



**Benjamin S. Murphy**  
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## SCIENTIFIC EXPERTISE

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Electrical and electromagnetic geophysical methods, with a specialty in induction methods  
Geophysical studies of mineral deposits, mineral systems, and Precambrian crustal structure  
Integration of geophysics results with other geoscientific datasets

## EDUCATION

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**Ph.D., Geology & Geophysics, Oregon State University** (May 2019)  
*Dissertation: "Goelectric Insights into Lithospheric Architecture in the Southeastern U.S."*

**B.A., Geology and Physics, Pomona College** (May 2013)  
*Geology Senior Thesis: "Soft Rocks in a Restless Caldera: The Long Valley Caldera-Fill Sediments"*  
*Physics Senior Thesis: "Investigations into Anomalous Spectroscopic Effects in GE124 and Recommendations for Alternative Materials"*

Structure from Motion Photogrammetry Short Course (Geol. Soc. Am.) (Oct 2021)  
Machine Learning for Mining Short Course (Soc. Econ. Geol.) (Sept 2021)  
Machine Learning Short Course (Am. Geophys. Union) (Dec 2020)  
Induced Polarization and Resistivity Tomography Short Course (Guideline Geo) (Oct 2020)  
International Association of Geomagnetism and Aeronomy (IAGA) Summer School (July 2019)  
Anaconda Method for Mapping Ore Deposits Short Course (Oregon State University) (Mar 2019)  
Seismic Reflection Short Course (Lamont-Doherty Earth Observatory) (Summer 2015)  
Summer of Applied Geophysical Experience (SAGE) (Summer 2012)  
Geology Field Camp (University of New Mexico) (Summer 2012)  
GIS Coursework (Arizona State University) (Summer 2011)

## PROFESSIONAL EXPERIENCE

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Consulting Geoscientist: Murphy Geo Consulting, LLC (Sept 2023 - Present)  
Mendenhall Postdoctoral Fellow: United States Geological Survey (Sept 2019 - Sept 2023)  
Independent Consultant: QuakeFinder (division of Stellar Solutions, Inc.) (Jan 2017 - June 2018)  
Staff Hydrogeologist: S.S. Papadopulos & Associates, Inc. (June 2013 - Aug 2014)  
Undergraduate research assistant: Pomona College Geology and Physics Depts. (2010-2011)

## FELLOWSHIPS, AWARDS, HONORS

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USGS STAR Award, Geologic Hazards Science Center (seminar committee service) (March 2023)  
National Science Foundation Graduate Research Fellow (2016-2019)  
Phi Kappa Phi (Spring 2019)  
Wrolstad Memorial Geophysics Scholarship, Oregon State University (Spring 2017)  
Maurice Mundorff Memorial Fellowship, Oregon State University (Spring 2016)  
Phi Beta Kappa (Spring 2013)  
Sigma Xi (Spring 2013)  
Mason L. Hill Memorial Award in Geology, Pomona College (Spring 2013)  
Richard P. Edmunds Physics Prize, Pomona College (Spring 2013)  
Barry M. Goldwater Scholar (Spring 2012)  
Mineralogical Society of America Undergraduate Prize (Winter 2012)  
Richard E. Strehle Memorial Award for Field Geology, Pomona College (Spring 2012)  
Tileston Freshman and Sophomore Physics Prizes, Pomona College (Spring 2010, Spring 2011)  
National Merit Scholar (Spring 2009)  
Eagle Scout (awarded Fall 2006)



## TEACHING, SEMINARS, LECTURES

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- Guest Instructor for Magnetotelluric Field Methods at Colorado School of Mines;  
Course: Geophysics Field Camp (May 2023)
- Guest Lectures on Magnetotellurics and Associated Methods at Colorado School of Mines; Course:  
Electrical and Electromagnetic Methods and Applications (March-April 2023)
- Seminar for Colorado School of Mines Society of Student Geophysicists Chapter: “Magnetotellurics, with  
an Example from Central Colorado” (November 2022)
- Guest Instructor for DC Resistivity Field Methods at Colorado School of Mines;  
Course: Geophysics Field Camp (May 2022)
- Guest Lectures on DC Resistivity and Induced Polarization Methods at Colorado School of Mines; Course:  
Electrical and Electromagnetic Methods and Applications (February 2022)
- Guest Lecture on Magnetotellurics and Global Induction Studies at Colorado School of Mines; Course:  
Physics of the Earth II (April 2021)
- Seminar at Department of Geophysics, Colorado School of Mines: “The Many Applications of  
Magnetotelluric Data: From Space Weather to Mineral Systems” (March 2021)
- Seminar at Center for Earthquake Research and Information, The University of Memphis:  
“Magnetotelluric Insights into Lithospheric Properties and Crustal Stresses in the Southeastern United  
States” (March 2021)
- Teaching Assistant at College of Earth, Ocean, and Atmospheric Sciences, Oregon State University;  
Course: Oregon Coast Math Camp (August – September 2015)
- Teaching Assistant at Pomona College Geology and Physics Departments (Fall 2010 – Spring 2013);  
Courses: Earth History, Igneous & Metamorphic Petrology, Intro. Physics, Statistical Mechanics

## SERVICE

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- President, Friends of Mineralogy Colorado Chapter (May 2023 – Present)
- Proposal Reviewer, National Science Foundation (Fall 2019)
- Journal Reviewer: (2016 – Present)
- Geophysical Research Letters / Geochemistry, Geophysics, Geosystems / Nature
  - Journal of Applied Geophysics / Geophysics / Earth, Planets and Space / Geoscience Frontiers
  - Geophysical Journal International / Seismological Research Letters
  - Space Weather / Journal of Space Weather and Space Climate

## SCIENTIFIC JOURNAL PUBLICATIONS

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- B.S. Murphy**, J.S. Caine, P.A. Bedrosian, J.W. Crosbie. Goelectric Evidence for a Wide Spatial Footprint  
of Active Extension in Central Colorado. *Geology* (accepted pending revisions).
- B.S. Murphy**, M.S. DeLucia, S. Marshak, D. Ravat, P.A. Bedrosian. Magnetotelluric insights into the  
formation and reactivation of trans-crustal shear zones in Precambrian basement of the eastern U.S.  
Midcontinent. *Geologic Society of America Bulletin* (2023).  
<https://doi.org/10.1130/B37099.1>
- S. Chakraborty, D.H. Boteler, X. Shi, **B.S. Murphy**, M.D. Hartinger, X. Wang, G. Lucas, J.B.H. Baker.  
Modeling geomagnetic induction in submarine cables. *Frontiers in Physics: Space Physics* **10** (2022).  
<https://doi.org/10.3389/fphy.2022.1022475>
- B.S. Murphy**, P.A. Bedrosian, A. Kelbert. Goelectric constraints on the Precambrian assembly and  
architecture of southern Laurentia. In S.J. Whitmeyer, M.L. Williams, D.A. Kellett, B. Tikoff, eds.,  
Laurentia: Turning Points in the Evolution of a Continent. *Geological Society of America Memoir* **220**  
(2023). [https://doi.org/10.1130/2022.1220\(13\)](https://doi.org/10.1130/2022.1220(13))



- B.S. Murphy**, J.M. Huizenga, P.A. Bedrosian. Graphite as an electrically conductive indicator of ancient crustal-scale fluid flow within mineral systems. *Earth and Planetary Science Letters* **594**, 117700 (2022). <https://doi.org/10.1016/j.epsl.2022.117700>
- J.J. Love, G.M. Lucas, E.J. Rigler, **B.S. Murphy**, A. Kelbert, P.A. Bedrosian. Mapping a Magnetic Superstorm: March 1989 Geoelectric Hazards and Impacts on United States Power Systems. *Space Weather* **20**(5), e2021SW003030 (2022). <https://doi.org/10.1029/2021SW003030>
- X. Shi, M.D. Hartinger, J.B.H. Baker, **B.S. Murphy**, P.A. Bedrosian, A. Kelbert, E.J. Rigler. Characteristics and Sources of Intense Geoelectric Fields in the United States: Comparative Analysis of Multiple Geomagnetic Storms. *Space Weather* **20**, e2021SW002967 (2022). <https://doi.org/10.1029/2021SW002967>
- J.J. Love, G.M. Lucas, **B.S. Murphy**, P.A. Bedrosian, E.J. Rigler, A. Kelbert. Down to Earth with nuclear electromagnetic pulse: Realistic surface impedance affects mapping of the E3 geoelectric hazard. *Earth and Space Science* **8**, e2021EA001792 (2021). <https://doi.org/10.1029/2021EA001792>
- B.S. Murphy**, G.M. Lucas, J.J. Love, A. Kelbert, P.A. Bedrosian, E.J. Rigler. Magnetotelluric sampling and geoelectric hazard estimation: Are national-scale surveys sufficient? *Space Weather* **19**, e2020SW002693 (2021). <https://doi.org/10.1029/2020SW002693>
- S. Naif, K. Selway, **B.S. Murphy**, G.D. Egbert, A. Pommier. Electrical conductivity of the lithosphere-asthenosphere system. *Physics of the Earth and Planetary Interiors* **313**, 106661 (2021). <https://doi.org/10.1016/j.pepi.2021.106661>
- M.D. Hartinger, X. Shi, G.M. Lucas, **B.S. Murphy**, A. Kelbert, J.B.H. Baker, E.J. Rigler, P.A. Bedrosian. Simultaneous Observations of Geoelectric and Geomagnetic Fields Produced by Magnetospheric ULF Waves. *Geophysical Research Letters* **47**(18), (2020). <https://doi.org/10.1029/2020GL089441>
- E. Marshalko, M. Kruglyakov, A. Kuvshinov, **B.S. Murphy**, L. Rastaetter, C. Ngwira, A. Pulkkinen. Exploring the influence of lateral conductivity contrasts on the storm time behavior of the ground electric field in the eastern United States. *Space Weather* **18**(3), (2020). <https://doi.org/10.1029/2019SW002216>
- B.S. Murphy**, G.D. Egbert. Synthesizing Seemingly Contradictory Seismic and Magnetotelluric Observations in the Southeastern United States to Image Physical Properties of the Lithosphere. *Geochemistry, Geophysics, Geosystems* **20**(6), 2606-2625 (2019). <https://doi.org/10.1029/2019GC008279>
- B.S. Murphy**, L. Liu, G.D. Egbert. Insights Into Intraplate Stresses and Geomorphology in the Southeastern United States. *Geophysical Research Letters* **46**(15), 8711-8720 (2019). <https://doi.org/10.1029/2019GL083755>
- A. Kelbert, P.A. Bedrosian, **B.S. Murphy**. The First 3D Conductivity Model of the Contiguous United States: Reflections on Geologic Structure and Application to Induction Hazards. In Geomagnetically Induced Currents from the Sun to the Power Grid, *Geophysical Monograph Series* **244** (American Geophysical Union). <https://doi.org/10.1002/9781119434412.ch8>
- M.S. DeLucia, **B.S. Murphy**, S. Marshak, G.D. Egbert. The Missouri High-Conductivity Belt, revealed by magnetotelluric imaging: Evidence of a trans-lithospheric shear zone beneath the Ozark Plateau, Midcontinent USA? *Tectonophysics* **753**, 111-123 (2019). <https://doi.org/10.1016/j.tecto.2019.01.011>
- B.S. Murphy**, G.D. Egbert. Source biases in midlatitude magnetotelluric transfer functions due to Pc3-4 geomagnetic pulsations. *Earth, Planets and Space* **70**:12 (2018). <https://doi.org/10.1186/s40623-018-0781-0>



- B.S. Murphy**, G.D. Egbert. Electrical conductivity structure of southeastern North America: Implications for lithospheric architecture and Appalachian topographic rejuvenation. *Earth and Planetary Science Letters* **462**, 66-75 (2017). <https://doi.org/10.1016/j.epsl.2017.01.009>
- B.S. Murphy**, R.R. Gaines, J.S. Lackey. Co-Evolution of Volcanic and Lacustrine Systems in Pleistocene Long Valley Caldera, California, USA. *Journal of Sedimentary Research* **86**(10), 1129-1146 (2016). <https://doi.org/10.2110/jsr.2016.70>
- R.J. Mawhorter, **B.S. Murphy**, A.L. Baum, T.J. Sears, T. Yang, P.M. Rupasinghe, C.P. McRaven, N.E. Shafer-Ray, L.D. Alpei, J.U. Grabow. Characterization of the ground X<sub>i</sub> state of <sup>204</sup>Pb<sup>19</sup>F, <sup>206</sup>Pb<sup>19</sup>F, <sup>207</sup>Pb<sup>19</sup>F, and <sup>208</sup>Pb<sup>19</sup>F. *Physical Review A* **84**, 022508 (2011). <https://doi.org/10.1103/PhysRevA.84.022508>
- L.D. Alpei, J.U. Grabow, A.N. Petrov, R. Mawhorter, **B. Murphy**, A. Baum, T.J. Sears, T.Zh. Yang, P.M. Rupasinghe, C.P. McRaven, N.E. Shafer-Ray. Precision spectroscopy of the <sup>207</sup>Pb<sup>19</sup>F molecule: Implications for the measurement of P-odd and T-odd effects. *Physical Review A* **83**, 040501 (2011). <https://doi.org/10.1103/PhysRevA.83.040501>

#### DATA SETS AND REPORTS

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- H. Alfaraj, S. Bin Zaqr, J. Howard, J. McCall, C. Thomas, **B.S. Murphy**, A.R. Miller, B. Mullett, A. Alangari, H. Alhammad, M. Alnabbat, P. Chang Huang, E. Deal, N. Dorogy, D. Lipfert, B. Passerella, B. Dugan, M.R. Siegfried, and the 2023 Mines Field Camp Session. Mines Geophysics Field Camp 2023: Magnetotelluric Transfer Functions from North Park - Steamboat Springs, Colorado. IRIS SPUD EM Transfer Function Database (2023). <https://doi.org/10.17611/DP/EMTF/MINES/GFC2023>
- B.S. Murphy**, J.W. Crosbie, E.M. Cox, K. Zamudio, D.J. Piccone, A.R. Miller, S.R. James, S.F. Wilbur, P.A. Bedrosian. Central Colorado Magnetotelluric Transfer Functions. IRIS SPUD EM Transfer Function Database (2023). <https://doi.org/10.17611/DP/EMTF/USGS/GGGSC/CO>
- A. Kelbert, **B.S. Murphy**, P.A. Bedrosian. CONUS-MT-2023: High resolution electrical conductivity variations in the Earth's crust and mantle of contiguous United States based on magnetotellurics and ground magnetic observatory data. IRIS Earth Model Collaboration (2023). <https://doi.org/10.17611/dp/emc.2023.conusmt.1>
- J.J. Love, **B.S. Murphy**. North American electricity power-grid and communication-network anomalies for several magnetic storms. *U.S. Geological Survey Data Release* (2022). <https://doi.org/10.5066/P9N4DVNT>
- A. Kelbert, **B.S. Murphy**, P.A. Bedrosian. CONUS-MT-2021: High resolution electrical conductivity variations in the Earth's crust and mantle of contiguous United States based on magnetotellurics and ground magnetic observatory data. IRIS Earth Model Collaboration (2021). <https://doi.org/10.17611/dp/emc.2021.conusmt.1>
- J.J. Love, A. Kelbert, **B.S. Murphy**, E.J. Rigler, K.A. Lewis. Geomagnetism Program Research Plan, 2020-2024. *United States Geological Survey Circular 1469* (2020). <https://doi.org/10.3133/cir1469>
- A. Kelbert, P.A. Bedrosian, **B.S. Murphy**. CONUS-MT-2019: High resolution electrical conductivity variations in the Earth's crust and mantle of contiguous United States based on magnetotellurics and ground magnetic observatory data. IRIS Earth Model Collaboration (2019). <https://doi.org/10.17611/dp/emc.2019.conusmt.1>



## CONFERENCE ABSTRACTS

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- H. Alfaraj, S. Bin Zaqr, C. Thomas, **B.S. Murphy**, A. Miller, B. Mullett, B. Passerella, B. Dugan, M. Siegfried, 2023 Mines Geophysics Field Camp. Magnetotelluric Imaging of the Northern Extension of the Rio Grande Rift in Colorado. *AGU Fall Meeting*, **T13C-0223** (2023).
- J. Howard, J. McCall, **B.S. Murphy**, J.D. Pepin, A. Miller, B. Mullett, B. Passerella, B. Dugan, M. Siegfried, 2023 Mines Geophysics Field Camp. Shallow Magnetotelluric Soundings for Developing a Hydrogeological Conceptual Model of the Steamboat Basin and North Park, Colorado. *AGU Fall Meeting*, **NS31A-0613** (2023).
- W.J. Shinevar, **B.S. Murphy**, V. Schulte-Pelkum, P.A. Bedrosian. Mapping water content in the western United States through the interpretation of mantle conductivity with WISTFUL-derived mantle temperatures. *AGU Fall Meeting*, **MR31B-0074** (2023).
- A. Kelbert, **B.S. Murphy**, C.C. Balch, J.A. Guerra. CONUS Modeled Magnetotelluric Impedances for Geoelectric Field Estimation. *AGU Fall Meeting*, **GP43A-02** (2023).
- S. Marshak, H. Xiao, **B.S. Murphy**, M.S. DeLucia, X. Song. Continental-Interior Deformation Deeper Down: Hints of Crustal Buckling and Trans-Crustal Shear Zones in the Cratonic Platform, Midcontinent USA. *Geol. Soc. of Am. Abstr. Prog.* **55**, 6 (2023).  
doi: 10.1130/abs/2023AM-391795
- S. Marshak, **B.S. Murphy**, M.S. DeLucia, D. Ravat, P.A. Bedrosian. Cratonic High-Conductivity Zones of the US Midcontinent, Based on Magnetotelluric Studies: Insight into Northwest-Trending Long-Lived Fault Zones. *AGU Fall Meeting*, **T22C-05** (2022).
- D.H. Boteler, S. Chakraborty, X. Shi, **B.S. Murphy**, M. Hartinger, X. Wang, G. Lucas, J.B.H. Baker. Modeling Geomagnetic Induction in Submarine Cables. *AGU Fall Meeting*, **SM36A-01** (2022).
- B.S. Murphy**, J.S. Caine, P.A. Bedrosian, J.W. Crosbie. Geoelectric Signatures of Cenozoic through Present-Day Tectonomagmatism and Metallogeny in Central Colorado. *Geol. Soc. of Am. Abstr. Prog.* **54**, 5 (2022). doi: 10.1130/abs/2022AM-377865 [Invited Oral Presentation]
- B.S. Murphy**, A. Kelbert, P.A. Bedrosian, J.J. Love, G.M. Lucas, E.J. Rigler. The Importance of Geology for Space Weather: An Example from the Colorado Front Range Urban Corridor. *AGU Fall Meeting*, **SM35B-1972** (2021). [Virtual Poster Presentation]
- B.S. Murphy**, P.A. Bedrosian, A. Kelbert. The electrical signature of sutures in the contiguous United States. *Geol. Soc. of Am. Abstr. Prog.* **53**, 6 (2021). [Virtual Oral Presentation]
- B.S. Murphy**, J.M. Huizenga, P.A. Bedrosian. Tracing Crustal-Scale Fluid Pathways Under Cover with Magnetotelluric Imaging: Examples from the Central United States. *Society of Economic Geologists (SEG) 100 Conference*, **ST.178** (2021) [Virtual Poster Presentation]
- S.-i. Karato, L. Dai, G.D. Egbert, J. Girard, **B.S. Murphy**, T. Olugboji, J. Park, R. Silber, Z. Zhang. Origin and significance of geophysical anomalies in the continental upper mantle: An interdisciplinary study. *EGU General Assembly*, **EGU21-13799** (2021).
- X. Shi, M.D. Hartinger, J.B.H. Baker, P.A. Bedrosian, **B.S. Murphy**, A. Kelbert, E.J. Rigler, J.M. Ruohoniemi. Sources of hazardous geoelectric fields in the United States during magnetic storms. *EGU General Assembly*, **EGU21-6934** (2021).
- B.S. Murphy**, L. Liu, G.D. Egbert. Integrating Seismic and Magnetotelluric Constraints on Lithospheric Properties to Explore the Geodynamic Origin of the Southeastern US Stress Field. *Seismological Research Letters (SSA Annual Meeting)* **92**, 2B (2021). [Invited Oral Presentation]



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- B.S. Murphy**, G.M. Lucas, J.J. Love, A. Kelbert, P.A. Bedrosian, E.J. Rigler. The Effect of Magnetotelluric Spatial Data Sampling in Geoelectric Hazard Estimation. *AGU Fall Meeting*, **GP14-09** (2020). [Virtual Poster Presentation]
- B.S. Murphy**, M.S. DeLucia, S. Marshak, P.A. Bedrosian, D. Ravat. Geoelectric Images of the Eastern US Midcontinent: Implications for Tectonic History and Mineral Resource Potential. *Geol. Soc. Am. Abstr. Prog.* **52**, 6 (2020). [Virtual Poster Presentation]
- B.S. Murphy**, J.M. Huizenga, P.A. Bedrosian. Tracing Crustal-Scale Fluid Pathways Under Cover with Magnetotelluric Imaging. *Geol. Soc. Am. Abstr. Prog.* **52**, 6 (2020). [Virtual Poster Presentation]
- B.S. Murphy**, G.D. Egbert, P.A. Bedrosian, A. Kelbert. Magnetotelluric Insights into the Lithospheric Architecture and Geodynamic History of the Appalachian Domain. *Geol. Soc. Am. Abstr. Prog.* **52**, 6 (2020). [[Invited](#) Virtual Oral Presentation]
- B.S. Murphy**, L. Liu, G.D. Egbert. Integrating Seismic and Magnetotelluric Constraints on Lithospheric Properties to Explore the Geodynamic Origin of the Southeastern US Stress Field. *Seismological Research Letters (SSA Annual Meeting)* **91**, 2B (2020). [[Invited](#) Oral Presentation; Meeting Canceled]
- B.S. Murphy**, G.D. Egbert, P.A. Bedrosian, A. Kelbert. Magnetotelluric Insights into the Lithospheric Architecture and Geodynamic History of the Eastern United States. *Geol. Soc. Am. Abstr. Prog.* **52**, 2 (2020). [Meeting Canceled]
- B.S. Murphy**, L. Liu, G.D. Egbert. Geodynamic Origin of the Southeastern US Stress Field and Large-Scale Appalachian Geomorphology. *Geol. Soc. Am. Abstr. Prog.* **52**, 2 (2020). [Meeting Canceled]
- B.S. Murphy**, A. Kelbert, G.D. Egbert. Electromagnetic Induction Forward Modeling with Non-Uniform Ionospheric Sources to Explore Spatial Patterns in Three-Dimensional MT Arrays. *AGU Fall Meeting*, **GP11A-04** (2019). [Oral Presentation]
- B.S. Murphy**, G.D. Egbert. Building a Continent: Using Array Processing and Visualization to Map the Geoelectric Expression of Major Crustal Sutures across the US. *2019 IUGG General Assembly*, **IUGG19-3695** (2019). [[Invited](#) Oral Presentation]
- B.S. Murphy**, G.D. Egbert. Synthesizing Seemingly Contradictory MT and Seismic Results to Image Lithospheric Properties beneath the Southeastern United States. *2019 IUGG General Assembly*, **IUGG19-3693** (2019). [Oral Presentation]
- B.S. Murphy**, L. Liu, G.D. Egbert. Using 3D electrical conductivity as a proxy for lithospheric viscosity in geodynamic modeling: An example from the southeastern United States. *2019 IUGG 2019 General Assembly*, **IUGG19-3697** (2019). [Poster]
- B.S. Murphy**, G.D. Egbert. Resolving Thick Thermal Lithosphere beneath the Southeastern United States: The Importance of Anelasticity in Synthesizing Seemingly Contradictory MT and Seismic Results. *AGU Fall Meeting*, **T53B-02** (2018). [Oral Presentation]
- E. Ivannikova, M. Kruglyakov, A.V. Kuvshinov, L. Rastaetter, A.A. Pulkkinen, C. Ngwira, **B.S. Murphy**. 3-D Storm Time Ground Geoelectric Field Modeling for the Northeastern United States. *AGU Fall Meeting*, **IN43B-06** (2018). [Oral Presentation]
- B.S. Murphy**, G.D. Egbert. Lithospheric magnetotelluric imaging for regional mineral resource exploration. *Society of Economic Geologists 2018 Meeting (Keystone, CO)* (2018). [Speed Talk & Poster]
- B.S. Murphy**, G.D. Egbert. Synthesizing Seemingly Contradictory MT and Seismic Results to Image Thick Thermal Lithosphere beneath the Southeastern United States. *24th EM Induction Workshop (Helsingør, Denmark)*, **S6.0-P609** (2018). [Poster]



- B.S. Murphy**, G.D. Egbert. Source Biases in Magnetotelluric Transfer Functions due to Pc3/4 (~10-100s) Geomagnetic Pulsations at Mid-Latitudes. *24th EM Induction Workshop (Helsingør, Denmark)*, **S1.0-P120** (2018). [Poster]
- B.S. Murphy**, G.D. Egbert. Mapping Induced Electromagnetic Fields across the Continental United States. *24th EM Induction Workshop (Helsingør, Denmark)*, **S1.0-T114** (2018). [Oral Presentation]
- B.S. Murphy**, G.D. Egbert. Surprises from the Magnetotelluric Component of the USArray in the Eastern United States: Perplexing Anticorrelations with Seismic Images and Puzzling Insights into Continental Dynamics. *AGU Fall Meeting*, **S42A-04** (2017). [Invited Oral Presentation]
- B.S. Murphy**, G.D. Egbert. Source Biases in Magnetotelluric Transfer Functions due to Pc3/Pc4 (~10-100s) Geomagnetic Activity at Mid-Latitudes. *AGU Fall Meeting*, **GP31A-06** (2017). [Oral Presentation]
- B.S. Murphy**, G.D. Egbert. Sutures and an Anomalous Deep Lithospheric Electrical Resistor in the Southeastern United States as Revealed by EarthScope Magnetotelluric Data. *AGU Fall Meeting*, **T51G-3018** (2016). [Poster]
- B.S. Murphy**, G.D. Egbert. Electrical Conductivity Signature of the New York-Alabama Lineament as Revealed by Initial 3D Inversions of EarthScope Magnetotelluric Data. *23rd EM Induction Workshop (Chiang Mai, Thailand)*, (2016). [Oral Presentation]
- B.S. Murphy**, G.D. Egbert. Application of the Matrix Logarithm to Interpretation of Magnetotelluric Impedance Tensor Data. *23rd EM Induction Workshop (Chiang Mai, Thailand)*, (2016). [Poster]
- B.S. Murphy**. Intracaldera Sedimentation in the Miocene Cottonwood Creek Caldera, Nevada, USA. *Geol. Soc. Am. Abstr. Prog.* **48**, (2016). [Oral Presentation]
- B.S. Murphy**, G.D. Egbert, E.D. Humphreys. Testing Magnetotelluric Constraints on the Physical State of the Yellowstone Plume. *AGU Fall Meeting*, **V31E-3070** (2015). [Poster]
- B.S. Murphy**. PyKrige: Development of a Kriging Toolkit for Python. *AGU Fall Meeting*, **H51K-0753** (2014). [Poster]
- K.W. Murphy, **B.S. Murphy**, A.W. Ellis. Dual Heuristics for Assessment of Hydrologic Sensitivities to Climate Change in Watersheds of the Lower Colorado Basin. *AGU Fall Meeting*, **H11G-0958** (2014). [Poster]
- J.S. Lackey, J.S. Miller, G.R. Davies, J.L. Eisenberg, **B.S. Murphy**. Deconvoluting magma mixing and source characteristics of a long lived (approximately 9 M.Y.) Sierra Nevada magmatic complex; O, Hf and trace elements of zircon from the John Muir Suite. *Geol. Soc. Am. Abstr. Prog.* **45**, 390 (2013). [Poster]
- J.S. Lackey, C.L. Sendek, J.S. Miller, **B.S. Murphy**, A.A. Fulton, I.N. Bindeman, R. Economos, A. Kylander-Clark, G.R. Davies. A Mojave perspective on volcanic-plutonic systems in California's Middle Jurassic arc. *Geol. Soc. Am. Abstr. Prog.* **45**, 691 (2013). [Poster]
- L. Pellerin, M. Gallegos, M. Goebel, **B.S. Murphy**, J. Smith, D. Soto, J. Swiatlowski, C. Volk, M. Welch, D.W. Feucht, B. Hollingshaus, P.A. Bedrosian, D.K. McPhee. Mapping the edge of the Cerros del Rio volcanic field, New Mexico: a piece of the puzzle to understanding a potential geothermal resource. *AGU Fall Meeting*, **NS23A-1645** (2012). [Poster]
- B.S. Murphy**, R.R. Gaines, J.S. Lackey. Soft Rocks in a Restless Caldera: The Long Valley Caldera-Fill Sediments. *Geol. Soc. Am. Abstr. Prog.* **44**, (2012). [Oral Presentation]



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- A.R. Zilberfarb, J.S. Lackey, C.L. Sendek, J.L. Eisenberg, **B.S. Murphy**, L.A. Ferguson, N.A. Raschick, N.D. Simpson, I.N. Bindeman. Variable Recycling of Anomalous Low- $\delta^{18}\text{O}$  Proterozoic Crust in the Ord Mountains, Mojave Desert, CA. *Geol. Soc. Am. Abstr. Prog.* **44**, 281 (2012). [Poster]
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