

CURRICULUM VITAE

Chloe E. Hart

• EDUCATION •

2013-Present **PhD Candidate**, Dual-title Earth and Space Sciences & Astrobiology,
University of Washington, Seattle, WA.

2008-2012 **Bachelor of Science**, Biology major, Geology minor, Magna Cum Laude,
Wittenberg University, Springfield, OH.

• PROFESSIONAL EXPERIENCE •

2013-Present **Research Assistant**, Geomicrobiology; *University of Washington, Seattle, WA.* PI: Drew Gorman-Lewis, PhD.

- Research topics include energetics of microbial growth, response to energy source availability, and heavy metal toxicity in acidophilic microorganisms.

2014-2017 **Undergraduate Student Research Mentor**, *University of Washington, Seattle, WA.*

- Directed 4 students in safe and successful laboratory research.

2014-2017 **Pacific Science Center Summer Research Internship Mentor**, *University of Washington, Seattle, WA.*

- Directed 3 students in safe and successful laboratory research.

2016 **NASA International Summer School in Astrobiology**, *Universidad Internacional Menéndez Pelayo, Santander, Spain.*

- Topic: Earth analog environments and the search for life beyond the Earth.

Jun-Sep 2015 **Astrobiology Research Rotation**, Microbiology and Biochemistry, *University of Washington, Seattle, WA.* PI: John Leigh, PhD. Research Scientist and mentor: Thomas Lie, PhD.

- Research topics include anaerobic microbial consortia enrichment and isolation and high-temperature nitrogen fixation in *Methanocaldococcus* FS406.

2008-2012 **Undergraduate Research Assistant**, *Wittenberg University, Springfield, OH.*

- Research topics include water retention in fiddler crab species, orchid and dandelion seed studies, sugar preference in red mites, and kingsnake genetics and fitness.

• TEACHING APPOINTMENTS •

2017 **Teaching Assistant: Geobiology (ESS 313; Fall)**, *University of Washington, Seattle, WA.*

2015 **Teaching Assistant: Introduction to Geology (ESS 101; Spring)**,

- University of Washington, Seattle, WA.*
- 2015 **Teaching Assistant: Dinosaurs (ESS 100; Winter)**, *University of Washington, Seattle, WA.*
- 2014 **Teaching Assistant: Introduction to Astrobiology (AstBio 115; Fall)**, *University of Washington, Seattle, WA.*
- 2013-2014 **Teaching Assistant: Introduction to Geology (ESS 101; Fall '13 - Spring '14)**, *University of Washington, Seattle, WA.*
- 2009-2012 **Biology Lab Peer Mentor: Concepts of Biology (BIO 170 and BIO 180)**, *Wittenberg University, Springfield, OH*
- 2012 **Physics Department Peer Mentor: Astronomy (PHYS 107)**, *Wittenberg University, Springfield, OH.*

• **GRANTS, FELLOWSHIPS, AWARDS** •

- 2018 Dept. of Earth and Space Sciences Research Gala Best Session Presentation (Session: Life, the Universe, and Everything)
- 2017 Stephen G. Warren Endowed Fund for Graduate Students in ESS & ESS Distinguished Graduate Student Research Support
- 2016 Stephen G. Warren Endowed Fund for Graduate Students in Earth and Space Sciences
- 2015 Dept. of Earth and Space Sciences Dorothy G. Stephens Fellowship
- 2014 Dept. of Earth and Space Sciences Robert and Jenny Winglee Grad Support Fund & Misch Fellowship
- 2012 Semester University Research Grant, Wittenberg University
- 2009 Biology Department Summer Research Grant, Wittenberg University

• **OUTREACH** •

- Dec 2017 Newton Elementary School (OH), kindergarten class. Topic: Microbiology & How to be a Scientist; microscope activity.
- Jul 2017 UW Summer Youth Microbiology Program (WA). Topic: Microbiology; lab tour and chemistry demonstrations.
- May 2017 Eatonville Elementary School (WA), 6th grade science class. Topic: Astrobiology: The Search for Life Elsewhere; exoplanet habitability activity.
- Dec 2016 Local elementary school students (WA). Rockin' Out Activity: Mars Mission Design.
- Aug 2016 UW Summer Youth Microbiology Program (WA). Topic: Microbiology; lab tour and chemistry demonstrations.
- Mar 2015 Wittenberg University's Astronomy Club (OH). Skype talk; Topic: Introduction to Astrobiology and Microbial Energetics.

- Mar 2015 Roosevelt High School (WA), 9th grade science classes. Topic: Cosmic Calendar.
- 2011 Astronomy Outreach Internship, *Wittenberg University, Springfield, OH.*

• PEER-REVIEWED PUBLICATIONS •

- 2018 **Hart, C. E.** and Gorman-Lewis, D. Energetics of *Acidianus ambivalens* in response to oxygen availability. *In prep.*
- 2018 **Hart, C. E.** and Gorman-Lewis, D. Surface complexation of Cd²⁺ by thermoacidophile *Sulfolobus acidocaldarius*. *In prep.*
- 2018 **Hart, C. E.** and Gorman-Lewis, D. *Acidithiobacillus* spp. growth energetics during iron(II) and sulfur oxidation. *In prep.*
- 2018 **Hart, C. E.** and Gorman-Lewis, D. Thermodynamics of anaerobic sulfur reduction by *Acidianus ambivalens*. *In prep.*
- 2010 Hale, A. N., Imfeld, S. M., **Hart, C. E.**, Gribbins, K. M., Yoder, J. A., and M. H. Collier. Reduced seed germination after pappus removal in the North American dandelion (*Taraxacum officinale*; Asteraceae). *Weed Science* 58: 420-425.
- 2010 Yoder, J. A., Bosley, J. W., Chambers, M. J., **Hart, C. E.**, Gribbins, K. M., and M. H. Collier. Reduced cuticular permeability promotes inland habitat expansion and freshwater survival in the fiddler crab *Uca minax* but not in its less terrestrial counterparts *U. pugilator* and *U. pugnax*. *Crustaceana* 83: 481-492.
- 2010 Yoder, J. A., Condon, M. R., **Hart, C. E.**, Collier, M. H., Patrick, K. R., and J. B. Benoit. Use of an alarm pheromone against ants for gaining access to ant/scale prey by the red velvet mite *Balaustium* sp. (Erythraeidae) in a honeydew rich environment. *The Journal of Experimental Biology* 213: 386-392.
- 2010 Yoder, J. A., Imfeld, S. M., Heydinger, D. J., **Hart, C. E.**, Collier, M. H., Gribbins, K. M., and L. W. Zettler. Comparative water balance profiles of Orchidaceae seeds for epiphytic and terrestrial taxa endemic to North America. *Plant Ecology* 211: 7-17.

• ORAL PRESENTATIONS •

- 2018 **Hart, Chloe** and Gorman-Lewis, Drew. Energetics of iron- and sulfur-oxidizing acidophiles. Department of Earth and Space Sciences Research Gala, University of Washington, Seattle, Washington.
- 2017 **Hart, Chloe** and Gorman-Lewis, Drew. Energetics of *Acidianus ambivalens* during aerobic growth on sulfur and varying nutrient availability.

Astrobiology Science Conference (AbSciCon), Mesa, Arizona.

- 2017 **Hart, Chloe** and Gorman-Lewis, Drew. Energetics of *Acidianus ambivalens* during aerobic growth on sulfur and varying nutrient availability. Department of Earth and Space Sciences Research Gala, University of Washington, Seattle, Washington.
- 2015 **Hart, Chloe** and Gorman-Lewis, Drew. Thermodynamic analysis of microbial growth during aerobic and anaerobic sulfur metabolisms. Department of Earth and Space Sciences Research Gala, University of Washington, Seattle, Washington.

• POSTER PRESENTATIONS •

- 2017 **Hart, C.** and Gorman-Lewis, D. Energetics of sulfur-oxidizer *Acidianus ambivalens* on varying nutrient availability. Geobiology Conference, Banff, Alberta, Canada.
- 2014 **Hart, C.** and Gorman-Lewis, D. Mineral Surface Mediated Metabolism of *Sulfolobus acidocaldarius*. Department of Earth and Space Sciences Research Gala, University of Washington, Seattle, Washington.
- 2012 Rausch, B., **Hart, C.E.**, Hagen, B., Hurst, S., Metz, D., and Phillips, R. S. Fluctuating asymmetry's effect on fitness indicators at varying incubation temperatures in the variable. Butler University Undergraduate Research Conference, Indianapolis, Indiana.
- 2010 **Hart, C. E.**, Collier, M. H., and J. A. Yoder. Release of neryl formate prevents detection of red velvet mites by ants when feeding on aphid/scale prey in honeydew-laden habitats. Annual Meeting of The Association of Southeastern Biologists, University of North Carolina, Asheville, Asheville, North Carolina. Online Abstract (P1.73)
- 2010 Imfeld, S. M., Heydinger, D. J., **Hart, C. E.**, Collier, M. H., Gribbins, K. M., Yoder, J. A., and L. W. Zettler. Water relations of terrestrial and epiphytic orchid seeds of North America with special reference to species endemic to Hawaii and an only known truly aquatic. Annual Meeting of The Association of Southeastern Biologists, University of North Carolina, Asheville, Asheville, North Carolina. Online Abstract (P1.48).
- 2010 Stueber, S. E., Winters, K. A., Heffelfinger, M. E., Wollaeger, H. M., Almdale, K. M., Imfeld, S. M., **Hart, C. E.**, Yoder, J. A., and M. H. Collier. Upper thermal limitations of the sand fiddler crab, *Uca pugilator*. Butler University Undergraduate Research Conference, Indianapolis, Indiana. Abstract p. 131.

- 2010 Stueber, S. E., Bosley, J. W., **Hart, C. E.**, Collier, M. H., Gribbins, K. M., and J. A. Yoder. Differences in habitat preference and suitability based on water balance profiles of *Uca minax*, *U. pugilator*, and *U. pugnax*. Annual Meeting of the Association of Southeastern Biologists, University of North Carolina, Asheville, North Carolina. Online Abstract (P1.69).