

Kevin A. MENDOZA

ADDRESS: 428-B Euclid Ave. Oakland, CA 94610
PHONE: 209-230-9811
EMAIL: kmendoza4@ucmerced.edu
WEBSITE: kevinmendoza.net
LINKEDIN: [linkedin.com/in/mtmendoza](https://www.linkedin.com/in/mtmendoza)

EDUCATION

Ph.D., Geophysics

2017 - PRESENT

UNIVERSITY OF UTAH. SALT LAKE CITY, UT

ADVISORS: Dr. Phillip Wannamaker and Dr. John Bartley

THESIS WORK: Lithospheric Rheology of the Great Basin Tectonic Province Derived from Magnetotelluric Resistivity Structure.

2017 STOKES MEMORIAL FELLOWSHIP RECIPIENT

COMPLETED COURSEWORK:

Inversion Theory, Physical Fields, Global Geophysics, Reviews Earth Science, Seismology, Seismic Imaging, GIS for the Geosciences

Bachelor of Science. Physics and Earth Systems Science Double Major with a Mathematics Emphasis

2009 - 2015

UNIVERSITY OF CALIFORNIA, MERCED. MERCED, CA

Graduated with honors. GPA: 3.69

ADVISORS: Dr. Jay Sharping and Dr. Greg Stock

DEAN'S HONOR LIST (3.5 semester GPA or higher): 2009, 2010, 2011, 2013

CHANCELLORS'S HONOR LIST (Two consecutive Dean's Honor Lists): 2010, 2012, 2014

THESIS: 'A Mass Balance Model of Lyell and Maclure Glaciers in Yosemite National Park'

RESEARCH EXPERIENCE

Geotechnician, Crew Chief

SUMMER 2017

GREEN GEOPHYSICS, BERKELEY CA

Geophysical Field Work: EarthScope ENAM Deployment

Main Objectives and Responsibilities:

- The Mission of EarthScope is to deploy geophysical instruments to study the structure and evolution of the North American continent. Through Green Geophysics, I deployed NIMS-Fluxgate magnetometer stations across the section of the project known as the Eastern North American Margin (**ENAM**).
- As a Crew Chief, I directed and accompanied teams to installation sites using a combination of GPS, compasses, maps, and satellite imagery. My duties required strict adherence to safety standards and production targets. I also worked to secure site permits and restored ground cover disturbed during our operations.

Physics Consultant

2016 - 2017

CALIFORNIA INSTITUTE OF TECHNOLOGY. PASADENA CA

Gharib Research Group. Plasma Physics and Bio-Physics

Main Objectives and Responsibilities:

- Patients diagnosed with the eye condition known as Strabismus often experience social difficulties. The Gharib group is addressing this through a contact lens prosthesis. My duties consisted of developing opacity models to be applied to the contact lens, acting as lead developer on contact-lens pattern software, and editing of the patent application.
- The Gharib group filed a patent for "Toroidal Plasma Systems" (Application: 14/929192) and is working to characterize a long-lived atmospheric pressure plasma produced by the piezoelectric effect. My duties on this project consist of reviewing existing literature on atmospheric pressure plasma phenomena and fact-checking/editing grant application drafts.

Geotechnician, Crew Chief

SUMMER 2015

OREGON STATE UNIVERSITY. CORVALLIS, OR

Geophysical Field Work: Imaging Magma Under St. Helens (iMUSH)

Main Objectives and Responsibilities:

- The Imaging Magma Under St. Helens (**iMUSH**) project aims to characterize the distribution of magma under Mt. St. Helens and Mt. Adams through Seismic and Magnetotelluric (MT) studies. Through Oregon State University I worked to deploy MT stations around the northern Cascade volcanoes Mt. Rainier, Mt. St. Helens, Mt. Adams, and Gilbert Peak. I deployed both Ant6-Zonge Zen MT sites as well as NIMS-Fluxgate magnetometers.

Student Researcher

SUMMER 2014

PURDUE UNIVERSITY AND LOS ALAMOS NATIONAL LABS. SANTA FE, NM

Summer of Applied Geophysical Experience (SAGE)

Tasks:

- Studied the geophysical theory and inversion methods associated with Seismic Reflection, Seismic Refraction, Time-domain Electromagnetics, Gravimetry, Magnetotellurics, Ground-penetrating Radar, and Proton-precession Magnetometry.
- Performed mid-crustal and near-surface geophysical surveys using these techniques within the Rio Grande Rift.
- Worked with peers and mentors to interpret collected data; findings presented at AGU 2014.

Geology Intern

SUMMER 2013

YOSEMITE NATIONAL PARK, DEPARTMENT OF THE INTERIOR. EL PORTAL, CA

Resource Management and Science Division

Tasks:

- Developed MATLAB scripts to validate and correct river stage data affected by freezing environmental conditions.
- Collected turbidity, dissolved organic matter, and pH data on the Merced and Tuolumne Rivers of Yosemite National Park.
- Assisted in collecting data on historical debris flows within Yosemite Valley, surveyed ecologically-sensitive alpine meadows in the Sierra Alpine Region, and mapped mafic ladder dikes within the Tuolumne Intrusive Suite.

PROFESSIONAL EXPERIENCE

In Progress: Intern, Geoscientist

2018

CONOCOPHILLIPS, HOUSTON, TX. APPLIED GEOSCIENCE DEPARTMENT

Objective Summary: Utilize DAS processed data and machine learning workflows to

- Develop automated workflows for DAS Crosswell Fracture Mapping,
- Assess key production drivers from post frac production logging and well interference DAS diagnostics.

Teacher

2016 - 2017

C2 EDUCATION, FREMONT, CA

Responsibilities:

- Provided private instruction in Calculus, Geometry, Algebra, Physics, Chemistry, Biology, Earth Science, English, ACT prep and SAT prep.
- Followed C2 standard teaching practices while customizing assignments to student interest and needs.

Electro-Mechanical Technician

SPRING 2016

OSTERHOUT DESIGN GROUP, SAN FRANCISCO, CA

Responsibilities:

- Followed Standard Operating Procedures to produce sub-assemblies of Osterhout Design Group's R-7 augmented reality glasses.
- Provided feedback to engineers on component quality, failure rates, and design issues.
- Identified previously unknown defects in the GPS antenna. Developed assembly procedures to standardize GPS antenna installation.
- Work relied heavily on fine motor skills, PCB schematic interpretation, spatial problem solving, and interdisciplinary collaboration.

Wilderness Education Ranger

2011 - 2015

YOSEMITE NATIONAL PARK. OFFSITE OFFICE IN MERCED, CA

Responsibilities:

- Provided resources to UC Merced student, staff, and visitors on National Parks, especially "Leave No Trace" ethics, recreational opportunities, and day-trip planning.
- Interacted with thousands of potential UC Merced applicants, providing them information on National Park Service careers, educational programs, and relevant UC Merced majors.
- Developed five presentations that introduced high school students to topics in volcanology, plate tectonics, ore-genesis, and sedimentology resulting in a total of 2,500 student contacts.
- Performed the duties of trip leader to local high school classes in Yosemite National Park.
- Designated Trip lead on 12 multi-day backpack trips with mixed student-staff participants.

Introduction to Geology Assistant

FALL 2014

UNIVERSITY OF CALIFORNIA MERCED. MERCED, CA

Responsibilities:

- Developed 15 lab assignments, assisted teaching discussion sections and midterm study sessions.
- Created a series of extra credit assignments which encouraged students to explore above and beyond curriculum standards.
- Assignment grading and student mentoring.

Yosemite Leadership Program Volunteer Interpreter

SUMMER 2011

YOSEMITE NATIONAL PARK, WAWONA

Responsibilities:

- Provided educational materials to 500 Yosemite National Park visitors per day.
- Hosted nature walks in the Mariposa Grove of Giant Sequoias, necessitating comprehensive knowledge of ecology, park management, and natural history.

CONFERENCE POSTER PRESENTATIONS

A Mass Balance Model of Lyell and Maclure Glaciers in Yosemite National Park

University of California Merced & National Park Service, Yosemite National Park

First Author. American Geophysical Union, Fall Meeting. ID: C33E-0864. San Francisco, CA, 2015

Gravity and Seismic Investigations of the Santo Domingo Basin, Rio Grande Rift, New Mexico

Los Alamos National Laboratory & Purdue University

Co Author. American Geophysical Union, Fall Meeting. ID: T43C-4753. San Francisco, CA, 2014.

RELEVANT PROJECTS

GeoWorld Minecraft Plugin

LANGUAGE: JAVA

PROGRESS: ALPHA RELEASE

[HTTPS://FORUMS.SPONGEPOWERED.ORG/T/WIP-GEOWORLD-FORMERLY-OREVEINS-MASTER-THREAD](https://forums.spongepowered.org/t/wip-geoworld-formerly-oreveins-master-thread)

A Minecraft Java plugin for the SpongeForge API. Plugin leverages dynamic procedural generation to emulate realistic geology. The plugin currently recreates sedimentary sequences with distinct geologic ages, ores based on hydrothermal circulation, an algorithm to emulate rock metamorphism, and igneous rock emplacement. Incorporation of stress-strain models of rock failure and digital elevation model-based surface terrain are planned features.

Ridge Axis Extraction

LANGUAGE: JAVA

A Java script implementing a ridge axis extraction algorithm outlined in YC Chang 2007¹. Decreased runtime by an order of magnitude by limiting path traversal depth.

Landscape Evolution Modeling

LANGUAGE: MATLAB, PYTHON

A Matlab and Python program that simulates landscape erosion via a commonly used waterbot automata approach. Algorithm incorporates fluvial sediment transport, thermal weathering, and hillslope creep.

ADDITIONAL SKILLS

Advanced Technical

Matlab, Python, Java,
Google Earth, Soldering

Intermediate Technical

R, LaTeX, Git, Fortran
PCB Design, Raspberry Pi,
Unix, Flamenco Guitar

Field Skills

Wilderness First Responder Training, GPS &
compass/map based navigation, Survey Team
Management

¹Chang, Yet-Chung, and Gaurav Sinha. "A visual basic program for ridge axis picking on DEM data using the profile-recognition and polygon-breaking algorithm." Computers & Geosciences 33.2 (2007): 229-237.