



EDUCATION

BACHELOR OF ARTS IN GEOPHYSICS & PLANETARY SCIENCE, 2015

Boston University, Boston, Massachusetts, Magna cum laude

EXPERIENCE

**Geoscientist II
Field Equipment Coordinator**

hydroGEOPHYSICS, Inc., Tucson, AZ

2020 – Present

Projects include:

- Application of geophysical methods for subsurface fluid flow mapping,
- Depth-to-bedrock characterization and alluvial sediment delineation,
- Broad basin characterization and water resource characterization,
- Void detection and contaminant delineation via electrical methods for mine reclamation, remediation, and closure,
- Drilling oversight and injection monitoring for secondary mineral recovery,
- Leak detection via electrical methods for lined ponds in industrial environments,
- Heap leach pad characterization.

Services and responsibilities include:

- Acquisition of geophysical data, including electrical resistivity tomography (ERT), induced polarization (IP), Audio-frequency Magnetotellurics (AMT), Multichannel Analysis of Surface Waves (MASW), and Transient Electromagnetics (TEM) also known as Time-domain Electromagnetics (TDEM),
- Quality control of data from all above methods,
- Data processing and inversion of land-based and water-based electrical resistivity tomography and audio-frequency magnetotellurics,
- Presenting data and case studies at preeminent geophysical and industry conferences,
- Comprehensive scientific and technical reporting on secondary mineral recovery, heap leach characterization, mineral exploration, and broad basin characterization projects,
- Vehicle management for HGI's 7 fleet vehicles, 4 trailers, and 2 off-road vehicles.

**Staff Geoscientist I
Vehicle Maintenance Coordinator**

hydroGEOPHYSICS, Inc., Tucson, AZ

2017 – 2020

Led geophysical field surveys for electrical resistivity tomography, induced polarization, gravity, magnetics, and Audio-frequency Magnetotellurics (AMT), seismic refraction, Multichannel Analysis of Surface Waves (MASW), and Transient Electromagnetics (TEM) also known as Time-domain Electromagnetics (TDEM). Performed quality control checks and processed electrical resistivity tomography, induced polarization, and audio-frequency magnetotelluric data. Completed comprehensive scientific and technical reporting on secondary mineral recovery, heap leach



characterization, and mineral exploration projects. Applied geophysical methods to characterize subsurface electrical properties.

Project Geophysicist

2015 – 2017

Zonge International, Inc., Tucson, AZ

Conducted field and computer-based geophysical surveys for resource identification. Projects included: lithium brine, gold, copper, water, natural gas and geothermal resource detection. Duties included: field management and training for ground magnetic data collection, remote site operation and data processing for magnetotelluric field surveys, creating stacked profiles, gridded maps and pseudosection plots in Oasis montaj, reporting on magnetotelluric and ground magnetic projects spanning hundreds of line-kilometers and hundreds of stations, communicating with clients on projects progress on data quality priorities.

Field Technician

2014

Zonge International, Inc., Midwestern United States

Installed NIMS long-period magnetotelluric receiver stations along the New Madrid fault zone as part of the EarthScope project through Oregon State University. EMScope aims to map the lower crust of the United States via monitoring of natural electromagnetic signals produced when the magnetosphere interacts with solar electromagnetic radiation.

Summer of Applied Geophysical Experience (SAGE) Intern

2014

Los Alamos National Laboratory, Santa Fe, NM

Participated in a short course followed by an academic research position on geophysical theory and exploration using field techniques such as ground penetrating radar, magnetics, seismic refraction, seismic reflection, transient electromagnetics, magnetotellurics, and gravity. Projects included: analysis of the geology and archaeology of the San Marcos Pueblo, data collection with seismic and electromagnetic data. Duties included: Team lead for exploration of the San Marcos Pueblo, paper and poster presentations on research findings at AGU and CUR, map creation and data plotting using Oasis montaj, forward modeling of seismic refraction data, interpretation of ground magnetic and seismic refraction data.

Geology Research Assistant

2014

Institute for Earth Science and Engineering (IESE), University of Auckland, Auckland, New Zealand

Research assistant for public outreach on volcanic hazards in the Auckland City Center. Projects included: Determining Volcanic Risk in Auckland (DEVORA) project. Duties included: preparing publications on monogenetic volcanic fields, creating volcanic maps and brochures on DEVORA research findings with Adobe InDesign and Illustrator, amending EndNote research databases with current articles, cataloguing rock samples, programming events for primary school students about the Auckland Volcanic Field.

Astronomy Research Assistant

2013-2014

Boston University, Department of Astronomy, Center for Space Physics, Boston, MA

Computer-based tracking of meteors using radar data from the Jicamarca Radio Observatory. Duties included: identifying meteor head-echoes to determine meteor mass, editing IDL code in a Linux environment, comparing dynamical mass, scattering theory, and differential ablation models, evaluating masses determined by radar with those determined by optical data.

Geochemistry Research Assistant

2013

Boston University, Department of Earth and the Environment, Boston, MA

Prepared and characterized mantle peridotite xenolith samples for whole rock major and trace element compositions. Projects included: R/V Roger Revelle research cruise (RR1310) dredging seamounts from Guam to Fiji along the Rurutu hotspot chain. Duties included: cleaning, cutting, labeling, and sonicating rock samples, analyzing hand samples of basalt, gabbro, and breccias with optical microscopes for texture, grain size, groundmass composition, inclusions, xenoliths, and glass, pre-processing EM-multibeam bathymetric data, dredge guidance along seamount chains.

Data Abstractor

Summer 2012

National Center for Health Statistics, National Ambulatory Medical Care Survey, Hyattsville, MD

Worked with statisticians to analyze data from health care surveys. Duties included: SAS statistical software data analysis, coordinating speakers and presentation materials for the National Conference on Health Statistics (NCHS), constructing a database of physician opinions on electronic health records to quantify and address concerns about healthcare policy and technical systems in ambulatory care centers.

PUBLICATIONS

Poje, M. S. L., Rucker, D. F., Levitt, M., Berumen, R., Galbraith, H., Strohmeier, J., McNeil, M., Rucker, K., Salgado, L. A., (2018, June). Optimizing Gold Leaching with the Aid of Electrical Resistivity Geophysics. *FastTIMES*, 23 (2), 78-85.

Poje, M. S. L., Berry, K., Brandt, T. W., Irwin, T. C., Creighton, A., MacLennan, K. J., Ferguson, J. F., and Pellerin, L. (2014, December). The San Marcos Pueblo Archaeological Site: A Review and Update of Ongoing Work by the Summer of Applied Geophysical Experience (SAGE). Poster session presented at the annual meeting of the American Geophysical Union, San Francisco, CA.

PROFESSIONAL AFFILIATIONS

Environmental and Engineering Geophysical Society (EEGS) – At-large Board Member

American Geophysical Union (AGU)

Earth Science Women's Network (ESWN)

Association of Women Geoscientists (AWG)

PROFESSIONAL CERTIFICATIONS

MSHA 5000-23 (Metal/Non-Metal Surface miner) (5/2022)

OSHA (10 Hour) (5/2022)

OSHA HAZWOPER (General Site Worker) (5/2018)

American Red Cross First Aid & CPR/AED (8/2014) – Expired 8/2018

NOLS Wilderness First Aid (9/2019) – Expired 9/2021

Defensive Driving (8/2014)

Class IV Laser Training (7/2013)

ESRI Cartography MOOC (3/2021)

*all current certifications unless indicated otherwise