

Heidi N. Krauss

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Education

PhD	Michigan State University Geology PhD Advisor: Dr. Allen McNamara Cumulative GPA: 4.0	2021 - Present
BS	University of Minnesota Duluth Geology Major Geographic Information Sciences Minor Cumulative GPA: 3.741	May 2021

Research Experience

Geodynamics Graduate Research Assistant 2022-Present

- Created computer code to automatically analyze convection model outputs
- Created temperature, composition, and velocity graphs and images from convection model data
- Independently learned how to run programs on the Michigan State University supercomputer
- Worked with Dr. Allen McNamara

Experimental Petrology Undergraduate Researcher 2019-2021

- Undergraduate Research Opportunities Program (UROP) project focused on first-row transition element partitioning between sodium end-member pyroxene and coexisting silicate melt in high-pressure piston cylinder experiments analyzed by scanning electron microscope
- Worked with Dr. Fred Davis

Independent Study Project on Archean Turbidites 2019-2020

- Focused on petrographic descriptions and chemical analysis using x-ray diffraction
- Worked with Dr. Latisha Bergman, Dr. Vicki Hansen, and Dr. John Goodge

Hydrology Field Assistant Summer 2019

- Aided graduate students in field work in the Knife River watershed
- Collected water samples and took detailed field notes
- Worked for Dr. Karen Gran

Experimental Geomorphology Research Assistant Summer 2019

- Assisted with setting up and resetting basin models to understand how rivers formed in low slope environments
- Worked for Brian Sockness and Dr. Karen Gran

Petrology Research Assistant 2018-2019

- Created a Google spreadsheet to catalog and find over 1000 rock samples and thin sections from his Antarctica collection
- Analyzed grain sizes and shapes using Adobe Photoshop
- Acquired and assembled online scientific papers
- Worked for Dr. John Goodge

Teaching

Graduate Teaching Assistant for Global Tectonics and Earth's Structure (GLG 401) Fall 2021, 2022, and 2023

- Prepared and taught all lab materials
- Assisted students understanding of outcrops in the field
- Established field trip safety protocol
- Coordinated student travel, room assignments, and lunch plans for class field trip
- Graded labs and determined final lab grades
- Maintained class D2L page
- Held office hours to help students understand material

- Graded labs and homework assignments and worked with the instructor to determine grades
- Maintained a class Canvas page
- Created zoom calls for class meetings and office hours
- Held office hours to help students understand material

Meeting Abstracts

American Geophysical Union Annual Fall Meeting December 2023

Krauss, Heidi N., and McNamara, Allen K., Superpiles: a low density explanation for LLSVPs, Submitted to the December 2023 Fall AGU Meeting, 15 December, 2023. Poster

Gordon Research Conference: Interior of the Earth June 2023

Krauss, Heidi N., and McNamara, Allen K., The role of initial condition in controlling the vertical stability of deep mantle compositional reservoirs, Submitted to the June 2023 Gordon Research Conference: Interior of the Earth, 18, June, 2023. Talk

Krauss, Heidi N., and McNamara, Allen K., Impact of Thermal Initial Condition on LLSVP Morphology, Submitted to the 2023 Gordon Research Conference: Interior of the Earth, 19 and 20, June 2023. Poster

North-Central Geological Society of America Conference Spring 2023

Krauss, Heidi N., and McNamara, Allen K., The Role of Initial Conditions in Controlling the Vertical Stability of Deep Mantle Compositional Reservoirs, Submitted to the 2023 North-Central Geological Society of America Conference, 4, May, 2023. Talk

Michigan State University Earth and Environmental Sciences Student Research Symposium March 2023

Krauss, Heidi N., and McNamara, Allen K., A Different Kind of Superplume, Submitted to the 2023 MSU Earth and Environmental Sciences Student Research Symposium, 10, March 2023. Talk

American Geophysical Union Annual Fall Meeting December 2022

Krauss, Heidi N., and McNamara, Allen K., The role of initial condition in controlling the vertical stability of deep mantle compositional reservoirs, Submitted to the December 2022 Fall AGU Meeting, 13 December, 2022. Poster

Michigan State University Earth and Environmental Sciences Student Research Symposium March 2022

Krauss, Heidi N., The history of Earth geodynamics, Submitted to the March 2022 MSU Earth and Environmental Sciences Student Research Symposium, 18 March, 2022. Talk

June 2021 Meeting of the American Institute of Professional Geologists Minnesota Section

Krauss, Heidi N., and Davis, Fred A., Experimental investigation of mantle heterogeneity using partitioning of first-row transition elements between clinopyroxene and melt with varying jadeite components, Submitted at the June 2021 meeting of the American Institute of Professional Geologists Minnesota Section, 1 June, 2021. Talk

University of Minnesota Earth Student Research Symposium April 2021

Krauss, Heidi N., and Davis, Fred A., Experimental investigation of mantle heterogeneity using partitioning of first-row transition elements between clinopyroxene and melt with varying jadeite components, Submitted to the April 2021 UMN Earth SRS Symposium, 1-2 April, 2021. Talk

North-Central Geological Society of America Conference Spring 2020

Krauss, Heidi N., and Davis, Fred A., Experimental investigation of mantle heterogeneity using partitioning of first-row transition elements between clinopyroxene and melt with varying jadeite components, Submitted at 2020 North-Central Conference, GSA, Duluth, Minn., 17-20 May, 2020.

Boor, Elizabeth, Carpenter, Logan, **Krauss, Heidi N.**, Wojtowicz, Emily, Brengman, Latisha Ashley, Goodge, John W. and Hansen, Vicki L., Origin of neoproterozoic metasedimentary rocks near pike lake, vermilion district, northeast minnesota, Submitted at 2020 North-Central Conference, GSA, Duluth, Minn., 17-20 May, 2020.

Honors and Awards

Michigan State University Earth and Environmental Sciences Department Graduate Student Symposium Outstanding Presentation	2023
Alumni Graduate Student Travel Award from Michigan State University Department of Earth and Environmental Sciences	2022
Council of Graduate Students at Michigan State University Perfect Attendance	2022
Outstanding Geology Senior Award from the University of Minnesota Duluth Department of Earth and Environmental Science	2021
American Institute of Professional Geologists Minnesota Section Student Grant	2021
Barr Engineering Outstanding Geology Junior Award from the University of Minnesota Duluth Department of Earth and Environmental Science	2020
Charlie Matsch Field Camp Scholarship from the University of Minnesota Duluth Department of Earth and Environmental Science	2020
Heller Field Camp Scholarship from the University of Minnesota Duluth Department of Earth and Environmental Science	2020
Tools of the Trade Award from the University of Minnesota Duluth Department of Earth and Environmental Science	2019
Estwing Award from the University of Minnesota Duluth Department of Earth and Environmental Science	2018
Cleveland-Cliffs, Inc. Scholarship	2018

Service

Vice President of the Michigan State University Earth and Environmental Sciences Graduate Student Organization	2022-Present
Michigan State University Earth and Environmental Sciences Graduate Student Organization Diversity Equity and Inclusion Officer	2022-Present
Unlearning Racism in the Geosciences Michigan State University Pod Member	2022-Present

Great IDEA (Inclusion, Diversity, Equity, and Accessibility) Fellowship - Creating an Educational Field Resource	Spring 2023
Michigan State University Science Festival “Let’s Grow Bismuth Crystals”	Spring 2023
Michigan State University Science Festival “What’s in the Box?”	Spring 2023
Graduate Student Representative for the Women’s Advisory Committee to the Vice President of Student Affairs at Michigan State University	2022-2023
Acquired Left-Handed Desks for Classrooms in the Natural Sciences Building at Michigan State University	Fall 2022
Michigan State University Earth and Environmental Sciences Graduate Student Organization Student Representative for the Council of Graduate Students	2021-2022
Michigan State University Science Festival “How Rocks Flow like Water”	Spring 2022
Facilitator for the College of Natural Sciences Listening Sessions	Spring 2022
Earth and Environmental Sciences Department Representatives for the Swenson College of Science and Engineering College Fees Committee at the University of Minnesota Duluth	2018-2021
Substitute TA for undergraduate Petrology class (GEOL 2312) for Dr. John Goodge	Fall 2019
Co-President of the University of Minnesota Duluth Earth Science Club	2019-2020
President of the University of Minnesota Duluth Geology Club	2018-2019
Station Leader for STEM Day representing the University of Minnesota Duluth Earth and Environmental Sciences Department	2019