



## ***HIRING 3 GEOLOGY AND GEOPHYSICS ASSISTANTS***

The Washington Geological Survey is looking for qualified applicants for some exciting geological and geophysical projects that will start in the next few months. These positions start in July, are 6 months in duration, and are a great opportunity to gain both applied and research experience.

### **PROJECT 1: GEOLOGIC MAP OF THE HARTS LAKE AND BALD HILL QUADRANGLES (SW WASHINGTON)**

**Location**—Based in Olympia; all field work will be daytrips from Olympia.

**Summary**—This project will map and characterize a potentially active fault zone that strikes beneath the state capital (Olympia structure), explore the age and character of Tacoma Basin fill, improve understanding of Pleistocene stratigraphy, expand documentation and understanding of abundant lahar deposits and associated hazards along the Nisqually River, refine the timing of glacial advance and recession (including the history of large outburst floods), and enhance understanding of the evolution of the ancestral Cascade volcanic arc and its relation to the accretion of Siletzia.

### **PROJECT 2: GEOLOGIC MAP OF THE KITTITAS AND EAST KITTITAS QUADRANGLES (CENTRAL WASHINGTON)**

**Location**—Based out of Ellensburg; all field work will be daytrips from Ellensburg.

**Summary**—This project is in the Kittitas Valley near Ellensburg in central Washington, which is an actively deforming fault- and fold-bound basin east of the Cascade Range. This is the 4th year of a multi-year project that will map and assess newly identified lidar scarps and known existing faults, provide detailed geologic mapping adjacent to ongoing USGS paleoseismic investigations, document the extent and character of landslides and landslide-prone features such as glacial deposits and dipping bedrock-sediment contacts, refine ages of Neogene stratigraphy to better understand the rate and style of deformation in the Yakima Fold and Thrust Belt (YFTB), build and update 2D/3D models of the geology and deformation history for Kittitas Valley, characterize the poorly understood tectonic transition from the YFTB west across the Cascade Range and into the active forearc fault system, collect new data for an updated 3D hydrogeologic model to aid in understanding water resources in both deep and shallow aquifers.

### **PROJECT 3: GEOPHYSICAL DATA COLLECTION FOR PROJECTS 1 AND 2**

**Location**—Based out of Olympia, with field work in Ellensburg, near Enumclaw, and near Olympia; overnight stays (hotel) required for work in Ellensburg and Enumclaw; day trips for work near Olympia.

**Summary**—This position will work with our lead field geophysicist to collect gravity and physical-property (density and magnetic susceptibility) data in support of projects 1 and 2. This mostly involves making a daily loop from a base station and collecting precise measurements of the strength of the gravity field. At the end of the field season these data are processed and used to develop new isostatic gravity maps of the study areas which help in identifying concealed faults or other lithologic boundaries. Hand samples of representative rock types are also collected during the summer and their density and magnetic susceptibility are measured in our Olympia lab. We then combine the new gravity data, the hand-sample data, and existing aeromagnetic survey data to develop forward models of subsurface geology that help to constrain geologic cross sections.

## **TO APPLY:**

- Applications are due no later than Sunday, **May 29**.
- Email required material to: Alex Steely, Geologic Mapping Supervisor, Washington Geological Survey; (360)-902-1471; [alex.steely@dnr.wa.gov](mailto:alex.steely@dnr.wa.gov)
- Ensure you meet the required qualifications (see below)
- Provide a resume (including GPA), cover letter, list of completed geology classes and grades, and the names of three references. Incomplete applications will not be considered.
- *Please indicate the position(s) for which you would like to be considered.*
- Telephone interviews will be conducted in early June; work starts in July, but can vary depending on your availability.

## **REQUIRED QUALIFICATIONS:**

- Bachelor's degree in geology or closely related discipline, including coursework on geologic mapping techniques and (or) field methods
- Experience or interest in driving on gravel forest roads with varying conditions, including the use of 4-wheel drive
- Experience or interest in using maps (paper and digital) to navigate marked and unmarked road networks

## **PREFERRED/DESIRED EDUCATION, EXPERIENCE, AND COMPETENCIES:**

- Master's degree in geology or closely related discipline OR 2 years of professional geology experience
- Experience using ArcPro and Field Maps or Collector
- Geologic knowledge of Washington State
- Experience collecting, processing, or interpreting geophysical data
- Ability to describe the basic lithology of sedimentary and igneous rocks
- Ability to pleasantly interact with the public

## **WORKING CONDITIONS AND SCHEDULE**

- Field work occurs July through late October and may require work in adverse weather (heat, rain, smoke) while hiking up to 10 miles on uneven and steep terrain.
- Driving is a big component of the job, with 50+ miles daily driving during data collection/mapping efforts and the potential for occasional overnight stays. Vehicles are supplied by the WGS.
- You will use a laptop, tablet, mobile phone, and standard geologic field equipment (rock hammer, pickaxe, sledge hammer, shovel, hand lens). Geophysical equipment includes gravimeters and magnetometers.
- Four 10-hour days per week is a typical schedule.

## **COMPENSATION**

- \$3,530/mo salary; per diem and accommodation during periods of travel

## **POSITIONS AND GENERAL JOB DUTIES**

- **2 geologic mapping assistants**

- (75%) Conducts independent and team-based geologic mapping, including making detailed descriptions of rocks, deposits, and geologic features encountered. Makes deductions and interpretations from new and existing geologic data. Continuously and accurately locates themselves in the field using a variety of methods (lidar, topography, GPS, compass, etc). Independently, or as a member of a mapping team, navigates forest roads, trails, and terrain. Uses an ArcGIS Online database for field-data collection. Compiles, reviews, and synthesizes existing and newly collected geologic information to develop geologic unit descriptions, interpret the geologic setting, and deduce geologic structures.
- (25%) Analyzes geologic data for the project (rock descriptions, outcrop patterns, geologic structures, compiled data as applicable) and deduces and interprets geologic patterns. May compile and interpret subsurface borings, wells, and other drilling records to understand subsurface geology. Independently, and as a member of an interdisciplinary team, may develop 2D cross sections of subsurface geology. Collates, prepares, and makes recommendations for which samples to send for laboratory analysis. Analyzes thin-sections to determine modal abundances of minerals and deduce provenance. May also complete miscellaneous tasks to meet project goals. Includes use of GIS, Microsoft Word, Microsoft Excel, and Adobe Illustrator software. May help to develop technical geologic writing, including unit descriptions, interpretive text, and appendix materials.

- **1 geophysical assistant**

- (75%) Conducts independent and team-based geophysical data collection. Ensures data are collected in accordance with best practices and are stored in a logical format. Continuously and accurately locates themselves in the field using a variety of methods (lidar, topography, GPS, compass, etc.). Independently, or as a member of a team, navigates forest roads, trails, and terrain. Uses an ArcGIS Online database for field-data collection. Collects and describe representative rock samples at locations deemed essential by the project staff.
- (25%) Performs quality assurance checks and advanced geophysical processing on new data using GIS, spreadsheets, and other geophysical software. Compiles and interprets subsurface borings, wells, and other drilling records to understand subsurface geologic constraints and geophysical properties. Independently, and as a member of an interdisciplinary team, develops subsurface models of geology and geophysical properties.