

Yiming Zhang
Curriculum Vitae

Institute for Rock Magnetism
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ACADEMIC APPOINTMENT

Postdoctoral Associate, Institute for Rock Magnetism, University of Minnesota, Twin Cities 2024
Postdoctoral Scholar, Earth and Planetary Science, University of California, Berkeley May-August 2024

EDUCATION

Ph.D., Earth and Planetary Science, University of California, Berkeley 2024
B.A, cum laude., Geology, Occidental College 2019

PUBLICATIONS
(* indicates mentored student)

Kahn, L.X.*, **Zhang, Y.**, Finnegan, Seth., Hodgin, E.B., Swanson-Hysell, N.L., (In prep), The stratigraphic record of the arrival of the Sacramento and San Joaquin Rivers to the California coast.

Zhang, Y., Anderson, N.S.*, Mohr, M.T., Nelson, L.L., Macdonald, F.A., Schmitz, M.D., Thurston, O.G., Guenther, W.R., Karlstrom, K.E., and Swanson-Hysell, N.L., (in review), Paleomagnetism of the southwest Laurentia large igneous province and Cardenas Basalt: pulsed magmatism during rapid late Mesoproterozoic plate motion, Submitted to: JGR Solid Earth.

Hodgin., E.B., Swanson-Hysell, N.L., Kylander-Clark, A.R.C., Turner, A.C., Stolper, D.A., Ibarra, D.E., Schmitz, M.D., **Zhang, Y.**, Fairchild, L.M., Fuentes, A.J., (accepted), One billion years of stability in the North American Midcontinent following two-stage Grenvillian structural inversion, Tectonics.

Zhang, Y., Hodgin, E.B., Alemu, T., Pierce, J.*, Fuentes, A., and Swanson-Hysell, N.L., (2024), Tracking Rodinia into the Neoproterozoic: new paleomagnetic constraints from the Jacobsville Formation, Tectonics. <https://doi.org/10.1029/2023TC007866>

Mohr, M.T., Schmitz, M.D., Swanson-Hysell, N.L., Karlstrom, K.E., Macdonald, F.A., Holland, M.E., **Zhang, Y.**, Anderson, N.* (2024), High-Precision U-Pb geochronology links magmatism in the SW Laurentia Large Igneous Province and Midcontinent Rift. Geology. <https://doi.org/10.1130/G51786.1>

Sapienza, F., Gallo, L.S., **Zhang, Y.**, Vaes, Bram., Domeier, Mathew., Swanson-Hysell, N.L., (2023), Quantitative Analysis of Paleomagnetic Sampling Strategies. JGR Solid Earth. <https://doi.org/10.1029/2023jb027211>

Gallo, L. C., Domeier, M., Sapienza, F., Swanson-Hysell, N. L., Vaes, B., **Zhang, Y.**, Arnould, M.,

Eyster, A., Gürer, D., Király, Á., Robert, B., Rolf, T., Shephard, G., and van der Boon, A., (2023), Embracing uncertainty to resolve polar wander: a case study of Cenozoic North America, *Geophysical Research Letters*. <https://doi.org/10.1029/2023GL103436>

Slotznick, S.P., Swanson-Hysell, N.L., **Zhang, Y.**, Clayton, K.E., Wellman, C.H., Tosca, N.J., and Strother, P.K., (2023), Reconstructing the paleoenvironment of an oxygenated Mesoproterozoic shoreline and its record of life, *GSA Bulletin*. <https://doi.org/10.1130/B36634.1>

Pierce, J.*, **Zhang, Y.**, Hodgin, E.B., and Swanson-Hysell, N.L., (2022), Quantifying inclination shallowing and representing flattening uncertainty in sedimentary paleomagnetic poles, *Geochemistry, Geophysics, Geosystems*. <https://doi.org/10.1029/2022GC010682>

Rose, I., **Zhang, Y.**, and Swanson-Hysell, N.L., (2022) Bayesian paleomagnetic Euler pole inversion for paleogeographic reconstruction and analysis, *JGR: Solid Earth*. <https://doi.org/10.1029/2021jb023890>

Zhang, Y., Swanson-Hysell, N.L., Avery, M.S., Fu, R.R., (2022), High geomagnetic field intensity recorded by anorthosite xenoliths requires a strongly powered late Mesoproterozoic geodynamo. *PNAS*. <https://doi.org/10.1073/pnas.2202875119>

Hodgin, E.B., Swanson-Hysell, N.L., DeGraff, J.M., Kylander-Clark, A.R.C., Schmitz, M.D., Turner, A.C., **Zhang, Y.**, Stolper, D.A., (2022), Final inversion of the Midcontinent Rift during the Rigolet Phase of the Grenvillian Orogeny. *Geology*. <https://doi.org/10.1130/G49439.1>

Cromwell, G., **Zhang, Y.**, (2021), New paleointensity data from Aniakchak volcano, Alaska, USA. *Geochemistry, Geophysics, Geosystems*. <https://doi.org/10.1029/2021gc010032>

Zhang, Y., Swanson-Hysell, N.L., Schmitz, M.D., Miller Jr., J.D., and Avery, M.S., (2021), Synchronous emplacement of the anorthosite xenolith-bearing Beaver River diabase and one of the largest lava flows on Earth. *Geochemistry, Geophysics, Geosystems*. <https://doi.org/10.1029/2021GC009909>

Swanson-Hysell, N.L., Avery, M.S., **Zhang, Y.**, Hodgin, E.B., Sherwood, R.J., Apen, F.E., et al., (2021). The paleogeography of Laurentia in its early years: new constraints from the Paleoproterozoic East Central Minnesota batholith. *Tectonics*. <https://doi.org/10.1029/2021TC0067511>

Swanson-Hysell, N.L., Hoaglund, S.A., Crowley, J.L., Schmitz, M.D., **Zhang, Y.**, and Miller Jr., J.D., (2020), Rapid emplacement of massive Duluth Complex intrusions within the Midcontinent Rift. *Geology*. <https://doi.org/10.1130/g47873.1>

Zhang, Y., Pairing paleointensity results with coercivity spectra: providing support for selection criteria. *IRM Quarterly*. Volume 30. Number 1.

TALKS

UC Berkeley EPS exit seminar April 25, 2024
Reconstructing late Proterozoic magmatism, geomagnetic field behavior, and paleogeography using tiny magnets in rocks

2023 AGU Fall Meeting Dec 5 2023
Constraining the position of Arabian-Nubian arc terranes in the lead-up to Snowball Earth glaciation: new constraints from Tonian dikes of Oman

Institute of Geology and Geophysics seminar, Chinese Academy of Science (invited) July 5 2023
New approaches to APWP synthesis and incorporating uncertainties in sedimentary records

2023 IRM conference (invited) June 5-June 8 2023

New approaches to apparent polar wander path development constrain the late Mesoproterozoic assembly of Rodinia

2023 MagIC workshop (invited) Feb 28-Mar 2 2023
New perspectives on Laurentia's Grenville Loop: tracking Rodinia across the Mesoproterozoic to Neoproterozoic boundary

2022 AGU Fall Meeting Dec 12-16 2022
Reconstructing the position of the supercontinent Rodinia in the early Neoproterozoic: new constraints from Laurentia's interior and the Grenville margin

Beijing Paleomagnetism and Geochronology Laboratory (invited, online) Sep 28 2022
High geomagnetic field intensity recorded by anorthosite xenoliths requires a strongly powered late Mesoproterozoic geodynamo

Young CEED 21 Frontiers in quantitative paleogeography (invited, online) Nov 14-20 2021
Bayesian_PEP_inversion: a Bayesian framework for integrating paleomagnetic and geochronologic data into apparent polar wander inversion

Grand Canyon Supergroup Field Forum (invited) April 9-19 2021
The rich paleomagnetic record of the Mesoproterozoic Midcontinent Rift and the Southwestern Laurentia LIP

Cloud Meeting on Paleomagnetism (online) 1/29/2021
Intense magmatic activity and a strong geomagnetic field -a study on the anorthosite xenoliths hosted in the Mesoproterozoic Midcontinent Rift diabase

2020 AGU Conference (online) 12/15/2020
Recovering Mesoproterozoic geomagnetic field intensity using anorthosite xenoliths hosted in Midcontinent Rift diabase

North Central GSA Conference, Duluth, MN (online) 05/18/2019
The rich paleomagnetic records of Proterozoic Midcontinent Rift intrusives: an updated synthesis with a new pole from the Beaver River diabase

Institute for Rock Magnetism, University of Minnesota, Minneapolis, MN (invited) 01/09/2019
Paleomagnetism and rock magnetism on the Beaver River diabase and anorthosite xenoliths therein

TEACHING

Teaching assistant for lab sessions at the IRM summer school June 2024

Graduate student instructor (GSI) for EPS 101 Field Geology and Digital Mapping Fall 2023
Advisor: Matthew Gleeson

Reader for EPS 88 PyEarth: A Python Introduction to Earth Science Spring 2023
Advisor: Nicholas Swanson-Hysell

GSI for EPS 101 Field Geology and Digital Mapping Fall 2022
Advisor: Nicholas Swanson-Hysell

Reader for EPS 115 Stratigraphy and Earth History Spring 2022
Advisor: Eben Blake Hodgins

GSI for EPS 101 Field Geology and Digital Mapping <i>Advisor: Nicholas Swanson-Hysell</i>	Fall 2021
GSI for EPS 50 The Planet Earth <i>Advisor: Daniel Stolper</i>	Spring 2021
Participant in the Graduate Remote Instruction Innovation Fellows Program	Winter 2020
GSI for EPS 101 Field Geology and Digital Mapping <i>Advisor: Nicholas Swanson-Hysell</i>	Fall 2020
Completion of UC Berkeley GSI Conference training	Jan 2020
Completion of required Online Course: Professional Standards and Ethics for GSIs	Fall 2019
Completion of required Pedagogy Course EPS 375	Fall 2019

ORIGINAL GEOLOGICAL FIELD WORK

Sliderock Mountains, Montana [1 week] <i>Extending site-based apparent polar wander path for North America into the Mesozoic with paleomagnetic data from the intrusive rocks of the Sliderock Mountain Volcanics.</i>	2024
Oman [2 weeks] <i>Constraining the position of Arabian-Nubian arc terranes in the lead-up to Snowball Earth glaciation through Tonian dikes of Oman.</i>	2024
Grenville orogen [3 weeks] <i>Pairing paleomagnetic data and thermochronology records to reevaluate the exhumation history of rocks of the Grenvillian Orogeny and recalibrate the Grenville Loop.</i>	2022, 2023
Death Valley, California; Grand Canyon, Arizona [4 weeks] <i>Using paleomagnetism and geochronology to study the temporal and magnetic relationship between the ca. 1.1 Ga South-western Laurentia Large Igneous Province and the Midcontinent Rift.</i>	2021
Pikes Peak, Colorado [2 weeks] <i>Using paleomagnetism and geochronology to study the emplacement history of Pikes Peak batholith and its temporal and magmatic associations with the Midcontinent Rift 1.1 billion years ago.</i>	2020
Midcontinent Rift, Lake Superior Region [11 weeks] <i>Reconstructing the behavior of the Mesoproterozoic geomagnetic field, continental motion during supercontinent assembly and the nature of ancient environments through paleomagnetic studies of the intrusive rocks and sediments of the 1.1 billion-year-old Midcontinent Rift.</i>	2019, 2020, 2021
Central Highland, Iceland [3 weeks] <i>Qualitatively and quantitatively measure the erosion rate of rhyolite soil erosion in Central highlands, Iceland</i>	2019

AWARDS AND FUNDING

AGU GPE Post-doc grant (\$755)	2024
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UC Berkeley graduate student conference travel grant (\$900) <i>2023 Geochronology Gordon Research Conference</i>	2023
UC Berkeley Earth and Planetary Science George C. Louderback Award	2023
2023 AGES3-Grad Geochronology Award (\$8,865) <i>Dating the Grenville Loop using U-Pb apatite thermochronology</i>	2023
2022 GSA Graduate Student Research Grant (\$1,749) <i>Paleomagnetism and thermochronology of the Adirondack Mountains, Grenville Province</i>	2022
UC Berkeley graduate student conference travel grant (\$900) <i>2022 AGU Fall Meeting oral presentation</i>	2022
Hearts to Humanity Eternal (H2H8) Programs (\$10,000) <i>H2H8 Association Graduate Research Grant to Advance Humanity through Science</i>	2022
U.S. Visiting Student Fellowships, Institute for Rock Magnetism <i>Paleomagnetism and rock magnetism study on Mesoproterozoic Beaver Bay Complex and anorthosite xenoliths therein (\$500)</i>	2019
ILSG Student Research Fund, Institute on Lake Superior Geology <i>To study the emplacement history of the Beaver River diabase and the anorthosite xenoliths therein using paleomagnetism (\$500)</i>	2019
Chevron-Xenel Gateway Fellowship, Berkeley International House (\$5,000)	2019
John Parke Young Student Grant, Occidental College <i>Using UAV Data for Monitoring Modern Rofabard Soil Erosion in Central Highlands, Iceland (\$3,500)</i>	2019
Independent research, Occidental College <i>Pseudo-Thellier Paleointensity Measurement on R-N Geomagnetic Polarity Reversal Recorded by Mafic Lava Flows, Anahola, Kauai (\$4,000)</i>	2018
Independent research, Henry Luce Foundation, Nanjing Univeristy <i>Mapping of Ambient Ozone Pollution in China and the Assessment of Its Health Impact on Socio-Economy (\$2,250)</i>	2017

SERVICE

Contributing developer to the open source PmagPy software project (<https://github.com/PmagPy/PmagPy>).

Reviewer for the following journals

Earth and Planetary Science Letters
Geochemistry, Geophysics, Geosystems
Science Bulletin
GEOLOGY

MEMBERSHIPS

American Geophysical Union (AGU)
Geological Society of America (GSA)