

Benjamin S. Murphy

Geology & Geophysics

Electromagnetic geophysicist with a strong, diverse background in the geosciences and an interest in seamlessly merging geological and geophysical data to evaluate mineral systems.

EXPERIENCE

Consulting Geoscientist

Murphy Geo Consulting, LLC · Sept 2023 - Present

- Geoscientific consulting services for the mineral exploration sector: electromagnetic geophysical data inversion and interpretation, geophysical simulation code development

Mendenhall Research Fellow

U.S. Geological Survey, Golden, CO · Sept 2019 - Sept 2023

- Performed and interpreted 3D inversions of magnetotelluric data at a range of spatial scales to provide pre-competitive data products for prospective critical mineral systems
- Developed cutting-edge 3D lithospheric electrical conductivity model for the United States in order to support USGS geoelectric hazards and mineral systems research
- Planned, permitted, and acquired multi-year magnetotelluric survey in central Colorado
- Lectured on electrical/electromagnetic geophysical methods at Colorado School of Mines; guest instructor for electrical/electromagnetic methods at CSM geophysics field camp

Data Analysis Consultant

QuakeFinder (division of Stellar Solutions, Inc.) · Jan 2017 - June 2018

- Developed and applied software pipeline (Python+Fortran) for long-term frequency domain processing of geomagnetic field data from a multi-continent network of sensors
- Utilized analysis results to characterize noise sources and to apprise client of sensor stability, data quality, and anomalous physical signals worth further analysis

Staff Hydrogeologist

S.S. Papadopulos & Associates, Inc., Bethesda, MD · June 2013 - Aug 2014

- Geochemical and geospatial data management and analysis, software development, relational database development and management, modeling support, report writing

EDUCATION

Ph.D., Geology & Geophysics, Oregon State University · May 2019

B.A., Geology and Physics (double major), Pomona College · May 2013

Machine Learning for Mineral Exploration Workshop (Soc. Econ. Geo.) · *Sept 2021*

Induced Polarization and Resistivity Tomography Field Practices Short Course · *Oct 2020*

Anaconda Method for Mapping Ore Deposits Short Course · *Mar 2019*

Summer of Applied Geophysical Experience (SAGE) · *Summer 2012*

Geology Field Camp (University of New Mexico) · *Summer 2012*

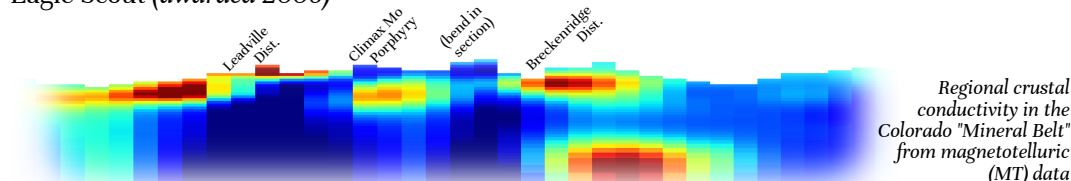
AWARDS & HONORS

Fellowships & Scholarships: National Science Foundation Graduate Research Fellow (2016-2019); Barry M. Goldwater Scholar (2012); National Merit Scholar (2009)

Oregon State University Awards: Wrolstad Memorial Geophysics Scholarship (2017); Maurice Mundorff Memorial Fellowship (2016)

Pomona College Awards: Mason L. Hill Memorial Award in Geology (2013); Richard P. Edmunds Physics Prize (2013); Richard E. Strehle Memorial Award in Geology (2012)

Other Awards: Mineralogical Society of America Undergraduate Prize (2012); Eagle Scout (awarded 2006)



CONTACT

Email

ben@murphygeo.com

Phone

(XXX) XXX-XXXX

Professional Website

www.murphygeo.com

Personal Website

www.rockingwiththerocks.com

SKILLS

- Geophysical and geoscientific data acquisition, processing, analysis, inversion, interpretation, visualization
- Magnetotelluric data inversion in ModEM; geophysical data inversion in SimPEG
- Integration of geophysical results with other datasets
- Translation between geologic/geochemical parameters and geophysical properties
- Python for scientific computing and machine learning; Fortran
- GIS (QGIS/GDAL, ESRI products)
- Geostatistics and kriging (original developer of PyKrige)
- High performance computing
- Cloud computing (AWS)
- Unix/Linux operating systems
- SVN/Git code version control; collaborative software development
- Offroad (4x4) driving

PUBLICATIONS &

PRESENTATIONS

20 scientific journal articles

- 9 as first author
- 1 additional first-author manuscript in review

28 scientific meeting presentations

- 15 oral presentations (5 invited)
- 13 poster presentations

2 undergraduate senior theses

PERSONAL INTERESTS

- Mineral and fossil field collecting
- GIS mapping of mineral and fossil localities