

Lucy R. Hutyra

Distinguished Professor & Chair, Department of Earth & Environment | Boston University

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PROFESSIONAL SUMMARY

My work examines how urbanization and other human disturbances influence the exchange of carbon, water, and energy between ecosystems and the atmosphere. I combine field measurements, remote sensing, and atmospheric observations to understand how forests and urban ecosystems respond to fragmentation, climate change, and the built environment. I lead a 40+ faculty department, advise federal and state government on climate science policy, and consult directly with industry on environmental impact assessment.

ACADEMIC APPOINTMENTS

Boston University, Boston, Massachusetts, USA

Distinguished Professor of Earth & Environment, 2024 – present

Department Chair, Earth & Environment, 2024 – present

Professor of Earth & Environment, 2021 – 2024

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

- 2024 – present: Board of Directors, Aerodyne Research
- 2023 – present: Commonwealth of Massachusetts Climate Science Advisory Panel
- 2023 – 2026: Visiting Faculty Fellow, Google.
- 2025 – Phi Beta Kappa Honorary Membership

- 2024 – American Geophysical Union, Ascent Award, Atmospheric Sciences
- 2024 – College of Arts & Sciences Distinguished Professorship
- 2023 – MacArthur Fellow
- 2017 – 2023: 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

- (43) Gateway Exposome Coordinating Center (GECC) for Alzheimer’s Disease and Alzheimer’s Disease Related Dementia (CO-PI). National Institute of Health. 07/2024 – 06/2029.
- (42) Modeling urban air temperature sensitivity to tree canopy expansion and cool roofs, World Resources Institute **(PI)**. 07/2024 – 02/2026
- (41) GeoCAFE - An RCN to Convene, Accelerate, Foster, and Expand Geosciences Research Addressing Climate Change Impacts on Human Health (C2H2) (CO-PI), National Science Foundation, 05/2024-04/2029
- (40) Downscaling of OCO-2/3 Target Mode SIF and XCO2 Observations to Understand Fine-Scale Variability in Urban, Suburban, and Agricultural Areas, NASA (CO-PI, Institutional PI) 02/2024 – 01/2027.
- (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 XCO2 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 XCO2 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) CO2-Air Quality Urban Synthesis and Analysis ("CO2-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 XCO2 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 XCO2 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 CO2 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) CO2 Urban Synthesis and Analysis ("CO2-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 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
- (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 Chapters

Bold denotes L.R. Hutyra; underline denotes advisee

Web of Science H-index = 59 (14,415 citations) · Google Scholar H-index = 68 (23,860 citations)

In Review

- (146) Milando, C., Yuan, Y., Bates-Haus, N., Arlak, A., Engel, R., Fabian, M.P., Wellenius, G., Hutyra, L.R., Re-examining Mortality Impacts of Urban Heat Islands in United States Cities, *Nature Communications*, in review.
- (145) Lee, J.Y., Fabian, M.P., Bowman, B., Smith, I., Yu, H., Li, D., McIntyre, A., **Hutyra, L.R.**, Cares, B., Castellon, J., Bongiovanni, R., Scammell, M.K., A partnership approach to urban cooling, one block at a time, *Lancet Planetary Health*, in review.
- (144) Wellenius, G.A., Luben, T.J., Gause, E., Feldscher, T., James, A., **Hutyra, L.R.**, Chakraborty, T.C., Stafoggia, M., Habre, R., Kloog, I., Berman, J.D., Brook, J.R., Brauer, M., Knapp, D., Lee, J., Adar, S.D., Lane, K.J., Impacts of Weather-Related Stressors on the Incidence, Progression, Exacerbation, and Burden of Risk and Burden in Alzheimer's Disease and Related Dementias: Research Gaps, Challenges, Opportunities, and Priorities, *Alzheimer's & Dementia*, in review.
- (143) Marrs, J.K., Jones, T.S., Lee, C.H., Hutyra, L.R., Pintar, A.L., Allen, D.W. Characterizing Measurement Uncertainty in Proximal Sun-Induced Fluorescence Retrievals, *Remote Sensing of Environment*, in review.
- (142) Conserva, M., Stanton, C., Van Arsdale, C., **Hutyra, L.R.**, Preserving and expanding fine-scale woody features is a low-leakage carbon removal pathway, *Nature Climate Change*, in review.
- (141) Bhatnagar, J., **Hutyra, L.R.**, Raeber, M., Winbourne, J.B., Templer, P.H., Urban mini forests need evidence, not just enthusiasm. *Nature Cities*, in review.
- (140) Stoyanova, H., Thompson, J.R., Hutyra, L.R. Spatiotemporal Variability of Soil Carbon Fluxes, Vegetation Distribution, and Microclimate in Solar Arrays, *Earth's Future*, in review.
- (139) Son, S.R., Wei, D., Commane, R., Reinmann, A., **Hutyra, L.R.**, Geddes, J. Synergistic impacts of urban greening and vehicle electrification on surface-level ozone production. *Environmental Science & Technology*, in review.
- (138) James, A.M., Gall, M., Bernman, J.D., Chakraborty, T.C., Burrows, K., Brook, J., Gause, E., Mueller, S., Luben, T.J., Manigandan, G., Bell, J.E., Parks, R.M., Bell, M.L., Errett, N.A., Ballester, J., Chen, K., **Hutyra, L.R.**, Volckens, J., Adar, S.D., Wellenius, G.A., Lane, K.J. Methods and guidance for understanding environmental disasters' impacts on Alzheimer's disease and related dementias. *Alzheimer's & Dementia*, in review.
- (137) Goebel, R., Moldavchuk, L., Jones, T.S., Dooley, J., **Hutyra, L.R.**, Carvalho, L.E. Bayesian downscaling of satellite-derived solar induced chlorophyll fluorescence. *Journal of the Royal Statistical Society, Series C.*, in review.
- (136) Lee, C., Dooley, J., Marrs, J., Allen, D., Jones, T., Stoyanova, H., Logan, B., **Hutyra, L.R.** The effects of share from canopy structure on remotely sensing chlorophyll fluorescence. *Remote Sensing of Environment*, in review.
- (135) Matthes, J.H., Munger, J.W., Gao, X., Hegwood, N., Ollinger, S., Talib, A., Thompson, G., **Hutyra, L.R.**, Jurado, S. A breakpoint in carbon cycle trends within a temperate deciduous forest is associated with increasing water stress, decreasing canopy nitrogen, and changing phenology. *Agricultural & Forest Meteorology*, in review.

2026

- (134) Adams, T., Geddes, J., Abad, G., **Hutyra, L.**, Gately, C., Lind, E. Sampling sub-pixel scale variability in total column NO₂ within a coastal urban environment: Observations from Pandora and implications for satellite remote sensing. *Environmental Science: Atmospheres*, DOI10.1039/d6ea00033a, 2026.
- (133) Gause, E.L., Feldscher, T., Popp, Z., Spangler, K.R., Mueller, S.C., Adams, Q.H., Chakraborty, T.C., **Hutyra, L.R.**, James, A., Luben, T.J., Doiron, D., Gronlund, C.J., Engel, R.A., Jimenez, M.P., Brook, J.R., Stafoggia, M., Kloog, I., Brauer, M., Adar, S.D., Lane, K.J., Wellenius, G.A., Data Considerations for Estimating Ambient Heat Exposure for Environmental Epidemiological Studies *Current Environmental Health Reports*, 13, article number 32, 2026.
- (132) Parazoo, N., Carroll, D., Abshire, J.B., Bar-On, Y.M., Birdsey, R.A., Bloom, A.A., Bowman, K.W., Braghiere, R.K., Bruhwiler, L.M., Byrne, B., Chatterjee, A., Crisp, D., Duncanson, L., Feldman, A.F., Fox, A.M., Frankenberg, C., Gay, B.A., Hopkins, F., Hoffman, F.M., Holmquist, J.R., **Hutyra, L.R.**, Keller, M., Koven, C.D., Laughner, J.L., Liu, J., Lovenduski, N.S., McKinley, G.A., McNicol, G., Menemenlis, D., Michalak, A.M., Miller, C.A., Nesser, H., Oda, T., Ordway, E.M., Ott, L.E., Paustian, K., Pierrat, Z.A., Poulter, B., Reed, S.C., Schimel, D.S., Serbin, S.P., Saatchi, S.S., Suto, H., Windham-Myers, L.,

Wunch, D.A. A US Scientific Community Review of Carbon Cycle Science Gaps and Opportunities to Better Support Earth System Science and Carbon Management. *Earth Science Reviews*, 278: 105493, 2026.

- (131) Fork, D. Wesley, E.J., Banerjee, S. Batchu, V., Chennapragada, A., Crossan, K., Cronkite-Ratcliff, B., Delich, E., Goulden, T., Kansal, M., Kemp, J., Mackres, E., Mayer, Y., Milman, B., Platt, J.C., Prabhakara, S., Prasad, G., Shetty, S., Stanton, C., Sun, W., **Hutyra, L.R.**, Estimating high-resolution albedo for urban applications, *Nature Communications*, 17(1): 4815, 2026.
- (130) Adams, Q.H., Hamer, D.H., **Hutyra, L.R.**, Wellenius, G.A., Shioda, K. Modeling the seasonal and climate-dependent dynamics of visceral leishmaniasis in Brazil: Implication for transmission and control. *Infectious Disease Modelling*: 11(2): 549-559, 2026.
- (129) Meng, L., Pourmokhtarian, A., Templer, P.H., **Hutyra, L.R.**, Driscoll, C.T. Effects of urbanization on the dynamics of carbon, nitrogen, and water cycling in hardwood forests of the northeastern US. *Landscape and Urban Planning* 267: 105541, 2026.

2025

- (128) Meng, L.H., Pourmokhtarian, A., Templer, P.H., **Hutyra, L.R.**, Thompson, J.R., Driscoll, C.T. Regional projections of the impacts of future urbanization and climate change on biogeochemical cycles in New England landscapes. *Research* 1043, 2025.
- (127) Parazoo, N., Carroll, D., Abshire, J.B., Bar-On, Y.M., Birdsey, R.A., Bloom, A.A., Bowman, K.W., Braghiere, R.K., Bruhwiler, L.M., Byrne, B., Chatterjee, A., Crisp, D., Duncanson, L., Feldman, A.F., Fox, A.M., Frankenberg, C., Gay, B.A., Hopkins, F., Hoffman, F.M., Holmquist, J.R., **Hutyra, L.R.**, Keller, M., Koven, C.D. Laughner, J.L., Liu, J., Lovenduski, N.S., McKinley, G.A., McNicol, G., Menemenlis, D., Michalak, A.M., Miller, C.A., Nesser, H., Oda, T., Ordway, E.M., Ott, L.E., Paustian, K., Pierrat, Z.A., Poulter, B., Reed, S.C., Schimel, D.S., Serbin, S.P., Saatchi, S.S., Suto, H., Windham-Myers, L., Wunch, D. A Scientific Community Vision for Sustained Earth Observations of Greenhouse Gases to Support Local to Global Action, *AGU Advances*, *AGU Advances*, 6, e2025AV001914, 2025.
- (126) Lyu, C., Harkins, C., Li, M., Mueller, K., Prothero, J., Verreryken, B., Miller, J.B., Lehman, S.J., Peischl, J., Gilman, J.B., Carsten, W., Coggon, M.W., Stockwell, C.E., Brown, S.S., Zuraski, K., Lamplugh, A., Gurney, K.R., Gawuc, L., Dass, P., Hoesly, R.M., Smith, S.J., Oda, T., **Hutyra, L.R.**, Gately, C.K., Granier, C., Whetstone, J.R., McDonald, B.C. Development of the United States Greenhouse gas And Air Pollutants Emissions System (GRA2PES). *Journal of Geophysical Research – Atmospheres*, 130: e2025JD043597. <https://doi.org/10.1029/2025JD043597>, 2025.
- (125) Atherton, K., Tatsumi, C., Frenette, I., Heaton, D., Smith, I.A., **Hutyra, L.R.**, Templer, P.H., Bhatnagar, J. Disruption of the oak tree microbiome with urbanization, *Nature Cities*, <https://doi.org/10.1038/s44284-025-00322-x>, 2025.
- (124) Madsen-Colford, S., **Hutyra, L.R.**, Smith, I., Wu, D., Arain, M.A., Staebler, R., Ma, W., Restrepo-Coupe, N., Wunch, D. Modification and comparison of two urban vegetation models over Southern Ontario, Canada, *Journal of Geophysical Research – Biogeosciences*, 130: e2025JG008943, 2025.
- (123) Meng, L., Pourmakhtarian, A., Templer, P.H., **Hutyra, L.R.**, Driscoll, C.T. Simulations of historical impacts of climate change and atmospheric chemistry on a northeastern U.S. forest ecosystem, *Ecological Applications*, doi.org/10.1002/eap.70079, 2025
- (122) Adams, Q., Gause, E.L., Baker, R.E., Hamer, D.H., Werneck, G.L., **Hutyra, L.R.**, Shioda, K., Wellenius, G.A. Impact of Weather Extremes on the Spatiotemporal Dynamics of Visceral Leishmaniasis in Brazil, *Plos Neglected Tropical Diseases*, 19 (7), e0013316, 2025.
- (121) Smith, I.A., Li, D., Fork, D.K., Wellenius, G.A., **Hutyra, L.R.** Optimizing urban cooling: A statistical approach to estimate tree canopy and cool roof expansion impacts on air temperature, *Communications Earth & Environment*, 5:507, 2025.
- (120) Li, Y., Manninen, E., Franklin, J.E., Gottlieb, E., Brown, S. Benmergui, J.S., Sargent, M., Chulakadabba, A., Jones, T., Smith, I., **Hutyra, L.R.**, Chen, J., Gately, C.K., Wofsy, S.C. Diurnal and seasonal dynamics of regional CO2 drawdown at Harvard Forest: Integrating remote sensing and modeling perspectives. *Science of the Total Environment*, 981, 179580, 2025.
- (119) Meng, L., Pourkokhtarian, A., Templer, P.H., **Hutyra, L.R.**, Discoll, C.T. The response of a northeastern temperature forest to future scenarios of climate change and energy policy through the 21st century. *Environmental Modeling and Software* 190: 106473, 2025.

- (118) Sanders-DeMott, R., **Hutyra, L.R.**, Hurteau, M.D., Keeton, W.S., Fallon, K.S., Anderegg, W.R.L., Hollinger, D.Y., Kuebbing, S.E., Lucash, M.S., Ordway, E.M., Vargas, R., Walker, W.S. Ground-Truth: Can Forest Carbon Protocols Ensure High-Quality Credits? *Earth's Future*, 13 (5), e2024EF005414, 2025.
- (117) Morreale, L., Thompson, J., Pasquarella, V., **Hutyra, L.R.** Edge cases: Fragmentation in temperate forest landscapes, *Frontiers in Ecology and Environment*, doi:10.1002/fee.2828, 2025.

2024

- (116) Abramoff, R.Z., Warren, J.M., Harris, J., Phillips, J.R., Winbourne, J., Smith, I., Reinmann, A., **Hutyra, L.R.**, Allen, D.W., Mayes, M.A. Shifts in belowground Processes along a temperate forest edge. *Landscape Ecology*, 39(5), 2024.
- (115) 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., Commene, R., Gately, C.K., **Hutyra, L.R.**, Gurney, K.R., Roest, G.S., Liang, J., Gourdji, S., Mueller, K.L., Whetstone, J.R., Shepson, P.B., New York City methane emissions: what are we missing?, *Environmental Science & Technology*, 58(21) 9147-9157, 2024.
- (114) Warner, K., Sonti, N.F., Cook, E.M., Hallett, R.A., **Hutyra, L.R.**, Reinmann, A.B. Urbanization exacerbates climate sensitivity of eastern United States broadleaf trees. *Ecological Applications*, e2970, 2024.
- (113) Templer, P.H., Atherton, K.F., Conrad-Rooney, E., Ho, H., **Hutyra, L.R.**, Ianniello, C.F., Kashian, D.R., Levy, J.I., Meshoulam, D., Urban, M.C., Strengthening graduate education and addressing environmental challenges through solutions-oriented partnerships and interdisciplinary training. *Sustainable Earth Review*, 7:3, 2024.
- (112) Smith, I.A., Templer, P.H., **Hutyra, L.R.** Water sources for street trees in mesic urban environments, *Science of the Total Environment*, 908 (168411), 2024.

2023

- (111) Rindy, J., Pierce, E., Geddes, J., Garvey, S., Gewirtzman, J., Driscoll, C., **Hutyra, L.R.**, Templer, P.H., Effects of Urbanization and Forest Fragmentation on Atmospheric Nitrogen Inputs and Ambient Nitrogen Oxide and Ozone Concentrations in Mixed Temperate Forests, *Journal of Geophysical Research – Biogeosciences*, 2023.
- (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 Communications*, 5(11), 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.,

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- (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.

2006

- (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.

2005

- (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., Froking, 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.

2004

- (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 Carmago, 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.

2003

- (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.

2001

- (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, *Science*, 294, 1688-1691, 2001.

2000

- (1) Zwieniecki, M.A., L. Hutyra, M.V. Thompson, N.M. Holbrook, Dynamic changes in petiole specific conductivity in red maple (*Acer rubrum* L.), tulip tree (*Liriodendron tulipifera* L.), and northern fox grape (*Vitis labrusca* L.), *Plant Cell Environment*, 23 (4), 407-417, 2000.

SELECTED MEDIA & PUBLIC-FACING WRITING

- (3) Smith, I.A. and Hutyra, L.R. Urban trees vs. cool roofs: What's the best way for cities to beat the heat? *The Conversation*, July 2025.
- (2) 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.
- (1) Gately, C.K., **Hutyra, L.R.** From pledges to action: Cities need to show their climate progress with hard data. *The Conversation*, December 2018

SELECTED INVITED TALKS & KEYNOTES

Representative selection from 127 invited talks, keynotes, and international presentations, 2002–present.

March 2026 – “34 years and counting - What have we learned from the EMS tower?” Harvard Forest LTER Annual Meeting [Invited]

March 2025 – “Influence of urban vegetation on the local atmosphere” Berkeley Atmospheric Sciences Center 2026 Symposium, University of California, Berkeley

August 2025 – “Trees in the City: Cooling, Carbon, and the Complications”, Telluride Science Town Talks, Telluride, CO

July 2025 – “Tradeoffs and strategies for improving urban climate & ecosystem services” Asian Development Bank

May 2025 – Phi Beta Kappa Induction Ceremony Commencement speaker, Boston University

April 2025 – “Vegetation influences on CO₂, air quality, and climate in cities” Massachusetts Institute of Technology, Cambridge, MA

March 2025 – “Urban vegetation and air quality: A multi-disciplinary perspective on CO₂, VOCs, and aerosols.” Aerodyne Research, Bellerica, MA

March 2025 – “Cooling ‘technologies’ – Albedo and tree management” Harvard University, Urban Heat Resiliency Design Workshop [Invited]

January 2024 – “Impacts of urbanization & forest fragmentation on carbon and energy budgets,” University of Helsinki, Finland

April 2024 – “Do we really want more trees in our cities?” MacArthur Foundation Fellows Retreat, Wisconsin

April 2024 – “Exploring the impacts of urbanization on the cycling of carbon in our ecosystems” Annual public lecture, Sustaining our World Series, University of Washington

December 2024 – “An exploration of the mitigation possibilities of urban vegetation” American Geophysical Union, Ascent Lecture [Invited]

September 2023 – “Heat in the city - Understanding the what, where, and how to advance climate solutions”, James B. Francis Lecture on the Built Environment, University of Massachusetts, Lowell

April 2023 - "What's place got to do with it? How urban and rural trees provide different benefits" Boston Public Library Earth Day Lecture

November 2021 - "The potential & possibilities for ground-based greenhouse gas monitoring networks " Glasgow COP26 Preview Event: "Monitoring Urban Greenhouse Gasses".

October 2021 – “Impacts of urbanization & landscape fragmentation on the carbon cycle” University of Toronto, Global Change Science Distinguished Lecturer Series

October 2021 – “Pushing boundaries – Women scientists at the forefront of community-engaged research” Boston University Initiative on Cities [Invited]

March 2021 – “Urban Heat: Rising Temperatures and Population Vulnerability in Cities” Boston University Trustees and the Advisory Committee for Socially Responsible Investing.
June 2018 – “Urban CO2 Fluxes” National Institute of Standards (NIST), Gaithersburg, MD.

TEACHING

Boston University, 2009–present

- EE475/675 / EE/BI 475/675 — Urban Ecology
- EE456/656 / GE 456/656 — Terrestrial Ecosystems and the Carbon Cycle
- EE270 / GE 270 — Data, Models, and Analysis in Earth & Environment
- EE764/BI764/EH799 — Urban Colloquium
- EE/BI/ES 719 — Colloquium in Biogeochemistry
- EE/BI/ES 720 — Practicum in Biogeochemistry
- EE765/BI765/EH797
- GE 104 — Natural Environments: The Physical Landscape

POSTDOCTORAL FELLOWS ADVISED

Steve Raciti (Ph.D. Cornell Univ.) April 2010 – July 2014
Brady Hardiman (Ph.D. Ohio State Univ.) June 2014 – 2015
Andrew Reinmann (Ph.D. Boston Univ.) April 2014 – 2017
Afshin Pourmokhtarian (Ph.D. Syracuse University) 2015-2017
Laura Schifman (PhD University of Rhode Island) 2018-2019
Conor Gately (Ph.D. Boston University) 2015-2019
Xiaoxing Tang (PhD Boston University) 2018-2020
Joy Winbourne (PhD UC-Davis) 2018-2021
Taylor Jones (PhD Harvard) 2019-2023
Yorum Hwang (Soule National University) 2023-2024
Ian Smith (PhD Boston University) 2023 - 2025
Chris Lee (PhD Rochester Institute of Technology) 2024 – 2026

CURRENT PHD STUDENTS

Nicholas Bates-Haus, Ph.D. Earth & Environment (Advisor, 2025-present)
Milena Raeber, Ph.D. Earth & Environment (Advisor, 2024-present)
Hristiana Stoyanova, Ph.D. Earth & Environment (Advisor, 2022-present)
Leeza Maldavchuk, Ph.D. Earth & Environment (Advisor, 2022-present)

GRADUATED PHD & GRADUATED STUDENTS ADVISEES

Thesis titles omitted for length; full details available on request.

2023: Sarah Garvey (1st Reader)
2023: Ian Smith (1st Reader)
2023: Luca Morreale (1st Reader)
2021: Julia Marrs, PhD Geography (1st Reader)
2020: Wiley Hundertmark, BA/MA Earth & Environment (Senior Thesis Advisor)
2019: Andrew Trlica, PhD Geography (1st Advisor)
2018: Steven Decina, PhD Biology (Thesis Co-Advisor)

2017: Ha Nguyen, PhD Geography (1st Reader)

2017: Ian Smith, BS, with Honors, Environmental Science (Senior Thesis Advisor)

2016: Gabrielle Jackson, Boston University Academy High School (Senior Thesis Advisor)

2015: Conor Gately, Ph.D. Geography (Thesis Co-Advisor)

2015: Brittain Briber, Ph.D. Geography (1st Reader)

2015: Victoria Dearborn, BS. With Honors, Geography & Environment (Senior Thesis Advisor)

2014: Evan Kuras, BS. With Honors, Geography & Environment (Senior Thesis Advisor)

2013: Preeti Rao, Ph.D. Geography & Environment (1st Reader)

2011: Max Brondfield, A.B. Harvard University (Senior Thesis Advisor)

2012: Larry Bandoni, Boston University Academy High School (Thesis Advisor)

PROFESSIONAL SERVICE

Advisory & Governance

- NASA Earth Science Advisory Committee (Federal Advisory Committee), 2017–2023
- Advisory Board, Environmental Science: Atmospheres journal, 2021–present
- North American Carbon Program Scientific Steering / Science Leadership Group, 2013–2020
- DOE Biological & Environmental Advisory Committee (BERAC) workshop on Urban Carbon Cycle Science, 2015
- NASA Decadal Survey Working Group, 2014

Grant Review Panels

NSF (DISES, LTER, CZO, CNH, Ecosystem Science/DEB), NASA (New Investigator Program, Post-Doctoral Fellowship), NOAA (Climate Program Office), DOD (SERDP), USDA (Soils & Global Change), and the German Research Foundation — 2009–present.

Journal Reviewer

Proceedings of the National Academy of the United States of America (PNAS), Science, Nature, Nature Ecology & Evolution, Global Change Biology; Environmental Science and Technology; Trends in Ecology & Evolution; 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 Geophysical Research – Atmospheres; Remote Sensing; New Phytologist; Journal of Photogrammetry and Remote Sensing; Science of the Total Environment; Atmospheric Chemistry and Physics.

Conference Leadership

Session convener for AGU Fall Meeting, ESA Annual Meeting, and the North American Carbon Cycle Science Program All-Investigators Meeting, 2009–2017. Lead or co-organizer for six international workshops, including the CO₂-Urban Synthesis & Analysis (CO₂-USA) workshop series and the Boston University Sustainable Urban Systems conference, 2017–2025.

Boston University Leadership & Service

- Associate Director, Boston University Urban NRT graduate training program, 2017–present
- Boston University Task Force on Convergent Research and Education, 2025
- Director of Biogeosciences, 2021–2024
- Associate Director / Interim Director, Initiative on Cities, 2021–2024
- Director, Campus as a Living Lab, 2020–2022
- Co-Director, BU Urban Climate Initiative, 2018–2022
- Associate Chair for Curriculum, Department of Earth & Environment, 2017–2018
- Director of Graduate Studies, Earth & Environment, 2015–2016
- Chair, Natural Sciences Curriculum Committee, College of Arts & Sciences, 2014–2015

OTHER EMPLOYMENT

Google

Visiting Faculty Fellow, Cambridge, Massachusetts, June 2023 – present

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