

GERMÁN D. SILVA

Ph.D. Candidate | Department of Geography

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EDUCATION

Ph.D., Geography, University of California, Santa Barbara exp. Dec 2025

Interdisciplinary Ph.D. Emphasis: Certificate in College and University Teaching

Committee: Jennifer King (Co-Chair), Dar Roberts (Co-Chair), Ian Walker, Kristin Byrd

Dissertation: "Investigating Inferential Relationships Between Soil Salinity and Plant Traits for Coastal Wetland Monitoring Applications"

M.A., Geography, University of California, Santa Barbara 2021

Committee: Jennifer King (Co-Chair), Dar Roberts (Co-Chair), Joe McFadden

Thesis: "The Influence of the Montecito Debris Flows on Landcover in Carpinteria Salt Marsh"

B.A., Geography, California State University, Stanislaus, Summa Cum Laude 2019

Areas of Concentration: Physical/Environmental Geography and Geospatial Technology

Minor: Environmental and Resource Studies

Thesis: "Effect of California's Drought on Pickleweed Vigor in a Californian Wetland: A Remote Sensing Approach"

PROFESSIONAL POSITIONS

Graduate Research Fellow, University of California, Santa Barbara Sept. 2019 – Sept. 2025

Graduate Teaching Associate, University of California, Santa Barbara Aug. 2024 – Sept 2024

Summer Research Fellow, NASA/CalTech Jet Propulsion Laboratory June 2023 – Sept. 2023

Graduate Teaching Assistant, University of California, Santa Barbara Sept. 2021 – Dec. 2021

Campus Cartographer, California State University, Stanislaus June 2017 – Aug. 2019

PUBLICATIONS

Silva, G.D. "Leveraging ChatGPT as a tool for teaching AI and climate media literacy" *California Geography* In Review

Silva, G.D., Roberts, D.A., Byrd, K.B., Chadwick, K.D., Walker, I.J., and King, J.Y. Aug. 2025
"Using imaging spectroscopy and elevation in machine learning to estimate soil salinity in intermittently tidal wetlands." *Ecosphere* 16 (8): e70356.
<https://doi.org/10.1002/ecs2.70356>

Chadwick KD, and many coauthors including **Silva, G.D.** "Unlocking ecological insights from subseasonal visible-to-shortwave infrared imaging spectroscopy: The SBG High Frequency Time Series (SHIFT) campaign." *Ecosphere* 16 (3).
<https://doi.org/10.1002/ecs2.70194> Mar. 2025

Silva, G., Roberts, D., McFadden, J., King, J., "Shifts in Salt Marsh Vegetation Landcover Following Debris Flow Deposition." *Remote Sensing* 14(12):2819. June 2022
<https://doi.org/10.3390/rs14122819>

GUEST LECTURES AND PEDAGOGICAL EXPERIENCE

University of California, Santa Barbara

Instructor of Record

GEOG W8 Intro to Global Warming Aug. 2024 – Sept. 2024

Teaching Assistant

GEOG 176A Intro to Geographic Information Systems Sept. 2021 – Dec. 2021

Guest Lectures

GIS Applications for Planning at CalPoly SLO , "Using Raster Data to Estimate Wetland Soil Salinity"	Fall 2025
Physical Geology at Moorpark College , "Wetlands and Resilience"	Spring 2024
<i>Pedagogical Training</i>	
Certificate in College and University Teaching	Sept. 2025
Certificate in Inclusive Teaching	Mar. 2025
Summer Teaching Institute for Associates (STIA)	Sept. 2024

GRANTS & FELLOWSHIPS

Eugene Cota-Robles Fellow, <i>UC Santa Barbara Graduate Division</i>	2019 – 2025
UCSB Associated Students Coastal Fund, \$6515.60	2023
Graduate Research Fellow, <i>National Science Foundation</i>	2019 – 2022
Ronald E. McNair Scholars Program, <i>California State University, Stanislaus</i>	2018 – 2019

MENTORSHIP EXPERIENCE

Graduate Student Peer Mentor, University of California, Santa Barbara

Sebastian Alvarez (2024 – Present), Wenxin Yang (2024 – Present), Xue Yan (2024 – Present), Sarah Payne (2023 – Present), My-Thu Tran (2023 – 2024)

Undergraduate Students, University of California, Santa Barbara (Indicates independent research project)*

Kathryn Kolb* (2023 – Present), Danae Stathatos* (2024 – 2025), Lacy Shifflette (2024), Damian Padilla (2024), Aidan Flynn (2024), Abby Nestor (2024), Evelyn Tsang (2024), Marian Walker* (2021 – 2024), Ruiming Song (2022), Ella Phillips (2022), Brianna Lee (2022), Madi Arndt (2022), Chenjia Liu (2022)

PRESENTATIONS

"Leveraging ChatGPT as a tool for teaching AI and climate literacy"	2025
Paper, California Geographical Society	
"Field and Model Implications for Estimation of Wetland Soil Salinity with Hyperspectral Imagery"	2024
Paper, Association of Pacific Coast Geographers	
"Integrating Imaging Spectroscopy and Elevation in Machine Learning for Soil Salinity Estimation in Coastal Wetlands"	2024
Paper, Ecological Society of America Annual Meeting	
"Elevating Remotely Sensed Data to Estimate Wetland Soil Salinity"	2024
Paper, California Geographical Society Conference	
"Remote Predictors of Soil Salinity in an Intermittently Tidal Wetland"	2023
Poster, American Geophysical Union Annual Conference	
"Shifts in Salt Marsh Vegetation Landcover Following Debris Flow Deposition"	2022
Paper, European spatial data for Coastal and Marine Remote Sensing	
"Change Detection in Carpinteria Salt Marsh Following the Montecito Debris Flow"	2021
Paper, California Geographical Society Conference	
"Using Remotely Sensed Data to Map Extent of Debris in a Californian Salt Marsh"	2020
Poster, National oSTEM Conference	
"Pickleweed Vigor in a Californian Salt Marsh: A Remote Sensing Approach"	2019
Paper, 33 rd Annual Student Research Competition at CSU Stanislaus	
"Effect of California's Drought on Pickleweed Health in Salinas River National Wildlife Refuge: A Remote Sensing Approach"	2018
Poster, Association of Pacific Coast Geographers	
"Did the California Drought Affect Geomorphology and Ecological Succession on the Tuolumne River"	2018
Poster, California Geographical Society	

SERVICE*University of California, Santa Barbara*

Geography Grad Student Peer Mentor	2022 – Present
S. California Student Representative, California Geographical Society	2022 – Present
Faculty Meeting Student Rep., Department of Geography	2022 – 2024
Exploratorium After Dark: Pride in Our Work Guest Speaker	2022
Outreach Committee, Department of Geography	2021 – 2022
oSTEM Co-President	2021 – 2022
oSTEM Graduate Student Mentor	2021 – 2022
oSTEM Graduate Student Liaison	2020 – 2021
Search Committee, Graduate Student Representative	2020
Geography Awareness Week Presenter	2019
Geography Student Representative, Graduate Student Association	2019 – 2020

MEMBERSHIPS

American Geophysical Union; American Association of Geographers; American Association for the Advancement of Science; Ecological Society of America; Coastal and Estuarine Research Federation; Out in Science, Technology, Engineering, and Mathematics; California Estuarine Research Society; Association of Pacific Coast Geographers; California Geographical Society

AWARDS & HONORS*Department of Geography, UC Santa Barbara*

David S. Simonett Memorial Award for Service (2025)

California Geographical Society

1st place Tom McKnight Graduate Paper Award (2025; 2024), Geosystems Award (2021)

Association of Pacific Coast Geographers

Award for an Outstanding Paper (2024), Geosystems Award for Applied/Physical Geography (2023)

Ladies of Landsat

Ladies of Landsat Manuscript Highlight (2022)