

Colleen R. Murphy
University of California, Santa Cruz
Earth and Planetary Sciences Department
1156 High St, Santa Cruz, CA, 95064
cormurpb@ucsc.edu

EDUCATION

- University of California Santa Cruz, Santa Cruz, CA 2017 – present
3rd year PhD Candidate, Earth and Planetary Sciences
Advisor: Dr. Noah Finnegan
- Graduate coursework completed* – Introductory Teaching Seminar; Earth and Planetary Sciences Foundations; Great Papers in The Earth Sciences; Groundwater Modeling; Order of Magnitude Estimation; Earthquake Physics; Slow Slip in Motion of Tectonic Faults, Landslides, and Glaciers; Geologic and Geomorphic Evolution of the Central California Coast Ranges; Fluvial Geomorphology
- University of California Berkeley, Berkeley, CA 2013 – 2017
BA Geophysics (*High Honors*), BA Geology
Advisor: Dr. William Dietrich
Thesis title: “Consequences of heterogeneous lithology on geomorphic evolution of mélanges from the Central Belt of the Franciscan Complex”

RESEARCH EXPERIENCE

- April 2020 – present **NSF INTERN**, USGS Geologic Hazards Science Center, Golden, CO
Developing hydrologic and slope stability models in HYDRUS 2D to test the dominant controls governing landslide recurrence along the coastal bluffs of Puget Sound
- September 2017 – present **Graduate Student Researcher**, UCSC Department of Earth and Planetary Sciences
Our objective is to investigate the mechanisms that cause some landslides to move persistently over many years while others fail catastrophically. To do this I deploy and maintain a permanent network of field-based sensors that monitor hydrology and landslide movement. Additionally, I use tools such as geospatial analysis, numerical modeling, and laboratory experiments as needed to complement our field investigations.
- 2016 – 2017 **SURF L&S Fellow**, UC Berkeley
Used field mapping and mineralogical characterization (x-ray diffraction and thin section petrography) to track the evolution of different rock types as they transition from hillslopes to stream channels.
- 2016 – 2017, 2015 **Field Assistant**, Eel River Critical Zone Observatory
2015: Conducted shallow seismic surveys, electrical resistivity imaging, topographic surveys, magnetometry surveys.
2016 – 2017: Collected groundwater samples every 2-3 weeks to study groundwater dynamics and subsurface weathering front propagation. Performed in-field chemistry with portable spectrophotometer, monitored water levels, measured unsaturated zone moisture content through neutron probing and borehole nuclear magnetic resonance.
- 2015 **NSF REU Fellow**, Indiana University – Purdue University Indianapolis
Identified and assessed chronology of paleochannels using remote sensing and soil cores. Assisted with archaeological excavation and geophysical surveys.

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TEACHING

Winter 2018, 2019, 2020	Graduate Teaching Assistant UCSC EART 140: <i>Geomorphology</i>
Winter 2020	Instructor UCSC GEOPATHS: <i>Writing Skills</i> Co-developed and taught seminar on scientific writing for undergraduates
Fall 2016	Reader UC Berkeley EPS C20: <i>Earthquakes in Your Backyard</i>
Spring 2015	Undergraduate Teaching Assistant UC Berkeley EPS 50: <i>Planet Earth</i>
2011 – 2016	Latin Tutor

ABSTRACTS

Murphy, C., Finnegan, N.J., Testing the predictions of the dilatant strengthening model in an active, slow-moving landslide: Abstract NH42A-07, AGU Fall Meeting, San Francisco, CA, 9-13 December 2019, Oral.

Murphy, C., Finnegan, N. J., Oberle, F. J., Perkins, J. P., Evidence for a positive feedback between shallow groundwater flow and shear failure in an active earthflow: Abstract EP24B-05, AGU Fall Meeting, Washington, D.C., 10-14 December 2018, Oral.

Druhan, J.L., Wang, J., Cargill, S., **Murphy, C.**, Tune, A.K., Dietrich, W.E., Rempe, D., The role of fluid mobility in the development of shale weathering profiles: Direct observations from a vadose zone monitoring system (Invited): Abstract EP21H-02, AGU Fall Meeting, New Orleans, LA, 11-15 December 2017, Oral.

Rempe, D.M., Druhan, J.L., Hahm, W.J., Wang, J., **Murphy, C.**, Cargill, S., Dietrich, W.E., Tune, A.K., The role of rock moisture on regulating hydrologic and solute fluxes in the critical zone (Invited): Abstract EP53D-1770, AGU Fall Meeting, New Orleans, LA, 11-15 December 2017, Poster.

Murphy, C.R., Monaghan, G.W., Identification and Chronology of Paleochannels and Their Relation to the Landform During the Mississippian Occupation at Lawrenz Gun Club: Midwest Archaeological Conference, Milwaukee, WI, 5-7 November 2015, Poster.

GRANTS, FELLOWSHIPS, and AWARDS

Waters Award for Excellence in Dissertation Proposal (\$2500) UCSCS EPS Department	2020
J. Casey Moore Award (\$3500) UCSC EPS Department	2018
NCALM Seed Grant Award National Center for Airborne Laser Mapping	2018
Outstanding Student Award Association of Women Geoscientists – SF Bay Area Chapter	2017
SURF L&S Fellowship UC Berkeley	2016
NSF REU Fellowship IUPUI	2015
Cal Alumni Association Leadership Award UC Berkeley	2013
Ronald McDonald House Charities Scholarship	2013

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SERVICE AND OUTREACH

Student Advisory Group Member CUAHSI	July 2020 - present
Graduate Student Representative to the Faculty UCSC	2019-2020
WiSE Volunteer Rock and Mineral Identification at Kamman Elementary School	Feb. 15, 2019
Office of Undergraduate Research and Scholarships Peer Advisor UC Berkeley	2016 – 2017
Volunteer Park Guide Lassen Volcanic National Park	2014
Gilbert Club Volunteer	2019, 2016, 2015

PROFESSIONAL TRAINING

CITL Mentorship Workshop Santa Cruz, CA	January 2020
ACE Training and Development Santa Cruz, CA Workshop for teaching and inclusivity strategies to increase retention of underrepresented students in earth sciences	September 2019
Near-Surface Geophysics for Hydrology Workshop Laramie, WY	September 2018
UC IGIS DroneCamp San Diego, CA	June 2018

CERTIFICATIONS

NAUI Advanced Open Water Diver	November 2019
FAA Remote Pilot Certification	September 2018