# **Laura E. Fackrell**

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**EDUCATION AND RESEARCH**

**Ph.D. Geology, Geochemistry, Geomicrobiology-2020 (Expected)**

University of Georgia, Athens, GA, GPA 3.94

* **Grants and Awards:** Watts-Wheeler Departmental Research and Travel Grants (2014).
* **Employment:** Teaching assistant for introductory, upper level, and writing intensive geology courses
* **Research Experience**: Geochemistry and mineralogy of Martian regolith for use in understanding potential for past life and application in exploration of Mars. Current projects include developing more mineralogically accurate Martian ‘soil’ simulants, plant growth experiments in developed simulants, and use of microbial communities to ameliorate developed simulants.

Relevant Coursework

* CRSS 6610 Soil Microbiology
* GEOL 6130 Aqueous Geochemistry
* CRSS 6670 Soil Chemistry
* ECOL 8322 Ecosystem Concepts

**Internship APL-NASA-2017**

John Hopkins University Applied Physics Laboratory, Laurel, MD

* **Research Experience:** Mapped and analyzed geologic deposits in Valles Marineris, Mars using ArcGIS, J-Mars, and ENVI software and THEMIS, HiRISE, TI, CTX, and CRISM data.
* **Intern Activities:** Participated in ACE Run planning potential mission to Near Earth Encounter Asteroid.
* **Presentations:** GSA 2017 Oral Presentation-*Mineralogical mapping of light-toned, sulfate-rich deposits in eastern Valles Marineris, Mars* (Fackrell et al. 2017).

**M.S. Geochemistry-2015**

University of Georgia, Athens, GA, GPA 3.89

* **Grants and Awards:** GSA Graduate Student Research Grant (2014), CMS Graduate Student Research and Travel Grants (2014), Watts-Wheeler Departmental Research and Travel Grants (2014)
* **Research Experience**: The geochemistry, mineralogy, and microbiology of hot springs in Kamchatka, Russia including sample analysis with XRD, RNA extraction, PCR, qPCR, TEM and SEM and preparation of samples for stated and statistical analysis using R Statistical Software and ArcGIS
* **Presentations:** CMS Poster: *Spatial versus spectral resolution: Mapping hot spring clays using meter scale satellite data and ground truth mineralogy* (Fackrell and Schroeder 2015)

Relevant Coursework

* GEOL 6370: Data Analysis
* GEOL 6310: Economic Geology
* GEOL 6350: Principles and Environmental Applications of GIS
* GEOL 8550 Clay Mineralogy XRD Lecture/Lab
* CBIO 7040:Electron Microscopy Lecture
* CBIO 7050L: Electron Microscopy Laboratory
* MARS 6810: Global Biogeochemical Cycles
* MARS 6620: Microbial Ecology

**B.S. Geology-2012**

University of Kansas, Lawrence, KS, GPA 3.82

* **Academic Scholarship**: Bill and Holland Scholarship Recipient University of Kansas (2011; 2012)
* **Field Experience**: Participated as a student and subsequently chosen as a teaching assistant for field course at University of Kansas that provided experience for students in mapping and other field techniques

Relevant Coursework

* GEOL 311: Mineralogy Lecture and Lab
* GEOL 312: Optical Mineralogy
* GEOL 360: Introduction to Field Investigation
* GEOL 331: Sedimentology and Surficial Lecture and Lab
* GEOL 536: Geological Well Log Analysis
* GEOL 572: Geophysics
* GEOL 560: and 561: Field Geology
* GEOL 562: Structural Geology Lecture and Lab
* GEOL 512: Igneous and Metamorphic Petrology
* GEOL 513: Optical Techniques in Petrology Laboratory
* GEOL 521: Paleontology Lecture and Lab
* GEOL 534: Volcanology
* GEOL 532: Stratigraphy Lecture and Lab

**B.S. Geology Major-2010 (Transfer)**

Brigham Young University, Provo, UT, GPA 3.52

Relevant Coursework

* GEOL 111: Introduction to Geology
* GEOL 112: Historical Geology
* GEOL 109: Planetary Geology
* GEOL 541: Geomorphology

**SKILLS**

**Lab Experience:** XRD and Rietveld Analysis, Well Logging Interpretation, SEM and TEM imaging and sample preparation, transmitted and reflective light petrography, RNA extraction, PCR and q PCR analysis

**Field Work:** Geological Mapping, Aqueous Geochemical Testing, Geologic and biologic specimen collection

**Software:** J-Mars, ENVI, Arc GIS Maps/Catalog, R Statistical Software, Bruker-TOPAS XRD analysis, Bruker-EVA XRD, Adobe Photoshop and Illustrator, CorelDraw, Microsoft Office Suite

**WORK AND VOLUNTEER EXPERIENCE**

**Public Education STEM Teacher-2015 to 2016**

Green County Public Schools System

Designed and taught STEM courses at the high school junior senior level for 100+ students.

**Small Group Tutor, Referral Based Tutor-2011 to 2013**

University of Kansas AAAC Tutoring Services, Lawrence, Kansas 2011 to 2013

* Tutor for Calculus, Chemistry, and Biology courses.
* Participated in both group tutoring and referral based one-on-one tutoring. Received consistent high reviews from tutees concerning their experience in tutoring

**Student Laboratory Assistant-2009 to 2010**

Brigham Young University Paleontology Museum, Provo, Utah

* University Paleontology Museum providing free access to knowledge of the past.
* Working up front giving tours to various age groups, and in back preparing fossils brought in from field using typical preparation equipment

**Full Time Volunteer Missionary-2007 to 2008**

The Church of Jesus Christ of Latter-day Saints, Ljubljana, Slovenia

* Full time service and proselyting missionary for one-half years in Slovenia/Croatia Mission
* Learn to speak and communicate in Slovenian and serve community and local congregation