



RESEARCHER 4 GEOPHYSICIST/GEOLOGIST – MN GEOLOGICAL SURVEY

Job ID: 341109

Special Notice for COVID-19

The UMN has suspended hiring for most positions. However, we will continue hiring for positions critical to the University's mission and operations at this time. **Applications are being accepted for this position** and you are encouraged to apply. In-person interviews are suspended indefinitely and will be replaced by interviews in a virtual format. Thank you for your continued interest in working at the University of Minnesota.

Qualifications

Minimum/Essential Qualifications:

- Master's degree in geophysics and two years of related experience, or a combination of education and work experience in geophysics or earth sciences totaling at least eight years. Related experience could include: undergraduate thesis, internship(s), professional work experience, and/or graduate school coursework experience.
- Experience with gravity and magnetic methods, as well as familiarity with passive seismic methods
- A valid driver's license
- A broad background in geology. A Bachelor's degree in geology or earth sciences is preferred.
- Availability for work-related travel within Minnesota.
- Willingness to learn new geological field, lab, and office skills
- Ability to work both independently and as part of a multidisciplinary team

Preferred Qualifications (the applicant does not need to meet these qualifications):

- A Ph.D. in geophysics, or combined education and work experience in geophysics and geology totaling greater than eight years
- Familiarity with the acquisition and reduction of gravity and magnetic data, as it relates to near-surface geophysics and geologic mapping within the Minnesota Geological Survey
- Experience with gravity and magnetic processing methods, including analysis of aeromagnetic data along with forward and inverse modeling.
- Experience interpreting geologic features such as faults, intrusions, etc. from processed aeromagnetic and gravity maps
- Previous experience with exploration seismology, with emphasis on passive seismic methods (HVSr) as applied to near-surface geology. The individual will be expected to

continue the ongoing research effort at MGS for developing and using passive methods to determine depth to bedrock across Minnesota.

- A background in geophysics that is sufficiently broad that the individual can effectively communicate with geologists and geophysicists of varying specialties.
- Ability to utilize and interpret a variety of different geologic datasets to create geologic maps
- Previous field experience, which may include field camp, independent research projects, work experiences, etc.
- Familiarity with Geographic Information Systems (GIS) and graphic software (e.g., Adobe Illustrator, Photoshop, etc.)
- Experience using Grilla (MoHo) for passive seismic analysis, Oasis Montaj (GeoSoft) and other geophysical modeling and analysis software for working with point and raster geophysics data.
- Effective writing and verbal communication skills
- Familiarity with navigational tools such as a GPS, compass, and topographic maps

About the Job

The MGS is seeking a highly motivated individual to bring their unique experience and perspective to our team. The main objective of this position is to use geophysics to contribute to geologic mapping of the Precambrian bedrock of Minnesota, and to assist in determining the thickness and composition of the Quaternary deposits across the state. Other duties may include assisting with geophysical studies associated with Paleozoic geology and hydrogeology. This position focuses on collecting, processing, and interpreting geophysical data in support of three-dimensional geologic mapping, because in many situations geophysics may provide the only means of investigating geology at depth. The individual will be expected to assist in producing geologic maps and accompanying products to convey information to various public entities, and is expected to develop technical field and office skills as a map author. The applicant is expected to have a solid foundation in geosciences and geophysics. This is a continuing position, pending a one-year probationary period review. The individual will work independently as well as with a multidisciplinary team depending on the task. The duties of the Researcher 4 may include but are not limited to the below list. Previous experience with all listed field or office duties is not required.

Field-based tasks (25%): (*Fieldwork is project-dependent, and can be scheduled around an individual's needs in most instances. Fieldwork is typically done in teams of two to ensure safety. Field safety training is provided.)

- 5% Acquire geophysical data at scales ranging from site-specific to statewide
- 5% Maintain proper field methods to assure the quality of the acquired geophysical data. This includes calibrations, base checks, equipment maintenance, and knowing the proper equipment usage to prevent breakage.
- 5% Drive a variety of vehicles, occasionally for long distances and for 4+ hours
- 5% Direct the work of field technicians for field-based data collection tasks
- 5% Conduct rock property measurements (usually density and magnetization)

Office-based tasks (75%):

- 20% Enter field data into databases utilizing a variety of software programs
- 20% Incorporate geophysical interpretations into Geographic Information Systems (GIS)

- 12% Design and construct map components, including cross-sections, and relevant figures, using Adobe Suite products
- 8% Interpret rock composition using gravity, magnetic, or other geophysical data
- 5% Assist in selecting drilling sites
- 5% Assist in locating sites for conventional seismic soundings (refraction and reflection), in cooperation with the Minnesota Department of Natural resources
- 5% Direct the work of field technicians for office-based tasks

About the Department

The Minnesota Geological Survey is a research and service arm of the Newton Horace Winchell School of Earth Sciences at the University of Minnesota. It investigates the geology of Minnesota and provides basic public information on the geology of the state. The Survey works with state, county, and regional offices to set up geologic data bases and provide technical guidance for water resource planning, land management and mineral exploration policy, energy system development, and other planning and resource management activities.

We are an off-campus location on Territorial Road., St. Paul (near Hwy 280 and University Ave.)

The Minnesota Geological Survey (MGS) serves the people of Minnesota by providing the geological information needed to support stewardship of water, land, and mineral resources. The MGS is an equal opportunity employer and is actively committed to making real change in diverse recruitment, hiring, and advancement within our community. The Diversity, Equity, and Inclusion committee at the MGS is working to develop and continually improve an inclusive and equitable climate in the workplace. Applications from members of historically underrepresented groups are especially encouraged to apply.

The University of Minnesota and the MGS value diverse identities and experiences, and honor disability as an important aspect of human diversity. The Disability Resource Center (DRC) works in partnership with students, faculty, and staff of the University to eliminate or minimize barriers and facilitate inclusion in the workplace. The MGS is committed to creating a pathway for employees with disabilities to be successful through accessibility and accommodations for all job duties.

How To Apply

Applications must be submitted online. To be considered for this position, please click the Apply button and follow the instructions. You will be given the opportunity to complete an online application for the position and attach a cover letter and resume.

Additional documents may be attached after application by accessing your "My Job Applications" page and uploading documents in the "My Cover Letters and Attachments" section.

To request an accommodation during the application process, please e-mail employ@umn.edu or call (612) 624-UOHR (8647).

Diversity

The University recognizes and values the importance of diversity and inclusion in enriching the employment experience of its employees and in supporting the academic mission. The University is committed to attracting and retaining employees with varying identities and backgrounds.

The University of Minnesota provides equal access to and opportunity in its programs, facilities, and employment without regard to race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, or gender expression. To learn more about diversity at the U: <http://diversity.umn.edu>.

Background Check Information

Any offer of employment is contingent upon the successful completion of a background check. Our presumption is that prospective employees are eligible to work here. Criminal convictions do not automatically disqualify finalists from employment.