

Arizona State University  
School of Earth and Space Exploration  
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## EDUCATION

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### Arizona State University—Tempe, Arizona Aug. 2015–present

Ph.D. Candidate, Geological Sciences

- Advisors: J Ramón Arrowsmith and Christopher Campisano (School of Human Evolution and Social Change)
- Committee: Arjun Heimsath, Kip Hodges, Kelin Whipple

### Arizona State University—Tempe, Arizona 2015–2018

M.S. Geological Sciences | Masters in Passing

- Thesis: *Tecolote volcano, Pinacate volcanic field (Sonora, Mexico): A case of highly explosive basaltic volcanism and shifting eruptive styles*
- Advisor: Amanda Clarke

### Lawrence University—Appleton, Wisconsin 2011–2015

B.A. Geology and Spanish, history minor | *magna cum laude*

- Senior Capstone: *A previously unrecognized impact structure at Brussels Hill, Door County, Wisconsin: Brecciation and shock-metamorphic features*
- Advisor: Marcia Bjørnerud

**Research interests:** Geological and environmental context of Plio-Pleistocene hominin evolution; basin analysis of the East African Rift System; cosmogenic radionuclides and detrital thermochronology; tectonic geomorphology; physical volcanology

## RESEARCH EXPERIENCE

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### Graduate Research Associate | Arizona State University Aug. 2015–present

- Hominin Sites and Paleolakes Drilling Project (HSPDP)
  - Paleoerosion rates and sediment provenance at HSPDP localities along the East African Rift utilizing cosmogenic radionuclides, (U-Th)/He and U/Pb thermochronology
  - Update and maintain the HSPDP website (<http://hspdp.asu.edu>)
- Cosmogenic and short-lived nuclides laboratory
  - Sample preparation for <sup>10</sup>Be isotope analyses
- Noble gas geochronology and geochemistry laboratories
  - (U-Th)/He detrital apatite conventional analyses; (U-Th)/He and U-Pb detrital zircon single crystal laser ablation double dating (LADD) analyses
- Pinacate volcanic field (Sonora, Mexico) | Secondary project with Amanda Clarke
  - Reconstructing the characteristics of an explosive basaltic eruption

- Undergraduate Research | Lawrence University** **Mar. 2014–June 2015**
- Brussels Hill meteorite impact structure (?), Brussels, Wis.
    - Conducted field work at site for sample collection; made and analyzed thin sections of exhumed and brecciated units to characterize deformation; carried out XRD analyses of brecciated rock to investigate shock-metamorphism

- LU-R1 internship | Illinois State University—Normal, Illinois** **June–Aug. 2013**
- Mentor: Lisa Tranel
    - *Transport of detrital sediments in low-gradient stream sections in the Teton Mountain Range and the Guadalupe and Sacramento Mountains*

## **TEACHING EXPERIENCE**

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**Water Planet (GLG 108) Teaching Assistant | Arizona State University** **Spring 2020 & 2019**

**Geomorphology (GLG 362) TA | ASU** **Fall 2019 & 2018**

**Introduction to Historical Geology (GLG 102/104 iCourse) TA | ASU** **Fall 2019 & 2018**

**Introduction to Geology (GLG 101/103 iCourse) TA | ASU** **Fall 2019**

**Structural Geology (GEOL 370) TA | Lawrence University** **Spring 2015**

- Writing and Content Tutor | Lawrence University** **Sept. 2012–June 2015**  
Center for Teaching and Learning
- Tutor for: Literary Analysis (ENG 150); Freshman Studies (FRST 101, 102); Introductory Geology (GEOL 110); The United States, 1896–Present (HIST 132); History, general; Spanish, all levels; Writing, general

## **PUBLICATIONS**

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Bjørnerud, Marcia, Juliana Olsen-Valdez, **Emily Zawacki**, Kirstin Edwards, Colin Nevins, and Drae Rogers (2020). Brussels Hill, Door County, Wisconsin: an enigmatic area of disturbed bedrock. *Journal of Geology*, 125, 4, p. 325–336. <https://doi.org/10.1086/709276>

**Zawacki, Emily E.**, Amanda B. Clarke, J Ramón Arrowsmith, Costanza Bonadonna, and Daniel J. Lynch (2019). Tecolote volcano, Pinacate volcanic field (Sonora, Mexico): A case of highly explosive basaltic volcanism and shifting eruptive styles. *Journal of Volcanology and Geothermal Research*, 379, p. 23–44. <https://doi.org/10.1016/j.jvolgeores.2019.04.011>

## **ABSTRACTS/PRESENTATIONS**

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**Zawacki, Emily E.**, J. Ramón Arrowsmith, Christopher J. Campisano, Arjun M. Heimsath, Manfred R. Strecker, Craig S. Feibel (2020). <sup>10</sup>Be-derived paleoerosion rates from Northern Awash and West Turkana Hominin Sites and Paleolakes Drilling Project (HSPDP) drill cores. *Geological Society of America Abstracts with Programs*, vol. 52, no 6. Talk.

Mazzarini, Francesco, Illaria Isola, **Emily E. Zawacki**, Amanda B. Clarke, J. Ramón Arrowsmith, Daniel J. Lynch, and Alejandro Hinojosa-Corona (2020). History, volcanology, and magma

storage of the Pinacate Volcanic Field, Sonora, Mexico. *American Geophysical Union, Chapman Conference on Distributed Volcanism and Distributed Volcanic Hazards*.

Mohr, Kyle, Amanda B. Clarke, Mattia De' Michieli Vitturi, Fabrizio Alfano, **Emily E. Zawacki**, Kurt Roggensack, and Chelsea M. Allison (2020). Modeling plume dynamics and ash dispersal in highly explosive basaltic eruptions. *American Geophysical Union, Chapman Conference on Distributed Volcanism and Distributed Volcanic Hazards*.

**Zawacki, Emily E.**, J Ramón Arrowsmith, Christopher J. Campisano, Matthijs C. van Soest, Kip V. Hodges, Manfred R. Strecker, Craig S. Feibel, and Frank Schaebitz (2019). Evaluating sediment provenance and volcanotectonic evolution of the East African Rift System with (U-Th)/He and U/Pb laser ablation double dating of detrital zircons from Hominin Sites and Paleolakes Drilling Project (HSPDP) drill cores. *Geological Society of America Abstracts with Programs*, vol. 51, no 5. Talk.

**Zawacki, Emily E.**, J Ramón Arrowsmith, Christopher J. Campisano, Matthijs C. van Soest, Kip V. Hodges, Manfred R. Strecker, Craig S. Feibel, and Frank Schaebitz (2019). Exhumation rates and sediment provenance from HSPDP drill cores using detrital apatite (U-Th)/He thermochronology and detrital zircon (U-Th)/He and U/Pb laser ablation double dating. *Gordon Research Conference in Geochronology*. Poster.

**Zawacki, Emily E.**, Amanda B. Clarke, J Ramón Arrowsmith, and Daniel J. Lynch (2017). Reconstructing an explosive basaltic eruption in the Pinacate volcanic field, NW Sonora, Mexico. *American Geophysical Union Fall 2017 Meeting*. #T23B-0615. Poster.

**Zawacki, Emily E.**, J Ramón Arrowsmith, Christopher J. Campisano, Manfred R. Strecker, Alan L. Deino, Craig S. Feibel, John D. Kingston, Helen M. Roberts, and HSPDP Team Members (2017). Modeling post-depositional accumulation of <sup>10</sup>Be in sandstones from the Hominin Sites and Paleolakes Drilling Project (HSPDP) cores for *in situ* cosmogenic radionuclide paleoerosion rate analyses. *Geological Society of America Abstracts with Programs*, vol. 49, no 6. Poster.

**Zawacki, Emily E.**, Ramón Arrowsmith, Christopher Campisano, Manfred Strecker, Alan Deino, Craig Feibel, and John Kingston (2017). Paleoerosion rates, exhumation rates and sediment provenance from the CHB, BTB, NAO/NAW and WTK HSPDP sites utilizing cosmogenic radionuclides, (U-Th)/He and U-Pb thermochronology. *Hominin Sites and Paleolakes Drilling Project Annual Meeting*. Poster.

**Zawacki, Emily E.**, Ramón Arrowsmith, Christopher Campisano, Dominique Garello, Manfred Strecker, Alan Deino, Craig Feibel, and John Kingston (2016). Investigating tectonic and climatic influences on hominin landscapes: Reconstructing paleoerosion rates at the BTB, NAO/NAW and WTK HSPDP sites through cosmogenic radionuclides (CRNs). *Hominin Sites and Paleolakes Drilling Project Annual Meeting*. Poster.

**Zawacki, Emily E.** and Marcia G. Bjørnerud (2015). A previously unrecognized impact structure at Brussels Hill, Door County, Wisconsin: Brecciation and shock-metamorphic features. *Geological Society of America Abstracts with Programs*, vol. 47, no. 5, p.82. Poster.

**Zawacki, Emily E.** and Marcia G. Bjørnerud (2014). A previously unrecognized impact structure at Brussels Hill, Door County, Wisconsin: Brecciation and shock-metamorphic features. *Geological Society of America Abstracts with Programs*, vol. 46, no. 6, p.707. Talk.

**Zawacki, Emily E.**, Amber J. Ritchie, Lauren L. Hoffman, and Lisa M. Tranel (2013). Transport of detrital sediments in low-gradient stream sections in the Teton Mountain Range and the Guadalupe and Sacramento Mountains. *Geological Society of America Abstracts with Programs*, vol. 45, no. 7, p.586. Poster.

## OUTREACH & SERVICE

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**Open House Committee | ASU School of Earth and Space Exploration** Jan. 2018–present  
Plan, advertise, and execute SESE Open House events held 2 times a year  
Serve as an exhibitor and created and run an interactive display on sedimentary rocks

**It's Sedimentary | <http://itssedimentary.com>** Feb. 2014–present  
Run and create content for my educational geology blog

**Geological Society of America Science Communication Internship** Sept. 2019  
Interviewed presenters and prepared summary of work for non-technical audiences

- *A Greener Sahara; Ancient Oases and Prehistoric Human Habitation in the Modern Desert*  
<https://speakingofgeoscience.org/2019/11/19/a-greener-sahara-ancient-oases-and-prehistoric-human-habitation-in-the-modern-desert/>
- *Understanding Earth Fissures: A Man-Made Geohazard*  
<https://www.youtube.com/watch?v=1SXaMH8gV6I>

**College Fair Alumni Representative, Lawrence University** 2016–2018  
Served as a representative for Lawrence University at Phoenix-area (AZ) college fairs

**Brussels Hill Meteorite Impact Site Field Trip** May 2015  
Led two 15-participant field trips to Brussels Hill, Wis., as part of the Ridges Sanctuary Door County Festival of Nature (Bailey's Harbor, Wis.)

## GRANTS & FELLOWSHIPS

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• ASU Graduate College Completion Fellowship	\$18,751	March 2020
• AGU Chapman Conference Travel Grant	\$800	Jan. 2020
• Gordon Research Conference (GRC) in Geochronology Attendance Scholarship	\$1,830	July 2019
• Troy L. Péwé Vision Fellowship in Quaternary Studies	\$1,500	May 2018
• Geological Society of America Student Research Grant	\$1,875	Apr. 2016
• Mellon Senior Experience Grant, Lawrence University	<u>\$1,200</u>	Sept. 2014
<b>Total: \$25,956</b>		

## HONORS & AWARDS

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- The College of Liberal Arts & Sciences Student Leader Award Nov. 2019
- School of Earth and Space Exploration Safety Star Aug. 2019
- Science Showcase Video Contest – Director's Choice Award Oct. 2017  
*"Why are the Rocks of Sedona, Arizona Red?"*  
<https://www.youtube.com/watch?v=aK7Hzz2kmrw>
- The College of Liberal Arts & Sciences Graduate Excellence Award Apr. 2017
- Honorable Mention, NSF Graduate Research Fellowship Program (GRFP) Mar. 2017

### Lawrence University:

- Phi Beta Kappa Apr. 2015
- Tank-Palmquist-Ross Award in Geology May 2014
- John J. and Graciela Alfieri Tuition Scholarship in Spanish May 2014
- Lambda Sigma, sophomore honor society May 2012
- Dean's List, all terms 2011–2015

## PROFESSIONAL MEMBERSHIPS

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American Geophysical Union (AGU) 2017  
Geological Society of America (GSA) Since 2013

## OTHER WORK EXPERIENCE

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**Office of Communications | Lawrence University**

- **Student Assistant** **June 2014–June 2015**
  - Utilized Adobe InDesign, Photoshop, and Illustrator to design official university materials
  - Wrote copy and copy-edited for *Lawrence* magazine and Lawrence University website
- **Student Graphic Designer** **Jan. 2012–June 2013**

***The Lawrentian* student newspaper | Lawrence University**

- **Editor-in-Chief** **Apr. 2014–Apr. 2015**
  - Oversaw and managed a 17-member Editorial Board and 40+ Staff Writers and Photographers
  - Led weekly Editorial Board meetings; published 26 issues throughout the year (weekly)
- **Design Editor/Associate Layout Editor & News Writer** **Oct. 2011–Apr. 2014**

## SKILLS

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ArcGIS; MATLAB; Adobe InDesign, Illustrator, and Photoshop; Microsoft Office Suite

## LANGUAGES

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English (native) and Spanish (full professional proficiency)