Brian Lee

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Education

06/2025 (expected)	University of California, Santa Barbara - Bren School of Environmental Science & Management, 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

2024 Bren Environmental Leadership Fellow, Bren School, UCSB, CA

2023 Arnhold Fellow, Bren School, UCSB, CA

2022 MUREP Fellow, NASA Goddard, MD (Dr. Lola Fatoyinbo & Dr. Atticus Stovall)

- Contributed to various forest structure remote sensing projects as part of PhD MUREP fellowship. Projects included calibration of ground-based terrestrial lidar scanning.

2021 MUREP Fellow, NASA Goddard, MD (Dr. Lola Fatoyinbo & Dr. Nathan Thomas)

- Contributed to creation of open-source spaceborne lidar bathymetry mapping software as part of PhD MUREP fellowship. Resulted in publication #3.

2020 PhD intern, NASA Goddard, MD (Dr. Chris Neigh)

- Contributed to creation of cloud-masking product for very high-resolution remote sensing data based on deep learning. Resulted in publication #2.

2018 Research Assistant, Jet Propulsion Laboratory, NASA-CALTECH, CA (Dr. Josh Fisher)

- Led the calibration and validation efforts for NASA ECOSTRESS mission, 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 (Dr. David Cooper)

- Spent the 2015 summer season working as a field technician 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.

Publications *(Published or in review)*

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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** 284, 113332. 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** 60:1-9. 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** 56:4. https://doi.org/10.1029/2019WR026058

Publications *(in prep)*

2. 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*).

1. B Lee, A Garcia, K Baylis, A Larsen. Quantifying ecosystem services of bats in California's Central Valley. (*in prep*).

Presentations

B Lee, A Rich, R Diehl, A Larsen. BATS: Bat-aggregated time series – A Python-based toolkit for landscape-level monitoring of Free-tailed Bats via weather radar. American Geophysical Union Fall Meeting 2024. *Oral presentation.*

Lee, B., 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. American Geophysical Union Fall Meeting 2024. *Poster presentation.*

B Lee, A Rich, R Diehl, A Larsen. BATS: Bat-aggregated time series – A Python-based toolkit for landscape-level monitoring of Free-tailed Bats via weather radar. Ecological Society of America 2023. *Poster presentation.*

Lee, B., Monitoring free-tailed bat populations using weather radar and machine learning. Yolo Basin Foundation, September 2022. *Oral presentation*

Lee, B., Remote sensing for ecosystem services. Pacific Union College, August 2021. *Oral presentation*

Grants & Awards (* Indicates grants of $10,000 or greater)

2024	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

Training

2022	CV4Ecology, California Institute of Technology (3 weeks)

Leadership & Mentoring

2024-	Bren Environmental Leadership Program (Underserved High school and Jr. High)
2024-	Zay Chonnad (Undergraduate student)
2023	Masters Group Project: *Informing Forest Conservation Regulations in Paraguay*
2022	Sebastian Nunez (Undergraduate student)
2021	Masters Group Project: *Exploring Mountain Lion Habitat Connectivity in Central and Southern California*
2021	Noah Moyer (Undergraduate student)
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*

Teaching Experience

Teaching Assistant	*EDS 214: Analytical Workflows* (Master's elective; 2024) *ESM 263: GIS* (Master's elective; 2023) *EDS 232: Machine Learning* (Master's elective; 2022) *ESM 280: Conservation Planning* (Master's elective; 2019, 2020, 2021)
Instructor	Biology, Chemistry, Physics, Math (High School; 2012-2015)

Conferences

American Geophysical Union	2024
Ecological Society of America	2023, 2022

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)