

Matthew Salinas

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EDUCATION

- 2025- Ph.D. Geological Sciences, University of Southern California
- 2025 B.S. Earth and Environmental Sciences, Highest Honors, University of Michigan

RESEARCH EXPERIENCE

- 2025- Ph.D Student Researcher
Active Tectonics Group, University of Southern California
Advisor: James Dolan
- Evaluation of seismic hazards of blind thrust faults in LA area
 - Building paleoseismic slip rate record of southern San Andrea fault system
- 2023-2025 Student Researcher
Geophysics Group, University of Michigan
Advisor: Yihe Huang
- Extensive use of Python to visualize and analyze spatiotemporal changes in geothermal induced seismicity sequences
 - Evaluation of seismic hazard and dominant physical mechanisms through b-value calculation
 - Compiled research results into Senior thesis, will be submitted to a peer reviewed journal in the coming months
- 2023 Summer Intern
Research Opportunities in Rock Deformation (RORD)
Advisor: Heather Savage
- Helped run a newly installed rapid heating apparatus
 - Spent 10 days participating in field work in Eastern California
 - Presented results of research at AGU23
- 2022-2023 Assistant Researcher
Isotopologue Paleosciences Laboratory (IPL), University of Michigan
Advisor: Naomi Levin
- Maintained high precision mass spectrometers to measure carbonate isotopologues
 - Utilized a vacuum glass line to process soil samples, including samples collected during field research
- 2021-2022 Student Researcher
Undergraduate Research Opportunities Program, University of Michigan
Advisor: Julia Kelson
- GIS-based assessment of Southeast Michigan for the potential occurrence of pedogenic carbonate precipitation

PUBLICATIONS

Poster Presentations

- 2025 *Linking Spatiotemporal b-Value Evolution to Physical Mechanisms Influencing EGS Induced Seismicity*
SSA Annual Meeting
- 2024 *Analysis of Spatiotemporal B-Value Evolution Across Different EGS Induced Seismicity Sequences*
AGU Fall Meeting
- 2024 *Spatiotemporal b-value Evolution in Geothermal Induced Earthquake Sequences*
Michigan Geophysical Union (MGU)
- 2023 *Nature's Kiln: How clay gouge evolves from frictional heating during earthquakes*
AGU Fall Meeting
- 2022 *Mapping Soil Inorganic Carbon in Southern Michigan*
UROP Spring Symposium

Manuscripts

- 2025 Kelson, J.R., Huth, T.E., Andrews, K., Bartleson, M.N., Cerling, T.E., Lixin, J., **Salinas, M.P.**, Levin, N.E., Pedogenic carbonate as a transient soil component in a humid, temperate forest (Michigan, USA), *Quaternary Research*.

TEACHING EXPERIENCE

- 2025 Teaching Assistant
Earthquakes, University of Southern California
Professor: James Dolan
- Leading three lab sections a week for a total of ~45 students
 - Grading of labs, lab quizzes, and exams
- 2025 Undergraduate Instructional Aid
Earth Math, University of Michigan
Professor: Jeroen Ritsema
- Grading weekly homework and offering weekly office hours to students
- 2024 Undergraduate Instructional Aid
Introduction to Earth Science, University of Michigan
Lecturer: Jefferson Yarce
- Working with the Center for Research on Learning & Teaching (CRLT) to develop equity focused teaching practices
 - Creating and modifying quiz and exam questions to better test student knowledge and halt use of GPT technology

DEPARTMENTAL SERVICE

- 2024-2025 Undergraduate Representative
Geo-club, University of Michigan

- Acting as liaison between the undergraduate body and Geo-club executive board within the department of Earth and Environmental Sciences
- Planning and leading yearly Undergraduate camping trip

2022 Camp Counsellor
 Earth Camp, University of Michigan

- Assisted with outreach to highschoolers in the Detroit area, working with two different cohorts of Earth Camp

PROFESSIONAL TRAINING

2024 Foundational Course Initiative Run by CRLT, University of Michigan

- Course Design Institute Cohort 7

2023 Unlearning Racism in Geosciences (URGE), University of Michigan

- Part of Year 3 pod in Geoscience DEI initiative

HONORS AND AWARDS

2024 NAGT/USGS Cooperative Summer Fellowship Program (CSFP) Nominee
 Keith and Inez Dixon Scholarship (\$5000)
 MGU Outstanding Undergraduate Poster
 SURE Support for Honors Thesis (UM Earth - \$3230)
 James B. Angell Scholar
 University Honors

RELEVANT COURSEWORK

University of Southern California -
 Shear Zone Seminar, Tectonic Geomorphology (planned W26)

University of Michigan -
 Mathematics: Calculus 2 & 3, Linear Algebra, Ordinary Differential Equations
 Physics: Physics 1 & 2
 Earth Science: Structural Geology, Field Course, Seismology, Tectonic Surface Processes

COMPUTER SKILLS

Programming Python - Intermediate proficiency (2 years)
 Matlab - Beginner proficiency (< 1 year)
 QGIS - Amateur proficiency (1 year)
 C++ - Amateur proficiency (1 year)
 Java - Amateur proficiency (1 year)