

# Emily H. G. Cooperdock

PhD Candidate

1 University Station C9000  
University of Texas at Austin  
Austin, TX 78712

(845)-731-1255  
emilyhgoldstein@utexas.edu  
www.emilycooperdock.com

## Research Interests:

Fluid-rock interaction; timing of serpentinization in tectonic processes; trace element cycling during serpentinization; magnetite formation; U and Th partitioning during metamorphism, method development for (U-Th)/He analysis; Fe-oxide (U-Th)/He dating; X-Ray Computed Tomography application to geologic samples

## Education:

- 2017 Ph.D. The University of Texas at Austin, Department of Geological Sciences  
*expected* *Dating serpentinization with magnetite (U-Th)/He chronometry*  
(Dr. Daniel Stockli, advisor)
- 2011 B.A. Columbia University, Department of Earth and Environmental Sciences  
*Depositional environment and detrital zircon dating of the Jardine*  
*Metasedimentary Sequence from the South Snowy Mountains in Yellowstone*  
*National Park*  
(Drs. David Mogk, Darrell Henry, Nicholas Christie-Blick, co-advisors)

## Research Grants:

- 2015 Jackson School of Geosciences Grant Matching Program: "Trace Element Systematics of Serpentinites" (\$1,000)
- 2015 Mineralogical Society of America's Mineralogy/Petrology Student Research Grant (\$5000)
- 2014 Jackson School of Geosciences Summer Analytical Fees Grant (\$1000)
- 2013 Geological Society of America Students-in-Aid Research Grant: "Magnetite (U-Th)/He and (U-Th)/Ne geochronology: constraining serpentinization along magma-poor continental margins" (\$2,300)
- 2013 Jackson School of Geosciences Grant Matching Program: "Magnetite (U-Th)/He and (U-Th)/Ne geochronology: constraining serpentinization along magma-poor continental margins" (\$1,000)

## Awards and Fellowships:

- 2014 National Science Foundation: Graduate Research Fellowship (\$32,000/year for three years)
- 2014 The University of Texas at Austin: F. Earl Ingerson Graduate Research Assistance Fellowship in Geochemistry (\$4000)
- 2014 The University of Texas at Austin: Graduate Dean's Prestigious Fellowship Supplement (\$1000)
- 2014 The University of Texas at Austin: Chevron Minority Summer Fellowship (\$9000)
- 2013 Geological Society of America: Diversity Award
- 2013 Geological Society of America Mineralogy, Geochemistry, Petrology and Volcanology Division: Student Research Award (\$1000)
- 2012 The University of Texas at Austin: Jackson School Graduate Fellowship (\$36,000)

2010 University of Kansas (Field Camp): Golden Hammer Award  
2007 Columbia University: Dean's List

Publications:

1. **Cooperdock, E. H. G.**, and Stockli, D. F. (2016) "Unraveling alteration histories in serpentinites and associated ultramafic rocks with magnetite (U-Th)/He geochronology." *Geology* 44(11): 967-970. doi: 10.1130/G38587.1
2. **Cooperdock, E. H. G.**, \*Raia, N. H., Barnes, J. D., Stockli, D. F. and Schwarzenbach, E. M. "Tectonic origin of serpentinites on Syros, Greece: Geochemical signatures of seafloor serpentinization preserved in a HP/LT subduction complex" in review at *Lithos*  
*\*Undergraduate student mentee*

Publications in Preparation:

1. **Cooperdock, E. H. G.** et al., "The applicability of magnetite (U-Th)/He chronometry to determine the age of serpentinites preserved in ophiolites"
2. **Cooperdock, E. H. G.** et al., "Uranium and thorium systematics in serpentinites"

Published Abstracts:

1. **Cooperdock, E. H. G.**, and Stockli, D. F. (2016) "Unraveling the alteration history of serpentinites and associated ultramafic rocks from the Kampos HPLT subduction complex, Syros, Greece" AGU Fall Meeting
2. \*Raia, N., **Cooperdock, E. H. G.**, Barnes, J. D., Stockli, D. F., and Schwarzenbach, E. (2016) "Tectonic origin of serpentinites on Syros, Greece: Geochemical signatures of seafloor serpentinization preserved in the HP/LT subduction complex" AGU Fall Meeting  
*\*Undergraduate student mentee*
3. Cai, Y., Kelemen, P. B., Goldstein, S. L., Yogodzinski, G. M., Hemming, S. R., Rioux, M. E., and **Cooperdock, E. H. G.** (2016) "Ages and geochemical comparison of coeval plutons and volcanics from the central and eastern Aleutian arc" AGU Fall Meeting
4. **Cooperdock, E. H. G.**, and Stockli, D. F., (2016) "Unraveling the alteration history of serpentinites and associated ultramafic rocks from the Kampos HPLT subduction complex, Syros, Greece" 4<sup>th</sup> International Serpentine Days Conference
5. **Cooperdock, E.**, Carter, M., and Lehnert, K. (2015) "The Internet of Samples in the Earth Sciences: Graduate students invested in the future of physical samples" Geological Society of America, Abstracts with Programs, Vol. 47, No. 7, p.819
6. **Hernandez Goldstein, E.**, Stockli, D., Ketcham, R. & Seman, S., (2014) "Improved Methodology for Magnetite (U-Th)/He Dating of Serpentinites" International Conference on Thermochronology
7. **Hernandez Goldstein, E.**, Stockli, D., Ketcham, R., & Seman, S., (2014) "U-Th/He Dating of Magnetites in Serpentinites" Goldschmidt Abstracts, 2014 974
8. **Hernandez Goldstein, E.**, Stockli, D. and Ketcham, R., (2013) "Vetting Unconventional Minerals for Thermochronology" Geological Society of America, Abstracts with Programs, Vol. 45, No. 7.
9. **Hernandez Goldstein, E.**, Stockli, D. and Ketcham, R., (2013) "Magnetite (U-Th)/He Geochronology: Advancements in Sample Preparation and Application to Date Serpentinites" Geological Society of America, Abstracts with Programs, Vol. 45, No. 3.
10. **Goldstein, E. H.**, Sauer, K., Harwood, J., Mogk, D., Henry, D., Mueller, P., and Foster, D., (2011)

“Evolution of the Precambrian rocks of Yellowstone National Park: Metasedimentary Rocks” Geological Society of America, Abstracts with Programs, Vol. 43, No. 4, p. 61.

11. Corbin, N., Walden, J., Bigoldi T., Thompson, J., Stockli, D., **Hernandez Goldstein, E.**, Biel, S., Fry, T., Wiese, S., and Weiland, C., (2010) “Late Miocene to Pliocene left-lateral reactivation of Middle Miocene right-lateral faults in the Mina deflection- a detailed stratigraphic, structural, fault-kinematic, and geochronological investigation in the Coaldale Junction area, Walker Lane, NV” Geological Society of America, Abstracts with Programs, Vol. 42, No. 5, p. 133.

Oral Presentations:

- 2017 Lamont Doherty Earth Observatory, “Unlocking the age of serpentinites with magnetite (U-Th)/He chronometry”
- 2017 *Invited:* Woods Hole Oceanographic Institute, “Unlocking the age of serpentinites with magnetite (U-Th)/He chronometry”
- 2016 4<sup>th</sup> International Serpentine Days Conference, “Unraveling alteration histories in serpentinites and associated ultramafic rocks with magnetite (U-Th)/He geochronology”
- 2015 Exxon-Mobil, “Magnetite U-Th/He Dating in the Alps”
- 2014 The University of Texas at Austin, Department of Geological Sciences, “Magnetite (U-Th)/He Records Multiple Events on Syros, Greece”
- 2014 Goldschmidt Conference, “(U-Th)/He Dating of Magnetites in Serpentinites”
- 2014 Columbia University, Lamont Doherty Earth Observatory, “Dating serpentinitization with magnetite (U-Th)/He geochronology”
- 2014 The University of Texas at Austin, Department of Geological Sciences, “The significance of dating magnetites from serpentinites at magma poor margins”
- 2013 Exxon-Mobil, “Dating Serpentinization with magnetite (U-Th)/He Thermochronology”
- 2011 Columbia University, Department of Earth and Environmental Sciences “Depositional environment and detrital zircon dating of the Jardine Metasedimentary Sequence from the South Snowy Mountains in Yellowstone National Park”

Teaching & Geoscience Education Experience:

- 2016 Teaching Assistant, Earth Materials, The University of Texas at Austin
- Prepared and led hands-on laboratories every week for twelve undergraduate students, guest lectured for class of 70 students, created demonstration videos to accompany lectures (*Instructor rating by students: 4.7/5.0*)
- 2016 Mentor to Undergraduate Honors Student, The University of Texas at Austin
- Mentor to female undergraduate honors student for her senior thesis project, conceptualized the project, advised research activities, writing, and presentations. The final product included a poster at AGU 2016 and a publication submitted to *Lithos*.
- 2015 Students Raising Students Mentor, The University of Texas at Austin
- Mentor to female undergraduate geophysics major, provided career advice
- 2014 GK-12 Associate, The University of Texas at Austin
- Presented to high school classrooms, lead department tours for K-12 students
- 2014 Co-coordinator for UTChron Undergraduate Summer Minority Intern Program
- Organized and mentored three undergraduates in (U-Th)/He related research projects at University of Texas at Austin, including students from University of Puerto Rico Mayaguez.

- 2014 Teaching Assistant, Honors Undergraduate Field Trip to the Colorado Plateau, The University of Texas at Austin
- 2013 Participant, On the Cutting Edge Workshop: Preparing for an Academic Career in Geosciences
- 2012 UTChron Laboratory Research Assistant, The University of Texas at Austin
  - Analyzed (U-Th)/He ages, ran ICP-MS analyses, performed clean lab duties
- 2010 NSF Research Experience for Undergraduates: Precambrian Rocks of Yellowstone National Park
- 2010 Undergraduate Research Assistant, Columbia University (2 semesters)
  - Carried out mineral separation of samples for graduate student
- 2010 Teaching Assistant, Solid Earth Systems, Columbia University (2 semesters)
  - Assisted during lab activities and field trips, graded all labs, tutored students

Professional Service/Activities:

- 2016 Co-convenor for AGU Session “4 Billion Years of Serpentinization on Earth and Beyond”
- 2016 Co-founder and Editor for *Science, Y’all!*, the official student science blog of the Jackson School of Geosciences at The University of Texas at Austin
- 2016 Coordinator, Petrology, Geochemistry, Structure and Tectonics Seminar, The University of Texas at Austin
- 2016 Panel Member, Jackson School of Geosciences 10<sup>th</sup> Anniversary Celebration and Research Symposium, The University of Texas at Austin
- 2015 Member, Jackson School Dean’s Evaluation Committee, The University of Texas at Austin
- 2015 Planning Committee, iSamples EarthCube Research Coordination Workshop, Austin, Texas
- 2014 Poster Presenter, 4<sup>th</sup> International Conference on Thermochronology
- 2014 Secretary, Graduate Student Executive Committee, The University of Texas at Austin
- 2014 Lead Coordinator, Jackson School Poster Symposium, The University of Texas at Austin
- 2013 Vice President, Graduate Student Executive Committee, The University of Texas at Austin
- 2013 Participant, Tectonic Sedimentary and Magmatic Evolution of Hyper-extended Rift Margins, Graubünden, Switzerland, Exxon Mobil Field School
- 2013 Participant, Franciscan Subduction Complex, CA, USA, International Lithosphere Program Field Trip
- 2013 Poster Presenter, Annual Meeting, Geological Society of America
- 2013 Student Volunteer, South-Central Annual Meeting, Geological Society of America
- 2013 Poster Presenter, South-Central Annual Meeting, Geological Society of America
- 2013 Poster Presenter, Jackson School Research Symposium, The University of Texas at Austin
- 2012 Student-Faculty Liaison, Graduate Student Executive Committee, The University of Texas at Austin
- 2012 Participant, Pyrenees Workshop 2012, St. Martin d’Arrossa, France
- 2011 Research Assistant, International Drilling Program Dead Sea Project, Dead Sea, Israel
- 2010 Student Volunteer, Annual Meeting, Geological Society of America
- 2009 Participant, Geoinformatics Workshop, Geological Society of America
- 2009 Research Assistant, MEDCOR Research Cruise, Messina, Sicily

Professional Societies: Geological Society of America, Mineralogical Society of America, American Geophysical Union, National Association of Geoscience Teachers