Lisa Rosenthal, PhD

Fire Ecologist & Data Scientist

✉ Lisamicaela.r@gmail.com

📍 Truckee, CA

🔗 www.linkedin.com/in/lisamr

○ https://github.com/lisamr

EDUCATION

PhD in Ecology
University of California, Davis
2016 – 2021

BS in Molecular Environmental Biology
University of California, Berkeley
2009 – 2013

TECHNICAL SKILLS

Languages
R (terra, sf, tidyverse, cmdstanr, brms, Rmarkdown, R Shiny), Python (fastai, geopandas, shapely, xarray, rasterio, dask, Jupyter notebooks), Javascript, Stan

Spatial Software
R, Python, Google Earth Engine, ArcGIS

Tools & Platforms
Git, Linux, SLURM, high performance computing clusters, cloud-based infrastructures (e.g. NASA MAAP, GEE), Amazon S3

PROFESSIONAL SUMMARY

Data scientist and fire ecologist with expertise in remote sensing, wildfire detection, and fuels modeling. Skilled in Python, R, and statistical analysis for geospatial data. Passionate about advancing climate resilience through applied Earth observation.

PROFESSIONAL EXPERIENCE

California Air Resources Board
Wildfire Emissions Inventory Specialist
09/2023 – present | Sacramento (remote), CA

- Develop Python module to estimate daily wildfire emissions using VIIRS satellite data and FOFEM for California and the western U.S.
- Automate large-scale emissions processing with a parallelized Dask pipeline
- Collaborate with NASA using cloud-based platform and contribute code to the Fire Events Data System (FEDS) algorithm to support fire detection and tracking
- Led collaborative development in a shared GitHub repo with agency, academic, and industry scientists; incorporated feedback from fire and air resource experts
- Managed contract development for a WUI structure fire emissions tool, connecting wildfire science with regulatory applications.

United States Geological Survey
Wildland Fuels Ecologist
09/2021 – 07/2023 | Three Rivers (remote), CA

- Developed Bayesian hierarchical Gaussian process models to forecast fine-scale spatial fuel loading; validated models using simulated data for robustness
- Analyzed satellite-derived fire severity to assess landscape-scale effects of tree mortality and its interaction with extreme weather events
- Designed statistically sound field monitoring strategies to inform land management, incorporating stakeholder input and scientific rigor
- Built reproducible pipelines for cleaning, processing, and visualizing remote sensing data using R, Google Earth Engine, and ArcGIS Pro
- Secured over $550K in competitive research funding to support wildfire ecology and remote sensing projects

University of California, Davis
PhD Graduate Research Fellow
09/2016 – 08/2021 | Davis, CA

- Used repeated field measurements and trained machine learning models on NAIP, LiDAR, and satellite imagery to monitor long-term canopy mortality in Yosemite Valley

Domain Knowledge
* Wildland fuels, forest disturbances, fire ecology, air quality, landscape ecology
* Inner workings of state & federal agencies, regulations, policies
* Scientific writing & reviewing of grants and publications

Quantitative and Computational
* Geostatistics & remote sensing
* Bayesian data analysis
* Machine learning
* Exploratory data analysis & visualization
* Deploy automated pipelines
* Git version control with other contributors
* Deploy analyses remotely on HPCs or in the cloud

Work Environment
* Strong oral & written communication
* Project leader & team collaborator
* Strong project management skills
* Scientific collaborations & outreach across academic, agency, private institutions
* Mentor for junior scientists

NOTABLE AWARDS

Climate Adaptation Science Centers Funding
2023, $349,000

National Parks Service (NRPP)
2023, $210,000

NSF Graduate Research Fellowship
2018-2021, $136,000

UC Davis Ecology Fellowship
2016-2017, $46,800

UC Berkeley Major Citation Award
2013, $500

NSF Undergraduate Research Award
2013, $5,000

- Developed spatially explicit Bayesian models to analyze plant neighborhood dynamics (e.g., recruitment, survival) and forest disease risk
- Demonstrated how statistical assumptions can reverse perceived effects of biodiversity on forest disease outcomes
- Independently secured $183K in fellowship funding and published 4 peer-reviewed papers

Amherst College
Laboratory Research Assistant
03/2015 – 05/2016 | Amherst, MA
- Assisted projects addressing the evolutionary ecology of the anther smut fungal pathogen system using molecular, greenhouse and field approaches
- Co-authored 2 peer-reviewed papers

University of California, Berkeley
Researcher
08/2013 – 06/2014 | Berkeley, CA
- Investigated continental distribution and diversity of corticioid fungi and published results as first author
- Analyzed sequence database with bioinformatics program QIIME and species spatial patterns in R

DATA TEACHING EXPERIENCE

R4WDS: R data science, 6 2-day workshops (CA Water Resources Board) |

Data Carpentry: Geospatial data in R (Arizona State Univ.) |

UC Davis: Data Manipulation in R |

UC Davis: Bayesian Poisson GLMMs |

Data Carpentry: Ecological data in R (UC Davis)

SELECT PUBLICATIONS

Managing after wildfire: Post-wildfire fuels across a severity gradient in Sierra Nevada conifer forests and giant sequoia groves
Forest Ecology & Management, 2025

Scattered tree death contributes to substantial forest loss in California
Nature Communications, 2024

Bayesian models for spatially explicit interactions between neighbouring plants
Methods in Ecology & Evolution, 2023

Community-level prevalence of a forest pathogen, not individual-level disease risk, declines with tree diversity
Ecology Letters, 2021