

Alba M. Rodríguez Padilla

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Professional Appointments

OK Earl Postdoctoral Fellow October 2023 – January 2025
California Institute of Technology · Host: Dr. Jean-Philippe Avouac

Education

PhD - Earth and Planetary Sciences August 2018 – August 2023
University of California, Davis · Advisor: Dr. Michael Oskin
Thesis: Earthquake Gates and Off-fault Deformation

BA in Human Ecology September 2014 – June 2018
College of the Atlantic, Bar Harbor, ME · Advisor: Dr. Sarah Hall
Thesis: Tectonoclimatic evolution of the forearc of southern Peru.

Year abroad - Earth and Planetary Sciences September 2016 – June 2017
McGill University, Montreal, QC, Canada.

International Baccalaureate August 2011 – May 2013
Pearson College UWC of the Pacific, Victoria, BC, Canada.

Research funding

NEHRP proposal award 2023
USGS Earthquake Hazards Program Grant, Southern California
Quantifying the erasure of earthquakes from the landscape of Southern California: implications for hazard assessment and paleoseismology. Coauthored with Dr. J Ramon Arrowsmith. \$70,000

OK Earl postdoctoral fellowship 2023-2025
California Institute of Technology
\$85,000

NASA FINESST fellowship 2021-2023
National Aeronautics and Space Administration
Testing constitutive laws for the evolution of off-fault deformation over the earthquake cycle. \$90,000

Durrell Graduate Field Award 2019-2022
University of California, Davis
Support for field campaign and instrumentation awarded by the UC Davis Earth and Planetary Sciences department. Awarded yearly. \$3,100

SCEC Proposal Award 2021
Southern California Earthquake Center
Beyond the damage zone: Characterizing widespread inelastic deformation from surficial fractures and aftershocks of the Ridgecrest sequence. Coauthored with Dr. Michael Oskin. \$40,295

PG&E Research Proposal 2020-2021
Pacific Gas & Electric
Incorporating the role of stress dissipation by off-fault deformation into Probabilistic Fault Displacement Hazard Analysis (PFDHA). Coauthored with Dr. Michael Oskin. \$33,000

SCEC Proposal Award 2020
Southern California Earthquake Center
Refining the timing and mechanics of San Jacinto-San Andreas joint rupture through Cajon Pass. Coauthored with Dr. Michael Oskin. \$42,016

Geological Society of America Graduate Research Grant 2019
Geological Society of America
Funding for field work at the Needles Fault District. \$2,200

Rothschild Advanced Student Work Grant 2018
College of the Atlantic
Funding for laboratory work of Undergraduate thesis. \$600

Funding for Geochronology of basalt dikes on Mount Desert Island, ME: implications for Eastern North American tectonics. \$2, 500

Honors and Scholarships

Best Science Story-telling

September, 2023

Southern California Earthquake Center

For poster presentation in the 2023 SCEC Annual Meeting.

Outstanding Student Presentation Award

2016-2023

Various Conferences

Seismological Society of America Annual Meeting 2023 • Seismological Society of America Annual Meeting 2022 • Seismological Society of America Annual Meeting 2021 • American Geophysical Union Fall Meeting 2017 (Tectonophysics Section) • College of the Atlantic Science Symposium, Fall 2017 • Geological Society of Maine Annual Meeting 2016 • Northeastern GSA Section Meeting 2016.

UC Davis graduate studies matching commitment award

2021-2023

University of California, Davis

\$31, 206.21

Summer Graduate Student Researcher Award in Engineering and Computer Sciences

2021

University of California, Davis

Summer support for graduate research in engineering, computer sciences, and disciplines with engineering-related applications and methods. \$10,682.25

Durrell Graduate Fellowship

2021-2022

University of California, Davis

In recognition of academic accomplishments and the graduate program's evaluation of potential for future achievement. \$1, 500

Travel Grants

2016 – 2022

Various

Progressive Failure of Brittle Rocks Penrose Conference, 2022, \$600 (declined) • Graduate Student Association Travel Grant, UC Davis, Spring 2022 \$500 • GeoPRISMS Synthesis Workshop, Winter 2022, \$400 • AGU Virtual Student Travel Grant, AGU, Fall 2020, \$1, 000 • Graduate Student Association Travel Grant, UC Davis, Fall 2019 \$500 • GMTSAR Short Course Travel Award, UNAVCO, \$600 • Crustal Deformation Modeling Workshop, Computational Infrastructure for Geodynamics, Summer 2019 \$600 • UCD student volunteer travel grant, UC Davis, Fall 2018 \$500 • AGU Austin Student Travel Grant, 2017 \$500 • Northeastern GSA student travel award, 2016 \$100 • Davis Award for International Travel, College of the Atlantic \$1, 500.

UCD Graduate Research Award

2020

University of California, Davis

Awarded in recognition of quality of research to support computational equipment costs. \$3, 000

NCALM Seed Award

2019

National Center for Airborne Laser Mapping

Proposal selected to receive 40sqkm of ALSM lidar for the Needles Fault District (Utah).

Senior Thesis Presenter to the College of the Atlantic Board of Trustees

2018

College of the Atlantic

Selected by Faculty Senate to present senior thesis to board of trustees and graduation visitors.

Shelby Davis Scholarship

2014-2018

College of the Atlantic

Scholarship awarded yearly. \$80, 000

GSA On To The Future Program

2017

Geological Society of America

Travel and mentorship scholarship to attend and present at the the GSA 2017 Annual Meeting. \$650

Walter A. Anderson Student Award

2016

Geological Society of Maine

Geological Society of Maine's recognition for best student work of the year.

United World Colleges (UWC) Scholarship

2011-2013

Pearson College UWC of the Pacific

Full scholarship to complete the International Baccalaureate at UWC. 15 students selected out of 1035 applicants in Spain. \$98, 000

Peer-Reviewed Publications

*denotes mentored undergraduate student

8. **Liu-Zeng, J., Liu, J., Liu, X., Milliner, C.W., Rodriguez Padilla, A. M., Avouac, J.P., Xu, S., Yao, W., Klinger, Y., Han, L., Shao, Y., Yan, X., Aati, S., Shao, Z.** Fault orientation trumps fault maturity in controlling coseismic rupture characteristics of the 2021 Maduo earthquake. In press in AGU Advances.
7. **Yao, W., Liu-Zeng, J., Shi, X., Wang, Z., Padilla, A. R., Qin, K., ... & Gao, Y.** (2024). Rupture branching, propagation, and termination at the eastern end of the 2021 Mw 7.4 Maduo earthquake, northern Tibetan plateau. *Tectonophysics*, 230262.
6. **Young, E. K., Oskin, M. E., & Rodriguez Padilla, A. M.** Reproducibility of remote mapping of the 2019 Ridgecrest earthquake surface ruptures. In press in SRL.
5. **Rodríguez Padilla, A.M. & Oskin, Michael E.**, 2023, Displacement Hazard from Distributed Ruptures in Strike-Slip Earthquakes. *Bulletin of the Seismological Society of America*, 113(6), 2730-2745.
4. **Benavente, C., Palomino, A., Wimpenny, S., Garcia, B., Rosell, L., Aguirre, E., Machare, J., Rodriguez Padilla, A.M., Hall, S.R.** (2022), Paleoseismic Evidence of the 1715 CE Earthquake on the Purgatorio Fault in Southern Peru: Implications for Seismic Hazard in Subduction Zones. *Tectonophysics*.
3. **Rodríguez Padilla, A.M., Oskin, M.E., Rockwell, T. K., Delusina, I., & Singleton, D. M.**, Joint Earthquake Ruptures of the San Andreas and San Jacinto Faults, California, USA. *Geology* 2022; 50 (4): 387–391. doi: <https://doi.org/10.1130/G49415.1>
2. **Rodríguez Padilla, A.M., Oskin, M.E., Milliner, C., & Plesch, A.**, Accrual of widespread rock damage from the 2019 Ridgecrest earthquakes. *Nat. Geosci.* 15, 222–226 (2022). <https://doi.org/10.1038/s41561-021-00888-w>
1. **Rodríguez Padilla, A.M., Quintana, M.A.*, Prado, R.M.*, Aguilar, B.J.*, Shea, T.M.*, Oskin, M.E., & Garcia, L.***, Near-field high-resolution maps of the Ridgecrest earthquakes from aerial imagery. *Seismological Research Letters* 2021, 93 (1): 494–499. doi: <https://doi.org/10.1785/0220210234>

Under review.....

1. **Rodríguez Padilla, A.M., Oskin, Michael E., Brodsky, E.E., Dascher-Cousineau, K., Herrera, V., White, S.**, The influence of earthquake gates in event surface rupture length. Under review in *Geophysical Research Letters*.

Non Peer-Reviewed Publications

6. **Hall, S.R., Rodriguez Padilla, A.M., Hodson, K., Audin, L.**, 2022, Geologic and Tectonic Setting of the Cordillera Blanca. Book chapter under edition. Springer.
5. **Rodriguez Padilla, A.M.**, 2023, New model tackles immature faults and their widespread fractures, Temblor, <http://doi.org/10.32858/temblor.325>
4. **Rodriguez Padilla, A.M.** Decoding earthquake mechanics with repeat pass airborne lidar. *Nat Rev Earth Environ* (2023). <https://doi.org/10.1038/s43017-023-00430-z>
3. **Rodriguez Padilla, A.M.**, 2023, Magnitude-4.4 earthquake rattles the Bay Area and Salinas Valley, Temblor, <http://doi.org/10.32858/temblor.306>
2. **Rodriguez Padilla, A.M.**, 2023, Palomar Observatory earthquake rocks Southern California, Temblor, <http://doi.org/10.32858/temblor.305>
1. **Rodriguez Padilla, A.M.**, 2022, North of Los Angeles, Faults Share Earthquakes, Temblor, <https://doi.org/10.32858/temblor.235>.

Invited Seminars

Cornell University (Ithaca, NY)• May 3, 2023

USC Lithospheric Dynamics (online)• March 8, 2023

Department of Earth, Planetary, and Space Sciences, UCLA (LA, CA)• February 21, 2023

Department of Geosciences, Utah State University (Logan, UT)• January 20, 2023

Hewett Club Lecture Series (UC Riverside, Riverside, CA)• October 18, 2022

Rupture and Fault Zone Observatory (IRIS, online)• October 8, 2022
 Berkeley Seismological Laboratory (Berkeley, CA)• September 20, 2022
 ENS Department of Geosciences (Paris, France)• June 21, 2022
 GFZ German Research Centre for Geosciences (Earth Surface Process Modelling section)• June 14, 2022
 Imaging geodesy special interest group (USGS Natural Hazards Mission Area, online)• May 19, 2022
 USGS Earthquake Science Center seminar (Moffet Field, CA)• May 9, 2022
 COMET+ webinar• April 6, 2022
 Earthquake Research Group, Geoazur (Nice, France)• January 10, 2022
 Fault Displacement Hazard Initiative group, UCLA (CA, USA)• October 19, 2021

Conference Presentations

Oral presentations (first author only).....

11. **Rodríguez Padilla, A.M. & Oskin, M.E.**, 2022, Distributed yielding over multiple earthquake cycles, presented at 2023 AGU Fall Meeting, San Francisco, December 11-15. **Invited**.
10. **Rodríguez Padilla, A.M., Herrera, V., White, S., & Oskin, M.E.**, 2023, The Coseismic and Long-Term Roles of Earthquake Gates in Strike-Slip Faults Oral Presentation at 2023 SSA Annual Meeting (San Juan, PR), April 17-20.
9. **Rodríguez Padilla, A.M., White, S., Herrera, V. & Oskin, M.E.**, 2022, Revisiting the role of geometrical complexity in rupture propagation and arrest in strike-slip earthquakes, presented at 2022 Fall Meeting, AGU, Chicago, 12-16 Dec. **Invited**
8. **Rodríguez Padilla, A.M. & Oskin, M.E.**, 2022, Evolution of distributed folding over multiple earthquake cycles, presented at Gordon Research Seminar, Maine, August 7, 2022. **Invited**.
7. **Rodríguez Padilla, A.M. & Oskin, M.E.**, 2022, 738,000 years of off-fault deformation at the Volcanic Tablelands (CA), presented at 2022 SSA Meeting, Bellevue (WA), April 19-23.
6. **Rodríguez Padilla, A.M. & Oskin, M.E., Rockwell, T. K., Delusina, I., & Singleton, D. M.**, 2022, The Frequency and Mechanics of Joint Earthquake Ruptures of the San Andreas and San Jacinto Faults, presented at 2022 SSA Meeting, Bellevue (WA), April 19-23.
5. **Rodríguez Padilla, A.M., Oskin, M.E., Milliner, C.W., Plesch, A.**, 2021, Pervasive crustal weakening from widespread off-fault damage: Implications from the 2019 Ridgecrest earthquakes, presented at 2021 Fall Meeting, AGU, New Orleans, 13-17 Dec.
4. **Rodríguez Padilla, A.M., Oskin, M. E., Milliner, C., & Plesch, A.** (2021, 04). Beyond the Damage Zone: Characterizing Widespread Inelastic Deformation From Integrated Fracture, Aftershock and Strain Maps of the 2019 Ridgecrest Sequence. Oral Presentation at 2021 Seismological Society of America Annual Meeting.
3. **Rodríguez Padilla, A.M., Oskin, M. E., Rockwell, T. K., Delusina, I., & Singleton, D. M.**(2020, 09). The power of passenger faults as passive recorders: refining the timing and mechanics of San Andreas-San Jacinto joint rupture through Cajon Pass. Oral Presentation at 2020 SCEC Cajon Pass Earthquake Gate Area: Progress and Future Plans. **Invited**.
2. **Rodríguez Padilla, A.M., Hall, S.R., Roy, S.G., Onwuemeka, J., Liu, Y., Harrington, R.M.**, 2018, Searching for a Seismic Signature in the Landscape of the Western Quebec Seismic Zone, Canada, presented at 2018 Fall Meeting, AGU, Washington DC, 11-14 Dec. **Invited**.
1. **Rodríguez Padilla, A.M., Hall, S.R., Benavente Escobar, P., Venuti, G.L., Rosell, L., Garcia Fernandez Baca, B., Audin, L.**, 2018, Evolution of a Paradoxical Landscape: New Constraints for Tectonic and Climatic Processes in the Forearc of Southern Peru, presented at 2018 Fall Meeting, AGU, Washington DC, 11-14 Dec.

Poster presentations.....

*denotes mentored undergraduate student

32. **Rodriguez Padilla, A.M., & Oskin, M. E.**(2023, 09). Rupture Re-nucleation across Step-overs Requires High Coulomb Stress Change. Poster Presentation at 2023 SCEC Annual Meeting.
31. **Oskin, M. E., Rodriguez Padilla, A.M., & Lau, W.** (2023, 09). Earthquake gates, recurrence intervals and expected magnitude range for strike-slip faults. Poster Presentation at 2023 SCEC Annual Meeting.

30. **Herrera, V.*, Rodríguez Padilla, A. M., White, S.*, & Oskin, M. E., 2023.** The Impact of Fault Bends and Regional Stress Fields on the Strength of Strike-Slip Faults. Poster Presentation at 2023 SSA Annual Meeting (San Juan, PR), April 17-20.
29. **Quintana, M.*, Rodríguez Padilla, A. M., Chadly, D. M., & Oskin, M. E., 2023.** A Semi-Automated Algorithm for Fault Displacement Profile Extraction. Poster Presentation at 2023 SSA Annual Meeting (San Juan, PR), April 17-20.
28. **Schnorr, E., Schwartz, S., Finnegan, N., & Rodríguez Padilla, A.M., 2022,** Seismic Shear Wave Velocity Response During Seasonal Initiation and Cessation of Earthflow Motion, T11A-0432, presented at 2022 Fall Meeting, AGU, Chicago, 12-16 Dec.
27. **Herrera, V.*, Rodríguez Padilla, A. M., White, S., & Oskin, M. E. (2022, 09).** The mechanics of rupture propagation through fault bends during strike-slip earthquakes. Poster Presentation at 2022 SCEC Annual Meeting.
26. **Quintana, M.*, Rodríguez Padilla, A. M., Chadly, D. M., & Oskin, M. E. (2022, 09).** Semi-automated extraction of fault displacement profiles and displacement-length relationships from high-resolution lidar data and standard fault maps. Poster Presentation at 2022 SCEC Annual Meeting.
25. **White, S.*, Rodríguez Padilla, A. M., Herrera, V.*, & Oskin, M. E. (2022, 09).** How far will a rupture travel past a fault junction during a strike-slip event?. Poster Presentation at 2022 SCEC Annual Meeting.
24. **Bravo, L.*, Rodríguez Padilla, A. M., & Oskin, M. E. (2022, 09).** Measuring vertical displacements from the 2019 Ridgecrest Earthquakes using the post-event lidar point cloud. Poster Presentation at 2022 SCEC Annual Meeting.
23. **Oskin, M. E.(2022, 09) & Rodríguez Padilla, A.M. (2022, 08).** Evolution of distributed folding over multiple earthquake cycles. Poster Presentation at 2022 SCEC Annual Meeting.
22. **Rodríguez Padilla, A.M., & Oskin, M. E.(2022, 09).** A probabilistic displacement hazard assessment framework for coseismic distributed fracturing from strike-slip earthquakes. Poster Presentation at 2022 SCEC Annual Meeting.
21. **Quintana, M.*, Rodríguez Padilla, A. M., Chadly, D. M., & Oskin, M. E. 2022.** HDBSCAN Cluster Analysis of Legacy Earthquake Surface Rupture Datasets. Poster Presentation at 2022 SSA Annual Meeting (Bellevue, WA), April 19-23.
20. **Rodríguez Padilla, A.M., Oskin, M.E., Milliner, C.W., Plesch, A., 2022,** Widespread inelasticity from the 2019 Ridgecrest earthquakes: implications for the long-term evolution of fault zones, presented at 2022 NSF Plate Boundary Deformation Geoprisms Workshop, March 15-18.
19. **Rodríguez Padilla, A.M., & Oskin, M. E.(2021, 08).** A curvature-based approach to measuring permanent long-wavelength off-fault deformation: applications to the Volcanic Tablelands, CA. Poster Presentation at 2021 SCEC Annual Meeting.
18. **Hernandez, M. T.*, Rodríguez Padilla, A. M., & Oskin, M. E. (2021, 08).** Damage Zone Patterns Along Creeping Faults in the Navajo Sandstone, Utah. Poster Presentation at 2021 SCEC Annual Meeting.
17. **Quintana, M.*, Rodríguez Padilla, A. M., Chadly, D. M., & Oskin, M. E. (2021, 08).** Near-field deformation of the southeastern strand of the 2019 Ridgecrest mainshock. Poster Presentation at 2021 SCEC Annual Meeting.
16. **Prado, R.*, Rodríguez Padilla, A. M., & Oskin, M. E. (2021, 08).** Localized and distributed deformation in a step-over of the Ridgecrest 2019 mainshock. Poster Presentation at 2021 SCEC Annual Meeting.
15. **Shea, T. A.*, Rodríguez Padilla, A. M., & Oskin, M. E. (2021, 08).** Mapping the fractures associated with the magnitude 6.4 Ridgecrest earthquake foreshock from July 4, 2019. Poster Presentation at 2021 SCEC Annual Meeting.
14. **Aguilar, B. J.*, Rodríguez Padilla, A. M., Quintana, M.*, Shea, T.*, Oskin, M. E. (2021, 08).** Surficial fractures from the middle of the 2019 Ridgecrest mainshock mapped from high-resolution aerial imagery. Poster Presentation at 2021 SCEC Annual Meeting.
13. **Young, E. K., Oskin, M. E., & Rodríguez Padilla, A. M. (2021, 08).** Effectiveness and reproducibility of remote mapping of the 2019 Ridgecrest earthquake ruptures with airborne lidar and imagery. Poster Presentation at 2021 SCEC Annual Meeting.

12. **Rodríguez Padilla, A.M., & Oskin, M.E., 2020**, Time-dependent Evolution of Off-fault Deformation, presented at 2020 Fall Meeting, AGU, virtual, 1-17 Dec.
11. **Rodríguez Padilla, A.M., Oskin, M. E., & Milliner, C. (2020, 08)**. Does Slip Heterogeneity Drive Near-field Fracture and Aftershock Distribution? Examples from the 2019 Ridgecrest Sequence. Poster Presentation at 2020 SCEC Annual Meeting.
10. **Marino, S.*, Rodríguez Padilla, A.M., & Oskin, M. E. (2020, 08)**. Analysis of fault-tip structures at seismogenic and creeping faults. Poster Presentation at 2020 SCEC Annual Meeting.
9. **Young, E. K., Oskin, M. E., & Rodríguez Padilla, A. M. (2020, 08)**. Testing the Reproducibility of Remote Surface Rupture Maps of the 2019 Ridgecrest Earthquakes. Poster Presentation at 2020 SCEC Annual Meeting.
8. **Marino, S.*, Rodríguez Padilla, A.M., & Oskin, M. E. (2020)**. Fracture and Folding at Fault Tips in the Needles Fault District (UT). Poster Presentation at the UC Davis 31st Annual Undergraduate Research, Scholarship and Creative Activities Conference.
7. **Rodríguez Padilla, A.M., & Oskin, M.E., 2019**, Characterization of Fault-related Folding from High-Resolution Topography: Implications for Time-Dependent Rheology of the Brittle Crust, T11A-0432, presented at 2019 Fall Meeting, AGU, San Francisco, CA, 9-13 Dec.
6. **Rodríguez Padilla, A.M., Oskin, M. E., Rockwell, T. K., Delusina, I., & Singleton, D. M.(2019, 08)**. Paleo-seismic investigation and mechanical modeling of rupture behavior through Cajon Pass. Poster Presentation at 2019 SCEC Annual Meeting.
5. **Foster, A. N., Gibson, S., Jiron, S., Moroz, G., & Padilla, A. M. R. (2018, November)**. Matching skill to need: a multi-institutional approach to field-based environmental science. Presented at the GSA Annual Meeting in Indianapolis, Indiana, USA-2018.
4. **Rodríguez Padilla, A.M., Hall, S.R., Benavente Escobar, P., Venuti, G.L., Rosell, L., Garcia Fernandez Baca, B., 2018**, Establishing the timing and characteristics of recent floods in the forearc of southern Peru, Borns Symposium, Climate Change Institute, University of Maine, Orono, May 1-2, 2018
3. **Onwuemeka, J., Liu, Y., Harrington, R. M., Peña-Castro, A. F., Rodríguez Padilla, A. M., & Darbyshire, F. A. (2017)**. Earthquake Source Parameter Estimates for the Charlevoix and Western Quebec Seismic Zones in Eastern Canada. AGUFGM, 2017, T11A-0431.
2. **Rodríguez Padilla, A.M., A.M., Onwuemeka, J., Liu, Y., Harrington, R.M., 2017**, Earthquake Source Parameters and Focal Mechanism Solutions for the Western Quebec Seismic Zone in Eastern Canada, T11A-0432, presented at 2017 Fall Meeting, AGU, New Orleans, LA, 11-15 Dec.
1. **Rodríguez Padilla, A.M., Venuti, G., and Hall, S.R, 2016**. Glacial erosion and pre-existing fracture networks collaborate to create the Acadia National Park Landscape, Geological Society of America Abstracts with Programs. Vol. 48, No. 2, paper no 58-2.

Media Features

Earthquake hazard communication (Spanish)

2022-2023

Univision Sacramento

Interviewed in Univision Sacramento to discuss earthquake hazard to the region. (8 interviews)
<https://tinyurl.com/univisionEQhazard>

TikTok interview

October 25, 2022

Southern California Earthquake Center

Introducing the SCEC Community on TikTok <https://tinyurl.com/scectiktok>

Joint Earthquake Ruptures of the San Andreas and the San Jacinto Faults

2021-2022

Several media outlets

Featured in UC Davis Newsletter, Science Daily, California Aggie.

Science Moab Podcast - Constantly Moving Earth

2021

Science Moab Podcast

Interviewed by Peggy Hodgkins about my work on creeping faults in Utah <http://sciencemoab.org/constantly-moving-earth/>

Graduate Advising

Collaboration with ASU

2024

Arizona State University

Mindy Zuckermann (PhD expected 2026), "The erasure of earthquake ruptures by surface processes". Co-advised with Ramon Arrowsmith.

Undergraduate Research Mentoring

SCEC SOURCES mentor

2021-2022

Southern California Earthquake Center

Project I: "Near-field kinematics of the 2019 Ridgecrest surface rupture" (summer 2021). Students: Brian Aguilar, Ruth Prado, Mercedes Quintana, Thomas Shea • **Project II:** "Characterizing the Surficial Extent of Damage along Creeping faults in the Navajo Sandstone" (summer 2021). Student: Michael Hernandez. **Project III:** "Unsupervised cluster analysis of surface rupture attributes" (2021-2022). Student: Mercedes Quintana. • **Project IV:** "Revisiting the role of geometrical complexity in rupture propagation" (2022-2023). Students: Vanessa Herrera and Sophia White. • **Project V:** Automated extraction of fault displacement profiles from lidar DEMs. (2022-2023). Student: Mercedes Quintana. • **Project VI:** "Mechanical compatibility of surface rupture segments with regional stress" (2023). Student: Vanessa Herrera.

Senior thesis mentor

2019-2022

University of California, Davis and San Diego State University

Sofia Marino (B.S. Geology, UC Davis, 2020), "Analysis of Fault-Tip Structures at Seismogenic and Creeping Faults", Project recipient of the Provost's Undergraduate Fellowship. • **Vanessa Herrera (B.S. Geophysics, SDSU, 2023)**, "The mechanics of earthquake rupture through fault bends in strike-slip events". • **Karen Castaneda (B.S. Geology, UC Davis, 2023)**, "Quantifying the role of surface processes in fault mapping".

McNair mentor

2021-2022

University of California, Davis

Guadalupe Bravo (B.S. 2022), "Measuring coseismic vertical displacements from lidar point clouds". Lupita is a 2021 McNair scholar. Co-advised with Mike Oskin.

Undergraduate Research in Earth Science (GEL 199) mentor

2021

University of California, Davis

Leslie Garcia (B.S. 2022), "Drone-based mapping of the 2019 Ridgecrest foreshock", Spring 2021. • **Kimberly Bowman (B.S. 2020)**, "Mapping off-fault damage along seismogenic faults in the Navajo Sandstone, UT", Summer 2021.

Service

Peer review

2021-present

Multiple journals

GRL, BSSA, SRL, Science

AGU Tectonophysics Revival Task Force

2021-2023

American Geophysical Union

AGU Tectonophysics Graduate Student Representative

2021-2023

American Geophysical Union

Student representative for the Tectonophysics section of the American Geophysical Union.

Open Topography Advisory Committee Student Member

2020-2023

Open Topography (SDSC, SESE, UNAVCO)

Student representative in the OT Advisory Committee.

UJNR SCEC delegate

September 2022

United States/Japan Cooperative Program in Natural Resources

IRIS Seismology Skill-Building Workshop panelist

2021-2022

IRIS

Panelist in the pathways to grad school for international students webinar.

SCEC Community Fault Model Reviewer

2022

Southern California Earthquake Center

Pathways to Graduate School AWG panelist

2021

University of California, Davis

Served as panelist in graduate school Q&A event for undergraduates in the Earth Science department.

AWG UC Davis Undergraduate Mentoring Program

2018-2021

University of California, Davis

Sierra Brinton and Yvonne Leon, 2020–2021 • Sara Benavidez, 2019–2020 • Daphne Kuta, 2018 –2019

Prospective Student Weekend Organizer

2021

University of California, Davis

Association for Women Geoscientists UC Davis Chapter Treasurer**2019-2020***University of California, Davis*

Fundraiser organizer, custodian of association funds, and event coordinator for undergraduate career path workshops.

Chemistry Faculty Search Committee**Fall 2017***College of the Atlantic*

Served as one of two student members in the five member chemistry faculty search committee. Responsibilities include revision of applications, CVs, and online and in-person interviews.

Skills

Software*Matlab, Python, R (intermediate), ArcGIS/QGIS***Field Methods***Geological and Geomorphic mapping, paleoseismic trenching, drone surveys***Laboratory Methods***¹⁴C sample preparation***Communication***English (proficient), Spanish (native)***Certifications***PADI Advanced Scuba Diver*

Affiliations

American Geophysical Union

Seismological Society of America