

# Alba M. Rodríguez Padilla

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## Professional Appointments

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

## Education

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**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 Experience

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**Evolution of Off-fault Plasticity over the Earthquake Cycle** **2021-2023**

*University of California, Davis · Advisor: Dr. Michael E. Oskin*

Refining the constitutive law and mechanistic understanding of stress dissipation by off-fault deformation over time combining field and remote sensing observations.

**Revisiting the role of geometrical complexity in rupture propagation in strike-slip earthquakes** **2022-2023**

*University of California, Davis · Advisor: Dr. Michael E. Oskin*

Mapping, characterizing, and analyzing the length and angle of bends, splays, gaps, step-overs, and secondary strands to constrain their role in rupture propagation.

**A framework for incorporating widespread coseismic fracturing into PFDHA** **2022-2023**

*University of California, Davis · Advisor: Dr. Michael E. Oskin*

Incorporating the displacements produced by secondary faulting and fracturing into a probabilistic displacement hazard analysis framework for immature strike-slip faults.

**Widespread inelasticity from fracture, aftershock, and strain maps** **2020-2021**

*University of California, Davis · Advisor: Dr. Michael E. Oskin. Collaborator: Dr. Christopher Milliner*

Analyzing the density decay of damage from high-resolution fracture, aftershock, and geodetic maps of the Ridgecrest 2019 earthquake sequence to determine the distribution of coseismic inelastic failure.

**Rupture Timing and Behavior Through Cajon Pass** **2018 – 2020**

*University of California, Davis · Advisors: Dr. Michael E. Oskin and Dr. Thomas K. Rockwell*

Constraining the timing and characteristics of linked San Andreas-San Jacinto ruptures through Cajon Pass using paleoseismology and quasistatic finite element modeling.

**Undergraduate Thesis** **2017 – 2018**

*College of the Atlantic · Advisor: Dr. Sarah Hall*

Geomorphic, structural, and hydrological analysis of the southern Peruvian forearc to determine the timing of tectonoclimatic feedbacks and their implication for the mechanisms controlling the long-term evolution of the Andes.

**Seismology Internship** **Summer 2017**

*McGill University · Advisor: Dr. Yajing Liu*

Integrating numerical techniques in Geomorphology and Seismology to determine the structural controls of seismicity in the Western Quebec Seismic Zone. Includes source parameter estimates, computation of focal mechanism solutions, analysis of the spatial distribution of b-value, drainage geometry analysis, and characterization of topographic anisotropy.

**Volcanology Research** **Spring 2017**

*McGill University · Advisors: Dr. John Stix and Dr. Kimberly Berlo*

Characterization of entrapment pressure and depth conditions of the Jörundur rhyolitic tuya (Iceland) from FTIR-analysis of volatile contents of plagioclase-hosted melt inclusions.

## Structure and Glacial Geomorphology Research

2015 – 2016

*College of the Atlantic · Advisor: Dr. Sarah Hall*

Investigation of the relationship between glacial and structural processes in shaping the landscape of Mount Desert Island, ME from field and remote landscape analysis.

## Professional Experience and Workshops

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<b>Graduate Research Assistant</b>	2018-present
<i>University of California, Davis</i>	
<b>Structure and Deformation at Plate Boundaries, GeoPRISMS Synthesis Workshop</b>	2022
<i>University of Hawaii at Manoa, March 17-18, 2022.</i>	
<b>SCEC Workshop: Coordinating Post-Earthquake Field Data Collection</b>	2022
<i>Online, January 12-14, 2022.</i>	
<b>SCEC Workshop: Community Geodetic Model</b>	2021
<i>Online, November 9-11, 2021.</i>	
<b>SCEC Workshop: Research Mentee Training - Harnessing Mentoring Relationships</b>	2021
<i>Online, September 9-11, 2021.</i>	
<b>Graduate Teaching Assistant</b>	2019-2021
<i>University of California, Davis</i>	
Neotectonics Field and Data Analysis Module (Summer 2019, 2021) · Structure (Winter 2021) · Physical Geology (Spring 2019, Fall 2019) · The Earth (Winter 2019) · Field Methods (Spring 2020)	
<b>SCEC Cajon Pass Earthquake Gate Area: Progress and Future Plans</b>	2020
<i>Online, September 4, 2020.</i>	
<b>InSAR Processing and Time-Series Analysis for Geophysical Applications short course</b>	2020
<i>Online via WebEx Training, August 10-14, 2020.</i>	
<b>GMTSAR Short Course</b>	2019
<i>Scripps Institution of Oceanography in La Jolla, CA, July 22-24, 2019.</i>	
<b>CIG Crustal Deformation Modeling Workshop</b>	2019
<i>Colorado School of Mines, Golden, CO, June 10-14, 2019.</i>	
<b>SCEC Cajon Pass Earthquake Gate Area Initiative: Integrated Science Workshop and Field Trip</b>	2018
<i>Hilton Palm Springs Resort, Palm Springs, CA, September 8-9, 2018.</i>	
<b>Undergraduate Teaching Assistant</b>	2015 – 2018
<i>College of the Atlantic</i>	
Climate and Weather (Spring 2018) · Calculus III (Fall 2017) · Geology and Humanity (Spring 2016) · Geology of Mount Desert Island (2015)	
<b>Undergraduate Research Assistant</b>	2014 – 2018
<i>College of the Atlantic</i>	
Assisted with field work and data analysis in various geomorphology projects in the Earth System Program.	

## Research funding

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<b>NEHRP proposal award</b>	2023
<i>USGS Earthquake Hazards Program Grant, Southern California</i>	
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	
<b>OK Earl postdoctoral fellowship</b>	2023-2025
<i>California Institute of Technology</i>	
\$85,000	
<b>NASA FINESST fellowship</b>	2021-2023
<i>National Aeronautics and Space Administration</i>	
Testing constitutive laws for the evolution of off-fault deformation over the earthquake cycle. \$90,000	
<b>Durrell Graduate Field Award</b>	2019-2022
<i>University of California, Davis</i>	
Support for field campaign and instrumentation awarded by the UC Davis Earth and Planetary Sciences department. Awarded yearly. \$3,100	
<b>SCEC Proposal Award</b>	2021
<i>Southern California Earthquake Center</i>	
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

**NEGSA Stephen Pollock Undergraduate Research Program**

2016

*Northeastern Geological Society of America*

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

**Honors and Scholarships****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

**United World Colleges (UWC) Scholarship**

2011-2013

**Peer-Reviewed Publications**

\*denotes mentored undergraduate student

5. **Rodríguez Padilla, A.M. & Oskin, Michael E.**, 2023, Displacement hazard from distributed ruptures in strike-slip earthquakes. In press in BSSA.
4. **Benavente, C., Palomino, A., Wimpenny, S., Garcia, B., Rosell, L., Aguirre, E., Machare, J., Rodríguez 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**

3. **Young, E. K., Oskin, M. E., & Rodriguez Padilla, A. M.** Reproducibility of remote mapping of the 2019 Ridgecrest earthquake surface ruptures. Under review in *SRL*.
2. **Liu-Zeng, J., Liu, J., Liu, X., Milliner, C.W., Avouac, J.P., Rodriguez Padilla, A. M., Xu, S., Yao, W., Klinger, Y., Han, L., Shao, Y., Yan, X., Aati, S., Shao, Z.**, Multifault rupture of the Mw 7.4 Maduo (China) earthquake reveals fault growth toward a stress-favored orientation. Under review in *PNAS*.
1. **Yao, W., Liu-Zeng, J., Shi, X., Wang, Z., Rodriguez Padilla, A. M., Qin, K., Han, L., Shao, Y., Liu, X., Xu, J., Wang, Y.**, Rupture Branching, Propagation, and Termination at the Eastern End of the 2021 Mw 7.4 Maduo Earthquake, North Tibet Plateau. Under review in *Tectonophysics*.

**Non Peer-Reviewed Publications**

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• May 3, 2023

USC Lithospheric Dynamics• March 8, 2023

Department of Earth, Planetary, and Space Sciences, UCLA• February 21, 2023

Department of Geosciences, Utah State University• January 20, 2023

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

Rupture and Fault Zone Observatory (IRIS, online)• October 8, 2022

Berkeley Seismological Laboratory• 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)• May 19, 2022  
 USGS Earthquake Science Center seminar• 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

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### Oral presentations.....

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. **Rodríguez 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., Rodríguez 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. **Rodriguez 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.\*, Rodriguez 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., & Rodriguez 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.\*, Rodriguez 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).** Paleoseismic 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., Rodriguez Padilla, A. M., & Darbyshire, F. A. (2017).** Earthquake Source Parameter Estimates for the Charlevoix and Western Quebec Seismic Zones in Eastern Canada. AGUFM, 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

<b>Earthquake hazard communication (Spanish)</b>	<b>2022-2023</b>
<i>Univision Sacramento</i>	
Interviewed in Univision Sacramento to discuss earthquake hazard to the region. (6 interviews)	
<a href="https://tinyurl.com/univisionEQhazard">https://tinyurl.com/univisionEQhazard</a>	
<b>TikTok interview</b>	<b>October 25, 2022</b>
<i>Southern California Earthquake Center</i>	
Introducing the SCEC Community on TikTok <a href="https://tinyurl.com/scectiktok">https://tinyurl.com/scectiktok</a>	
<b>Joint Earthquake Ruptures of the San Andreas and the San Jacinto Faults</b>	<b>2021-2022</b>
<i>Several media outlets</i>	
Featured in UC Davis Newsletter, Science Daily, California Aggie.	
<b>Science Moab Podcast - Constantly Moving Earth</b>	<b>2021</b>
<i>Science Moab Podcast</i>	
Interviewed by Peggy Hodgkins about my work on creeping faults in Utah <a href="http://sciencemoab.org/constantly-moving-earth/">http://sciencemoab.org/constantly-moving-earth/</a>	

## Convened Sessions

<b>Above the Seismogenic Zone: Fault Damage and Healing in the Shallow Crust</b>	<b>2023</b>
<i>Seismological Society of America Annual Meeting</i>	
Chair: Travis Alongi. Other co-conveners: Ashley Griffith, Ahmed Elbanna, and Prithvi Thakur.	
<b>Structure, Mechanics, and Hazards of Geometrically Complex Fault Systems</b>	<b>2022</b>
<i>American Geophysical Union Fall Meeting</i>	
Chair: James Biemiller. Other co-conveners: Alice-Agnes Gabriel and Roland Burgmann.	

**What is the influence of fault maturity in earthquakes and fault systems?** 2022

*American Geophysical Union Fall Meeting*

Chair: Alba M. Rodriguez Padilla. Other conveners: Michele Cooke (UMass Amherst), Huiyun Guo (UCSC), Alex Hatem (USGS).

**Fault Damage Zones: What We Know and Do Not** 2022

*Seismological Society of America Annual Meeting*

Chair: Alba M. Rodriguez Padilla. Other conveners: Travis Alongi (UCSC), Xiaoahua Xu (UT Austin), Tom Mitchell (UCL).

**Great Unsolved Questions in Tectonophysics: Volume 1** 2021

*American Geophysical Union Fall Meeting*

Chair: Alba M. Rodriguez Padilla and Christopher Rollins (GNS New Zealand). Other conveners: Jean-Philippe Avouac (Caltech) and Heather Crume (UC Berkeley).

**Towards an Integrated View of Earthquake Gates From Geologic Observations and Numerical Models 2021**

*Seismological Society of America Annual Meeting*

Chair: Veronica Prush (McGill). Other co-conveners: Michele Cooke (UMass Amherst) and Julian Lozos (CSUN).

## Guest Lectures

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**Geology of National Parks** May, 2021

*College of the Atlantic*

Instructor of record: Prof. Sarah Hall. Lecture title: "Salt tectonics in the Canyonlands National Park". May 28, 2021.

**Seminar in Plate Tectonics** March, 2021

*Drexel University*

Instructor of record: Prof. Lojč Vanderkluisen. Lecture title: "Fault interactions in the Pacific-North America transform plate boundary". March 4, 2021.

## Undergraduate Research Mentoring

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**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

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**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.



*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&amp;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

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**Software***Matlab, Python (intermediate), R (beginner), ArcGIS/QGIS, Cubit/Trelis***Field Methods***Geological and Geomorphic mapping, oriented thin section sample collection, paleoseismic trenching***Laboratory Methods***<sup>14</sup>C sample preparation***Communication***English (proficient), Spanish (native)***Certifications***PADI Advanced Scuba Diver***Relevant coursework***UC Davis, UCSC, McGill, College of the Atlantic*

Active Tectonics, Earthquake Physics, Geological Data Analysis, Fracture and Flow of Rocks, Topics in Remote Sensing, Inverse Theory, Order of Magnitude Estimation, Calculus III, Differential Equations, Fractals and Scaling, Anatomy of Fault Zones, Quantitative Geomorphology, Field Camp, Advanced Volcanology.

## Affiliations

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American Geophysical Union

Seismological Society of America

Association for Women Geoscientists