

CURRICULUM VITAE

Daniel W. Feucht, Ph.D.
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EDUCATION

Ph.D. in Geophysics

Fall 2017

University of Colorado Boulder

Dissertation title: "Magnetotelluric Imaging of Lithospheric Modification in the Rio Grande Rift, Colorado and New Mexico, USA"

Committee: Anne Sheehan (Chair), Paul Bedrosian, Craig Jones, G. Lang Farmer, Shijie Zhong

B.A. in Geophysics

Spring 2010

University of California Berkeley

RESEARCH INTERESTS

Near-surface geophysics, applications of electromagnetic geophysics, Western U.S. geology and tectonics, structure of the Earth's crust and upper mantle, geothermal energy, geomagnetic hazards

RESEARCH EXPERIENCE

Postdoctoral Research Associate

2017 - present

Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado Boulder

- Using magnetotelluric data to investigate the influence of ground conductivity on geomagnetic hazard to the national power grid during geomagnetic space weather events.

Graduate Research Assistant

2011 - 2017

Department of Geological Sciences, University of Colorado Boulder

- Conducted major magnetotelluric field campaign over three summer field seasons, including survey design, permitting, data acquisition, field assistant training, and logistics.
- Investigated the physical state of the lithosphere beneath the Rocky Mountains and Rio Grande Rift
- Emphasis on geologic interpretation and implications of geophysical results for tectonic evolution of the Western U.S.

Post-Baccalaureate Research Assistant

2010 - 2011

Lawrence Berkeley National Laboratory, Berkeley, CA

- Developed MATLAB routines for visualizing, calibrating, and editing magnetotelluric data prior to inversion

Undergraduate Research Assistant

2010

GNS Science, Lower Hutt, New Zealand

- Acquired, processed, and analyzed magnetotelluric data from a geothermal waste water injection well site
- Developed MATLAB routines for visualizing MT data

PUBLICATIONS

Feucht, D.W., Sheehan, A.F., and Bedrosian, P.A. (2017). Magnetotelluric imaging of lower crustal melt and lithospheric hydration in the Rocky Mountain Front transition zone, Colorado, USA, *Journal of Geophysical Research: Solid Earth*, 122. <https://doi.org/10.1002/2017JB014474>.

Feucht, D.W., Bedrosian, P.A., and Sheehan, A.F., Magnetotelluric imaging of lithospheric modification due to late Cenozoic extension in the Rio Grande Rift, New Mexico, USA, *in prep.*

Bedrosian, P.A. and **Feucht, D.W.**, 2014, Structure and tectonics of the northwest United States from EarthScope USArray magnetotelluric data, *Earth and Planetary Science Letters*, 402, pp. 275-289.

CONFERENCE PAPERS

Feucht, D.W., Bedrosian, P.A., Jiracek, G.R., Pellerin, L., 2017, Electrical Resistivity Structure of the Valles Caldera, New Mexico, USA: Results From 3D Inversion of Modern and Legacy Magnetotelluric Data Collected by Industry and the Summer of Applied Geophysical Experience (SAGE). 2017 AGU Fall Meeting, New Orleans, LA. [T51D-0515] [poster]

Feucht, D.W., Bedrosian, P.A., and Sheehan, A.F., 2016, Lithospheric resistivity structure beneath the Rocky Mountain front: 2D anisotropic inversion of magnetotelluric, 2016 GSA Annual Meeting, Denver, CO. [talk]

Feucht, D.W., Sheehan, A.F., and Bedrosian, P.A., 2015, Joint interpretation of seismic tomography and new magnetotelluric results provide evidence for support of high topography in the Southern Rocky Mountains and High Plains of eastern Colorado, USA, 2015 AGU Fall Meeting, San Francisco, CA. [talk]

Feucht, D.W., Bedrosian, P.A., and Sheehan, A.F., 2014, Deep Conductivity Structure of the Rio Grande Rift, New Mexico, USA. 22nd Electromagnetic Induction Workshop, Weimar, Germany. [talk]

Feucht, D.W., Bedrosian, P.A. and Sheehan, A.F., 2013, Deep electrical conductivity structure of the Rio Grande Rift in Colorado and New Mexico: Early results from a two-year magnetotelluric study. 2013 AGU Fall Meeting, San Francisco, CA. [talk]

HONORS AND AWARDS

CIRES Innovative Research Proposal	2017
NSF Graduate Research Internship Program	2016
Rocky Mountain Association of Geologists Bolyard Scholarship	2014
SEG Foundation Henry Bates Peacock Scholarship	2014

Geological Society of America Graduate Student Research Grant	2014
CU Boulder Dept. of Geological Sciences W.O. Thompson Award	2014
CU Boulder Dept. of Geological Sciences Spetzler Award	2012
CIRES Graduate Research Fellowship	2012
Antarctic Service Medal	2011

PROFESSIONAL VOLUNTEER SERVICE

Volunteer Science Intern

2012 - present

U.S. Geological Survey (USGS), Denver, CO

- Lead field coordinator for regional magnetotelluric survey of New Madrid region of Arkansas and Tennessee
- Provided training for USGS scientists, contractors, and undergraduate interns on use of magnetotelluric equipment
- Developed software tools in MATLAB for visualizing, analyzing, archiving, and publishing USGS geophysical data

TEACHING & MENTORING

Teaching Staff

2010 - present

Summer of Applied Geophysical Experience (SAGE)

- Lecturer, teaching assistant, and field logistics manager for undergraduate/graduate level geophysics field camp
- Mentored students in acquisition, processing, analysis, and interpretation of geophysical data and modeling results
- Topics covered include active-source seismology, gravity and magnetics, electromagnetics, archaeology, basin structure, rift tectonics, and geothermal energy exploration

Teaching Assistant, Field Seminar in Western U.S. Geology

2015

Dept. of Geological Sciences, CU Boulder

- Planned logistics for ten-day spring break field trip focusing on geology and tectonics of the southwest United States
- Mentored students on preparation of guidebook style reports for presentation in the field

Teaching Assistant, Field Geophysics

2011, 2014

Dept. of Geological Sciences, CU Boulder

- Taught students use of computer software in geophysical data analysis and interpretation (Excel, MATLAB, GravMag)

Teaching Assistant, Principles of Geophysics

2014

Dept. of Geological Sciences, CU Boulder

- Facilitator for two recitation sections of introduction to geophysical methods and analysis

Graduate Mentor, IRIS Internship Program

2013

Dept. of Geological Sciences, CU Boulder

- Trained intern in acquisition and interpretation of magnetotelluric (MT) data from regional scale geophysical survey investigating tectonics of the Rio Grande Rift
- Advised intern on poster presentation given at the American Geophysical Union Fall Meeting in 2013.

PROFESSIONAL DEVELOPMENT

Special Topics Seminar - Teaching & Learning Geosciences

University of Colorado Boulder, Fall 2014

- Objectives included recognizing the conditions necessary for learning to occur in college classes, planning lessons that addressed geoscience literacy standards, incorporating multiple levels of Bloom's taxonomy, engaging students in lecture through active learning, and other current topics such as flipped classroom instructional strategies.

ADDITIONAL FIELD EXPERIENCE

Science Crew

2011

Transantarctic Mountains Magnetotelluric Transect

- Field support for broadband magnetotelluric survey across transect of Transantarctic Mountains
- Assisted with data acquisition, instrument maintenance, and field logistics

Field Course in Volcanology

2009

Center for the Study of Active Volcanoes (CSAV), Hilo, HI

- Three-week short course in physical volcanology, gas geochemistry, and geophysical volcanic monitoring techniques

REFERENCES

Anne F. Sheehan, Professor of Geophysics

University of Colorado Boulder

(303) 492-4597 / anne.sheehan@colorado.edu

Paul A. Bedrosian, Research Geophysicist

U.S. Geological Survey, Denver, CO

(303) 236-4834 / pbedrosian@usgs.gov

Lawrence W. Braile, Professor of Geophysics, SAGE co-director

Purdue University, West Lafayette, IN

(765) 494-5979 / braile@purdue.edu