

Samantha Lance

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EDUCATION

Ph.D, Geography (Anticipated 2030)

University of California, Santa Barbara (UCSB)

Principal Investigator: Vamsi Ganti

Research Focus: Global River Avulsion and California River Migration

Master of Environmental Science and Management, 4.0 GPA (June 2025)

Bren School of Environmental Science & Management – University of California, Santa Barbara (UCSB)

Specialization: Water Resources Management

Highlighted Coursework: Quantitative Geomorphology, Sustainable Water Resources Management, Groundwater Management, Conservation Planning, Data Analysis

Bachelor of Arts in Environmental Earth Science, 3.83 GPA (May 2022)

Washington University in St. Louis (WashU), St. Louis, MO

Honors/Awards: Lynne Cooper Harvey Writing Prize, Graduated with College Honors

Involvement: Member of the Academic Geology Fraternity Sigma Gamma Epsilon, Radio DJ

Highlighted Coursework: Surface Processes, Hydrology, Introduction and Advanced GIS, Sedimentary Geology, Biogeochemistry, Physics I

RESEARCH EXPERIENCE

Graduate Student Researcher (9/25-Present)

Surface Processes Group, Geography Department, UCSB, Santa Barbara, CA

- Leveraged high resolution data from the National Agricultural Imagery Program to create watermarks from 2010-2025 for rivers in California
- Identified regions of high river mobility along California's rivers to better inform FEMA flood maps and understand correlations with salmon habitats

Research Assistant (6/24–Present)

Surface Processes Group, Geography Department, UCSB, Santa Barbara, CA

- Compiled a database of 250+ river avulsions globally and collected 30+ years of river discharge and suspended sediment data for rivers globally
- Analyzed trends in this data and determined rivers do avulse (or catastrophically shift directions) during major flooding events (paper in preparation)

Data Manager for Masters Group Project (3/24–Present)

The Bren School and Santa Ynez Chumash Environmental Office, Santa Barbara, CA

- Collaborated on a 4-person team to grow 200 native and agricultural plants to understand whether adding biosolids-based biochar to soils would affect plant growth and nutrient quality
- Managed all laboratory activities by creating the experimental plan, addressing all plant-related concerns such as predation, and leading all nutrient extraction lab sessions
- Imported all data into RStudio to create data visualizations and prepare to perform preliminary statistical analyses (t-tests) in the winter quarter

Research Assistant (10/23–3/24)

Industrial Sustainability Analysis Laboratory, UCSB, Santa Barbara, CA

- Compiled environmental impacts for 6 major industries from 50+ Environmental Product Descriptions
- Data from this project was submitted to the California Air and Resource Board to develop future embodied carbon policies

Research Assistant (1/21–5/21)

Aqueous Geochemistry and Mineralogy Group, St. Louis, MO

- Analyzed the effect of trace metal presence on sulfide content of soils from Oak Ridge, Tennessee
- Measured pH and sulfide levels and created sulfide standards each week in an anoxic glovebox

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TEACHING & EDUCATION EXPERIENCE

Teaching Assistant, The Channel Islands (ENV S 111/GEOG 149) (1/26-3/26)

- Provided guidance on the design of assignments, quizzes, and exams
- Assisted with classroom management, such as taking class attendance, answering questions

Teaching Assistant, Land, Water, and Life Course (GEOG 4) (9/25-12/25)

- Designed chalkboard lessons for three one-hour sections each week for 60+ students to provide more detail on class content and provide exam review
- Hosted office hours to assist struggling students and discuss career prospects

Time Management Assistant (TMA), Transitioning into Academic Excellence Course (1/24–3/24)

UCSB, Santa Barbara, CA

- Conducted individual weekly meetings with 10+ students to provide them the resources to succeed at UCSB and remain off of academic probation
- Collaborated weekly with fellow TMAs to evaluate how to handle high risk cases

Peer Mentor

Calculus I Peer Led Team Learning, WashU, St. Louis, MO (8/20–12/20, 8/21–5/22)

- Led a 15+ person class each weekend to help students struggling with Calculus I coursework by providing challenging questions and support
- Participated in a 3-credit leadership seminar to become a better mentor for undergraduate students

PUBLICATIONS

Lance, S., Leenman, A., Gardner, J., Ganti, V. (in preparation). Anomalously Large Floods Precede River Avulsions Globally. Manuscript in preparation.

CONFERENCE PRESENTATIONS

Oral Presentations

Lance, S., Leenman, A., Gardner, J., Ganti, V. (2026, April). Anomalously Large Floods Precede River Avulsions Globally. Talk presented at Southern California Geobiology and Geomorphology Symposia, Riverside, CA

PROFESSIONAL EXPERIENCE

Environmental Planning Intern (6/24–12/24)

Morro Bay National Estuary Program, Morro Bay, CA (Remote)

- Designed an ArcGIS StoryMap containing maps and descriptions of 20+ projects to show the progress the Estuary Program has made to address areas of improvement cited by the EPA
- Compiled 5 years of project information and data into an Excel matrix that will become the core of their Program Evaluation documentation submitted to the EPA this March

Staff Geologist (8/22–11/22)

Haley & Aldrich, New York, NY

- Managed 10+ staff on a construction site in the South Bronx to ensure the proper removal and movement of 750-1500 tons of highly contaminated soil so it would not impact local communities
- Created Bluebeam site maps of 30+ contaminants to allow clients to reduce their costs by qualifying for state regulated brownfield remediation grants

GIS Consultant (12/22–2/23)

Nashville Parks Foundation, Nashville, TN (Remote)

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- Analyzed and cleaned a set of Google Earth Pro data for QGIS to create a high-resolution map of parks for the CEO to use in presentations to potential donors
- Spearheaded a project to map HG Hill Realty Company managed properties within a mile of high-need parks in Nashville, which led to a \$3,000 donation for park beautification

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SKILLS & CERTIFICATIONS

Spatial Analysis: ArcGIS Pro, ArcMap

Map-Making: RStudio, ArcGIS Pro, ArcMap, Google Earth Pro

Data Analysis: RStudio, Python, Excel

Data Visualization + Design: RStudio, Python, Affinity

Language: Basic Knowledge of Chinese and Spanish

Other: Beginner Runner, Intermediate Skier, and Expert Crocheter