

## EDUCATION

- 2014 PhD Natural Resources & Environment, University of Michigan
- 2008 International MSc of Rural Development, Humboldt University Berlin (Germany), Chinese Academy of Social Sciences (China), Agrocampus Rennes (France), Universidad de Córdoba (Spain)
- 2005 BSc Environmental & Resource Management, Brandenburg University of Technology

## ACADEMIC EMPLOYMENT

- 2024 – now Associate professor, Department of Earth & Environment, Boston University
- 2020 – now Affiliate professor, Faculty of Computing & Data Sciences, Boston University
- 2016 – 2024 Assistant professor, Department of Earth & Environment, Boston University
- 2015 – 2016 Postdoctoral scholar (Eric Lambin), School of Earth Sciences, Stanford University
- 2010 – 2014 Research assistant (Arun Agrawal), School of Natural Resources and Environment, University of Michigan – Ann Arbor
- 2010 Lecturer, Department of Landscape Economics, University of Greifswald, Germany
- 2008 – 2010 Research assistant, Department of Sustainability Science, University of Greifswald

## RESEARCH INTERESTS

Changes in global land governance and its effects on land cover; estimation of the costs and effects of land conservation; causal inference with parcel and satellite data; spatial conservation planning under constraints (budgets, data); revealed-preference valuation; standards, infrastructure, and open-source software for analysis of large-scale, high-dimensional, historical property & land use data.

## PUBLICATIONS

*advisees: postdoc, graduate student\*, undergraduate student\*\**

### Peer-reviewed journal articles

Count: 55                      Citations: 3247 (Google) / 1357 (ISI)                      h-index: 24 (Google) / 16 (ISI)

- 2024 **Nolte C**, Reboredo Segovia A\*, Ochoa Quintero JM, Burbano-Girón J. Improving estimates of land protection cost in a tropical biodiversity hotspot. *Front Ecol Environ* 22 (2)

*10.1002/fee.2626*

**Nolte C**, Boyle K, Chaudhry A, Clapp C, Guignet D, Hennighausen H, Kushner I\*\*, Liao Y, Mamun S, Pollack A\*, Richardson J, Sundquist S\*\*, Swedberg K\*, Uhl J. Data practices for studying the impacts of environmental amenities and hazards with nationwide property data.

*Land Econ* 100 (1)

*10.3368/le.100.1.102122-0090R*

- Albers H, Chang C, Dissanayake S, Helmstedt K, Kroetz K, Dilkina B, Zapata-Moran I, **Nolte C**, Ochoa-Ochoa L, Spencer G. Anticipating anthropogenic threats in acquiring new protected areas. *Conserv Biol* 38 (2):e14176 [10.1111/cobi.14176](https://doi.org/10.1111/cobi.14176)
- Armsworth P, Dilkina B, Fargione J, Fisher M, Fovargue R, Harris J, Jackson H, Le Bouille D, Nolte C. Optimal conservation outcomes consider donor geography and their willingness to support more distant projects. *Biol Conserv* 297: 110734 [10.1016/j.biocon.2024.110734](https://doi.org/10.1016/j.biocon.2024.110734)
- Chaudhry A, **Nolte C**, Fairbanks D. Water market participation and agricultural land values. *Land Econ* 100 (1) [10.3368/le.100.1.102122-0091R](https://doi.org/10.3368/le.100.1.102122-0091R)
- den Braber B, Oldekop J, Devenish K, Godar J, **Nolte C**, Schmoeller M, Evans K. Socio-economic and environmental trade-offs in Amazonian Protected Areas and Indigenous Territories revealed by assessing competing land-uses. *Nat Ecol Evol* 8 (8) [10.1038/s41559-024-02458-w](https://doi.org/10.1038/s41559-024-02458-w)
- Guignet D, **Nolte C**. Hazardous waste and home values: an analysis of treatment and disposal sites in the US. *J Assoc Environ Resour Econ* 11:2 [10.1086/726157](https://doi.org/10.1086/726157)
- Hagen S, **Nolte C**, Morgan S, Chang Y, Boccaletti G, Reddy S. Understanding variation in impacts from private protected areas across regions and protection mechanisms to inform organizational practices. *Conserv Biol* 38 (2): e14225 [10.1111/cobi.14225](https://doi.org/10.1111/cobi.14225)
- Loomis J, Richardson L, Dara P, Mueller J Zabel J, Smalley P, Fitch R, **Nolte C**, Paterson R. Ecosystem service values provided by National Parks to residential property owners. *Ecol Econ* 220:108175 [10.1016/j.ecolecon.2024.108175](https://doi.org/10.1016/j.ecolecon.2024.108175)
- Mamun S, Nelson S, **Nolte C**. Estimating the impact of Critical Habitat designation on the values of undeveloped and developed parcels. *Land Econ* 100 (1). [10.3368/le.100.1.101922-0081R](https://doi.org/10.3368/le.100.1.101922-0081R)
- Schloss C, Cameron R, Franklin B, **Nolte C**, Morrison S. An approach to designing efficient implementation of 30x30 terrestrial conservation commitments. *Conserv Sci Pract: e13232* [10.1111/csp2.13232](https://doi.org/10.1111/csp2.13232)
- Swedberg K\*, Castillo Castillo A, Cardoso D, Mamun S, Zhang J\*, Boyle K, **Nolte C**, Papenfus M, Phaneuf D, Polasky S. Spatial heterogeneity in hedonic price effects for lake water quality. *Land Econ* 100 (1). [10.3368/le.100.1.102122-0086R](https://doi.org/10.3368/le.100.1.102122-0086R)
- Zabel J, **Nolte C**, Paterson R. Measuring the value of U.S. National Parks using hedonic property value models. *Land Econ* 100 (1). [10.3368/le.100.1.102122-0088R1](https://doi.org/10.3368/le.100.1.102122-0088R1)
- 2023 Anderegg W, Collins T, Grineski S, Nicholls S, **Nolte C**. Climate change greatly escalates forest disturbance risks to US property values. *Environ Res Lett* 18:094011 [10.1088/1748-9326/ace639](https://doi.org/10.1088/1748-9326/ace639)
- Armsworth P, Dilkina B, Fargione J, Fisher M, Fovargue R, Harris J, Jackson H, Le Bouille D, **Nolte C**, Richards C. Multiplying the impact of biodiversity conservation funding using spatial exchange rates. *Front Ecol Environ* 21(10):489-497 [10.1002/fee.2678](https://doi.org/10.1002/fee.2678)
- Gold M, Binder S, **Nolte C**. Expanding the coverage and accuracy of parcel-level land value estimates. *PLoS One* 18(9):e0291182 [10.1371/journal.pone.0291182](https://doi.org/10.1371/journal.pone.0291182)
- Gourevitch J, Kousky C, Liao Y, **Nolte C**, Pollack A\*, Porter J, Weill J. Unpriced climate risk and potential consequences of overvaluation in U.S. housing markets. *Nat Clim Chang* 13:250-257. [10.1038/s41558-023-01594-8](https://doi.org/10.1038/s41558-023-01594-8)

- Guignet D, Jenkins R, **Nolte C**, Belke J. The external costs of industrial chemical accidents: a nationwide property value study. *J Hous Econ* 62:101954. [10.1016/j.jhe.2023.101954](https://doi.org/10.1016/j.jhe.2023.101954)
- Hennighausen H, Liao Y, Pollack A\*, **Nolte C**. Flood insurance reform and housing market dynamics. *J Hous Econ* 62:101953 [10.1016/j.jhe.2023.101953](https://doi.org/10.1016/j.jhe.2023.101953)
- Johnson K, Parton L, **Nolte C**, Williamson M, Nogeire-McRae T, Paudel J, Brandt J. Moving to the country: understanding the effects of COVID-19 on property values and farmland loss. *J Hous Econ* 62:101955. [10.1016/j.jhe.2023.101955](https://doi.org/10.1016/j.jhe.2023.101955)
- Kemink K, Pressey R, Adams V, **Nolte C**, Olimb S, Healey A, Liu B, Frerichs T, Renner R. Assessing prioritization measures for a private land conservation program in the U.S. Prairie Pothole Region. *Conserv Sci Pract* 5(7):e12939 [10.1111/csp2.12939](https://doi.org/10.1111/csp2.12939)
- Malakoff K\*\*, **Nolte C**. Estimating the parcel-level impacts of agricultural conservation easements on farmland loss using satellite data in New England. *Land Use Policy* 132:106814 [10.1016/j.landusepol.2023.106814](https://doi.org/10.1016/j.landusepol.2023.106814)
- Mamun S, Castillo-Castillo A, Swedberg K\*, Zhang J\*, Boyle K, Cardoso D, Kling CL, **Nolte C**, Papenfus, M, Phaneuf D, Polasky S. Valuing water quality in the US using a national data set on property values. *Proc Nat Acad Sci USA*, 120(15):e2210417120. [10.1073/pnas.2210417120](https://doi.org/10.1073/pnas.2210417120)
- Pollack A\*, Wrenn D, Sue Wing I, **Nolte C**. Potential benefit in remapping the Special Flood Hazard area: evidence from the U.S. housing market. *J Hous Econ* 61:101956. [10.1016/j.jhe.2023.101956](https://doi.org/10.1016/j.jhe.2023.101956)
- Reboredo Segovia A\*, Matallana C, Amaya Torres D, Meza Chavez D, Gómez Candamil J, López-Gamboa V, **Nolte C**. Implementing land acquisitions for watershed services in the tropical Colombian Andes produces marginal progress for advancing area-based conservation objectives. *Conserv Lett* 16 (2): e12932. [10.1111/conl.12932](https://doi.org/10.1111/conl.12932)
- Stapp J, **Nolte C**, Potts M, Baumann M, Haya B, Butsic V. Little evidence of management change in California's forest offset program. *Commun Earth Environ* 4:331 [10.1038/s43247-023-00984-2](https://doi.org/10.1038/s43247-023-00984-2)
- 2022 Pollack A\*, Sue Wing I, **Nolte C**. Aggregation bias and its drivers in large-scale flood loss estimation: a Massachusetts case study. *J Flood Risk Manag* 15(4): e12851. [10.1111/jfr3.12851](https://doi.org/10.1111/jfr3.12851)
- Magliocca N, de Bremond A, Ellicott E, Seghezzo L, Venencia C, Mosciaro MJ, **Nolte C**. Two of a kind? Large-scale land acquisitions and commodity frontier expansion in Argentina's Dry Chaco. *Ecol Soc* 27(2):27. [10.5751/ES-13103-270225](https://doi.org/10.5751/ES-13103-270225)
- 2021 Yang H, Simmons B, Ray R, **Nolte C**, Gopal S, Ma Y, Ma X, Gallagher K. Risks to global biodiversity and Indigenous lands from China's overseas development finance. *Nat Ecol Evol* 5(11):1520-1529. [10.1038/s41559-021-01541-w](https://doi.org/10.1038/s41559-021-01541-w)
- Simmons B, **Nolte C**, McGowan J. Tough questions for the "30 x 30" conservation agenda. *Front Ecol Environ* 19:322-323. [10.1002/fee.2375](https://doi.org/10.1002/fee.2375)
- 2020 **Nolte C**. High-resolution land value maps reveal underestimation of conservation costs in the United States. *Proc Nat Acad Sci USA* 117(47):29577-29583. [10.1073/pnas.2012865117](https://doi.org/10.1073/pnas.2012865117)
- Armsworth P, Benefield A, Dilkina B, Fovargue R, Jackson H, Le Bouille D, **Nolte C**. Allocating resources for land protection using continuous optimization: biodiversity conservation in the United States. *Ecol Appl* 30(6):1-13. [10.1002/eap.2118](https://doi.org/10.1002/eap.2118)

- Bullock E, **Nolte C**, Reboredo Segovia A\*, Woodcock C. Ongoing forest disturbance in Guatemala's protected areas. *Remote Sens Ecol Conserv* 6(2):141-152. [10.1002/rse2.130](https://doi.org/10.1002/rse2.130)
- 2019 **Nolte C**, Meyer S, Sims K, Thompson J. Voluntary, permanent land protection reduces forest loss and development in a rural-urban landscape. *Conserv Lett* 12(6):e12649. [10.1111/conl.12649](https://doi.org/10.1111/conl.12649)
- Nolte C**, De Vos A, Schöttker O. Cost-effectiveness of public policy for the long-term conservation of private lands: What is the deal? *Conserv Lett* 12(6):1-3. [10.1111/conl.12691](https://doi.org/10.1111/conl.12691)
- Sims K, Thompson J, Meyer S, **Nolte C**, Plisinski J. Assessing the local economic impacts of land protection. *Conserv Biol* 33(5):1035-1044. [10.1111/cobi.13318](https://doi.org/10.1111/cobi.13318)
- le Polain de Waroux Y, Garrett R, Graesser J, **Nolte C**, White C, Lambin E. The restructuring of South American soy and beef production and trade under changing environmental regulations. *World Dev* 121:188-202, [10.1016/j.worlddev.2017.05.034](https://doi.org/10.1016/j.worlddev.2017.05.034)
- 2018 **Nolte C**. Buying forests for conservation: contours of a global trend. *Curr Opin Environ Sustainability* 32:68-75, [10.1016/j.cosust.2018.05.003](https://doi.org/10.1016/j.cosust.2018.05.003)
- Nolte C**, Gobbi B, le Polain de Waroux Y, Piquer-Rodríguez M, Butsic V, Lambin E. Challenges in attributing avoided deforestation to policies and actors: lessons from provincial zoning in the Argentine Dry Chaco. *Ecol Econ* 150:346-352. [10.1016/j.ecolecon.2018.03.010](https://doi.org/10.1016/j.ecolecon.2018.03.010)
- Lambin E, Gibbs H, Heilmayr R, Carlson K, Fleck L, Garrett R, le Polain de Waroux Y, McDermott C, McLaughlin D, Newton P, **Nolte C**, Pacheco P, Rausch L, Streck C, Thorlakson T, Walker N. The role of supply-chain initiatives in reducing deforestation. *Nature Climate Change* 8(2):109-116. [10.1038/s41558-017-0061-1](https://doi.org/10.1038/s41558-017-0061-1)
- Brandt J, **Nolte C**, Agrawal A. Deforestation and timber production in Congo after the implementation of sustainable management policy: a response to Karsenty et al (2017). *Land Use Policy* 77, 375-378. [10.1016/j.landusepol.2018.04.056](https://doi.org/10.1016/j.landusepol.2018.04.056)
- 2017 **Nolte C**, Gobbi B, le Polain de Waroux Y, Piquer-Rodríguez M, Butsic V, Lambin E. Decentralized land use zoning reduces large-scale deforestation in a major agricultural frontier. *Ecol Econ* 136: 30-40. [10.1016/j.ecolecon.2017.02.009](https://doi.org/10.1016/j.ecolecon.2017.02.009)
- Nolte C**, le Polain de Waroux Y, Munger J, Reis T, Lambin E. Conditions influencing the adoption of effective anti-deforestation policies in South America's commodity frontiers. *Glob Environ Change* 43: 1-14. [10.1016/j.gloenvcha.2017.01.001](https://doi.org/10.1016/j.gloenvcha.2017.01.001)
- Robinson B, Masuda Y, Kelly A, Holland M, Bedford C, Childress M, Fletschner D, Game E, Ginsburg C, Hilhorst T, Lawry S, Miteva D, Musengezi J, Naughton-Treves L, **Nolte C**, Sunderlin W, Veit P (2017) Incorporating land tenure security into conservation. *Conserv Lett*, 11(2):1-12. [10.1111/conl.12383](https://doi.org/10.1111/conl.12383)
- 2016 **Nolte C**. Identifying challenges to enforcement in protected areas: empirical insights from 15 Colombian parks. *Oryx* 59(02): 317-322. [10.1017/S0030605314000891](https://doi.org/10.1017/S0030605314000891)
- Brandt J, **Nolte C**, Agrawal A. Deforestation and timber production in Congo after the implementation of sustainable forest management policy. *Land Use Policy* 52: 15-22. [10.1016/j.landusepol.2015.11.028](https://doi.org/10.1016/j.landusepol.2015.11.028)
- 2015 Ferraro P, Hanauer M, Miteva D, Nelson J, Pattanayak S, **Nolte C**, Sims K. Estimating the impacts of conservation on ecosystem services and poverty by integrating modeling and evaluation. *Proc Natl Acad Sci USA* 112 (24): 7420-7425. [10.1073/pnas.1406487112](https://doi.org/10.1073/pnas.1406487112)

- Coad L, Leverington F, Knights K, Geldmann J, Eassom A, Kapos V, Zamora C, Cuadros I, **Nolte C**, Burgess N, Hockings M. Measuring impact of protected area management interventions: current and future use of the global database of protected area management effectiveness. *Phil Trans R Soc B* 370: 20140281. [10.1098/rstb.2014.0281](https://doi.org/10.1098/rstb.2014.0281)
- 2014 Brandt J, **Nolte C**, Steinberg S. Foreign capital, forest change and regulatory compliance in Congo Basin forests. *Environ Res Lett* 9(4): 044007. [10.1088/1748-9326/9/4/044007](https://doi.org/10.1088/1748-9326/9/4/044007)
- 2013 **Nolte C**, Agrawal A, Silvius K, Soares-Filho B. Governance regime and location influence avoided deforestation success of protected areas in the Brazilian Amazon. *Proc Nat Acad Sci USA* 110(13): 4956-4961. [10.1073/pnas.1214786110](https://doi.org/10.1073/pnas.1214786110)
- Nolte C**, Agrawal A, Barreto P. Setting priorities to avoid deforestation in Amazon protected areas: Are we choosing the right indicators? *Environ Res Lett* 8(1): 015049. [10.1088/1748-9326/8/1/015039](https://doi.org/10.1088/1748-9326/8/1/015039)
- Nolte C**, Agrawal A. Linking management effectiveness indicators to observed effects of protected areas on fire occurrence in the Amazon Rainforest. *Conserv Biol* 27(1): 155-165. [10.1111/j.1523-1739.2012.01930.x](https://doi.org/10.1111/j.1523-1739.2012.01930.x)
- Coad L, Leverington F, Burgess N, Cuadros I, Geldmann J, Marthews T, Mee J, **Nolte C**, Stoll-Kleemann S, Vansteelant, N, Zamora C, Zimsky, M, Hockings M. Progress towards the CBD protected area management effectiveness targets. *Parks* 19: 13-24
- 2012 Stoll-Kleemann S, Kettner A, Leverington F, **Nolte C**, Nielsen G, Bomhard B, Stolton S, Marr M, Hockings M. Erfassung der Managementeffektivität in Europas Schutzgebieten [Assessing the management effectiveness of Europe's protected areas]. *Landschaft und Naturschutz* 44(2): 034-044
- 2009 Stoll-Kleemann S, Schliep R, **Nolte C**. The Global Research Centre for Biosphere Reserve Advancement. A New Emphasis on Social Dynamics and Exchange in UNESCO's World Network. *GAIA* 18(3): 270-272

## Revise & Resubmit

Reboredo Segovia A\*, López L, Bullock E, Arévalo P\*, Matallana C, **Nolte C**. Making a difference takes time: comparing the impacts of two direct conservation interventions on forest cover in a biodiversity hotspot. *Proc Natl Acad Sci USA*

## Other publications

- 2021 Simmons B, **Nolte C**, McGowan J. Delivering on Biden's 2030 conservation commitment. *bioRxiv*: [10.1101/2021.02.28.433244](https://doi.org/10.1101/2021.02.28.433244)
- 2010 Leverington F, Costa KL, Courrau J, Pavese H, **Nolte C**, Marr M, Coad L, Burgess N, Bomhard B, Hockings M. Management effectiveness evaluation in protected areas – a global study. 2nd edition. IUCN: Gland, Switzerland
- Nolte C**, Leverington F, Kettner A, Marr M, Nielsen G, Bomhard B, Stolton S, Stoll-Kleemann S, Hockings M. Protected Area Management Effectiveness Assessments in Europe: A review of data, methods and results. BfN Skripten Series 271a. BfN: Bonn
- 2008 **Nolte C**. Property rights and payments for watershed services from forests in China: A case study of Beijing's Forest Eco-Compensation. MSc. Thesis

- 2006 **Nolte C.** The Biosphere Tour: Observations and Recommendations. Report to the UNESCO-MAB Secretariat, UNESCO field offices and biosphere reserves.
- 2005 **Nolte C.** Awareness of the "Man and the Biosphere" program and its impact on visitors' attitudes towards tourism services in Dana BR, Jordan. BSc. Thesis

### **CURRENTLY FUNDED PROJECTS**

- 2024-2026 Collaborator: *Predicting interactions between demographic change, climate adaptations, and conservation actions across the U.S. Caribbean.* USGS Southeast Climate Adaptation Science Center (\$45K to Boston University). PI: Georgina Sanchez (North Carolina State University) (1)
- 2023-2025 PI: *LakeSense: A portal for nationwide remotely sensed lake water quality indicators to inform benefit-cost analyses for federal and state-level rule-making.* NASA: Water Resources Applications (\$448,845). Co-I: Cédric Fichot. (2)
- 2022-2026 PI: *High-resolution prediction and uncertainty estimation of land value and conservation costs in the contiguous United States.* NSF: Human-Environment and Geospatial Sciences (\$287,931). (3)
- 2022-2027 Senior personnel: *Large-scale CoPe: Coastal Hazards, Equity, Economic prosperity, and Resilience (CHEER).* NSF Coastlines and People (\$16,240,129 total, \$1.07M to Boston University). PI: Rachel Davidson (U of Delaware) (4)
- 2020-2025 PI: *Comparing the effectiveness of conservation instruments in the Colombian Andes biodiversity hotspot.* NASA: Land Cover / Land Use Change (\$449,652). Co-Is: Eric Bullock and Paulo Arévalo. (5)

### **PAST GRANTS, AWARDS, FELLOWSHIPS,**

- 2020 *Identifying spatial priorities for reducing emissions from forest loss in the contiguous United States.* The Nature Conservancy, \$25,100
- Quantifying the causal impact of The Nature Conservancy's land acquisitions and conservation easements on land cover change.* The Nature Conservancy, \$33,380
- 2019 *Developing a remote-sensing based impact evaluation strategy for the Sustainable Agroforestry Development Program in the Dominican Republic.* Inter-American Development Bank (consultancy supporting four students), \$65,200
- Research Incubation Award,* Hariri Institute for Computing and Computational Science & Engineering, Boston University, \$31,500
- 2018 *Junior Faculty Fellow,* Hariri Institute for Computing and Computational Science & Engineering, Boston University, \$10,000
- Evaluating the impacts of land tenure clarification and boundary demarcation on deforestation in Guatemala's protected areas.* Inter-American Development Bank, (consultancy supporting two PhD students), \$52,500
- 2017 *Spatially optimizing investments in biodiversity conservation across decision hierarchies.* National Institute for Mathematical-Biological Synthesis Working Group (Co-PI with Paul Armsworth and Kailin Kroetz) – 3 workshops

- 2016 *Optimizing species conservation in the presence of special value decay*. Postdoctoral Fellowship, National Institute for Mathematical-Biological Synthesis, \$102,000 (declined to accept tenure-track position)
- 2014 UK Department for International Development (PI Arun Agrawal) - \$3,100,000 (author of core idea of proposal, not involved with research due to time constraints)
- 2013 National Science Foundation, Doctoral Dissertation Improvement Grant - \$12,915
- 2012 Rights and Resources Initiative (PI Arun Agrawal, 33% effort) – \$130,000  
University of Michigan, Graham Doctoral Sustainability Fellowship – \$50,000  
University of Michigan, Rackham International Student Fellowship – \$10,000
- 2011 Gordon and Betty Moore Foundation (PI Arun Agrawal, 50% effort) – \$399,000  
University of Michigan, Rackham Summer Research Grant  
University of Michigan, International Institute Individual Fellowship (summer)  
University of Michigan, Rackham Graduate Student Research Grant (summer)
- 2010 University of Michigan, School of Natural Resources & Environment, PhD Fellowship
- 2008 German Academic Exchange Service (DAAD), Field Research Fellowship
- 2007 European Union, Erasmus Mundus Action 3 Fellowship
- 2005 Beijing Institute of Technology, Semester Abroad Scholarship

## CONFERENCES / PRESENTATIONS

### Symposium organization

- 2022 Workshop: Joint Special Issue in *Land Economics* and *Journal of Housing Economics*: “Property value analysis using ZTRAX – Applications under the Approaching Sunset“. 3-day online showcase of nationwide hedonic analyses using Zillow’s ZTRAX database. 50 participants, ~30 institutions
- Symposium: “Strategies to estimate the costs of 30x30 protection actions over large scales in the United States: approaches, standards, evidence“. North American Congress for Conservation Biology, Reno, NV
- 2021 PLACES webinar: land, water and ZTRAX. 3-day online showcase of analyses of large-scale high-dimensional parcel-level data; scaling causal inference and hedonic analyses; peer review of data filtering standards. 211 participants, 122 institutions
- 2020 Inaugural PLACES webinar: 3-day online workshop discussing advanced data analyses with large-scale high-dimensional parcel-level data. 110 participants, 80 institutions
- "Geo-locating ZTRAX" PLACES webinar. 80 participants, 40 universities
- 2019 Symposium: "Voluntary, permanent private land protection: evidence on allocation and impact" International Congress for Conservation Biology, Kuala Lumpur, Malaysia
- 2017 - 2019 Four workshops: “Spatially optimizing investments in biodiversity conservation across decision hierarchies” (with Paul Armsworth and Kailin Kroetz). Workshop, National Institute for Mathematical-Biological Synthesis, Knoxville, TN

2017 Symposium: “Land acquisitions for conservation: reconciling plans with empirical reality”  
International Congress for Conservation Biology, Cartagena, Colombia

**Scholarly presentations**

***Bold meetings: invited***

2023 “Land Value Data Release Workshop” PLACES webinar, 26 attendees from U.S. universities (13), federal agencies (6), conservation organizations (6), and the private sector.

“Comparing the effectiveness of conservation instruments in the Colombian biodiversity hotspot”, **NASA Carbon Cycle & Ecosystems Joint Science Workshop**, College Park, MD

“Estimating the impacts and costs of land conservation efforts: how satellites and property data can support the search for optimal investments into environmental goods” (tenure talk), Boston University

“Comparing the effectiveness of conservation instruments in the Colombian Andes” (joint presentation of five analyses with NASA-LCLUC project team)

1. School of Environmental and Rural Studies, Javeriana University, Bogotá
2. IDEAM (Institute of Hydrology, Meteorology, and Environmental Studies), Bogotá
3. Alexander von Humboldt Biological Resources Institute, Bogotá

2022 “Comparing the effectiveness of conservation instruments in the Colombian Andes biodiversity hotspot” (invited poster) and “Challenges and opportunities in forest change remote sensing” (invited panel), **NASA Land Cover/Land Use Change 25<sup>th</sup> Anniversary Meeting**, Bethesda, MD

“Characterizing and calibrating uncertainties in the estimation of parcel-level land values and conservation costs” The Workshop in Environmental Economics and Data Science (TWEEDS), Eugene, OR

“LakeSense: a portal for nationwide remotely-sensed lake water quality indicators to inform benefit-cost analyses for federal and state-level rulemaking” **NASA Water Resources Applications Meeting**, Salt Lake City, UT

“Parcel-level land protection cost estimates for the contiguous United States with implications for conservation planning” **Ecological Society of America Meeting**, Montréal, Canada

“Parcel-level land protection cost estimates for the contiguous United States with implications for conservation planning” North American Congress for Conservation Biology, Reno, NV

2021 “Global conservation planning needs better cost data: some findings from the Colombian Andes” International Congress for Conservation Biology (remote)

“High-resolution estimates of land protection costs for “30 by 30” conservation planning: towards better global maps” Annual Meeting of the **Forest and Livelihoods: Assessment, Research, and Engagement (FLARE)** network (remote)

“High-resolution estimates of land protection costs for “30 by 30” conservation planning: towards better global maps”, Agricultural and Applied Economics Seminar, **University of Wisconsin-Madison**.

“Estimando el costo de compras de tierra para fines de conservación en los Andes” (Estimating the cost of land purchases for conservation purposes in the Andes). **Alexander von Humboldt Institute for Biological Resources Research**, Bogotá, Colombia (remote)



- "Estimating land protection costs at high resolutions: towards better global maps" Wilcove Lab, **Princeton University** (remote)
- 2020 "High-resolution land value maps reveal underestimation of conservation cost in the United States" The Workshop in Environmental Economics and Data Science (TWEEDS) (remote)
- "Comparing the effectiveness of conservation instruments in the Colombian Andes biodiversity hotspot" **NASA Land Cover/Land Use Change Science Team Meeting** (remote)
- "From observation to inference: how satellites and big data can help us understand the effects of land conservation decisions", Center for Energy & Environment, **University of Tennessee – Knoxville** (remote) [youtu.be/6\\_dXntdBrFo](https://youtu.be/6_dXntdBrFo)
- "PLACES in a nutshell" Inaugural PLACES webinar [youtu.be/XJ84eNSQaPs](https://youtu.be/XJ84eNSQaPs)
- 2019 "Design of a remote-sensing based impact evaluation strategy for the Sustainable Agroforestry Development Program ", **Inter-American Development Bank & Government of the Dominican Republic**, Santo Domingo, Dominican Republic
- "Predicting the cost of conserving private lands in the U.S. at high resolutions and large scales" Ecological Society of America Annual Meeting, Louisville, KY
- "Land conservation and sale price prediction: pushing the analytical frontier" Headquarters of Zillow Inc., Seattle, WA
- "Effects of private land conservation: a system for large-scale, fine-resolution hypothesis testing with satellites and parcel data" The Workshop in Environmental Economics and Data Science (TWEEDS), Portland, OR
- "PLACES: measuring the effects of private land conservation with large-scale ownership and satellite data" **Junior Faculty Fellow Talk**, Boston University [youtu.be/3Tx6kBSz0a4](https://youtu.be/3Tx6kBSz0a4)
- "Machine learning for automated valuation of conservation easements" Boston University Data Science Day, Boston, MA
- 2018 "Private land protection in Massachusetts: measuring impacts, modeling costs" **Massachusetts Land Trust Coalition Quarterly Meeting**, North Grafton, MA
- "Building a national parcel database to explain and support private land protection in the U.S." **Max Planck – Yale Center for Biodiversity Movement and Climate Change, Yale University**, New Haven, CT
- "Building a national parcel database to explain and support private land protection in the U.S." **Parcellation & Forest Loss Workshop, Vermont Natural Resources Council**
- "Allocation and Impact of Private Land Conservation in the U.S.: new evidence from large-scale parcel datasets" North American Congress for Conservation Biology, Toronto, Canada
- "Impact Evaluation of Land Conservation Interventions: Tools, Methods, Data" (three-part workshop), **Peking University & Lincoln Institute of Land Policy**, Beijing, China
- "Evaluating Impacts of Forest-Based Climate Mitigation Interventions" **Mercator Research Institute on Global Commons and Climate Change**, Berlin, Germany
- "Evaluating Impacts of Forest-Based Climate Mitigation Interventions" Alumni Conference, **Brandenburg University of Technology**, Cottbus, Germany

- “Impact and cost of voluntary land protection: a benchmark for measuring the real cost of conservation” Land & Livelihoods Workshop, Boston University
- “Tracing impacts of land protection in Massachusetts” Inter-Agency Land Committee, **Massachusetts Executive Office of Energy & Environmental Affairs**, Boston, MA
- “Estimated impacts of private land conservation on long-term land cover change in Massachusetts” Harvard Forest, Petersham, MA
- “Tracing causal impacts of conservation interventions across scales” **German Centre for Integrative Biodiversity Research (iDiv)**, Leipzig, Germany
- 2017 “Land acquisitions for conservation: drivers of spatial allocation in the U.S., Chile, and Colombia” International Congress for Conservation Biology, Cartagena, Colombia
- “Contribution of public land acquisitions to biodiversity conservation in Colombia”, International Congress for Conservation Biology, Cartagena, Colombia
- “Conserving more - but where? Explaining spatial drivers of land acquisitions for conservation in the U.S., Chile, and Colombia” Association of American Geographers (AAG) Annual Meeting, Boston, MA
- “Protecting more - but where? Spatial drivers of private land protection in the conterminous U.S.”, **Harvard Forest**, Petersham, MA
- “Conserving private properties: expensive niche or the future of land protection?”, Governing Sustainability Seminar, School of Nat. Res. & Env., **University of Michigan**
- 2016 “Quantifying conservation influence: the allocation and impact of land conservation in South America and the U.S.” (talk series)  
Environmental Studies Colloquium, **University of Colorado - Boulder**  
Institute on the Environment, **University of Minnesota**  
Department of Forest & Wildlife Ecology, **University of Wisconsin - Madison**  
Nat. Resources & Environmental Sciences Seminar, **University of Illinois - Urbana**
- “Disentangling the Impacts of Argentina’s Forest Law in the Chaco: Matching and its Limitations” AAG Annual Meeting, San Francisco, CA
- “Adoption of effective forest conservation instruments in soy-and-cattle frontiers”  
Workshop: Improving conservation outcomes from supply-chain interventions. Gordon & Betty Moore Foundation, Palo Alto, CA
- “Tracing causal impacts in international forest conservation”  
**Oregon State University**, Corvallis, Oregon (job talk)  
**Michigan State University**, East Lansing, Michigan (job talk)  
**Boston University**, Boston, Massachusetts (job talk)
- “Causal linkages between protected area support and impact” **Conservation Strategy Fund**, Washington, DC (webinar)
- 2015 “Linkages between biodiversity finance and impact: The case of protected area support in the Andes-Amazon region” **German Development Institute**, Bonn, Germany
- 2013 “Explaining the impacts of protected area management in the Andes-Amazon Region”, **Environmental Research Center (UFZ)**, Leipzig, Germany

- “Ecological and Social Impacts of Protected Areas in the Andes-Amazon Region”  
International Congress for Conservation Biology, Baltimore, MD
- “Ecological and Social Impacts of Protected Areas in the Andes-Amazon Region”  
AAG Annual Meeting, Los Angeles, CA
- 2012 “Explaining the impacts of protected area management in the Andes-Amazon Region”,  
**German Federal Ministry for Development & Economic Cooperation**, Berlin, Germ.
- “Impacts of protected areas on deforestation: The relative importance of location, governance and management”. IUCN World Conservation Congress, Jeju, S. Korea
- “Management effectiveness and impact of Amazon protected areas”.  
Workshop: Governance and Conservation: Towards More Robust Indicators,  
Gordon and Betty Moore Foundation, Palo Alto, CA
- “Management effectiveness of protected areas: Are we choosing the right measures?”  
Student Conference on Conservation Science, University of Cambridge, UK
- 2011 “Management effectiveness of protected areas: Are we choosing the right measures?”  
Conference: Forest Biodiversity in a Changing Climate, University of Freiburg, Germany
- 2010 “Evaluating the Management Effectiveness of European Protected Areas”.  
Workshop: Instruments for Social Monitoring in German Biosphere Reserves, University of  
Greifswald, Germany
- 2009 “Protected Area Management Effectiveness Evaluation: Rationale, Approaches and  
Application in Europe”. CBD Workshop on PoWPA Implementation in CEE Countries,  
**International Academy of Nature Conservation**, Vilm, Germany
- “Chinese Forest Policy in the 21<sup>st</sup> Century”, Lecture Series: Challenges of Sustainable  
Resource Use in Asian Economies, **Humboldt University Berlin**, Germany
- 2007 “The Biosphere Tour: Implementation of the UNESCO-MAB Programme in Europe, Middle  
East and Asia”. **EuroMAB Conference**: Bridging Science and Society, Antalya, Turkey

### **Symposium co-organization**

- 2016 “Improving Conservation Outcomes from Supply-Chain Interventions (PI: Eric Lambin),  
Gordon and Betty Moore Foundation, Palo Alto, CA
- 2011 “Joint Outcomes Related to Sustainability” (PI: Arun Agrawal), Capstone Conference,  
University of Michigan, MI
- “Governance and Conservation: Towards More Robust Indicators” (PI: Arun Agrawal),  
Gordon and Betty Moore Foundation, Palo Alto, CA
- 2009 “Evaluation of Management Effectiveness: Future Proofing”, Workshop, EUROPARC  
Federation Conference, Strömstad, Sweden
- “Management Effectiveness of Europe's Protected Areas and the Convention on Biological  
Diversity” (PI: Susanne Stoll-Kleemann) Workshop, International Academy of Nature  
Conservation, Vilm, Germany

## TEACHING

Boston University	EE 270: Data, Models, and Analysis in Earth & Environment (undergrad.)
	EE 508: Data Science for Conservation Decisions (undergrad. / graduate)
	EE 535: Global Land Conservation: Theory and Practice (undergrad. / grad.)
	EE 545: Methods of Environmental Policy Analysis (undergrad. / graduate)
Stanford Univ.	Land Change Science (graduate)
Greifswald Univ.	Economics of Biodiversity Conservation (graduate)
	Environmental Economics (undergraduate)
	Introduction to Economics (undergraduate)

## PHD STUDENTS

### Earth & Environment, Boston University

Principal advisor:

- Sachini Ranasinghe, started Jan 2023: *Nationwide remote sensing of lake water quality to inform benefit-cost analyses for federal and state-level rule making.*
- Ana Reboredo Segovia, graduated May 2023, now: research associate, World Resources Institute: *Evaluating the impact of conservation and development interventions on Guatemalan and Colombian forest ecosystems.*
- Adam Pollack, graduated May 2022, now: research scientist, Dartmouth College: *Heterogeneity in flood risk valuation and estimation from county to continental scales.*

Committee member:

- Nicolas Schneider, graduating 2024 (principal advisor: Ian Sue Wing): *Projections of climate change impacts on agriculture and energy systems.*
- Emilie Edelblutte, graduated Nov 2022 (principal advisor: Anne Short): *Multispecies politics of wildlife conservation and management in urban and suburban landscapes of Northeastern U.S. and Western India.*
- Shijuan Chen, graduated Jul 2022 (principal advisor: Curtis Woodcock): *Satellite-based monitoring, attribution, and analysis of forest degradation.*
- Radost Stanimirova, graduated Dec 2020 (principal advisor: Curtis Woodcock): *Using multi-resolution remote sensing to measure ecosystem sensitivity and monitor land degradation in response to land use and climate variability.*

### External committee member

- Kristen Swedberg, graduated 2024, Virginia Tech, Agricultural and Applied Economics, principal advisor: Kevin Boyle. *Large-scale valuation of lake water quality.*
- Jiarui Zhang, graduated May 2022, University of Wisconsin-Madison, Agricultural and Applied Economics, principal advisor: Dan Phaneuf: *Three essays on property values and water quality*

## **SERVICE TO THE PROFESSION**

- Editorial: Co-editor of Joint Special issue in Land Economics and Journal of Housing Economics: “Property value analysis using ZTRAX – Applications under the Approaching Sunset” with Dan Phaneuf, Jeff Zabel, and Kevin Boyle
- Grant review: NSF: Human-Environment & Geographical Sciences (2021, 2024)
- Peer review: Conservation Biology (7)  
Conservation Letters (5)  
Proceedings of the National Academy of Sciences (4)  
Land Use Policy (3)  
Biological Conservation (2)  
Current Opinion in Environmental Sustainability (2)  
Nature Communications (2)  
Conservation Science & Practice  
Environmental & Resource Economics  
Environmental Research Letters  
Nature Sustainability  
Philosophical Transactions of the Royal Society B
- 2017 Scientific Committee, International Congress of Conservation Biology

## **SERVICE TO THE DEPARTMENT**

- 2023 - Curriculum Committee, Earth & Environment, Boston University
- 2022 - 2023 Search Committee, Endowed Chair in Environmental Data Science, Boston U
- 2018 - 2021 Merit Review Committee, Earth & Environment, Boston University
- 2019 Search Committee, Coupled Human-Natural Systems (2 positions), Boston U
- 2018 Governance Committee, Earth & Environment, Boston University
- 2018 Search Committee, Coupled Human-Natural Systems, Boston U
- 2012 - 2013 Research Committee, School of Natural Resources and Environment, U of M

## **SERVICE TO THE COLLEGE**

- 2018 - 2020 Social Science Curriculum Committee, Boston University

## **PROFESSIONAL SERVICES**

- 2020 - 2021 Gordon and Betty Moore Foundation: Expert Panel for the Evaluation of the Andes-Amazon Initiative (> \$350 million portfolio across 5 countries)
- 2018 Inter-American Development Bank: Consultant for the Impact Evaluation of the "Sustainable Agroforestry Development Program" in the Dominican Republic (\$150 million grant).

2018 Inter-American Development Bank: Consultant for the Impact Evaluation of the Grant "Cadaster Establishment and Consolidation of Legal Certainty in Protected Areas" in Guatemala (\$22 million grant).

## INTERNATIONAL RESEARCH EXPERIENCE

**bold: major** (≥3 months in field)      underlined: minor      *italic: remote*

Argentina, Austria, Australia, **Brazil**, Bolivia, Cambodia, *Chile*, Croatia, **China**, **Colombia**, Dominican Republic, Ecuador, Egypt, France, Germany, *Guatemala*, **Jordan**, Italy, *Ireland*, Lebanon, Montenegro, Morocco, Paraguay, *Peru*, *Portugal*, *Republic of Congo*, Thailand, Slovenia, *Spain*, **USA**, Vietnam

## LANGUAGES

German:      native  
English:      fluent  
Spanish:      fluent  
French:      fluent  
Portuguese:    rusty  
Chinese:      very rusty  
Arabic:      very rusty