Brian Lee

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Education

06/2025	University of California, Santa Barbara - Bren School of Environmental Science & Management. PhD in Environmental Science. Committee: Dr. Ashley Larsen, Dr. Robert Heilmayr, Dr. Lola Fatoyinbo, Dr. Kathy Baylis. **Dissertation: From fields to forests: Advancing our understanding of managed-natural landscapes with remote sensing fusion and machine learning**
05/2018	Yale University - School of Forestry and Environmental Science. M.E.M. in Environmental Management
06/2012	Pacific Union College. B.S. in Biology

Professional Appointments

2026	Postdoctoral Associate, ESIIL, CU Boulder *(starting April, 2026)*
2025	Instructor of record, UCSB Bren School, UCSB • Taught ESM 270P Conservation Planning, a graduate-level course focused on GIS-driven conservation planning, spatial prioritization, and decision-making.
2025	Instructor of record, UCSB MasterScholar, UCSB • Developed and taught an Introduction to Research course for underrepresented high school students
2024	Bren Environmental Leadership Fellow, Bren School, UCSB
2023	Arnhold Fellow, Bren School, UCSB
2022	MUREP Fellow, NASA Goddard • Contributed to various forest structure remote sensing projects as part of PhD MUREP fellowship working with Dr. Lola Fatoyinbo & Dr. Atticus Stovall. Projects included calibration of ground-based terrestrial lidar scanning.
2021	MUREP Fellow, NASA Goddard • Contributed to creation of open-source spaceborne lidar bathymetry mapping software as part of PhD MUREP fellowship working with Dr. Lola Fatoyinbo & Dr. Nathan Thomas. Resulted in publication #3.
2020	PhD Intern, NASA Goddard • Contributed to creation of cloud-masking product for very high-resolution remote sensing data based on deep learning working with Dr. Chris Neigh. Resulted in publication #2.
2018	Research Assistant, Jet Propulsion Laboratory, NASA-CALTECH

- Led the calibration and validation efforts for NASA ECOSTRESS mission working with Dr. Josh Fisher, which involved creating data streams from ~80 eddy covariance towers and calibrating/validation data from spaceborne sensor. Resulted in publication #1.

2015 Field Technician, Colorado State University

- Spent the 2015 summer season working as a field technician in the lab of Dr. David Cooper, collecting reference data of riparian zone growth in long-running Yellowstone field project studying the trophic cascade of wolf re-introduction.

2013-2015 Field Biologist, International Gorilla Conservation Programme, Rwanda

- Developed methodology for field bio-sample collection to assist in mountain gorilla conservation efforts.
- Spearheaded and organized logistics and equipment acquisition for the 2015-16 Gorilla Census, which covered the trans-boundary Virunga NP of DRC, Rwanda, and Uganda. Trained, oversaw, and managed 48 wildlife rangers for Census.

2012-2015 Peace Corps Volunteer, Peace Corps Rwanda

- Taught high school sciences to ~300 Rwandan students. Subjects included Biology, Chemistry, Physics, Math, Technology, and English.

Teaching Experience

Instructor of Record	*ESM 270P*: Conservation Planning Practicum (Graduate; 2025)
	MasterScholar Introduction to Research (High school; 2025)
	Biology, Chemistry, Physics, Math (High School; 2012-2015)
Teaching Assistant	*EDS 214: Analytical Workflows* (Graduate; 2024)
	ESM 263: GIS (Graduate; 2023)
	EDS 232: Machine Learning (Graduate; 2022)
	ESM 270: Conservation Planning (Graduate; 2019, 2020, 2021, 2025)

Publications *(Published or in review)*

Published

5. B Lee (Co-first author), S Sambado (Co-first author), et al. 2025. Bat activity reveals targeted foraging with agricultural and pest control implications. **Ecology and Evolution.** https://doi.org/10.1002/ece3.70819
4. B Lee, A Rich, R Diehl, A Larsen. 2024. BATS: Bat-aggregated time series – A Python-based toolkit for landscape-level monitoring of Free-tailed Bats via weather radar. **Methods in Ecology and Evolution.** https://doi.org/10.1111/2041-210X.14445
3. J Carballo-Vega, ML Carrol, CSR Neigh, M Wooten, B Lee, A Weis, M Aronne, WG Alemu, Z Williams. 2023. Optimizing WorldView-2, -3 cloud masking using machine learning

approaches. **Remote Sensing of Environment**. https://doi.org/10.1016/j.rse.2022.113332

2. N Thomas, B Lee, O Coutts, P Bunting, D Lagomasino, L Fatoyinbo. 2022. A purely spaceborne open-source approach for regional bathymetry mapping. **IEEE Transactions in Geoscience and Remote Sensing**. https://doi.org/10.1109/TGRS.2022.3192825

1. JB Fisher JB, B Lee, AJ Purdy, GH Halverson, MB Dohlen, et al. 2020. ECOSTRESS: NASA's next generation mission to measure evapotranspiration from the International Space Station. **Water Resources Research**. https://doi.org/10.1029/2019WR026058

In review

1. B Lee**,** R Heilmayr, K Baylis, F Noack, A Larsen. Radar-based monitoring reveals bat-driven insecticide reductions. **Nature Sustainability**, *in review.*

In preparation

1. B Lee, A Rich, L Fatoyinbo, N Thomas, A Stovall, GF Olmedo, PI Ramirez, R Heilmayr. Tree-mendous changes: Quantifying changes in forest carbon using remote sensing and machine learning. (*in prep for Remote Sensing of the Environment*).

Grants & Awards (* Indicates grants of $8,000 or greater)

2025	NSF LEAP Momentum Fellowship*, Columbia University (declined)
2024-2025	Bren Environmental Leaders Fellowship*
2023	First Place PhD Presentation, UCSB Bren PhD Symposium
2020-2023	NASA Minority University Research and Education Project*: Quantifying artisanal mining and forest degradation using active-passive remote sensing data fusion (Co-PI with Dr. Ashley Larsen)
2021	Microsoft Azure AI for Earth*
2020	Schmidt Environmental Sciences Research Accelerator Award*
2020	Yolo Basin Foundation Fellowship*
2019	Bren Forest Sustainability Fellowship*, UCSB
2017	Tropical Resources Initiative Fellowship*, Yale University
2016-2018	Paul Coverdell Fellowship*, Yale University—Peace Corps

Presentations

2025	Stanford University. *Oral presentation*: Tree-mendous changes: Quantifying changes in forest carbon using remote sensing and machine learning. Taking the Pulse of the Planet: From Sensors to Solutions.
2024	American Geophysical Union Fall Meeting. *Oral presentation:* BATS: Bat-aggregated time series – A Python-based toolkit for landscape-level monitoring of Free-tailed Bats via weather radar.

2024	American Geophysical Union Fall Meeting. *Poster presentation:* Tree-mendous changes: Quantifying changes in forest carbon using remote sensing and machine learning.
2023	Ecological Society of America. *Poster presentation:* BATS: Bat-aggregated time series – A Python-based toolkit for landscape-level monitoring of Free-tailed Bats via weather radar.
2022	Yolo Basin Foundation. *Oral presentation:* Monitoring free-tailed bat populations using weather radar and machine learning.
2021	Pacific Union College. *Oral presentation:* Remote sensing for ecosystem services.

Training

2022	CV4Ecology, California Institute of Technology
2012	Secondary Science Education, Pre-service training, Peace Corps Rwanda

Leadership & Mentoring (*Undergraduates)

2025	Vikesh Dheeriya*, Arantza Lira*, Rafael Romero Flores*
2024	Bren Environmental Leadership Program (Underserved High school and Jr. High)
2024	Zay Chonnad*
2023	Masters Group Project: *Informing Forest Conservation Regulations in Paraguay*
2022	Sebastian Nunez*
2021	Masters Group Project: *Exploring Mountain Lion Habitat Connectivity in Central and Southern California*
2021	Noah Moyer*
2020	Masters Group Project: *Combining Conservation and Community Empowerment to Protect Grauer's Gorilla*
2019	Masters Group Project: *Evaluating Synergies and Tradeoffs Among Agricultural Productivity, Ecosystem Services, and Human Wellbeing in Rwanda*

Conferences

2024	American Geophysical Union
2022, 2023	Ecological Society of America

Service & Other

Outreach	Bren Environmental Leadership Program (2024) US Peace Corps, Rwanda (2012-2015)
Society Memberships	Ecological Society of America, American Geophysical Union
Other Internal Service	Various panels (Bren open house, prospective students).
Reports	*Stopping the Tide: A strategy for maintaining forest connectivity within the Mesoamerican Biological Corridor*, WCS—Yale-led white paper.

Languages	English (Native), Korean (Advanced/Professional), Kinyarwanda (Intermediate)
Skills	Python, Remote sensing fusion, Geospatial analysis, Statistical analysis, High-performance computing, Cloud computing, Deep learning, Project management, Study design