

# SYDNEY A. MAGUIRE

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## EDUCATION

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### Master of Science, Earth Science – Geology

University of North Carolina, Chapel Hill

*Selected Coursework:* Tectonic Geomorphology, Evolution of Earth's Surface Environment, Data Analysis, Marine Geology, Proposal Writing, Mountain Building

*Expected August 2023*

### Bachelor of Science, Earth Science – Geology

University of California, Santa Barbara

*Selected Coursework:* Summer Field, Mineralogy, Geomorphology, Engineering and Environmental Geology, Structural Geology, Ore Deposits, Metamorphic Petrology, Physical Volcanology, Sedimentology and Stratigraphy, Groundwater, Geological Application of GIS, General Chemistry (I, II, III), Calculus (I, II), Algebra Based Physics (I, II, III), Linear Algebra, Differential Equations

*September 2019*

## PROFESSIONAL EXPERIENCE

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### GRADUATE

*Master's Thesis (in-progress):* "Evaluation of Temporal Variability along the Garlock Fault: Determination & Assessment of New Slip Rates from the Latest Pleistocene to Pliocene"

*Advisor:* Dr. Eric Kirby

#### MEETING ABSTRACTS

**Maguire, S.A.,** Kirby, E., Walker, J.D., 2022, Evaluating Displacement along the Garlock Fault Zone During the Pliocene and Early Pleistocene from Provenance of Fanglomerate Deposits, GSA Annual Meeting, Abstract 67-6. [Poster]

**Maguire, S.A.,** Kirby, E., Walker, J.D., 2022, New Slip Rates Along the Garlock Fault Zone During the Mid-Pleistocene and Pliocene from Provenance of Fanglomerate Deposits, American Geophysical Union Fall Meeting, Abstract T45D-0148. [Poster]

### INDUSTRY

Staff Geologist, Slate Geotechnical Consultants, Inc.

Geologic data compilation and analysis, report writing, geologic cross-section construction, figure creation, geologic reconnaissance, soil logging, seismic source characterization for larger probabilistic seismic hazard analysis, fault hazard analysis

*Fall 2019 to June 2021*

### UNDERGRADUATE

Research Assistant, UCSB Geomorphology Research Group

Structure-from-motion study of sea cliff erosion along Santa Barbara marine terrace

*Fall 2018 to Summer 2019*

Research Assistant for Dr. Roberta Rudnick, UCSB Geochemistry Research Group

Study of mantle and Earth's surface geochemistry through work with glacial diamictites, sulfides, mid-ocean ridge basalts, and mantle xenoliths. Thin section petrography analysis, rock crushing, and mineral separation and extraction

*Spring 2017 to Summer 2018*

### FIELD PROJECTS

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Garlock Fault Zone, Kern County, CA

Geologic mapping of displaced piles of alluvium with provenance ties across the El Paso, Garlock, and Savoy Faults for analysis of displacement through time, sample collection for  $^{40}\text{Ar}/^{39}\text{Ar}$  dating of detrital sanidine and  $^{10}\text{Be}/^{26}\text{Al}$  burial dating of quartzite boulders

*Total of eight weeks, 2022*

Undisclosed High-Rise, San Francisco, CA

Five-week drill program consisting of soil logging and rock coring for strength analyses, followed by installation of 300' piles for building retrofit and concurrent soil logging, piezometer and inclinometer data collection

*Winter 2020 to Spring 2021*

Kaiser Permanente, San Rafael, CA

Geologic reconnaissance of hillslope above hospital

*Spring 2020*

Field Camp - Schell Creek Range, White Pine County, NV

Geologic mapping of extensional tectonic frameworks, carbonate and volcanic petrology, geomorphology

*Summer 2019*

## SOFTWARE EXPERIENCE

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Esri ArcMap/GIS Geologic mapping, geostatistical analysis, figure creation	3.5 Years
Adobe Illustrator Geologic cross-section creation, general figure creation	3.0 Years
R (Programming Software) Data cleaning, calculation, manipulation	3.0 Years
Agisoft Photoscan/Metashape Structure-from-motion dense cloud and orthomosaic construction	1.0 Years
StraboSpot2 Geologic mapping on tablets in field	6 Months
Cloud Compare Dense cloud comparison for volumetric change	3 Months
MATLAB Programming and numeric computing platform used for data analysis and modeling	2 Months

## TEACHING AND MENTORSHIP

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### SUBSTITUTE LECTURER

GEOL 201 - Earth's Surface: Processes, Landforms, and History Lectured six classes when professor was absent. Lectures focused on glacial landscapes and geomorphology, atmospheric and oceanic circulation, the Greenhouse Effect, present-day climate change, and climate oscillations. The course emphasizes biological, chemical, and physical processes that shape the surface of the earth, including climate change, the global water cycle, geomorphic processes, and depositional environments.	Fall 2022
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### TEACHING ASSISTANTSHIPS

GEOL 303 – Sedimentology and Stratigraphy Assisted teaching in labs for three hours a week to 25 students. Course introduces principles involved in description, classification, and interpretation of sedimentary rocks and stratigraphic units including stratigraphic correlation. Emphasis on relationships between processes and sedimentary facies depositional environments and stacking patterns.	Spring 2023
GEOL 201 - Earth's Surface: Processes, Landforms, and History Served as a lecture assistant and grader for 59 students. Designed and implemented final course project. Lectured six classes when professor was absent. Course emphasis on biological, chemical, and physical processes that shape the surface of the earth, including climate change, the global water cycle, geomorphic processes, and depositional environments.	Fall 2022
GEOL 425 - Introduction of Field Geology Taught six hours per week to 25 students. Course introduces geologic field methods, making observations, mapping, identification of structures and features, interpretation to solve basic geologic problems.	Spring 2022
GEOL 101L - Planet Earth Laboratory Taught seven hours a week to 90 students. Course focuses on the study of common minerals and rocks, use of topographic and geologic maps to illustrate processes.	Fall 2021

### MENTORSHIP ROLES

Graduate Research Mentor Mentored and managed a year-long research project for one undergraduate student focusing on a structure-from-motion photogrammetric reconstruction and trench logging of a railroad cut exposing several thrust fault traces and growth strata.	2022-2023
Tutor - UNC Chapel Hill Academic Support Program for Student Athletes (ASPSA) Taught geologic principles and review lecture material for introductory geoscience courses to 15 student athletes for six hours a week.	Fall 2022
Undergraduate Student Field Training Geologic mapping and sampling training of one female undergraduate student for four weeks (summer) and one week (fall) in the Mojave Desert.	Summer and Fall 2022

UCSB GEMSS (Geoscience Enrichment and Mentoring for Students by Students)

*Fall 2020*

Mentoring of two undergraduate earth science students, aiding in development of academic, professional, and personal goals.

## **CERTIFICATIONS**

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Geologist in Training (G.I.T.)

*March 2021*

Fundamentals of Geology Exam, ASBOG

## **GRANTS AND AWARDS**

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Perkins Elmer Research Symposium Presentation Award – Honorable Mention (\$500)

*April 2023*

Martin Supplemental Research Fellowship (\$5000)

*February 2023*

AWG Takken Student Research Presentation Travel Award (\$500)

*September 2022*

GSA Cordilleran Section Student Travel Grant (\$350)

*September 2022*

GSA Student Research Grant (\$2500)

*June 2022*

UCSB Earth Science Outstanding Academic Achievement

*June 2019*

UCSB Earth Science Department Field Award (\$2000)

*June 2019*

UCSB Coastal Fund Minor Grant (\$975)

*March 2019*

## **PROFESSIONAL ORGANIZATIONS**

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Association for Women Geoscientists

*July 2022 to Present*

Geological Society of America

*January 2022 to Present*

American Geophysical Union

*January 2022 to Present*

Association of Environmental and Engineering Geologists

*Fall 2019 to June 2021*