

Kristofer Tyler Hornsby, PG

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Education

M.Sc., Geology, Portland State University, Spring 2017, 3.95 GPA

B.S., Geological Sciences, University of Oregon, Spring 2012, Academic Honors

Work Experience

Geologist, Shannon & Wilson, Inc., CO

February 2018-Present

Staff geologist performing tasks related to geological engineering projects. Duties include, logging and sampling drill data for subsurface analysis of soil and rock engineering properties, coordinating with engineers, drillers, and construction personal, monitoring groundwater fluctuations, monitoring inclinometer instruments, conducting geomorphic surface analysis using ArcGIS and Structure From Motion software, and generating maps and technical reports.

Staff Geologist, Lettis Consultants International, CA

September 2017- February 2018

Staff geologist at the Oroville Spillway Emergency Recovery Project. Duties include supervising geotechnical engineering activities for anchor installation and the construction of a secant wall, logging drill data and determining the depth of weathered bedrock, fine detail structural mapping, monitoring anchor installations, developing maps and Agisoft mosaics, investigating landslides, and writing technical reports. Logged drill core to analyze bedrock weathering, rock strength, and discontinuity data. Additionally, I determined packer testing depths, and final borehole depths for well installations. I served as a crew leader supervising a team of 3-4 entry-level geologists.

Summer Geological Research Intern, Bureau of Reclamation, CO

Summer 2017

Researched active tectonic systems in the western United States during a 12 week internship involving both field work and lab analysis. Mapped tectonic geomorphic features using lidar, aerial photography, and topographic maps. Conducted field mapping of Quaternary age deposits and structural features and collected geophysical data including downhole seismic velocity/refraction and electric resistivity surveys. Excavated and analyzed paleoseismic trench sites and soil pits. Compiled new and existing data into technical reports.

Graduate Research Assistant, Portland State University, OR

2016-2017

Conducted research on active fault systems using lidar and balloon-based Structure from Motion photogrammetry, as well as field mapping. Excavated, cleaned, gridded, photographed, logged, and collected AMS radiocarbon and OSL samples from several paleoseismic trench sites and stream bank exposures. Assisted with active-source seismic surveys, prepared field equipment, and supported field logistics.

Graduate Teaching Assistant, Portland State University, OR

2015-2016

Planned, organized, and instructed three academic terms of undergraduate geology labs, including upper level structural geology and tectonics, surficial processes, and introductory general geology labs. Assisted with guiding department field trips.

Exploration Geologist, Pathfinder Mineral Services, AK

2012-2015

Collected geochemical, structural, and lithological data, generated isopach maps, geologic maps, and cross sections to better understand structural complexities and ore grade distribution in schist and granite hosted mesothermal style gold deposits of the Yukon Tanana Uplands. Logged the lithologies, structures, mineralization and alteration of drill core, researched reduced intrusion related gold systems, organized field reconnaissance mapping and soil and stream

silt sampling/prospecting programs. (Three field seasons (4 months each), 1 as crew leader, with 1-2 months of data analysis in the winter months). I logged drill core data for four ~40,000 foot drill core programs and was responsible for ~ 6,000 feet of core per season (~24,000 feet logged).

Lead Geologist, Gypsum Resource Materials, NV 2014-2015
Supervised a 15 month gypsum exploration program at the Blue Diamond Hill Mine, as well oversaw production drilling, grade control, and mine planning. Logged borehole data, conducted lab analysis of samples, created maps, cross sections, and 3-D models with modeling software to create a complete reserve evaluation. Communicated with other geologists, engineers, drillers, and mine employees to create a long-term mine plan. I also conducted geological studies and ore evaluations on prospective mine acquisitions, assisted with permitting, safety inspections, and reclamation plans. Logged and tested drill core data for gypsum purity and anhydrite contamination, as well as for engineering properties.

Geologist, Cornforth Consultants, OR Summer 2014
Worked with a geotechnical engineering firm on a landslide mitigation project in the coast range of Oregon. Logged drill data for anchor installation, inspected and helped install anchors, and monitored ground movement and groundwater with geotechnical instruments. (Temporary hire for the project)

GIS Mapping Technician, Global Mapping Solutions, OR 2013-2014
Collected data and created digital maps of electrical utilities in Lane County using Trimble and GIS software. (Temporary Contract)

Volunteer Experience

Paleoseismic Research Volunteer, USGS 2016-2017
Assisted (Dr. Scott Bennett) with a paleoseismic analysis of the Canyon River Fault, WA. Logged and mapped sedimentary units at two trench sites, collected samples for AMS radiocarbon and optically stimulated luminescence (OSL) dating, described stratigraphic units, and surveyed trench dimensions using a Trimble differential GPS unit. Currently volunteering with the USGS Hazards Center in Golden, Colorado in paleoseismic trenches.

Field Research Assistant, University of Oregon, Department of Geology Fall 2011
Assisted with a geological mapping project in the Black Mountain region of Death Valley National Park with a graduate student. Work was focused on mapping and interpreting complex structural features and stratigraphy.

Restoration Volunteer, Nearby Nature, OR 2011-2012
Restored riparian habitat along the Willamette River through invasive species removal and native plant propagation. Instructed and led a group of 25 college volunteers on habitat restoration.

Related Skills

Software: ArcGIS, gINT, QGIS, Agisoft Photoscan, CloudCompare, LAStools, MATLAB, R, Microsoft Office, Rockware, GoogleEarth, Oxford Oxcals, Adobe Illustrator, Photoshop, Oxford EDS Aztec, QT Modeler, JMP, AutoCAD.

Wilderness first aid, working around helicopters, drilling rigs, and heavy equipment, mine safety and first aid, living in remote locations and operating a field camp.

Thin section analysis, photogrammetry, Structure from Motion, operating a terrestrial laser scanner, drill logging, paleoseismic trenching, logging soft sediments, engineering anchor installation, geotechnical core logging, and beginner level total station experience.

Academic Awards, Grants, and Scholarships

Outstanding Graduate Award, Portland State University, 2017
Best overall poster, AEG student night, Portland chapter, 2017
Graduate Research Grant, Geological Society of America, 2016
Travel and Lodging Grant, UNAVCO/Open Topography, Imaging and Analyzing Active Faults with High Resolution Topography, 2016
Dean's List, University of Oregon, 2010, 2011
Dean's Scholarship, University of Oregon, 2007
Amity High School Valedictorian, 2007

Certifications and Registrations

Professional Geologist, Colorado (per §34-1-201, CO Revised Statutes), 2017	
40 Hour HAZWOPER	Expiration: 02/23/19
First Aid/CPR/AED	Expiration: 03/01/20
Railroad Education	Expiration: 02/29/19
RR Safety Training-Contractor, BNSF/UPRR	Expiration: 02/29/19
Certified Diver (PADI)	

Professional Memberships

Seismological Society of America	2016-Present
American Geophysical Union	2016-Present
Geological Society of America	2015-Present
Associated of Environmental and Engineering Geologist	2015-Present
Northwest Mining Association	2013-2015

Related Coursework

Topics in lidar and landscape evolution	Hillslope Geomorphology
Mountain Building	Hydrology
Earthquake Geology	Geophysics
Tectonic Geomorphology	Surface Hydrology
GIS for the Natural Sciences	Geology of Ore Deposits
Statistics and Data Analysis	Oceanography
Field Camp (6 weeks)	Scanning Electron Microscopy
Geological Hazards	Paleo-Environments (Isotope Geology)
Advanced Structural Geology	Soil Mechanics

Additional Experience

Member of volunteer and logistics committee, Moonlight 5, OR 2012
Volunteered with a group of six other students to organize a 5K running event in Eugene, OR. Tasks include recruiting volunteers, planning and organizing race logistics, assisting with budget planning, and promoting the event. Proceeds from the race (~\$12,000) were donated to the advanced primary stroke center at Sacred Heart Medical Center.

Scientific Abstracts and Publications

Hornsby, K.T., Streig, A.R., Bennett, S.E.K., Chang, J.C., 2017, *Constraining the Holocene Extent of the Meers Fault, Oklahoma using High-Resolution Topography and Paleoseismic Trenching*, SSA Annual Meeting.

Hornsby, K.T., Streig, A.R., Bennett, S.E.K., Chang, J.C., Woelfel, I.E., 2016, *Constraining the Rupture Length and Timing of the Northwest Extension of the Meers Fault, Oklahoma using High Resolution Topographic and Age Data*, AGU Fall Meeting, EP11B-0994.

Bennett, S.E.K., Streig, A.R., Chang, J.C., **Hornsby, K.T.**, Woelfel, I.E., Andrews, R.D., Briggs, R.W., McNamara, D.E., Williams, R.A., and Wald, D.J., 2016, *Rapid Field Response to the 3 September 2016 M5.8 Earthquake Near Pawnee, Oklahoma: Summary of Structural Damage and Liquefaction Observations*, AGU Fall Meeting, S44C-01.

Hornsby et al, 2018, *Constraining the Holocene Extent of the Northwest Meers Fault, Oklahoma with High Resolution Topography and Paleoseismology*. (BSSA-IN REVIEW)/

References Available by Request

Dr. Ashley Streig, PSU, streig@pdx.edu

Dr. Scott Bennett, USGS, sekbennett@usgs.gov

Dr. Kenneth Cruikshank, PSU, ikc@pdx.edu

Jason Bressler, Pathfinder Mineral Services, bressler@pathfindermineralservices.com

Bryan Eleogram, Gypsum Resource Materials, Bryanruston@gmail.com

Jeanne Godaire, Federal Bureau of Reclamation, jgodaire@usbr.gov