Courtney L. Wagner
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EDUCATION

Ph.D. Geology, Department of Geology & Geophysics, University of Utah (August 2020, expected)
Advisor: Dr. Peter C. Lippert

B.S. Geobiology, Honors, Department of Earth & Environmental Sciences, University of Rochester (May 2015)
Advisor: Dr. John A. Tarduno
Thesis: Characterization of a Single Magnetotactic Bacterial Species from Devil's Bathtub, Mendon Ponds Park, Honeoye Falls, NY

Relevant Coursework
(* = class taken with a laboratory course, ** = class taken with an attached project)
Geology: Introduction to Geological Sciences*, Introduction to Environmental Science, Evolution of the Earth*, Principles of Paleontology, Mineralogy*, Planetary Science and Geologic Evolution**, Sedimentology and Stratigraphy*, Topics in Quaternary Geomorphology**, Marine Geology, Structural Geology*, Paleomagnetism and Global Plate Tectonics, Seminar in Paleomagnetism**, Petrology and Geochemistry, Geology Field Camp (through the University of Buffalo)

Related Courses: Principles of Biology I, Perspectives in Biology II*, Genetics and the Human Genome*, Chemical Concepts I*, Chemical Concepts II*, Organic Chemistry*, Calculus I, Calculus II, Calculus III, Linear Algebra with Differential Equations, General Physics I*, General Physics II*, Introduction to Public Health, Environmental Law and Policy, Applied Statistics – Biological and Physical Sciences**, Scanning Electron Microscope (SEM) Practicum*,**

PUBLICATIONS

John Tarduno, Michael Watkeys, Thomas Huffman, Rory Cottrell, Eric Blackman, Anna Wendt, Cecelia Scribner, and **Courtney Wagner**, 2015. Antiquity of the South Atlantic Anomaly and evidence for top-down control on the geodynamo. *Nature Communications*, 6, 1-6, doi:10.1038/ncomms8865.

PRESENTATIONS

Wagner, C., J. Tarduno, A. Stein, and E. Sia. *Characterization of a Single Magnetotactic Bacterial Species from Devil's Bathtub, Mendon Ponds Park, Honeoye Falls, NY*, Undergraduate Research Exposition, University of Rochester, May 2015. Invited Talk.

Wagner, C. and B. McIntyre. *Electron Microscope Viewing of Magnetotactic Bacteria,* University of Rochester, May 2015. Poster.

RESEARCH EXPERIENCE

Laboratory Technical Assistant, Paleomagnetic Research Group, University of Rochester (*since 2013*)

- Paleomagnetic data collection and processing
- Paleomagnetic sample preparation, including hand-picking single crystals, biological tissues, nano-particle extractions, baked earth sample preparation, and standard paleomagnetic specimens

Electron Microscopy: SEM Practicum at the University of Rochester (*Spring 2015*)

- Training for various preparation techniques to preserve and make samples conductive for Scanning Electron Microscopy (SEM) and Transmission Electron Microscopy (TEM)
- Instrumental use of SEM, TEM, and Atomic Force Microscope (AFM)

NSF Research Experiences for Undergraduates, Department of Physics, University of Rochester (*Summer 2014)*

- Collected field samples containing magnetotactic bacteria, magnetically separated the samples, and identified various species of magnetotactic bacteria based on of their display of magnetotaxis
- Concluded and communicated project and findings through a presentation at the end of the program

Field Work in Southern Africa, Paleomagnetic Research Group, University of Rochester (*August 2014*)

- Visited and helped collect Iron Age samples from sites in South Africa, Botswana, and Zimbabwe
- Performed archaeological excavation and specialized paleomagnetic sample preparation
- Collaborated with professional archaeologists and geologists from South Africa, Botswana, and Zimbabwe

TECHNICAL EXPERIENCE

- Proficient with the use of the following paleo- and rock magnetic instrumentation: AGICO KLY-4S Kappabridge magnetic susceptibility system, Princeton Measurements Alternating Gradient Force Magnetometer, and 2G Enterprise SQUID Cryogenic Magnetometer
- Familiar with biological techniques involving: DNA Isolation, Polymerase Chain Reaction (PCR), Gel Electrophoresis, Genomic Sequencing, and Genomic Analysis
- Experience with Electron Microscopy preparations: gluteraldehyde fixation, microtomy, hexamethyldisilazane (HMDS), and sputter coating (using various conducive materials)
- Experience with the following SEM imaging modes and techniques: secondary electron, backscattered electron, x-ray microanalysis, and nano-fabrication (electron beam and focused ion beam lithography)
- Experience with the following TEM imaging modes and techniques: bright field, dark field, energy-dispersive x-ray spectroscopy, and electron diffraction
- Additional training in Atomic Force Microscopy (AFM) techniques and cantilever/probe design
- Proficient with light microscopy techniques including oil emersion and optical methods for mineral identification
- Comfortable navigating and manipulating the following software: Octave Online, RStudio, ImageJ, Microsoft programs (Excel, Word, Powerpoint), and Adobe Dreamweaver

TEACHING ACTIVITES

Tutor for Environmental Science, Professor Karen Berger, University of Rochester *(Spring 2015)*

Introduction to Geological Sciences Workshop Leader, University of Rochester (*2012 – 2013*)

- Completed training through a class titled "Workshop Leadership" involving various workshop style scenarios
- Led weekly laboratory exercises for a group of eight students
- Prepared miniature lessons and spent extra, non-mandatory, hours outside laboratory helping students with difficult concepts

AWARDS

Second Place Geologist (Honorable Mention, voted by staff and peers) at the University of Buffalo's Field camp *(Summer 2015)*

Angelo Taglicozzo Memorial Geological Scholarship, NE-AIPG (*2015*) **1500 USD**

University of Rochester Earth and Environmental Sciences Lattimore Prize Scholarship (*2015*) **1100 USD**

NSF Research Experience for Undergraduates *(2014*) **4900 USD**

PROFESSIONAL AFFILIATIONS

Geological Society of America (GSA), Member (*since 2013*)

American Geophysical Union (AGU), Member (*since 2013*)

Northeast Section of the American Institute of Professional Geologists (NE-AIPG), Member (*since 2013*)

Sigma Gamma Epsilon, Zeta Phi chapter: honorary society for the Earth Sciences (*since 2015*)

SYNERGYSTIC ACTIVITIES

President and Member of the Undergraduate Society for Geological Sciences, University of Rochester (*2011 – 2015*)

President and Social Chair of Women's Club Soccer, University of Rochester (*2011 – 2015*)
Alternative Spring Break Leader and Member of Habitat for Humanity (*since 2011*)
Staff Assistant for the National Rural Electric Cooperative Association (*since 2011*)
Grassroot Soccer Coach and Member (*since 2013*)