) Garvey, S.M., Templer, P.H., Bhatnagar, J., **Hutyra, L.R.** Soils at the Forest Edge, *Science of the Total Environment*, 891: 164320, 2023.
- (106) Conrad-Rooney, E., Gerirtzman, J., Pappa, Y., Pasquarella, V., **Hutyra, L.R.**, Templer, P.H. Atmospheric Wet Deposition in Urban and Suburban Sites Across the United States, *Atmospheric Environment*, 305:119783, 2023.
- (105) Caron, S. Garvey, S.M., Gewirtzman, J. Schultz, K., Bhatnagar, J.M., Driscoll, C., **Hutyra, L.R.**, Templer, P.H. Urbanization and Fragmentation Have Opposing Effects on Soil Nitrogen Availability in Temperate Forest Ecosystems, *Global Change Biology*, 29(8): 2156-2171.
- (104) Smith, I.A., Fabian, P.M., **Hutyra, L.R.**, Landcover composition and albedo impacts on urban surface temperature across seven United States cities: Towards optimal climate sensitive design, *Science of the Total Environment*, 857: 159663, 2023.
- 2022 (103) Tiesken, K., Smith, I.A., Jimenez Celsi, J.B., **Hutyra, L.R.**, Fabian, M.P. Mapping the Cooling Health Benefits of Greenspace through an Ecosystem Services Framework. *Science of the Total Environment*, 845(1): 157283, 2022.
- (102) Hajny, K.D., Floerchinger, C., Pitt, J., Tomlin, J., Kaeser, R., Stirm, B.H., Jayarathnew, T., Gately, C.K., Sargent, M., Gurney, K., Roest, G., Lopez-Coto, I., Turner, A.J., **Hutyra, L.R.**, Shepson, P.B., Wofsy, S.C. A spatially-explicit inventory scaling approach to estimate urban CO2 emissions. *Elementa*, 10.1525/elementa.2021.00121, 2022.
- (101) Mitchell, L., Lin, J., **Hutyra, L.R.**, Bowling, D., Cohen, R., Davis, K., DiGangi, E., Duren, R., Ehleringer, J., Fain, C., Falk, M., Guha, A., Karion, A., Keeling, R., Kim, J., Miles, N., Miller, C., Newman, S., Pataki, D., Prinzivalli, S., Ren, X., Rice, A., Richardson, S., Sargent, M., Stephens, B., Turnbull, J., Verhulst, K., Vogel, F., Weiss, R., Whetstone J., Wofsy, S. A Multi-City Urban Atmospheric Greenhouse Gas Measurement Data Synthesis. *Scientific Data*, 9(1): 361, 2022.
- (100) Garvey, S.M., Templer, P.H., Pierce, E.A., Reinmann, A.B., **Hutyra, L.R.** Diverging patterns at the forest edge: Soil respiration dynamics of fragmented forests in urban and rural areas. *Global Change Biology*, 28(9): 3094-3109, 2022.
- (99) Pitt, J., Lopez-Coto, I., Hajny, K.D., Tomlin, J., Kaeser, R., Jayarathne, T., Stirm, B.H., Floerchinger, C.R., Loughner, C.P., Commane, R., Gately, C.K., **Hutyra, L.R.**, Gurney, K., Roest, G.S., Liang, J., Gourdji, S., Karion, A., Whetstone, J.R., Shepson, P.B. New York City greenhouse gas emissions estimated with inverse modelling of aircraft measurements. *Elementa*, 10: 1, 10.1525/elementa.2021.00082, 2022.
- (98) Winbourne, J.B., Smith, I.A., Stoyanova, H., Kohler, C., Gately, C.K., Logan, B.A., Reblin, J., Reinmann, A.B., Allen, D.W., **Hutyra, L.R.** Quantification of urban forest and grassland carbon fluxes using bottom-up measurements and a satellite-based model in Washington DC/Baltimore area. *Journal of Geophysical Research – Biogeosciences*, 127, e2021JG006568, 2022.
- (97) Jimenez, R.B., Lane, K.J., **Hutyra, L.R.**, Fabian, P.M. Spatial resolution of normalized difference vegetation index and greenness exposure misclassification in an urban cohort. *Journal of Exposure Science Epidemiology* 32(2): 213-222, 2022.
- (96) Parazoo, N.C., Coleman, R.W., Yadav, V., Stavros, E.N., Hulley, G., **Hutyra, L.R.** Estimating Biological Carbon Fluxes in a Mixed Urban Mediterranean Landscape Using

- High Resolution Thermal and Optical Remote Sensing Constraints. *Science of the Total Environment*, 806: 151335, 2022.
- 2021 (95) Morreale, L., Thompson, J.R., Tang, X., Reinmann, A.B., **Hutyra L.R.**, Fragmentation impacts on temperate forest productivity: reversal of the tropical edge paradigm. *Nature Communications* 12:7181.
- (94) Sargent, M. Floerchinger, C., McKain, K., Budney, J., Gottlieb, E., **Hutyra, L.R.**, Rudek, J., Wofsy, S.C. Majority of US natural gas emissions unaccounted for in inventories. *Proceedings of the National Academy of Sciences of the United States of America* 118 (44): e2105804118, 2021.
- (93) Angot, H., Rutkowski, E., Sargent, M., Wofsy, S., **Hutyra, L.R.**, Howard, D., Obrist, D. Selin, N. Atmospheric mercury sources in a coastal-urban environment: A case study in Boston, Massachusetts, USA. *Environmental Science: Processes & Impacts*, DOI: 10.1039/D1EM00253H, 2021.
- (92) Smith, A.I., Li, D., Winbourne, J.B., Jones, T.S., Tieskens, K., **Hutyra, L.R.** A satellite-based model for estimating latent heat flux from urban vegetation. *Frontiers in Ecology & Evolution*, 9: Article 695995, 2021.
- (91) Marrs, J.K., Jones, T.J., Allen, D.W., **Hutyra, L.R.** Instrumentation sensitivities for tower-based solar-induced fluorescence measurements. *Remote Sensing of Environment* 259, 112413, 2021.
- (90) Tang, X., Woodcock, C.E., Olofsson, P., **Hutyra, L.R.** Assessment of land use / land cover change and associated carbon emissions and uptake in the Mekong Drainage Basin by time series analysis of MODIS and Landsat data. *Remote Sensing of Environment*, 256, 112336, 2021.
- (89) Hundertmark, W.J., Lee, M., Smith, I.A., Bang, A.H.Y., Chen, V., Gately, C.K., Templer, P.H., **Hutyra, L.R.** Influence of Landscape Management Practices on Urban Greenhouse Gas Budgets. *Carbon Balance and Management*, 16(1): 1-12, 2021.
- 2020 (88) Reinmann, A.B., Smith, I.A., Thompson, J., **Hutyra, L.R.** Forest fragmentation impacts on carbon balance across urban and rural landscapes. *Environmental Research Letters*, 15:114036, 2020.
- (87) Werbin, Z., Brochu, P., Buckley, S., Butler, L., Connolly, C., Heidari, L., Houttuijn Bloemendaal, L., McCabe, T.D., Miller, T., **Hutyra, L.R.** A Decision Support Tool for Mitigating Urban Heat Island Effects through Tree-planting. *Plos-One*, e0224959, 2020.  
\*paper resulted from student practicum course advised in Spring 2019\*
- (86) Marrs, J.K., Reblin, J.S., Logan, B.A., Allen, D.W., Reinmann, A.B., Bombard, D. Tabachnik, D., **Hutyra, L.R.** Is solar-induced fluorescence truly a proxy for photosynthesis? *Geophysical Research Letters*, 47, e2020GL087956, 2020.
- (84) Lauvaux, T., Gurney, K.R., Miles, N.L., Davis, K.J., Richardson, S.J., Deng, A. Nathan, B.J., Oda, T., Wang, J.A., **Hutyra, L.**, Turnbull, J. Policy-relevant assessment of urban CO2 emissions. *Environmental Science and Technology*, 54: 10237-10245, 2020
- (83) Winbourne, J.B., Jones, T.S., Garvey, S., Harrison, J., Wang, L., Li, D., Templer, P.H., **Hutyra, L.R.**, Tree transpiration and urban temperatures: current understanding, implications, and future research directions. *Bioscience*, 70(6): 576-588, 2020.
- (82) Jones, T.S., Winbourne, J., **Hutyra, L.R.** Ribbonized sap flux sensor: An integrated sap flow sensor. *Ecospheres*, 11(6):e03135, 2020.
- (81) Decina, S.M., Templer, P.H., **Hutyra, L.R.** Hotspots of nitrogen deposition in urban areas: a global data synthesis. *Frontiers in Ecology and Environment*, 18(2): 92–100, 2020.
- (80) Tang, X., **Hutyra, L.R.**, Arévalo, P., Baccini, A., Woodcock, C.E., Olofsson, P., Spatiotemporal tracking of carbon emissions and uptake using time series analysis of Landsat data: a spatially explicit carbon bookkeeping model. *Science of the Total Environment*, 720: 137409, 2020.
- (79) Trlica, A., **Hutyra, L.R.** Smith, I.A., Morreale, L., Current and future biomass carbon uptake in Boston's urban forest, *Science of the Total Environment*, 709: 136196, 2020.
- 2019 (78) Barrera, Y., Nehr Korn, T., Hegarty, J., Sargent, M., Benmergui, J., Gottlieb, E., Wofsy, S., DeCola, P., **Hutyra, L.**, Jones, T., Using Lidar Technology to Assess Urban Air

- Pollution and Improve Estimates of Greenhouse Gas Emissions in Boston. *Environmental Science & Technology*, 53: 8957-8966, 2019.
- (77) Smith, I.A., Hutyra, L.R., Reinmann, A.B., Thompson, J., Allen, D.W. Forest fragmentation stimulate soil respiration in temperate forests. *Geophysical Research Letters*, 46 <https://doi.org/10.1029/2019GL082459>, 2019.
- (76) Smith, I.A., Dearborn, V., Hutyra, L.R. Live fast, die young: Accelerated growth, mortality, and turnover in urban street trees. *Plos-One*, 14(5): e0215846, 2019
- 2018 (75) Urbanowicz, C., Hutyra, L.R., Stinson, K.A. The effects of urbanization and land use on ragweed distribution. *Ecosphere* 9(12): e02512, 2018.
- (74) Hayes, D. J., R. Vargas, S. R. Alin, R. T. Conant, L. R. Hutyra, A. R. Jacobson, W. A. Kurz, S. Liu, A. D. McGuire, B. Poulter, and C. W. Woodall, 2018: Chapter 2: The North American carbon budget. In *Second State of the Carbon Cycle Report (SOCCR2): A Sustained Assessment Report* [Cavallaro, N., G. Shrestha, R. Birdsey, M. A. Mayes, R. G. Najjar, S. C. Reed, P. Romero-Lankao, and Z. Zhu (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, pp. 71-108, <https://doi.org/10.7930/SOCCR2.2018.Chw2>, 2018
- (73) Gurney, K. R., P. Romero-Lankao, S. Pincetl, M. Betsill, M. Chester, F. Creutzig, K. Davis, R. Duren, G. Franco, S. Hughes, L. R. Hutyra, C. Kennedy, R. Krueger, P. J. Marcotullio, D. Pataki, D. Sailor, and K. V. R. Schäfer, 2018: Chapter 4: Understanding urban carbon fluxes. In *Second State of the Carbon Cycle Report (SOCCR2): A Sustained Assessment Report* [Cavallaro, N., G. Shrestha, R. Birdsey, M. A. Mayes, R. G. Najjar, S. C. Reed, P. Romero-Lankao, and Z. Zhu (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, pp. 189-228, <https://doi.org/10.7930/SOCCR2.2018.Ch4.>, 2018.
- (72) Hayek, M. N., Longo, M., Wiedemann, K.T., Wu, J., Smith, M., Restrepo-Coupe, N., Tapajos, R., da Silva, R., Fitzjarrald, D.R., Camargo, P.B., Hutyra, L.R., Alves, L.A., Daube, B., Munger, J.W., Saleska, S.R., Wofsy, S.C. Factors Controlling Carbon Exchange in an Eastern Amazon Forest: from Hours to Years. *Biogeosciences*, 15, 4833-4848, 2018
- (71) Sargent, M., Barrera, Y., Nehrkorn, T., Hutyra, L.R., Gately, C.K., Jones, T., McKain, K., Sweeney, C., Hegarty, J., Hardiman, B., Wofsy, S.C. Anthropogenic and biogenic CO<sub>2</sub> fluxes in the Boston urban region, *Proceedings of the National Academy of Sciences of the United States of America*, 115(29), 7491-7496, 2018.
- (70) Smith, I.A., Hutyra, L.R., Reinmann, A.B., Marrs, J.K., Thompson, J. Piecing together the fragments: Elucidating edge effects on forest carbon dynamics. *Frontiers in Ecology and Environment*, 16: 213-221, 2018.
- (69) Decina, S., Templer, P.H., Hutyra, L.R. Atmospheric Inputs of Nitrogen, Carbon, and Phosphorus Across an Urban Area: Unaccounted Fluxes and Canopy Influences. *Earth's Future*, 6 (2) 134-148, 2018.
- (68) Hayek, M., Wehr, R., Hutyra, L.R., Longo, M., Wiedemann, K., Munger, J.W., Bonal, D., Saleska, S.R., Fitzjarrald, D.R., Wofsy, S.C. A novel correction for biases in forest eddy covariance carbon balance: the MS-PEARL correction. *Agricultural and Forest Meteorology*, 250: 90-101, 2018.
- 2017 (67) Trlica, A., Hutyra, L.R., Schaaf, C., Erb, A., Wang, J. Albedo, land cover, and the urban heat island. *Earths Future*, 5: 1084-1101, 2017.
- (66) Gately, C.K. and L.R. Hutyra. Large uncertainties in urban-scale carbon emissions. *Journal of Geophysical Research – Atmospheres*, 122: 11,242-11260, 2017.
- (65) Scharenbroch, B.C., Carter, D., Bialecki, M., Fahey, R., Scheberl, L., Catania, M., Roman, L., Bassuk, N., Harper, R., Werner, L., Siewert, A., Miller, S., Hutyra, L., Raciti, S. A rapid urban site index for assessing the quality of street tree planting sites. *Urban Forestry & Urban Greening*, 27:279-286, 2017.
- (64) Reinmann, A.B. and L.R. Hutyra. Reply to Remy et al.: Local and global limitations to forest productivity as mediators of biogeochemical response to forest edge effects, *Proceedings of the National Academy of Sciences of the United States of America*, 114: E7033-E7034, 2017.

- (63) Decina, S., Templer, P.H., **Hutyra, L.R.**, Gately, C.K., Rao, P. Variability, drivers, and effects of nitrogen deposition across an urban area: emerging patterns among human activities, the atmosphere and soils. *Science of the Total Environment*, 609: 1524-1534, 2017.
- (62) Kittridge, K.B., Thompson, J., Morreale, L., Short Gianotti, A., **Hutyra, L.R.** Three decades of forest harvesting along a suburban - rural continuum. *Ecosphere*, 8(7) e01882, 2017.
- (61) Gately, C.K., **Hutyra, L.R.**, Peterson, S., Sue Wing, I. Urban Emissions Hotspots: Quantifying Vehicle Congestion and Air Pollution Using Mobile Phone GPS Data. *Environmental Pollution*, 229:496-504, 2017.
- (60) Hardiman, B., Wang, J., **Hutyra, L.R.**, Gately, C., Getson, J., Friedl, M. Accounting for urban biogenic fluxes in regional carbon budgets. *Science of the Total Environment*, 592: 366-372, 2017.
- (59) Groffman, P.M., Cavender-Bares, J., Childers, D., Grimm, N.B., Grove, M., **Hutyra, L.R.**, Pataki, D., Pickett, S., Pouyat, R., Rosi-Marshall, E., Ruddell, B. Moving towards a new Urban System Science, *Ecosystems*, 20: 38-43, 2017.
- (58) Wang, J.A., **Hutyra, L.R.**, Li, D., Friedl, M.A. Gradients of atmospheric temperature and humidity controlled by local urban land use intensity in Boston. *Journal of Applied Meteorology and Climatology*, 56: 817-831, 2017.
- (57) Reinmann AB and **LR Hutyra**. Edge effects enhance carbon uptake and its vulnerability to climate change in temperate broadleaf forests. *Proceedings of the National Academy of Sciences of the United States of America*, 114(1): 107-112, 2017.
- 2016 (56) Jenerette, G.D., Clarke, L.W., Avolio, M.L., Pataki, D.E., Gillespie, T., Pincetl, S., Nowak, D.J., **Hutyra, L.R.**, McHale, M., McFadden, J.P., Alonzo, M. Climate Filters and Trait Choices Shape Urban Tree Biodiversity: Beyond Biome Matching and Homogenization. *Global Ecology and Biogeography*, 25 (11), 1367-1376, 2016.
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- (1) Rice, A.H., E.P. Hammond, S.R. Saleska, L.R. Hutyra, M.W. Palace, M.M. Keller, P.B. de Camargo, K. Portilho, D. Marques, and S.C. Wofsy. 2007. LBA-ECO CD-10 Ground-based Biometry Data at km 67 Tower Site, Tapajos National Forest. ORNL DAAC, Oak Ridge, Tennessee, USA. <https://doi.org/10.3334/ORN LDAAC/854> Published 6/13/2008  
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#### OTHER PUBLICATIONS

- (8) Smith, I.A., Lusk, K., **Hutyra, L.R.** On the use of ‘cool roofs’ to reduce residential heat exposure disparities in Boston, MA. Initiative on Cities Research Report, December 2022.
- (7) Gately, C.K., **Hutyra, L.R.** From pledges to action: Cities need to show their climate progress with hard data. *The Conversation*, December 2018
- (6) Templer, P.H., **Hutyra, L.R.**, Decina, S. It’s raining nitrogen. *Silva Magazine*, Fall 2016.
- (5) Hutyra, L.R. Critical Urban Science Questions. Solicited White Paper for the Department of Energy, Biological and Environmental Research Committee, 2015.
- (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.
- (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.
- (2) **Hutyra, L.R.**, Raciti, S., Phillips, N.G., Munger, J.W. Exploring Space-time Variation in Urban Carbon Metabolism, *Urbanization and Global Environment Change, Viewpoints*, IV: 11-14, 2011.
- (1) **Hutyra, L.R.** Carbon footprints. *World Book Encyclopedia*, 2011.

#### INTERNATIONAL PRESENTATIONS

- (17) November 2021 - "The potential & possibilities for ground-based greenhouse gas monitoring networks " Glasgow COP26 Preview Event: "Monitoring Urban Greenhouse Gasses".
- (16) October 2021 – “Impacts of urbanization & landscape fragmentation on the carbon cycle” University of Toronto, Global Change Science Distinguished Lecturer Series
- (15) November 2020 - "The potential & possibilities for ground-based greenhouse gas monitoring networks " Glasgow COP26 Preview Event: "Monitoring Urban Greenhouse Gasses", November 2020.
- (14) February 2019 – “Modeling urban biospheric fluxes” Institute of Geological and Nuclear Sciences, Wellington, New Zealand [Invited]
- (13) March 2018 – “The CO<sub>2</sub>-Urban Synthesis and Analysis (CO<sub>2</sub>-USA) Project” *Cities IPCC 2018 Conference*, Edmonton, Canada.
- (12) January 2018 – “Forests, Cities, and the Carbon Cycle” Max Planck Institute for Biogeochemistry, Jena, Germany [Invited]
- (11) February 2017 – “Urban forest ecology: a role for terrestrial laser scanning?” The Royal Society, Kavli Meeting, The terrestrial laser scanning revolution in forest ecology, London, England [Invited]
- (10) April 2016 – “Emissions of CO<sub>2</sub> and criteria air pollutants from mobile sources: Insights from integrating real-time traffic data into local air quality models” European Geophysical Union Meeting, Vienna, Austria.
- (9) June 2014 – “CO<sub>2</sub> fluxes in cities” Urban Environmental Pollution (UEP 2014): Climate Change and Urban Environment, Toronto, Canada. [Invited Plenary]
- (8) January 2012 – “Lessons learned from micrometeorological measurements in the Amazon” Center for Environmental Sensing and Modeling, 5<sup>th</sup> Annual Workshop, National University of Singapore, Singapore. [Invited]

- (7) November 2009 – “Seasonal and annual controls on forest carbon exchange,” New Phytologist Symposium: Carbon cycling in tropical ecosystems. Guangzhou, China. [\[Invited\]](#)
- (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.
- (5) January 2009 – “Validation of ecosystem carbon exchange estimates,” Workshop on monsoon Asia tropical forest dynamics and sustainability, Khon Kaen, Thailand. [\[Invited\]](#)
- (4) September 2007 – “Effects of disturbance on biomass, structure and carbon balance in two Amazonian Forests,” NASA LBA-ECO, Salvador, Brazil.
- (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.
- (2) November 2005 – “Climatic variance and vulnerability in Amazonia,” NASA LBA-ECO Conference, Brasilia, Brazil.
- (1) August 2002 – “Factors controlling long- and short-term sequestration of atmospheric CO<sub>2</sub> in a mid-latitude forest,” International Congress of Ecology & INTECOL meeting, Seoul, South Korea. [\[Invited\]](#)

**INVITED  
SEMINARS &  
KEYNOTE  
ADDRESSES**

- (54) April 2023 - "What's place got to do with it? How urban and rural trees provide different benefits" Boston Public Library Earth Day Lecture
- (53) April 2023 – "Impacts of Urbanization & Landscape Fragmentation on the Carbon Cycle" University of Maryland – Baltimore County, Department of Geography & Environmental Systems
- (52) February 2022 – “Fluxes in the city - An exploration of urban of how infrastructure, human actions, and biology influence the urban atmosphere” Northeastern University, Marine & Environmental Sciences seminar
- (51) February 2022 – “Impacts of urbanization & landscape fragmentation on the carbon cycle” Department of Energy, Brookhaven National Laboratory
- (50) May 2021 – “Field validations of SIF and PRI to better estimate GPP” NASA Surface Biology and Geology Calibration & Validation Science Team.
- (49) March 2021 – “Urban Heat: Rising Temperatures and Population Vulnerability in Cities” Boston University Trustees and the Advisory Committee for Socially Responsible Investing.
- (48) February 2021 – “Impacts of urbanization & landscape fragmentation on the carbon cycle” Clark University
- (47) January 2021 – “Impacts of urbanization & landscape fragmentation on the carbon cycle” Michigan State University
- (46) July 2020 – “Smart Cities, Sustainability and Well-Being” Gordon Research Conference, Industrial Ecology, Newry, ME [\[Invited Keynote; cancelled due to COVID\]](#)
- (45) May 2020 – “COVID-19 & Cities: Pollution and the environment” Boston University Initiative on Cities Webinar
- (44) Nov 2019 – “Cities, landscape fragmentation, & the carbon cycle: Are we measuring the right things in the right places?” University of New Hampshire
- (43) Oct 2019 – “Cities, landscape fragmentation, & the carbon cycle: Are we measuring the right things in the right places?” Brown University
- (42) July 2019 – “Coupling Biology and Chemistry in Cities: Feedbacks Between Urban Vegetation & the Atmosphere” Gordon Research Conference, Atmospheric Composition, Newry, ME [\[Invited Keynote\]](#)
- (41) March 2019 – “What is the carbon value of trees across developed landscapes” Ecological Landscaping Association, Amherst, MA [\[Keynote\]](#)
- (40) October 2018 – “Piecing together the fragments: Elucidating edge effects on forest carbon dynamics”, NASA Jet Propulsion Laboratory, Pasadena, CA
- (39) October 2018 – “Forests, Cities, and the Carbon Cycle”, University of California, Berkeley
- (38) September 2018 – “Cycling of CO<sub>2</sub> in urban environments: Disentangling emissions and biological uptake to measure progress in climate action plans”, Boston University Medical School, Dept of Environmental Health.

- (37) June 2018 – “Urban CO2 Fluxes” National Institute of Standards (NIST), Gaithersburg, MD
- (36) June 2018 – “Urban CO2 Fluxes” John Hopkins University, Baltimore, MD
- (35) May 2018 – “Boston’s forest canopy” City of Boston Parks Department, Boston, MA
- (34) April 2018 - “Forests, Cities, and the Carbon Cycle” University of California - Riverside, Riverside, CA
- (33) April 2018 – “The Value of Trees & Vegetation in the Urban Landscape” Massachusetts Arborists Association [keynote], Framingham, MA
- (32) January 2018 – “Forests, Cities, and the Carbon Cycle” Max Planck Institute for Biogeochemistry, Jena, Germany
- (31) June 2017 – “Net productivity of urban vegetation” Massachusetts Department of Conservation and Recreation, Tree City USA Forum, Arlington, MA [Keynote]
- (30) November 2016 – “The evolution of a Professor’s career”, Massachusetts Institute of Technology, Early Career Science Network Workshop, Cambridge, MA
- (29) September 2016 – “The urban carbon cycle: Uncertainties & surprises” Department of Energy, Oak Ridge National Laboratory, Oak Ridge, TN.
- (28) May 2016 – “The urban carbon cycle: Linkages between biology, fossil fuel emissions, and atmospheric observations” National Institute of Standards (NIST), Gaithersburg, MD.
- (27) April 2016 – “The urban carbon cycle: Linkages between biology, fossil fuel emissions, and atmospheric observations” Cornell University, Ithaca, NY.
- (26) January 2016 – “The urban carbon cycle: Linkages between biology, fossil fuel emissions, and atmospheric observations” Volpe Center, Department of Transportation, Cambridge, MA.
- (25) May 2015 – “The urban carbon cycle” PBA NOVA Science Café Seminar Series, Cambridge, MA
- (24) May 2015 – “Quantifying and modeling the urban carbon cycle – An examination of land use change, vegetation responses, and emissions” Oak Ridge National Laboratory, Knoxville, TN.
- (23) April 2015 – “Urban carbon cycling - Seeing the city through the trees,” Brookline Greenspace alliance, Brookline, MA.
- (22) April 2015 – “Quantifying and modeling the urban carbon cycle – An examination of land use change, vegetation responses, and emissions” University of Utah, Global Change and Sustainability Center Seminar Series, Salt Lake City, UT.
- (21) October 2014 – “Cities and the climate challenge” Boston University Development Office Alumni Event, Portland, ME.
- (20) October 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 Webinar Series.
- (19) September 2014 – “Advancing the human condition,” Boston University, Gitner Lecture Series, Boston, MA.
- (18) May 2014 - “Urbanization, land cover change, and the carbon cycle,” Harvard University, Environmental Science and Engineering Seminars, Cambridge, MA.
- (17) May 2014 – “Urbanization, land cover change, and the carbon cycle,” Harvard University, Arnold Arboretum, Boston, MA.
- (15) March 2014 - “Urbanization, land cover change, and the carbon cycle,” City University 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 – “CO<sub>2</sub> 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.

**INVITED  
CONFERENCE,  
PANEL &  
WORKSHOP  
PRESENTATIONS**

- (38) August 2022 – “Dynamics of carbon cycling at temperate forest edges”, Ecological Society of America Annual Meeting [Invited]
- (37) October 2021 – “Pushing boundaries – Women scientists at the forefront of community-engaged research” Boston University Initiative on Cities [Invited]
- (36) October 2021 – “Cool, climate-safe cities: New solutions & research”, Institute of Sustainable Energy [invited]
- (35) March 2021 – “Land Use” Harvard Forest LTER Symposium, Petersham, MA [invited]
- (34) February 2021 – “The world after COVID” Pardee Center video series [invited]
- (33) December 2020 – “Collaborative networks for information exchange and datasharing”, American Geophysical Union Fall Meeting, San Francisco, CA. [invited]
- (33) October 2020 – “The world after COVID” Pardee Center video series [invited]
- (32) January 2020 – “Carbon cycling in cities: Bold policies, but how do we assess progress?” American Meteorology Society Annual Meeting, Boston, MA. [invited]
- (31) December 2019 – “Carbon cycling in cities: Bold policies, but how do we assess progress?” American Geophysical Union Fall Meeting, San Francisco, CA. [invited]
- (30) October 2019 – “Biological carbon fluxes in cities”, CO2USA Workshop, Boston, MA [Invited]
- (30) October 2018 – “Biological carbon fluxes in cities”, CO2USA Workshop, Salt Lake City, UT [Invited]
- (29) November 2017 – “Biosphere flux inventories for cities”, National Institute of Standards, Maryland. [Invited]
- (28) September 2017 – “Role of biology in influencing the atmospheric mixing ratios of CO2 in cities,” Advancing Urban GHG Inventory Development for Science and Mitigation Management Needs, National Institute of Standards, Maryland. [Invited]
- (27) August 2017 – “Future directions for urban ecology and the essential role of long term, social-ecological research” Ecological Society of America annual meeting, Portland, OR [Invited]
- (26) November 2016 – “Urban Carbon Cycle Science”, Twenty-Eighth Annual Kavli Frontiers of Science Symposium (United States National Academy of Science), Irvine, CA [Invited]
- (25) April 2016 – “Boston regional Greenhouse Gas Research Program”, National Institute of Standards, Maryland. [Invited]
- (24) December 2015 - "Attribution of urban greenhouse gas fluxes: Does the biosphere in cities matter?" American Geophysical Union Fall Meeting, San Francisco, CA. [Invited]



- (23) January 2015 – “Urban Carbon Cycle” North American Carbon Cycle All Investigators Meeting, Washington D.C. [Breakout session convener]
- (22) January 2015 – “Integrated Field Laboratory” Department of Energy, Biological and Environmental Advisory Committee Workshop, Washington D.C.
- (21) November 2014 – “Sea level rise and the future of coast cities,” Boston University, Initiative of Cities, Boston, MA [Invited conference moderator]
- (20) October 2014 – “The Resilient City,” Boston University, Initiative of Cities, Boston, MA [Invited Speaker and Discussant]
- (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 Associate 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, 9<sup>th</sup> 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.

BOSTON  
UNIVERSITY

Fall 2023 - Sabbatical  
Spring 2023 – EE475: Urban Ecology (29 undergraduates)  
Fall 2022 – EE456/656: Terrestrial Ecosystems and the Carbon Cycle (8 undergraduate, 15 graduate students)  
Spring 2022 – EE765/BI 765/EH797 (12 graduate students)  
Spring 2022 - EE/BI 475/675: Urban Ecology (15 graduate & 14 undergraduate students)  
Fall 2021 – EE764/BI764/EH799 Urban Colloquium (12 graduate students)  
Spring 2021 – No courses taught  
Fall 2020 – EE 270 – Data, Models, and Analysis in Earth & Environment (30 undergraduates)  
Spring 2020: GE/BI/ES 720: Practicum in Biogeochemistry (7 graduate students)  
Spring 2020 – GE 456/656: Terrestrial Ecosystems and the Carbon Cycle (10 undergraduate, 9 graduate students)  
Fall 2019 – GE/BI/ES 719: Colloquium in Biogeochemistry (8 graduate students)  
Spring 2019 – GE/BI 475/675: Urban Ecology (25 graduate & 5 undergraduate students)  
Spring 2019 - GE/BI/ES 720: Practicum in Biogeochemistry (17 graduate students)  
Fall 2018 - GE/BI/ES 719: Colloquium in Biogeochemistry (24 graduate students)  
Spring 2018 – No courses taught  
Fall 2017 – GE 270: Data, Models, and Analysis in Earth & Environment (31 undergraduates)  
Spring 2017 – Sabbatical Leave  
Fall 2016 – Sabbatical Leave  
Spring 2016 – GE 475/675: Urban Ecology (12 undergraduates, 7 graduate students)  
Fall 2015 – GE 456/656: Terrestrial Ecosystems and the Carbon Cycle (1 undergraduate, 6 graduate students)  
Spring 2015 – GE 475/675: Urban Ecology (8 undergraduates, 3 graduate students)  
Fall 2014 – GE 456/656: Terrestrial Ecosystems and the Carbon Cycle (1 undergraduate, 11 graduate students)  
Spring 2014 – GE/BI/ES 720: Practicum in Biogeochemistry (8 students)  
Fall 2013 – GE 475/675: Urban Ecology (8 undergraduates, 13 graduate students)  
Fall 2013 – GE/BI/ES 719: Colloquium in Biogeochemistry (7 students)  
Spring 2013 – GE 456/656: Terrestrial Ecosystems and the Carbon Cycle (5 undergraduates, 7 graduate students, 1 auditor)  
Fall 2012 – no courses taught, Family Medical Leave  
Spring 2012 – GE 104: Natural Environments: The Physical Landscape (34 undergraduates, Teaching Fellow with 3 lab sections)  
Fall 2011 – GE 456/656: Terrestrial Ecosystems and the Carbon Cycle (12 graduate students, 1 auditor)  
Spring 2011 – GE 104: Natural Environments: The Physical Landscape (25 undergraduates, Teaching Fellow with 3 lab sections)  
Fall 2010 – GE 456/656: Terrestrial Ecosystems and the Carbon Cycle (4 undergraduates, 7 graduate students)  
Spring 2010 – GE 104: Natural Environments: The Physical Landscape (22 undergraduates, Teaching Fellow with 3 lab sections)  
Fall 2009 – URBDP 498: Environmental Planning (18 students)

UNIVERSITY OF  
WASHINGTON

**POST-  
DOCTORAL  
FELLOWS  
ADVISED**

Steve Raciti (Ph.D. Cornell Univ.) April 2010 – July 2014 (*Currently an Associate Professor at Hofstra University*)  
Brady Hardiman (Ph.D. Ohio State Univ.) June 2014 – 2015 (*Currently an Associate Professor at Purdue University*)  
Andrew Reinmann (Ph.D. Boston Univ.) April 2014 – 2017 (*Currently an Assistant Professor at City University of New York*)  
Afshin Pourmokhtarian (Ph.D. Syracuse University) 2015-2017 (*Currently an Assistant Professor at Wentworth College*)

Laura Schifman (PhD University of Rhode Island) 2018-2019 (*Currently Scientist at MADEP*)  
 Conor Gately (Ph.D. Boston University) 2015-2019 (*currently Research Analyst MAPC*)  
 Xiaoxing Tang (PhD Boston University) 2018-2020 (*Currently Post-doctoral Fellow with Professor Curtis Woodcock*)  
 Joy Winbourne (PhD UC-Davis) 2018-2021 (*Currently Assistant Professor at University of Massachusetts - Lowell*)  
 Taylor Jones (PhD Harvard) 2019-2023 (*Currently Assistant Professor Georgetown University*)

**GRADUATED  
PHD STUDENTS**

2023: Sarah Garvey (1<sup>st</sup> Reader)  
 Thesis: *Forest Fragments and urbanization affects on belowground processes and soil carbon cycling*  
 2023: Ian Smith (1<sup>st</sup> Reader)  
 Thesis: *Urbanization impacts on vegetation, heat, and water for improved climate adaption*  
 2023: Luca Morreale (1<sup>st</sup> Reader)  
 Thesis: *The effects of fragmentation on temperate forests in the northeastern United States: Measuring the extent and impacts on forest growth and structure*  
 2023: Stephen Goughney (3<sup>rd</sup> Reader)  
 Thesis: *Nutrient allocation and conservation mechanisms in trees: Intraspecific variation, reproductive costs, and global scale comparisons*  
 2023: Paige Bruchu (3<sup>rd</sup> Reader)  
 Thesis: *Exposure to greenness and the natural landscape: Understanding the impacts on urban health and heat*  
 2022: Raquel Jimenez Celsi (3<sup>rd</sup> Reader)  
 Thesis: *School greenness and individual-level academic performance in elementary-aged students: Evidence from the global south*  
 2022: Leticia Lee, PhD Earth & Environment (3<sup>rd</sup> Reader)  
 Thesis: *Phenology, light use efficiency, and ecosystem productivity in temperate deciduous forests*  
 2022: Anthony Wong, PhD Earth & Environment (2<sup>nd</sup> Reader)  
 Thesis: *Importance of Terrestrial Ecosystem Functioning on Air Quality - The Cases of Ozone Deposition and Land Change*  
 2021: Julia Marrs, PhD Geography (**Thesis Advisor**)  
 Thesis: *“Solar induced fluorescence as a tool to understand carbon exchange”*  
 2020: Wiley Hundertmark, BA/MA Earth & Environment (**Senior Thesis Advisor**)  
 Thesis: *Analyzing Spatial Forest Characteristics Using LiDAR and Foliar Measurements*  
 2020: Ryan Quinn, MS Biology (3<sup>rd</sup> Reader)  
 Thesis: *“Autotrophic belowground carbon fluxes in two bioenergy crops”*  
 2019: Andrew Trlica, PhD Geography (**Thesis Advisor**)  
 Thesis: *“Spatial patterning in albedo and biogenic carbon exchange in urban areas”*  
 2019: Paulo Arevola, PhD Geography (3<sup>rd</sup> Reader)  
 Thesis: *“Land change and carbon dynamics in the Columbian Amazon”*  
 2019: Sarabeth Buckley, Ph.D. Geography (Committee Chair)  
 Thesis: *“Enhancing plant growth and carbon harvesting for sustainable agriculture”*  
 2019: Jonathan Wang, Ph.D Geography (3<sup>rd</sup> Reader)  
 Thesis: *“Interactions among land cover, disturbance, and productivity across artic-boreal ecosystems of northwestern North America from remote sensing.”*  
 2019: Erin Pierce, MA Biology (2<sup>nd</sup> Reader)  
 Thesis: *“Effects of air quality, urbanization, and fragmentation on above-ground carbon storage of temperate forest ecosystems.”*  
 2018: Steven Decina, PhD Biology (**Thesis Co-Advisor**, currently AAAS Fellow at Environmental Protection Agency)  
 Thesis: *“Urban biogeochemical cycles of carbon, nitrogen, and phosphorus: The city of Boston as a case study”*  
 2017: Ha Nguyen, PhD Geography (**Thesis Advisor**, currently post-doc at University of Technology, Sydney)

- Thesis: *“Ecological impacts of deforestation and forest degradation in Northwestern Borean peat swamp forests”*
- 2017: Ian Smith, BS, with Honors, Environmental Science (**Senior Thesis Advisor**)  
Thesis: *Piecing together the fragments: Elucidating edge effects on forest carbon dynamics.*
- 2016: Margaret Hendrick, PhD Geography (2<sup>nd</sup> reader, currently Post-doc at Boston University)  
Thesis: *“The environmental and political ecology of natural gas”*
- 2016: Gabrielle Jackson, Boston University Academy High School (**Senior Thesis Advisor**, currently Barnard College undergraduate)  
Thesis: *“On the Edge: Impacts of the Edge Effect on Climate Change and Urban Forest Carbon Dynamics in the Greater Boston Area”*
- 2016: Ramona Hihn, MA Geography (2<sup>nd</sup> Reader)  
Thesis: *“The Relationship Between Urban Climate And Vegetation, A Review Through Two Yearlong Case Studies In Massachusetts”*
- 2015: Conor Gately, Ph.D. Geography (**Thesis Co-Advisor**, currently Post-doc at Boston University)  
Thesis: *“Greenhouse Gas Emissions from Mobile Sources: Improved Understanding of the Drivers of Emissions and Spatial Patterns”*
- 2015: Brittain Briber, Ph.D. Geography (**Thesis Advisor**)  
Thesis: *“Urbanization, carbon fluxes, and Ecosystems: An Exploration of Coupled Dynamics and Feedbacks”*
- 2015: Victoria Dearborn, BS. With Honors, Geography & Environment (**Senior Thesis Advisor**)  
Thesis: *“Carbon dynamics of urban street trees”*
- 2015: Ji Hyun Kim, Ph.D. Geography (4<sup>th</sup> Reader, currently a post-doc at University of Illinois)  
Thesis: *Carbon and water cycles in mixed-forest catchments: Ecohydrological modeling of the influences of climate variability and invasive insect infestation*
- 2015: Zhan Li, Ph.D. Geography (3<sup>rd</sup> Reader)  
Thesis: *“Advances in measuring forest structure by terrestrial laser scanning with the dual wavelength echidna lidar”*
- 2015: Rose Amramoff, Ph.D. Biology (2<sup>nd</sup> Reader, currently a post-doc at Lawrence Livermore National Laboratory)  
Thesis: *“Phenology and allocation of plant belowground carbon at local to global scales”*
- 2014: Evan Kuras, BS. With Honors, Geography & Environment (**Senior Thesis Advisor**)  
Thesis: *“Intra-neighborhood Variability in Individual Heat Exposure”*
- 2014: Andrew Reinmann, Ph.D. Biology (2<sup>nd</sup> Reader, currently post-doc in Hutyra Lab)  
Thesis: *“Effects of winter climate change on carbon and nitrogen losses from temperate forest ecosystems”*
- 2013: Preeti Rao, Ph.D. Geography & Environment (**Thesis Advisor**, currently post-doc at NASA Jet Propulsion Lab)  
Thesis: *“Carbon, nitrogen, and vegetation along an urbanization gradient: A Boston case study using field, remotely sensed and socioeconomic data”*
- 2013: Poliana Lemos, Ph.D. Biology (2<sup>nd</sup> Reader, currently Adjunct Professor at Santa Monica College)  
Thesis: *“A Centennial-Time Scale Analysis of New England Forests' Carbon Resiliency to the Hemlock Woolly Adelgid”*
- 2011: Max Brondfield, A.B. Harvard University (**Senior Thesis Advisor**; currently UCSF medical student)  
Thesis: *“Defining the urban-to-rural gradient: An analysis of CO<sub>2</sub> emissions inventories and patterns of spatial variation in the greater Boston area”*
- 2012: Larry Bandoni, Boston University Academy High School (**Thesis Advisor**, currently BU undergraduate)  
Thesis: *“The effects impervious surfaces have on soils below them and the consequences of further urbanization”*
- 2010: Jared Newell, M.S. Geography (2<sup>nd</sup> 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> ”
<b>CURRENT PHD STUDENTS</b>	Sophie Kaye, MA Earth & Environment (Advisor, 2021-present) Hristiana Stoyanova, Ph.D. Earth & Environment (Advisor, 2022-present) Leeza Maldivchuk, Ph.D. Earth & Environment (Advisor, 2022-present)
<b>WORKSHOPS &amp; CONFERENCES ORGANIZED</b>	Co-Organizer: <a href="#">Mapping Urban Air: Linking Observations and Processes</a> , Telluride Science Meeting, Telluride, CO. July 2023 20 people Co-Organizer: <a href="#">Mapping Urban Air: Linking Observations and Processes</a> , Telluride Science Meeting, Telluride, CO. July 2021 20 people Lead Organizer: Sustainable Urban Systems, <i>Re-envisioning Urban Infrastructure to Address Climate Change: A Comprehensive Regional Framework for Sustainability</i> . <a href="https://www.bu.edu/urbanclimate/bu-sus-2019/">https://www.bu.edu/urbanclimate/bu-sus-2019/</a> August 2019, Boston, MA. 176 people Lead Organizer: 3 <sup>rd</sup> CO2-Urban Synthesis & Analysis Workshop <a href="http://sites.bu.edu/co2usa/454-2/">http://sites.bu.edu/co2usa/454-2/</a> October 2019, 96 people. Co-Convenor: 2 <sup>nd</sup> CO2-Urban Synthesis & Analysis Workshop, Salt Lake City, UT <a href="https://environment.utah.edu/co2-workshop/">https://environment.utah.edu/co2-workshop/</a> October 2018, 75 people. Co-Convenor: 1st CO2-Urban Synthesis & Analysis Workshop, Gaithersburg, MD <a href="http://sites.bu.edu/co2usa/november-2017-workshop/">http://sites.bu.edu/co2usa/november-2017-workshop/</a> October 2017, 50 people.
<b>SERVICE SCIENTIFIC COMMUNITY</b>	2017-present: NASA Earth Science Advisory Committee (ESAC; Federal Advisory Committee) 2021-present: Advisory Broad for <i>Environmental Science: Atmospheres</i> journal 2013-2020: North American Carbon Program Scientific Steering Group (NACP SSG). Renamed from SSG to Science Leadership Group 2014-2019: Oak Ridge National Laboratory, Data Active Archive Center (ORNL-DAAC). User Working Group. 2016: Science question reviewer for the U.S. National Science Bowl (associated with the Oak Ridge Associated Universities) 2016: Convener for the American Geophysical Union, Outstanding Student Presentation Awards in Global Environmental Change 2016: Co-Organizer for Boston University Conference of Urban Sustainability 2016: Co-Chair for the North American Carbon Program Science Implementation Review 2015: DOE Biological and Environmental Advisory Committee (BERAC) workshop on Urban Carbon Cycle Science. 2014: NASA Decadal Survey Working Group 2014-2015: Urban National Ecological Observatory Network (NEON) Design Working Group 2013: North American Carbon Program 2013 All Investigators Meeting (Scientific Steering Committee member) 2013: National Socio-Environmental Synthesis Center (SESYNC) working group “The Megaregion as Socio-Ecological Unit” 2010: Columbia University, Lamont-Doherty Earth Observatory, Women Faculty in Science panelist
<b>INVITED GRANT REVIEW PANELIST</b>	2023: National Science Foundation, Science & Technology Center site review team 2021: National Science Foundation, Dynamics of Integrated Socio-Environmental Systems (DISES) 2020: National Science Foundation, Long-Term Ecological Research 2019: National Science Foundation, Critical Zone Observatory (CZO) 2016: National Science Foundation, Coupled Natural-Human Systems (CNH) 2015: National Science Foundation, Ecosystem Science (DEB) 2014: National Aeronautics and Space Administration: New Investigator Program (NIP) 2013: National Science Foundation, Ecosystem Science (DEB)

	<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>
<b>AD-HOC GRANT REVIEWER</b>	<p>2023: National Ocean and Atmospheric Administration: Climate Program (CPO)</p> <p>2018: National Science Foundation, Data and Technology in Environmental Hazards</p> <p>2018: National Science Foundation, Ecosystem Science (DEB)</p> <p>2017: National Ocean and Atmospheric Administration: Climate Program (CPO)</p> <p>2017: National Science Foundation, Ecosystem Science (DEB)</p> <p>2016: German Research Foundation</p> <p>2015: National Science Foundation: Hydrology</p> <p>2015: National Aeronautics and Space Administration: Post-Doctoral Fellowship</p> <p>2014: National Aeronautics and Space Administration: Post-Doctoral Fellowship</p> <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 &amp; Spatial Sciences</p> <p>2010: National Science Foundation: Climate &amp; Large Scale Dynamics</p>
<b>CONFERENCE SESSION CONVENER</b>	<p>2017: North American Carbon Cycle Program Implementation Plan - Updates, Syntheses, &amp; New Opportunities (Breakout group convener, North American Carbon Cycle Science Program, All Investigator Meeting)</p> <p>2015: Urban Carbon Cycle Breakout Session (Session Convener, North American Carbon Cycle Science Program, All Investigator Meeting)</p> <p>2015: Biogeochemistry of Rivers and Soils in the Urban Ecosystem and Their Climate Impacts session convener, American Geophysical Union Annual Meeting)</p> <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>
<b>INVITED JOURNAL REVIEWER</b>	<p>Proceedings of the National Academy of the United States of America (PNAS), Science, Nature, Nature Ecology &amp; Evolution, Global Change Biology; Environmental Science and Technology; Trends in Ecology &amp; Evolution; Agricultural &amp; 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 Geophysical Research – Atmospheres; Remote Sensing; New Phytologist; Journal of Photogrammetry and Remote Sensing; Science of the Total Environment; Atmospheric Chemistry and Physics.</p>
<b>BOSTON</b>	<p>2023 - present: Associate Director, Initiative on Cities</p>

**UNIVERSITY  
SERVICE**

2021-present: Director of Biogeosciences  
2017-present: Associated Director for the Boston University Urban NRT graduate training program  
2023: CAS STEM Research Support Committee  
2023: CAS Teaching Awards Committee  
2022-2023: Dalton Environmental Data Science Endowed Chair search Committee  
2021-2022: Interim Director, Initiative on Cities  
2017-present: Advisory board member for the Boston University Initiative on Cities  
2021: Biogeosciences student awards committee  
2021: Earth & Environment Merit review committee  
2021: Initiative of Cities Director Search Committee member  
2020 & 2021: Sustainability Research Institute Director Search Committee member  
2020-2022: Director, Campus as a Living Lab  
2018-2022: Co-Director for the BU Urban Climate Initiative  
2019-2020: Earth & Environment faculty search committee member (Coupled Human-Natural Systems)  
2018-2019: Earth & Environment faculty search committee member (Coupled Human-Natural Systems)  
2018-2019: Biology faculty search committee member (Global Change Biology)  
2017-2018: Associate Chair for Curriculum, Department of Earth & Environment  
2016-2017: Task Force on the Boston University Climate Action Plan  
2015-2016: Graduate Academic Affairs Committee  
2015-2016: Director of Graduate Studies for Earth & Environment  
2015-2016: Earth & Environment faculty search committee member (Remote Sensing)  
2014-2015: Chair, Natural Sciences Curriculum Committee, College of Arts and Sciences  
2014: Graduate Women in Science & Engineering panel discussant on career-life balance.  
2010 – 2014: Natural Sciences Curriculum Committee, College of Arts and Sciences  
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**

Google  
Visiting Faculty Fellow, Cambridge, Massachusetts, June 2023 – June 2024  
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