

EDUCATION

University of California, Santa Barbara | Applied Mathematics, B.S., 2025, GPA: 3.67

Sacramento City College | Mathematics, A.S. 2022, GPA: 4.00

University of California, Santa Barbara | Masters of Environmental Data Science, EDG 2026, GPA: 4.0

RELATED EXPERIENCE

Research Assistant - WAVES Lab 2024– Present

University of California Santa Barbara, Goleta, CA

- Applying statistical and numerical methods in the analysis and validation of agricultural water and land use datasets
- Developing a Python codebase for analysis of satellite imagery and other remotely sensed data

Outreach Officer - Women in Science and Engineering (WiSE) 2024 - Present

University of California Santa Barbara, Goleta, CA

- Coordinating mentorship program supporting 130+ undergraduates in STEM
- Focusing outreach efforts on increasing diversity in quantitative sciences

BEL Fellow - Bren Environmental Leadership (BEL) Program Summer 2024

University of California Santa Barbara, Goleta, CA

- Conducted research on irrigation patterns in Sub-Saharan Africa using satellite data analysis
- Created statistical frameworks and visualization methods for complex spatial relationships
- Presented findings at three academic venues including AGU Fall Meeting, managing project timeline and deliverables

Emergent Brilliance - Leadership Immersion Program Summer 2022

Martha's Vineyard, MA

- Studied leadership models and wellbeing through biomimicry and understanding natural systems
- Created website and structure for environmental education non-profit

IV Recovery - Community Initiative 2023 - Present

Goleta, CA

- Leading an initiative organizing (bi)weekly local coastal cleanups
- Developing community engagement strategies to increase and normalize university stewardship

Tutor - Davis, CA 2020 – 2023

- Taught mathematics to students from elementary through college level
- Provided GED preparation support across all subject areas
- Developed individualized learning plans to accommodate different learning styles

Awards and Honors

Co-recipient - Family Foundation Research Mentorship Award (Mentor: Anna Boser) November 2024
University of California Santa Barbara, Goleta, CA

Fellow - Bren Environmental Leadership Program Fellowship (Mentor: Anna Boser) Summer 2024
University of California Santa Barbara, Goleta, CA

PRESENTATIONS (Past and forthcoming)

- [1] **Miller E**, Boser A, Caylor K. “Satellite Data Reveal Emerging Decentralized Irrigation Systems in Sub-Saharan Africa.” Summer@Bren 2024 Flash Talks, UCSB, CA. August 29, 2024.
- [2] **Miller E**, Boser A, Caylor K. “Water Source Attribution for Center Pivot Irrigation in Sub-Saharan Africa.” Mantell Symposium in Environmental Justice and Conservation Innovation, UCSB, CA. October 24, 2024.
- [3] Boser A, **Miller E**, Perez J, Kelly Caylor. “Analyzing the sustainability and climate resilience of rapidly expanding center pivot Irrigation in Sub-Saharan Africa using remote sensing.” American Geophysical Union. Washington D.C. December 9-13 2024.

RELATED COURSEWORK

MATH 118A/B/C - Real Analysis Series

- Mastered techniques for analyzing continuous functions, sequences, and series
- Developed rigorous proof writing abilities and logical reasoning skills
- Gained expertise in convergence analysis applicable to data series processing

MATH 108A/B - Linear Algebra Series

- Mastered matrix operations and transformations for handling multi-dimensional data
- Implemented eigenvalue and eigenvector calculations for dimensional reduction
- Applied vector space theory to analyze relationships between dependent variables

MATH 104A - Numerical Analysis Series (Series in progress)

- Implemented numerical methods for solving systems of equations
- Developed error analysis techniques for computational results
- Mastered interpolation and approximation methods for discrete data points

CMPSC 8/16 - Computer Science and Problem Solving

- Mastered fundamental programming concepts in Python and C++
- Learned computer memory management and system architecture basics
- Developed understanding of data structures and algorithmic thinking

PSTAT 120A - Probability and Statistics (Series in progress)

- Gained foundational knowledge in probability theory and distributions
- Learned fundamental hypothesis testing and confidence interval calculations
- Developed basic proficiency with R programming for statistical analysis