

GRACE MCELLISTREM

mcell035@d.umn.edu | 225 Academy Street, Newark DE, 19716

Education

University of Delaware 2025 - Present

M.S. Geological Sciences

University of Minnesota Duluth 2021 - 2025

B.S. Geological Sciences, Minor: Environmental Sciences

Research Experience

Undergraduate Research Opportunities Program (UROP) 2024 - 2025

Department of Earth and Environmental Sciences, University of Minnesota Duluth

"Microstructural Fracture Orientation in Rocks Surrounding the Douglas Fault Indicating Earthquake Rupture Direction"

- Collected field data and oriented hand samples
- Utilized a rock saw to make billets for the creation of thin sections
- Optical thin section analysis
- Programmed rose diagrams using R

Research Assistant 2024 – 2025

Department of Earth and Environmental Sciences, University of Minnesota Duluth

- Basalt Fracture Strength – Assistance with H. Gerfen, a graduate student whose project focuses on the physical qualities of basalt flows around Duluth. Experience using the Schmidt Hammer, locating and orienting samples for fracture core analysis.
- River Transects – Assistance with B. Bugno, a graduate student whose project focuses on the effectiveness of river restoration projects around Duluth. Experience using a stadia rod and eye level.

Geology Field Studies 2024

Department of Earth and Environmental Sciences, University of Minnesota Duluth

- Analyzed LIDAR data
- Learned efficient field traversing techniques
- Collected field data and interpreted landscapes
- Created maps, cross sectional diagrams, stratigraphic columns, comparisons from analytical rock core data and regional history summaries

Conference Presentations

"Microfracture Orientation in the Douglas Fault Damage Zone: Implications for Past Seismicity and Earthquake Rupture Directivity" UMD Undergraduate Research Symposium. Duluth, MN 2025

"Architecture of the Douglas Fault damage zone, northwest Wisconsin" Institute of Lake Superior Geology. Mt. Iron, MN 2025

Professional Experience

MSA Professional Services Inc., Duluth MN

Environmental Consultant Intern

2023 – 2024

- Collected and packaged contaminated soil samples for analysis of GROs, VOCs, and PVOCS
- Collected and packaged contaminated water samples for analysis of contaminants
- Utilized ArcGIS software and collected field data surrounding river transects, road and culvert quality
- Crafted reports surrounding groundwater and soil testing, UST removals, and landfill containment sites
- Increased profit margin of ~\$100,000
- Oversaw municipal construction projects for documentation of safe practice

Technical Skills

- Experience with programming languages, geographical and mathematical packages: Python, R, Excel, HTML, CSS, MATLAB, ArcGIS
- Developed control-volume, finite-difference groundwater flow models
- Experience collecting oriented field samples
- A2 French Proficiency (ILA)

Leadership Positions

UMD North Shore Climbers – Outdoor Climbing Coordinator

- Coordinated with other leaders and organized safe and educational outdoor climbing events
- Communicated with the university for event planning
- Educated new climbers.

University of Minnesota Duluth Earth and Environmental Sciences – Social Media Coordinator

- Coordinated with university faculty to publish specials on their research and documenting exciting lab work
- Highlighting graduate student's research
- Engaging and documenting the department's involvement with public events and guest seminars