

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

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 with the b-value to explore potential real-time monitoring strategies
- Compiling research into an **Honors Thesis in W25**

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*

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

Manuscripts

2024	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), <i>Quaternary Research</i> .
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TEACHING EXPERIENCE

2024	Undergraduate Instructional Aid Introduction to Earth Science, University of Michigan Lecturer: Jefferson Yarce <ul style="list-style-type: none"> • 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
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DEPARTMENTAL SERVICE

2024-	Undergraduate Representative Geo-club, University of Michigan <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • Course Design Institute Cohort 7
2023	Unlearning Racism in Geosciences (URGE), University of Michigan <ul style="list-style-type: none"> • 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
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RELEVANT COURSEWORK

W25 (planned)	Linear Algebra (Math 214) Earthquake Hazard and Fault Mechanics (Earth 526) Tectonics and Earth Surface Processes (Earth 517)
F24	Data Analysis, Inference, and Estimation (Earth 468) Differential Equations (Math 216)
Su24	Geology Field Course (Earth 440)
W24	Sedimentology (Earth 305) Geophysics - Seismology (Earth 483) Magmatism, Metamorphism, and Plate Tectonics (Earth 352)
F23	Structural Geology (Earth 351)
W23	Geophysics (Earth 314) Physics II - Electricity and Magnetism (Physics 240)
F22	Physics I - Mechanics (Physics 140) Calculus III - Multivariate Calculus (Math 215)

COMPUTER SKILLS

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