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EDUCATION

Ph.D.	1998	Oceanography	University of Washington, Seattle WA
M.S.	1995	Oceanography	University of Washington, Seattle WA
A.B.	1990	Chemistry, with Honors	Vassar College, Poughkeepsie NY

PROFESSIONAL EXPERIENCE

2003-present Associate Prof. (2010-present), Asst. Prof. (2003-10), School of Earth & Space Exploration and School of Molecular Sciences, Arizona State University
2007-present Senior Sustainability Scientist, Global Institute of Sustainability, Arizona State University
2006-present Faculty Honors Advisor, Barrett, the Honors College at Arizona State University
2001-2003 Associate Director, Rutgers/NOAA Cooperative Marine Education and Research Program, Institute of Marine and Coastal Sciences, Rutgers University
2000-2003 Visiting Assistant Professor, Institute of Marine and Coastal Sciences, Rutgers University
1998-2000 Post-Doctoral Fellow, Institute of Marine and Coastal Sciences, Rutgers University

RESEARCH INTERESTS

- Carbon and nitrogen cycling (aquatic, marine, hydrothermal, and terrestrial ecosystems)
- Astrobiology and Exoplanets
- Urban biogeochemistry, Geoengineering, and Anthropocene Science

AWARDS AND RECOGNITIONS

2018 Visiting Fellow: Earth-Life Science Institute (ELSI; Tokyo Technical University)
2016 ASU TeamLA Leadership Academy Fellow, Global Institute of Sustainability
2014 ASU Leadership Academy Fellow, Global Institute of Sustainability
2013 Visiting Fellow: Hanse Institute for Advanced Study (Hanse-Wissenschaftskolleg, Germany)
2009 NSF (CAREER) Faculty Early Career Development Award (\$573,549)

PUBLICATIONS

Summary

64 peer-reviewed publications (~5/yr). Total citations: 2477, *h-Index*: 23 ([GoogleScholar](#), Nov. 2019)

‡: corresponding author (this is a key indicator in the Chemistry field); *italics*: post-doctoral fellow, underline/double underline: Hartnett graduate/undergraduate advisee, */** : other graduate/undergraduate student.

IF: Impact Factor, # Citations, Hartnett role description. ♦: notes and clarifications, Blue: collaborative work that could only be accomplished through a team effort; Red: high-profile, notable, or >50 citations.

Peer-reviewed Journal Articles and Book Chapters

64. [Nye, J, E Shock, H Hartnett‡. \(in press, 2020\) Characterization of dissolved organic matter in hot springs using fluorescence spectroscopy and parallel factor \(PARAFAC\) analysis. *Organic Geochemistry*. doi: 10.1016/j.orggeochem.2019.103964](#)

63. [Robinson, KJ, KM Fecteau, IR Gould, HE Hartnett, LB Williams, EL Shock. \(2020\) Metastable equilibrium of substitution reactions among oxygen- and nitrogen-bearing](#)

- organic compounds at hydrothermal conditions. *Geochimica et Cosmochimica Acta*. 272, 93-104. 10.1016/j.gca.2019.12.030
62. *Fecteau, K*, I Gould, L Williams, H Hartnett, G Shaver**, *K Johnson*, E Shock. (2019) Bulk gold catalyzes hydride transfer in the Cannizzaro and related reactions. *New J. Chem.* 43, 19137-19148. doi: 10.1039/C9NJ04029C
IF: 3.07, 0 citations; HH role: interpretation and discussion of data, revising and editing. ♦this paper was highly collaborative
61. Glein, CR, IR Gould, ED Lorange, HE Hartnett, EL Shock. (2020) Mechanisms of decarboxylation of phenylacetic acids and their sodium salts in water at high temperature and pressure. *Geochimica et Cosmochimica Acta*. 269, 597-621. 10.1016/j.gca.2019.11.003
IF: 5.052, 0 citations; HH role: intellectual content, interpretation and discussion of data, revising and editing. ♦this paper was highly collaborative
60. Childers, DL, P Bois, HE Hartnett, T McPhearson, G Metson. (2019) Urban ecological infrastructure (UEI): an inclusive concept for the non-built urban environment. *Elementa Science of the Anthropocene*. 7, 46.
IF: 3.52, 0 citations; HH role: intellectual content, interpretation and discussion of data, writing and editing. ♦this paper was highly collaborative
59. Buessecker, S**, K Tylor, *J Nye*, K Holbert, J Urquiza-Munoz, J Glass, H Hartnett, H Cadillo-Quiroz. (2019) Effects of sterilization techniques on chemodenitrification and N₂O production in tropical peat microcosms. *Biogeosciences*. 16, 4601-4612. doi: 10.5194/bg-2019-282
IF: 4.373, 1 citation; HH role: intellectual content, interpretation and discussion of data, writing and editing. ♦this paper was highly collaborative
58. Bockisch, C, E Lorange, G Shaver**, H Hartnett, E Shock, I Gould. (2019) Selective green reductions using geomimicry. *Green Chemistry*. 21, 4159-4168. doi: 10.1039/C9GC00636B
IF: 9.405, 1 citation; HH role: intellectual content, interpretation and discussion of data, writing and editing. ♦this paper was highly collaborative
57. Shock, E, C Bockisch*, *C Estrada*, *K Fecteau*, I Gould, H Hartnett, K Johnson, *K Robinson*, J Shipp, L Williams. (2019, in the press) Earth as organic chemist. In: *Whole Earth Carbon*. Deep Carbon Observatory. University of Cambridge Press. doi: 10.1017/9781108677950.014
HH role: intellectual content, interpretation and discussion of data, writing and editing. ♦this paper was highly collaborative
56. *Robinson, K*, IR Gould, *KM Fecteau*, HE Hartnett, LB Williams, EL Shock. (2019) Deamination reactions under acidic hydrothermal conditions. *Geochimica et Cosmochimica Acta*. 244, 113-128.
IF: 5.052, 6 citations; HH role: intellectual content, interpretation and discussion of data, revising and editing.
55. Hartnett, H and D Hannah (2019) Monsters of the Deep. In: *A Year Without a Winter*. D Hannah, B Cooper, J Eschirch, C Selin. Eds. Columbia University Press. New York. 284 pp.
IF: N/A, HH: lead author. ♦this is an Art-Science collaboration that is part of a book project celebrating the 200th anniversary of Mary Shelly's *Frankenstein*.
54. *Fecteau, KM*, IR Gould, CR Glein, LB Williams, HE Hartnett, EL Shock. (2019).

Production of carboxylic acids from aldehydes under hydrothermal conditions: a kinetics study of benzaldehyde. *ACS Earth & Space Chemistry*. 3, 170-191.

IF: 2.79, 3 citations; HH role: intellectual content, interpretation and discussion of data, revising and editing.

53. Bockisch, C**, ED Lorance, **HE Hartnett**[‡], EL Shock[‡], IR Gould[‡]. (2018) Kinetics and mechanisms of dehydration of secondary alcohols under hydrothermal conditions. *ACS Earth and Space Chemistry*. **2**(8), 821-832.
IF: 2.79, 6 citations; HH role: corresponding author, intellectual content, interpretation and discussion of data, revising and editing. This paper was an ACS Editor's Choice article and is at the top of the most-read articles in ACSESC for 2019.
52. Richter, D, S Billings, P Groffman, E Kelly, K Lohse, W McDowell, C Riebe, W Silver, T White, S Anderson, S Brantley, Z Brecheisen, O Chadwick, **H Hartnett**, S Hobbie, C Kazanski, D Markewitz, K O'Neill, P Schroeder, A Thompson. (2018) Ideas and Perspectives: Strengthening the biogeosciences in environmental research networks. *Biogeosciences*. **15**, 4815-4832.
IF: 4.373, 10 citations; HH role: intellectual content, interpretation and discussion of data, writing and editing. ♦this paper was highly collaborative
51. Schwieterman, EW, NY Kiang, MN Parenteau, CE Harman, S DasSarma, TM Fisher**, GN Arney, **HE Hartnett**, C Reinhard, S Olson, VS Meadows, CS Cockell, SI Walker, JL Grenfell, S Hegde, S Rugheimer, R Hu, TW Lyons. (2018) Exoplanet biosignatures: A review of remotely detectable signs of life. *Astrobiology*. **18**(6), 663-708.
IF: 3.768, **122 citations**; HH role: intellectual content, discussion of data, coordination of writing, and editing. ♦I co-lead this review paper developed from the 2016 NASA/NExSS Biosignatures workshop. This paper had significant media attention. It was a top-read 2018 paper, and is in the top 1% of Astrobiology papers; it has an Altmetrics score of 308 placing it in the 99th percentile of High Attention Scores for 2018 articles: <https://www.altmetric.com/details/20200925>.
50. Yang, Z, I Gould, L Williams, **HE Hartnett**, E Shock. (2018) Effects of iron-containing minerals on hydrothermal reactions of ketones. *Geochimica et Cosmochimica Acta*. **223**, 107-126.
IF: 5.052, 9 citations; HH role: intellectual content, interpretation and discussion of data, writing, and significant editing for English grammar.
49. **Hartnett, HE**[‡]. (2017) Biogeochemistry. In: *Encyclopedia of Geochemistry*. Ed. W. White. Springer, Cham. doi: 10.1007/978-3-319-39193-9_169-1.
IF: n/a, 72 downloads, HH: 100%.
48. **Hartnett, HE**[‡]. (2017) Dissolved Organic Matter. In: *Encyclopedia of Geochemistry*. Ed. W. White. Springer, Cham. doi: 10.1007/978-3-319-39193-9_155-1.
IF: n/a, 52 downloads, HH: 100%.
47. **Palta, M**[‡] and **HE Hartnett**[‡]. (2017) The Nitrogen Cycle. In: *Encyclopedia of Geochemistry*. Ed. W. White. Springer, Cham. doi: 10.1007/978-3-319-39193-9_160-1
IF: n/a, 89 downloads, HH: 50%
46. Venturi, S*, F Tassi, I Gould, E Shock, **H Hartnett**, E Lorance, C Bockisch*, K Fecteau*, F Capecciacci, O Vaselli. (2017) Mineral-assisted production of benzene under hydrothermal conditions: insights from experimental studies on C₆ cyclic hydrocarbons. *Journal of Volcanology & Geothermal Research*. **346**, 21-27.
IF: 2.79, 5 citations; HH role: intellectual content, interpretation and discussion of data, writing.
45. Londoño, S*, **HE Hartnett**, L Williams. (2017) The antibacterial activity of aluminum in clay from the Colombian Amazon. *Environmental Science & Technology*. **51**(4), 2401-2408.

- IF: 7.250; 21 citations; HH role: intellectual content, interpretation and discussion of data, writing and significant editing for English grammar.
44. Desch SJ[‡], N Smith*, C Groppi, P Vargas**, R Jackson*, A Kalyaan*, P Nguyen*, L Probst*, ME Rubin*, H Singleton**, A Spacek*, A Truitt*, P Zaw**, **HE Hartnett[‡]**. (2017) Arctic ice management. *Earths Future*. **5**(1), 107-127.
- IF: 6.756, 16 citations, HH role: intellectual content, interpretation and discussion of data, writing and editing. ♦Hartnett and Desch were the intellectual leads on this paper. The paper received significant media attention; it has an Altmetrics score of 634, placing it in the 99th percentile of High Attention Scores for 2017 science articles: <https://www.altmetric.com/details/14862679>.
43. Eagar, J*, P Herckes, **H Hartnett[‡]**. (2017) The characterization of haboobs and the deposition of dust in Tempe, AZ from 2005-2014. *Aeolian Research*. **24**, 81-91.
- IF: 2.679, 2 citations; HH role: corresponding author, obtained funding for the project, contributed to intellectual content, interpretation and discussion of data, and writing.
42. Yang, Z, **HE Hartnett[‡]**, E Shock[‡], I Gould[‡]. (2015) Organic oxidations using geomimicry. *J. Organic Chemistry*. **80**(24), 12159-12165.
- IF: 4.849, 11 citations; HH role: corresponding author, obtained funding, intellectual content, interpretation and discussion of data, writing, and significant editing for English grammar.
41. Bailey, A**, M Kellom*, *A Poret-Peterson*, K Noonan, **HE Hartnett**, J Raymond. (2014) Draft Genome of *Microvirga* sp. BSC39, Isolated from Biological Soil Crust of Moab, Utah. *Genome Announcements*. **2**(6), e01197-14. doi: 10.1128/genomeA.01197-14
- IF: 1.3, 4 citations; HH role: discussion of data, writing and editing. ♦the samples were collected as part of my NSF project.
40. Bailey, A**, M Kellom*, *A Poret-Peterson*, K Noonan, **HE Hartnett**, J Raymond. (2014) Draft Genome of *Bacillus* sp. BSC154, Isolated from Biological Soil Crust of Moab, Utah. *Genome Announcements*. **2**(6), e01198-14 doi: 10.1128/genomeA.01198-14
- IF: 1.3, 2 citations; HH role: discussion of data, writing and editing. ♦the samples were collected as part of my NSF project.
39. Bailey, A**, M Kellom*, *A Poret-Peterson*, K Noonan, **HE Hartnett**, J Raymond. (2014) Draft Genome of *Massilia* sp. BSC265, Isolated from Biological Soil Crust of Moab, Utah. *Genome Announcements*. **2**(6), e01199-14 doi: 10.1128/genomeA.01199-14
- IF: 1.3, 5 citations; HH role: discussion of data, writing and editing. ♦the samples were collected as part of my NSF project.
38. Yang, Z, ED Lorance, C Bockisch, LB Williams, **HE Hartnett**, EL Shock, IR Gould. (2014) Hydrothermal photochemistry as a mechanistic tool in organic geochemistry: the chemistry of dibenzylketone. *Journal of Organic Chemistry*. **79**(17), 7861-7871.
- IF: 4.849, 14 citations; HH role: obtained funding for the work, intellectual content, data interpretation and discussion, writing, and significant editing for English grammar.
37. Xie, W, CL Zhang, J Wang, Y Chen, Y Zhu, J de la Torre, H Dong, **HE Hartnett**, BP Hedlund, MG Klotz. (2014) Distribution of ether lipids and composition of the archaeal community in terrestrial geothermal springs: Impact of environmental variables. *Environmental Microbiology*. **17**(5), 1600-1614.
- IF: 6.312, 18 citations; HH role: obtained funding, intellectual content, sample collection, interpretation and discussion of data, writing, and significant editing for English grammar. ♦my lab contributed the environmental data used in this analysis.
36. Oiler, J, E Shock, **H Hartnett**, A Dombard, H Yu. (2014) Harsh environment sensor array-enabled hot spring mapping. *IEEE Sensors Journal*. **14**(10), 3418-3425.

- IF: 1.901, 1 citation; HH role: intellectual content, interpretation and discussion of data, writing and editing.
35. [Shipp, J](#), I Gould, L Williams, E Shock, **HE Hartnett**[‡]. (2014) Sphalerite is a geochemical catalyst for carbon-hydrogen bond activation. *Proceedings of the National Academy of Sciences of the USA*. **111**, 11642-11645.
IF: 10.727, 24 citations; HH role: obtained funding for the work, intellectual content, interpretation and discussion of data, writing, and editing.
 34. [Vanderkluysen, L](#), MR Burton, AB Clarke, **HE Hartnett**, J-F Smekens*. (2014). Composition and flux of explosive gas release at LUSI mud volcano (East Java, Indonesia). *Geochemistry Geophysics Geosystems* **15**. doi: 10.1002/2014GC005275
IF: 3.517, 29 citations; HH role: obtained some of the funding, intellectual content, sample collection and analysis, interpretation and discussion of data, writing and editing. ♦this was a fully-collaborative project and I led the geochemistry portion of the work.
 33. [Hamilton, GA](#) and **HE Hartnett**[‡]. (2013) Soot black carbon concentration and isotopic composition in soils from an arid, urban ecosystem. *Organic Geochemistry*. **59**, 87-94.
IF: 3.458, 27 citations; HH role: corresponding author, obtained funding for the work, intellectual content, interpretation and discussion of data, writing, and editing.
 32. Dutta, A, M Flores, S Roy*, J Schmitt, [GA Hamilton](#), **HE Hartnett**, AK Jones. (2013) Sequential oxidations of thiolates and the cobalt metallocenter in a synthetic metalloprotein: Implications for the biosynthesis of nitrile hydratase. *Inorganic Chemistry*. **52**(9), 5236-5245.
IF: 4.762, 12 citations; HH role: intellectual content, interpretation and discussion of data, revising and editing.
 31. Glass, JB, A Chappaz, B Eustis, AC Heyvaert, D Waetjen, **HE Hartnett**, AD Anbar. (2013) Molybdenum geochemistry in a seasonally dysoxic Mo-limited lacustrine ecosystem. *Geochimica et Cosmochimica Acta*. **114**, 204-219.
IF: 5.052, 24 citations; HH role: intellectual content, interpretation and discussion of data, revising and editing.
 30. Marusenko, Y*, [J Shipp](#), [GA Hamilton](#), JL Morgan*, M Keebaugh, H Hill*, A Dutta*, X Zhou*, N Upadhyay*, J Hutchings*, P Herckes, A Anbar, E Shock, **HE Hartnett**. (2013) Bioavailability of nanoparticulate hematite to *Arabidopsis thaliana*. *Environmental Pollution*. **174**, 150-156.
IF: 5.552, 27 citations; HH role: intellectual content, interpretation and discussion of data, revising and editing. ♦I advised this collaborative, student-led project.
 29. Hou, W, S Wang, H Dong, H Jiang, B Briggs, J Peacock, Q Huang**, L Huang, G Wu, X Zhi, W Li, J Dodsworth, B Hedlund, C Zhang, **H Hartnett**, P Dijkstra, B Hungate. (2013) A comprehensive census of microbial diversity in hot springs of Tengchong, Yunnan Province, China using 16S rRNA gene pyrosequencing. *PLoS ONE*. **8**(1), e53350. doi: 10.1371/journal.pone.0053350
IF: 3.702, **160 citations**; HH role: intellectual content, sample collection, interpretation and discussion of data, writing, and significant editing for English grammar. ♦my lab contributed the environmental data used in this analysis.
 28. [Shipp, J](#)[‡], I Gould, **HE Hartnett**[‡], L Williams, E Shock. (2013) Organic functional group transformations in water at elevated temperature and pressure: Reversibility, reactivity, and mechanisms. *Geochimica et Cosmochimica Acta*. **104**, 194-209.
IF: 5.052, 29 citations; HH role: obtained funding for the work, intellectual content, interpretation and discussion of data, writing, and editing.
 27. Larson, E, S Earl, E Hagen, R Hale*, **H Hartnett**, M McCrackin, M McHale, N Grimm. (2013)

- Beyond restoration and into design: Hydrologic alterations in aridland cities. In: *Resilience in Ecology and Urban Design: Linking Theory and Practice for Sustainable Cities*. Pickett, Cadenasso, and McGrath, eds. Future Cities Series, Vol 3. Springer. p.630.
 IF: n/a, 8 citations; HH role: intellectual content, interpretation and discussion of data, revising and editing. ♦Highly collaborative, authors 2-6 contributed equally to this manuscript.
26. Yang, Z*, I Gould, L Williams, **HE Hartnett**, E Shock. (2012) The central role of ketones in reversible and irreversible organic functional group transformations. *Geochimica et Cosmochimica Acta*. **98**, 48-65.
 IF: 5.052, 20 citations; HH role: intellectual content, interpretation and discussion of data, writing, and significant editing for English grammar.
25. Dutta, A.*, GA Hamilton, **HE Hartnett**, A Jones. (2012) Construction of heterometallic clusters in a small peptide scaffold as [NiFe]-Hydrogenase models: Development of a synthetic methodology. *Inorganic Chemistry*. **51**(18), 9580-9588.
 IF: 4.762, 18 citations; HH role: intellectual content, interpretation and discussion of data, revising and editing.
24. Takai, K, MJ Mottl, SH Nielsen, and the IODP Expedition 331 Scientists. (2012) IODP Expedition 331: Strong and Expansive Subseafloor Hydrothermal Activities in the Okinawa Trough. *Scientific Drilling*. **13**, 19-27. doi: 10.2204/iodp.sd.13.03.2011
 IF: n/a, **55 citations**; HH: intellectual content, field work, sample analysis, interpretation of data, writing (leader for physical processes and sedimentology) revising and editing. ♦I was invited to be on the 8-person writing team for this IODP volume.
23. Miller-Coleman, R, C Ross, J Dodsworth, E Shock, **H Hartnett**, A McDonald, B Hedlund. (2012) *Korarchaeota* diversity, biogeography, and abundance in Yellowstone and Great Basin hot springs and prediction of *Korarchaeota*-permissive springs based on machine learning. *PLoS ONE*. **7**(5), e35964. doi: 10.1371/journal.pone.0035964
 IF: 3.702, 34 citations; HH role: intellectual content, interpretation and discussion of data, writing, revising, and editing.
22. Loiacono, S*, D Meyer-Dombard, J Havig, *A Poret-Peterson*, **H Hartnett**, E Shock. (2012) Evidence for high-temperature *in situ* *nifH* transcription in an alkaline hot spring of Lower Geyser Basin, Yellowstone National Park. *Environmental Microbiology*. **14**(5), 1272-1283.
 IF: 6.312, 30 citations; HH role: intellectual content, interpretation and discussion of data, writing, revising, and editing.
21. Brantley, S, P Megonigal, F Scatena, A Balogh-Brunstad, R Barnes, M Bruns, P van Cappellen, K Dontsova, **H Hartnett**, T Hartshorn, A Heimsath, B Herndon, L Jin, K Keller, J Leake, B McDowell, R Meinzer, T Mozdzer, S Petsch, J Pett-Ridge, K Pregelizer, P Raymond, C Riebe, K Shumaker, A Sutton-Greir, R Walter, K Yoo. (2011) Twelve testable hypotheses on the geobiology of weathering. *Geobiology* **9**(2), 140-165.
 IF: 4.647, **116 citations**; HH role: intellectual content, interpretation and discussion of data, coordination of writing, revising, and editing. ♦I lead a section of this 12-part paper.
20. Roy, S*, S Shinde*, G Hamilton, **H Hartnett**, A Jones. (2011) Artificial [FeFe] hydrogenase: On resin modification of an amino acid to anchor a diiron-hexacarbonyl cluster in a peptide framework. *European Journal of Inorganic Chemistry*, **2011**(7), 1050-1055.
 IF: 2.932, 34 citations; HH role: intellectual content, interpretation and discussion of data, revising and editing. ♦Scopus has more citations for this paper than Google Scholar.
19. Takai, K., M Mottl, S Nielsen, J Birrien, S Bowden, L Brandt, A Breuker, J Corona, S Eckert, H Hartnett. (2011) Expedition 331 summary: Deep hot biosphere. *Proceedings of the Integrated Ocean*

Drilling Program, Expedition 331. 1-39. doi: 10.2204/iodp.proc.331.2011

IF: n/a, 24 citations; HH: intellectual content, field work, sample analysis, interpretation of data, writing (leader for physical processes and sedimentology) revising and editing. ♦I was invited to be on the 8-person writing team for this IODP volume.

18. Williams, L, J Holloway, B Canfield*, C Glein*, **H Hartnett**, J Dick, E Shock. (2011) Birth of biomolecules from the warm wet sheets of clays near spreading centers. In: *Earliest Life on Earth: Habitats, Environments and Methods of Detection*. S Golding & M Glikson, eds. Springer, New York, 316pp.

IF: n/a, 9 citations; HH role: intellectual content, interpretation and discussion of data, writing and editing. ♦this paper was highly collaborative

17. **Hartnett, HE[‡]** and GA Hamilton. (2010) Black carbon in Phoenix-area soils: Distribution and relationship with land use across a desert city. *Geochimica et Cosmochimica Acta*. **74**(12S), A385.

IF: 5.052, 1 citation; HH role: obtained funding for the work, intellectual content, interpretation and discussion of data, writing, and editing. ♦extended abstract

↑ *post-tenure publications*

↓ *pre-tenure publications*

16. Beraldi-Campesi, H, **H Hartnett**, A Anbar, G Gordon, F Garcia-Pichel. (2009) Effects of biological soil crusts on soil elemental concentrations: implications for biogeochemistry and as traceable biosignatures of ancient life on land. *Geobiology*. **7**, 348-359.

IF: 4.647, **66 citations**; HH role: obtained funding for the work, intellectual content, interpretation and discussion of data, writing, revising, and editing. ♦I was PI for the project that generated this paper.

15. **Hartnett, HE[‡]**, S Boehme, C Thomas, D De Master, C Smith. (2008) Benthic oxygen fluxes and denitrification rates from high-resolution porewater profiles from the Western Antarctic Peninsula Continental Shelf. *Deep-Sea Research*. **55**, 2415-2424.

IF: 2.919, 23 citations; HH role: obtained funding for the work, intellectual content, field work, sample analysis, interpretation and discussion of data, writing, revising, and editing.

14. Gallinari, M*, O Ragueneau, D DeMaster, **H Hartnett**, D Rickert, C Thomas. (2008) Influence of seasonal phytodetritus deposition on biogenic silica dissolution in marine sediments: Effects on preservation. *Deep-Sea Research*. **55**, 2451-2464.

IF: 2.919, 14 citations; HH role: intellectual content, interpretation and discussion of data, writing, revising, and editing.

13. Seitzinger, SP, **HE Hartnett**, RJ Lauck, MA Mazurek, T Minegishi**, G Spyres, R Styles. (2005) Molecular-level chemical characterization and bioavailability of DOM in stream water using electrospray-ionization mass spectrometry. *Limnology & Oceanography*. **50**, 1-12.

IF: 4.372, **98 citations**; HH role: intellectual content, field work, design and execution of experiments, interpretation and discussion of data, writing, revising, and editing. ♦I was responsible for coordinating this collaborative paper, although the lab director is 1st author.

12. **Hartnett, HE[‡]**, A Devol, J Brandes, B Chang*. (2005) Oxygen isotope fractionation during respiration in marine sediments. *Geochimica et Cosmochimica Acta*. **69**(10S), A579. doi: 10.1016/j.gca.2005.03.033.

IF: 5.052, 5 citations; HH role: intellectual content, design and execution of experiments, interpretation and discussion of data, writing, revising, and editing. ♦extended abstract

11. **Hartnett, HE[‡]** and EC Minor[‡], guest editors. (2003) Special Issue: Novel Techniques for Chemical Characterization in Marine Systems. *Marine Chemistry*. **83**. 99p.

IF: 3.636; HH: 50%. ♦This was an invited special issue.

10. **Hartnett, HE[‡]** and SP Seitzinger. (2003) High-resolution nitrogen gas profiles in sediment porewaters using a new probe for membrane-inlet mass spectrometry (MIMS). *Marine Chemistry*. **83**, 23-30.
IF: 3.636, 27 citations; HH role: intellectual content, field work, sample analysis, design of instrumentation, execution of experiments, interpretation and discussion of data, writing, revising, and editing.
9. **Hartnett, HE[‡]** and AH Devol. (2003) Role of a strong oxygen deficient zone in the preservation and degradation of organic matter: a carbon budget for the continental margins of NW Mexico and Washington State. *Geochimica et Cosmochimica Acta*. **67**, 247-264.
IF 5.052, **157 citations**; HH role: intellectual content, field work, sample analysis, design and execution of experiments, interpretation and discussion of data, writing, revising, and editing.
8. **Devol, AH[‡]** and **HE Hartnett[‡]**. (2001) Role of the oxygen minimum zone in organic carbon transfer to the deep ocean. *Limnology & Oceanography*. **46**, 1684-1690.
IF: 4.372, **104 citations**; HH role: intellectual content, field work, sample analysis, interpretation and discussion of data, writing, revising, and editing.
7. **Hedges, JI, FS Hu, AH Devol, HE Hartnett, E Tsamakis, RG Keil.** (1999) Sedimentary organic matter preservation: A test for selective degradation under oxic conditions. *American Journal of Science*. **299**(7,8,9), 529-555.
IF: 4.692, **301 citations**; HH role: field work, sample analysis, interpretation and discussion of data, writing.
6. **Kristensen, E, AH Devol, HE Hartnett.** (1999) Organic matter diagenesis in sediments on the continental shelf and slope of the Eastern tropical and temperate North Pacific. *Continental Shelf Research*. **19**, 1331-1351.
IF: 2.495, 34 citations; HH role: field work, sample analysis, data interpretation.
5. **Hartnett, HE[‡]**, RG Keil, JI Hedges, AH Devol. (1998) Influence of oxygen exposure time on the preservation of organic carbon in continental margin sediments. *Nature*. **391**, 572-574.
IF: 44.959, **676 citations**; HH role: intellectual content, field work, design and execution of experiments, interpretation and discussion of data, writing, revising, and editing.
4. **Hartnett, HE[‡]** and AH Devol. (1998) Isotopic fractionation of oxygen during sediment respiration. V.M. Goldschmidt Conference, Toulouse 1998. *Mineralogical Mag.* **62A**(1), 577-578.
IF: 5.052, 2 citations; HH role: intellectual content, sample collection, design and execution of experiments, interpretation and discussion of data, writing and editing. ♦[extended abstract](#)
3. **AH Devol[‡]** and **HE Hartnett[‡]**. (1998) The effect of the water column O₂ minimum zone on sedimentary organic matter diagenesis. V.M. Goldschmidt Conference, Toulouse 1998. *Mineralogical Mag.* **62A**(1), 377-378.
IF: 5.052, 1 citations; HH role: intellectual content, sample collection, design and execution of experiments, interpretation and discussion of data, writing and editing. ♦[extended abstract](#)
2. **Beck, CW, HE Hartnett, JG Phocas.** (1993) The origin of amber found at Hauterive-Champrèveyres, Switzerland. In: *Hauterive-Champrèveyres. 9. Métal et parure au Bronze final, Neuchâtel*. Rychner-Faraggi, ed., 119-121 & Plates 123-124.
IF: n/a, 0 citations; HH role: sample analysis and data interpretation.
1. **Beck, CW and HE Hartnett.** (1993) Sicilian Amber. In: *Amber in Archaeology. (Proceedings of the Second International Conference on Amber in Archaeology, Liblice 1990)*. CW Beck & J Bouzek, eds. Institute of Archaeology, Czech Acad. of Sciences. Prague, pp. 36-47.
IF: n/a, 19 citations; HH role: sample analysis and data interpretation.

Submitted Manuscripts

- S-3. [Glaser, D., H Hartnett, S Desch, C Unterborn, A Anbar, S Buessecker*, T Fisher*, S Glaser*, S Kane, C Lisse, C Millsaps, S Neuer, J O'Rourke, N Santos, S Walker, M Zolotov. \(submitted\) Detectability of life using oxygen on pelagic planets and water worlds. *The Astrophysical Journal*.](#)
- S-2. [Robinson, KJ, IR Gould, H Hartnett, L Williams, EL Shock. \(in revision\) Modeling deamination rates across temperature to develop geochemical probes for planetary exploration. *Geochimica Cosmochimica Acta*.](#)
- S-1. [Lisse, CM, SJ Desch, CT Unterborne, SR Kane, PR Young, HE Hartnett, NR Hinkel, SH Shim, EE Mamajek. \(in revision\) Procedure for observing rocky exoplanets to maximize the likelihood of atmospheric oxygen biosignatures. *Astrophysics Journal Letters*](#)

Curated data sets

- D-2. [Nye, J, E Shock, and H. Hartnett. \(2019\) Dissolved organic carbon concentration and fluorescence in continental hot springs. <https://data.mendeley.com/datasets/47rp3drbfs/draft?a=28b34e5b-bd72-44a2-a1e8-c4283eb47f70>](#)
- D-1. [Hartnett, HE and D Childers. \(2018\) Water-quality monitoring in Tempe Town Lake, AZ. ongoing since 2005. *Environmental Data Initiative*. doi:10.6073/pasta/59d2e20260ad78d887e9bf3dd8987db4](#)

Published Curricula

- C-1. [Collins, D, K Bombe, M Elser, M Gallagher, E Ortiz, V Phelps, R Singh, S Ylatupa-McWhorter, E Stuffings, C Bires, A Cook-Davis, J Cordova, K Dunbar, L Guerrero, P Haberstroh, H Hartnett, C Jones, D Jones, L Kudo, L Lundquist, R Lybrand, D Noble, A Norenberg, H Romero, H Rowe, S Smith, W Tucker, M Walker-Irvin. \(2018\) *SCAPE: Sustainable Communities and Place-based Education. A High-School Curriculum Focused on the Colorado River*. 318 pp. <http://coloradoriverscape.org>](#)

White papers and other Publications

This category includes a series of interdisciplinary white papers (W2-W16) prepared for various National Academy of Science Committees, and a published cruise report.

- W-16. [D Apai, A Banzatti, NP Ballering, EA Bergin, A Bixel, T Birnstiel, M Bose, S Brittain, H Cadillo-Quiroz, D Carrera, F Ciesla, L Close, SJ Desch, C Dong, CD Dressing, RB Fernandes, K France, E Gharib-Nezhad, N Haghhighipour, HE Hartnett, Y Hasegawa, H Jang-Condell, P Kalas, SR Kane, JS Kim, S Krijt, C Lisse, M López-Morales, R Malhotra, S Morrison, GD Mulders, KM Pontoppidan, C Scharf, KR Schwarz, EW Schwieterman, KG Stassun, N Turner, K Wagner, P Young. \(2019\) Planetary habitability informed by planet formation and exoplanet demographics. *Bulletin of the American Astronomical Society*. 51\(3\) 2019BAAS...51c.475A](#)
- W-15. [C Harman, V Airapetian, D Apai, GiadGa Arney, D Buzasi, H Cadillo-Quiroz, B Danchi, S Domagal-Goldman, C Dong, C Dressing, R Felton, T Fisher, K France, D Gelino, HE Hartnett, P Kalas, SR Kane, NY Kiang, JS Kim, R Kopparapu, M López-Morales, J Lustig-Yaeger, N Parenteau, S Redfield, C Reinhard, TD Robinson, S Rugheimer, L Sohl, A Solmaz, K Stassun, M Trainer, AR Truitt, K Tsigaridis, K Wagner, S Walker. \(2019\) A balancing act: Biosignature and anti-biosignature studies in the next decade and beyond. *Bulletin of the American Astronomical Society*. 51\(3\) 2019BAAS...51c.414H](#)
- W-14. [H Jang-Condell, S Brittain, A Weinberger, M Liu, J Faherty, J Bae, S Andrews, M Ansdell,](#)

- T Birnstiel, A Boss, L Close, T Currie, S Desch, S Dodson-Robinson, C Dong, G Duchene, C Espaillat, K Follette, E Gaidos, P Gao, N Haghhighipour, H Hartnett, Y Hasegawa, M Kama, J Kim, Á Kóspál, C Lisse, W Lyra, B Macintosh, D Mawet, P McGehee, M Meyer, E Peretz, L Perez, K Pontoppidan, S Sallum, C Salyk, A Szentgyorgyi, K Wagner. (2019) Protoplanetary Disk Science Enabled by Extremely Large Telescopes. Submitted to the *Astro2020 Decadal Survey* for the National Academy of Sciences. arXiv:1903.05077
- W-13. N Hinkel, H Hartnett, C Lisse, P Young (2019) An Interdisciplinary Perspective on Elements in Astrobiology: From Stars to Planets to Life. Submitted to the *Astro2020 Decadal Survey* for the National Academy of Sciences. arXiv:1904.01092
- W-12. VS Airapetian, V Adibekyan, M Ansdell, D Alexander, T Bastian, S BoroSaikia, A Brun, O Cohen, M Cuntz, W Danchi, J Davenport, J DeNolfo, R DeVore, C Dong, J Drake, K France, F Frascchetti, K Garcia-Sage, M Gillon, A Glocer, J Grenfell, G Gronoff, GGopalswamy, M Guedel, H Hartnett, H Harutyunyan, N Hinkel, A Jensen, M Jin, C Joshnstone, P Kalas, SR Kane, C Kay, I Kitiashvili, OKochukhov, D Kondrashov, J Lazio, J Leake, G Li, J Linsky, T Lueftinger, B Lynch, W Lyra, A Mandell, K Mandt, H Maehara, M Miesch, A Mickaelian, S Mouchou, Y Notsu, L Ofman, L Oman, R Osten, R Oran, R Petre, R Ramirez, G Rau, S Redfield, V Reville, S Rugheimer, M Scheucher, J Schlieder, K Shibata, J Schnittman, D Soderblom, A Strugarek, J Turner, A Usmanov, A Vidotto, A Vourlidis, M Way, GP Zank, S Babkhanova, A Pevtsov, Y Lee, W Henning, K Colon, E Wolf. (2019) Reconstructing Extreme Space Weather from Planet Hosting Stars. Submitted to the *Astro2020 Decadal Survey* for the National Academy of Sciences. arXiv:1903.06853
- W-11. SJ Desch, S Kane, CM Lisse, CT Unterborn, **HE Hartnett**, S-H Shim (2018) A procedure for observing rocky exoplanets to maximize the likelihood that atmospheric oxygen will be a biosignature. arXiv:1801.06935 (2 citations)
- W-10. R Barnes, A Shahar, C Unterborn, **H Hartnett**, A Anbar, B Foley, P Driscoll, S-H Shim, T Quinn, K Iacovino, S Kane, S Desch, N Sleep, D Catling, B Zuckerman, S Xu, W Henning. (2018) Geoscience and the Search for Life beyond the Solar System. Submitted to the *Exoplanet Science Strategy* for the National Academy of Sciences. arXiv:1801.08970 (1 citation)
- W-9. VS Airapetian, V Adibekyan, M Ansdell, O Cohen, M Cuntz, W Danchi, CF Dong, JJ Drake, A Fahrenbach, K France, K Garcia-Sage, A Glocer, JL Grenfell, G Gronoff, **H Hartnett**, W Henning, NR Hinkel, AG Jensen, M Jin, P Kalas, SR Kane, K Kobayashi, R Kopparapu, J Leake, M López-Puertas, T Lueftinger, B Lynch, W Lyra, AM Mandell, KE Mandt, WB Moore, D Nna-Mvondo, Y Notsu, H Maehara, Y Yamashiki, K Shibata, LD Oman, RA Osten, A Pavlov, RM Ramirez, S Rugheimer, JE Schlieder, JD Schnittman, EL Shock, C Sousa-Silva, MJ Way, Y Yang, PA Young, GP Zank. (2018) Exploring Extreme Space Weather Factors of Exoplanetary Habitability. Submitted to the *Exoplanet Science Strategy* for the National Academy of Sciences. arXiv:1803.03751 (1 citation)
- W-8. R Kopparapu, E Hebrard, R Belikov, N M Batalha, G Mulders, C Stark, D Teal, S Domagal-Goldman, D Gelino, A Mandell, A Roberge, S Rinehart, S Kane, Y Hasegawa, W Henning, B Hicks, V Adibekyan, E Schwieterman, E Kohler, J Teske, N Hinkel, C Nixon, K France, W Danchi, J Haqq-Misra, E Wolf, S Guzewich, B Charnay, G Arney, **H Hartnett**, E Lopez, D Minniti, J Renaud, V Airapetian, C Dong, A Del Genio, M Trainer, G Rau, Adam Jensen, Michael Way, C Lisse, W Lyra, F Marchis, D Jontof-Hutter, P Young, R Pierrehumbert, C Harman, J Fortney, B Moore, S Beckwith, E Shock, S Desch, K Mandt, N Izenberg, E Ford, S Curry, C Scharf, A Anbar. (2018) Exoplanet diversity in the era of space-based direct imaging missions.

Submitted to the *Exoplanet Science Strategy* for the National Academy of Sciences.
arXiv:1803.03812. (2 citations)

- W-7. S Domagal-Goldman, N Kiang, N Parenteau, D Catling, S DasSarma, Y Fujii, C Harman, A Lenardic, E Palle, C Reinhard, E Schwieterman, J Schneider, H Smith M Tamura, D Angerhausen G Arney V Airapetian, N Batalha, C Cockell, L Cronin, R Deitrick, A Del Genio, T Fisher, D Gelino, L Grenfell, **H Hartnett**, S Hegde, Y Hori, B Kacar, J Krissansen-Totten, T Lyons, W Moore, N Narita, S Olsen, H Rauer, T Robinson, S Rugheimer, N Siegler, E Shkolnik, K Stapelfeldt, S Walker. (2018) Life beyond the solar system: Remotely Detectable biosignatures Submitted to the *Exoplanet Science Strategy* for the National Academy of Sciences. arXiv:1801.06714 (3 citations)
- W-6. E Schwieterman, C Reinhard, S Olson, T Lyons, V Airapetian, M Ansdell, G Arney, D Catling, S Curry, W Danchi, S Domagal-Goldman, C Dong, K France, P Gao, G Gronoff, C Harman, S Kane, R Kopparapu, **H Hartnett**, A Jensen, A Lincowski, M Lopez-Morales, R Loyd, H Lustig-Yaeger, W Lyra, A. Mandell, D Minniti, N Parenteau, S Ranjan, S Redfield, T Robinson, A. Rushby, E Shock, W Sparks, L Walkowicz, R Wordsworth. (2018) The Importance of UV Capabilities for Identifying Inhabited Exoplanets with Next Generation Space Telescopes. Submitted to the *Exoplanet Science Strategy* for the National Academy of Sciences. arXiv:1705.05791.
- W-5. S Kane, G. Arney, D Crisp, S Domagal-Goldman, L Glaze, C Goldblatt, D Grinspoon, J Head, A Lenardic, C Unterborn, M Way, V Airapetian, A Anbar, D Brain, W Danchi, A Del Genio, S Desch, C Dong, T Fisher, J Fortney, P Gao, D Gelino, G Gilli G Gronoff, S Guzewich, **H Hartnett**, N Heavens, W Henning, N Izenberg, D Jontof-Hutter, R Kopparapu, C Lisse, R Loyd, W Lyra, A Mandell, M Marley, W Moore, J O'Rourke, J Renaud, T Robinson A Rushby, L Schaefer, C Scharf, E Schwieterman, E Shock, H Smith, L Sohl. (2018) Venus: the nearby exoplanetary laboratory. Submitted to the *Exoplanet Science Strategy* for the National Academy of Sciences. arXiv preprint. arXiv:1801.03146
- W-4. R Barnes, A Shahar, C Unterborn, **H Hartnett**, A Anbar, B Foley, P Driscoll, S-H Shim, T Quinn, K Iacovino, S Kane, S Desch, N Sleep, D Catling. (2018) Geoscience and the Search for Life Beyond the Solar System. Submitted to the *Astrobiology Science Strategy for the Search for Life in the Universe* for the National Academy of Sciences. arXiv preprint. arXiv:1801.08970 (1 citation)
- W-3. S Desch, S Kane, C Lisse, C Unterborn, **HE Hartnett**, S-H Shim. (2018) A procedure for observing rocky exoplanets to maximize the likelihood that atmospheric oxygen will be a biosignature. Submitted to the *Astrobiology Science Strategy for the Search for Life in the Universe* for the National Academy of Sciences. arxiv.org/abs/1801.06935
- W-2. S Domagal-Goldman, N Kiang, N Parenteau, D Catling, S DasSarma, Y Fujii, C Harman, A Lenardic, E Palle, C Reinhard, E Schwieterman, J Schneider, H Smith M Tamura, D Angerhausen G Arney V Airapetian, N Batalha, C Cockell, L Cronin, R Deitrick, A Del Genio, T Fisher, D Gelino, L Grenfell, **H Hartnett**, S Hegde, Y Hori, B Kacar, J Krissansen-Totten, T Lyons, W Moore, N Narita, S Olsen, H Rauer, T Robinson, S Rugheimer, N Siegler, E Shkolnik, K Stapelfeldt, S Walker. (2018) Life Beyond the Solar System: Remotely Detectable Biosignatures. Submitted to the *Astrobiology Science Strategy for the Search for Life in the Universe* for the National Academy of Sciences. arXiv preprint. arXiv:1801.06714 (1 citation)
- W-1. LD Lambourn, **H Hartnett**, AH Devol. (1996) R/V Wecoma WE94-07B Cruise Report: Porewater data from the Washington shelf and slope.

Book Project in Progress

Tasker, E, S Desch, Y Fujii, H Hartnett, M Laneuville, C Unterborn, eds. *Planetary*

Diversity. Under contract with Institute of Physics, IOP. Writing workshop held Feb. 2019, chapter drafts will be completed July 2019, figures in process, publication anticipated early 2020.

Manuscripts in Progress

- Robinson, KJ, C Bockisch, IR Gould, GD Shaver, HE Hartnett, LB Williams, EL Shock. Using geomimicry to rethink amide bond synthesis. *Angewente*
- Glaser, D, H Cadillo-Quiroz, D Finn, H Hartnett. Diurnal water cycling in the hyperarid Atacama Desert.
- Nye, J, E Shock, K Robinson, H Hartnett. Dissolved organic carbon fluorescence as a tracer for continental hydrothermal processes.
- Hartnett, H and N. Hinkel. Phosphorous in stars and planets. (in prep for *Astrophysical Journal*)
- Kemmitt, K, H Hartnett, and N Grimm. Dissolved organic matter uptake and decomposition varies by source in desert streams. (in prep for *Freshwater Biology*).
- Napolitano, DC, HE Hartnett, P Herckes. A novel method for carbonate quantification in atmospheric particulate matter. (In prep for *Atmospheric Measurement Techniques*)
- Hartnett, HE**‡, C Till‡, AD Anbar, D Glaser, M Guild*, K Iacovino, A Johnson*, J Leong*, C Ostrander*. Solid-Earth processes are key drivers in the evolution of Earth’s redox state. (in prep for *Earth & Planetary Science Letters*)
- Hamilton, GA, SJ Hall, **HE Hartnett**.‡ Bioavailability of soot black carbon in urban soils. *Soil Biology and Biochemistry*.
- Bowman, M., Z. Smith, and **H.E. Hartnett**‡ (revising to resubmit) Shedding light on the photoreactivity and bioavailability of Colorado River dissolved organic carbon. *Chemosphere*.

RESEARCH FUNDING

Summary

21 external awards: ~\$41M awarded to ASU with ~\$2.6M attributed to Hartnett.

ASU tracks investigator recognition for each award; on multiple PI awards the amount reflects Hartnett’s percentage. This table is required in the promotion materials (KEDAnalytics data retrieved July 2019; post-tenure period is highlighted blue; *: 2020 data are year-to-date).

Fiscal Year	Proposals	Awards	Expenditures	F&A Income
2020			\$126,604*	\$27,346*
2019	\$3,524,404	\$384,344	\$168,591	\$45,708
2018	\$4,478,548	\$288,541	\$186,954	\$45,633
2017	\$444,631	\$355,860	\$146,688	\$36,481
2016	\$1,808,243	\$55,020	\$132,769	\$26,641
2015	\$651,306	\$164,186	\$151,603	\$33,220
2014	\$1,128,719	\$304,132	\$221,107	\$69,622
2013	\$434,658	\$9,800	\$301,682	\$96,686
2012	\$409,196	\$9,800	\$188,120	\$58,803
2011	\$1,106,839	\$153,233	\$217,132	\$62,695
2010	\$1,293,538	\$581,748	\$158,578	\$41,472

2009	\$1,196,286	\$325,918	\$91,899	\$23,702
2008	\$1,532,768	\$0	\$63,874	\$17,568
2007	\$904,743	\$12,000	\$26,334	\$8,115
2006	\$2,407,071	\$194,667	\$58,459	\$15,694
2005	\$1,357,217	\$15,000	\$6,682	--
2004	\$2,980,521	--	--	--
2003	~\$350,000	--	--	--
Totals:	\$22,593,704	\$2,556,812	\$2,090,170	\$572,325

External Awards

Current

21. *Rocky planet diversity: A TWSC proposal.*

NASA TWSC. Aug 1 2019–Jul 31 2020. \$42,902.

PI: H Hartnett (80%: 34,321), CoI: Desch (20%).

20. *Experimental tests for the origin and evolution of anoxygenic photosynthesis.*

NASA Exobiology. Feb 14 2019–Feb 13 2022, ~\$657,088.

PI: H Hartnett (50%: 328,554), CoI: Redding (50%)

19. *Organic carbon burial efficiency in the southern Indian Ocean.*

NSF-MG&G/Rutgers: The State University of New Jersey. Oct 2018-Sep 2020, \$66,890.

PI: H Hartnett (100%: 66,890)

18. *CAP IV: Investigating urban ecology & sustainability through the lens of Urban Ecological Infrastructure.*

NSF LTER. Dec 1 2018–Nov 30 2022, \$4,507,998.

PI: D Childers; Senior Personnel: H Hartnett (3%: 135,238), and many others

17. *Making the LEAP from transfer student to research scientist.*

NSF S-STEM. Feb 15 2017–Jan 31 2022 ~\$999,265.

PI: S Brownell, Co-PIs H Hartnett (20%: 198,453) and A Zaniewski

16. *NExSS: Exoplanetary ecosystems.*

NASA-NExSS. Dec 31 2014–Dec 30 2019, \$6,097,436.

PI: S Desch; Deputy PI: H Hartnett (6%: \$164,940, to date); ~12 co-PIs)

15. *A remote sensing approach to mapping changes in Earth's surface water.*

GOOGLE Earth Engine Research Award. Jan 1 2014–Dec 31 2019 (in NCE), \$54,009.

PI: H Hartnett (100%: \$54,009)

Completed

14. *CAP IV: "Design with Nature" infrastructure in Phoenix: A framework for exploring urban ecology and sustainability*

NSF LTER. Dec 1 2016–Nov 30 2018, \$2,254,000.

PI: D Childers; Senior Personnel: H Hartnett (~3%: \$202,859), and many others

13. *FESD Type 1: The dynamics of Earth system oxygenation.*

NSF Frontiers in Earth System Dynamics. Sep 1 2013-Aug 31 2018, \$4,845,000.

PI: A Anbar PI; Co-Is: H Hartnett (5%: \$242,250) and ~10 others)

12. *CAP3: Urban sustainability in the dynamic environment of central Arizona.*

NSF-LTER. Dec 1 2010–Nov 30 2018, \$6,812,015

PI: N Grimm; Senior Personnel: H Hartnett (1%: 68,120) and ~10 others

11. *SCAPE (Sustainable Communities and Place-based Education) in the Colorado River*.
EPA-EE Model Grant. Jul 1 2016–May 31 2017, \$192,200.
PI: D Collins; Co-Is: **H Hartnett** (20%: \$38,440)
10. *Bakrie initiative for geologic hazards at Arizona State University*.
Bakrie Foundation. May 2011–April 2016, ~\$1,000,000.
PI: A Clarke; Co-Is: **H Hartnett**, R Arrowsmith, K Hodges.
9. *Central Arizona–Phoenix Long-Term Ecological Research: Phase 2*
NSF-LTER. Dec 1 2004–Nov 30 2010, \$4,919,942
PI: N Grimm; Senior Personnel: **H Hartnett** (1%: 17,075 in years 5 & 6) and many others
8. *NAI: Follow the elements*.
NASA. Jan 1 2009–Dec 31 2013. Award amount: ~\$5.9M
PI: A Anbar. Collaborator: **H Hartnett** (no official recognition)
7. *Toward a holistic and global understanding of hot spring ecosystems: A US-China based international collaboration*.
NSF OISE (PIRE). Aug 1 2010–Jul 31 2014, \$189,790.
PI: **H Hartnett** (100%: \$189,790)
6. *Transformation and transport of organic carbon in the Colorado River-Reservoir system*.
NSF-CAREER Award. Sept 1 2009–Aug 31 2014, \$573,549.
PI: **H Hartnett** (100%: \$573,549)
5. *Expedition 331 - Okinawa Deep Hot Biosphere*.
IODP-Ocean Leadership. Sept 2010–Aug 2013, \$39,201.
PI: **H Hartnett** (100%: \$39,201)

↑ *post-tenure awards*

↓ *pre-tenure awards*

4. *Organic geochemical transformations and the deep biosphere—Food sources for microbes in sedimentary systems*.
NSF Emerging Topics in Biogeochemical Cycles. Sep 1 2008–Aug 31 2013, \$1,528,590.
PI: E Shock; Co-Is: **H Hartnett** (20%: \$305,718), I Gould, J Holloway, L Williams
3. *Biogeochemistry of desert crusts: Organic carbon and trace element dynamics*.
NSF-Biogeosciences. Aug 15 2005–Mar 31 2010, \$389,334.
PI: **H Hartnett** (50%: \$194,667); Co-Is: A Anbar, F Garcia-Pichel
2. *Mass dependent isotope fractionation of bioessential and toxic metals: A new perspective on the environmental chemistry of metals*.
The Dreyfus Foundation. Sept 1 2007–Aug 31 2009, \$120,000
PI: A Anbar; Co-Is: **H Hartnett** (20%: \$24,000), P Herckes, E Shock
1. *Characterization of dissolved organic carbon (DOC) in the Verde River-reservoir system by electrospray ionization mass spectrometry*.
ASU-NSF Water Quality Center. Jan 1 2005– Dec 31 2005, \$15,000.
PI: **H Hartnett** (100%: \$15,000)

Internal Awards

These are competitive awards, including: seed-grants, summer salary awards, graduate student salary support and research funds, and undergraduate student support; total: ~\$300,993. Hartnett is PI in all cases (unless specified).

ASU DECISIVE

2018 *Arctic ice management and planetary ices research*. CoIs: **Hartnett & Desch**. \$25,000

2018 *Dual-phytoplankton systems for CO₂ sequestration*. CoIs: Redding, **Hartnett**, Lammers, Nielson, Stirling, Romaniello. \$25,000

CLAS NS-SSGRG Seed Grant Funding

2013 *Deoxygenation of biomass products using geochemistry*. CoIs: **Hartnett** & Gould. \$48,694

CAP-LTER Faculty Summer Awards

2017 *Time-series analysis of Tempe Town Lake biogeochemistry*. \$4,000
2016 *Time-series analysis of Tempe Town Lake biogeochemistry*. \$10,658
2016 *Impact of haboobs and dust on the chemistry of an urban lake: Tempe Town Lake*. \$11,827
2015 *Time-series analysis of Tempe Town Lake biogeochemistry*. \$9780
2015 *Impact of haboobs and dust on the chemistry of an urban lake: Tempe Town Lake*. \$13,080
2009 *Bioavailability of black carbon in soils and dissolved organic carbon in Tempe Town Lake: effects of microbial decomposition on organic carbon composition*. \$2,000
2008 *Development of numerical and statistical approaches for interpretation of ESI-MS*. \$5,000
2007 *Development of chromatography techniques for ESI-MS in urban aquatic samples*. \$7,000

CAP-LTER Graduate Student Research Assistantship Awards

2011 *Distribution and reactivity of black carbon in Phoenix-area soils*. (Summer) \$5,000
2010 *Distribution and reactivity of black carbon in Phoenix-area soils*. (Summer) \$5,600
2009-10 *Distribution and reactivity of black carbon in Phoenix-area soils*. (Academic year) \$18,527
2009 *Distribution and reactivity of black carbon in Phoenix-area soils*. (Summer) \$4,426
2008-09 *Distribution and reactivity of black carbon in Phoenix-area soils*. (Academic year) \$18,527
2008 *Distribution and reactivity of black carbon in Phoenix-area soils*. (Summer) \$5,146

CAP-LTER Research Experience for Undergraduates (REU) Awards.

2008 *Effects of monsoon storms on carbon composition in Tempe Town Lake*. \$3,000
2007 *Biogeochemistry of carbon in Tempe Town Lake*. \$3,800.

NASA Space Grant Undergraduate Internships

2019-20 *Biogeochemistry of carbon and nitrogen in urban aquatic systems*. \$5600
2018-19 *Arctic Ice Investigations for Planetary Management*. \$11,200 (two students, split)
2018-19 *Biogeochemistry and astrobiology in extreme environments*. \$5600 (split)
2018 *Biogeochemistry and astrobiology in extreme environments*. (Summer) \$2400
2016-17 *Biogeochemistry of carbon and nitrogen in urban aquatic systems*. \$4,800
2015-16 *Biogeochemistry of carbon and nitrogen in urban aquatic systems*. \$4,800
2014-15 *Biogeochemistry of carbon and nitrogen in urban aquatic systems*. \$4,800
2013-14 *Biogeochemistry of carbon and nitrogen in urban aquatic systems*. \$4,800
2012-13 *Biogeochemistry of carbon and nitrogen in urban aquatic systems*. \$2,400
2012-13 *Fluorescence analysis of natural dissolved organic matter*. \$2,400
2011-12 *Biogeochemistry of carbon and nitrogen in urban aquatic systems*. \$2,400
2011-12 *Black carbon in desert residential soils*. \$2,400
2010-11 *Biogeochemistry of carbon and nitrogen in hot spring ecosystems*. \$2,400
2009-10 *Biogeochemistry of carbon and nitrogen in urban aquatic systems*. \$2,400
2008-09 *Geochemistry of fluids and solids from the LUSI mud volcano, Sidoarjo, Indonesia*. \$2,400
2007-08 *Carbon biogeochemistry in hot spring ecosystems*. \$2,400

2007-08 *Biogeochemistry of carbon in Tempe Town Lake*. \$2,400

NASA Space Grant Graduate Student Research Assistantship Awards

2010 *AZ standards-based water chemistry curricula for 3-5th grades*. (Summer) \$11,264.

2008 *Informal education: Arizona water quality and water supply*. (Summer) \$9,264.

Pending Proposals

NSF NRT: *Earth Systems Science for the Anthropocene (ESSA)*. ~\$3M (PIs: Grimm, Hartnett, York, and others).

Moore/Simons Foundation: *The stable isotope ecology of Earth's earliest eukaryotes*. ~\$1.5M. (PI: Junium, Syracuse, CoI: **Hartnett**)

NASA PMEF: *Acquisition of a Hyperion-II plasma oxygen source of the NanoSIMS 50L at Arizona State University*. ~\$500,000 (PI: M Bose, Co-Is: M Wadhwa, R Hervig, L Williams, C Till, P Williams, E Shock, **H Hartnett**)

Planned Submissions

PRF-ND: *Does Mineral Surface Binding Energy Control the Long-term Preservation of Organic Matter in Sediments?* \$110,000. (PI: **H Hartnett** (80%), CoI: S Romaniello)

NSF CNH. *Extreme events in watersheds and human response to change under uncertainty*. ~\$600,000 (PI: **Hartnett**, Co-I's York, Harms (UAF))

NASA Habitable Worlds: *Using organic compound reactivity to reveal geological processes in habitable worlds*. (PI: Shock, CoIs: **Hartnett** (25%), Gould, Williams, Robinson)

NASA Exobiology: *Vapor phase stable isotope probing life detection system development for arid soils*. ~600,000. (PI: Trembath-Reichert, CoI: **Hartnett**, 50%)

NASA-ICAR – three step one proposals planned. Due Jan 2020

NSF NRT – selected through internal submission. Due Feb. 2020

PATENT DISCLOSURES

P-4. Provisional Patent. Single step process for production of phenol and copper metal. G. Loescher, I Gould, H Hartnett, E Shock, L Williams. (ASU invention ID: D20-044; US patent application #62/965,513)

P-3. Provisional patent. Hydrocarbon Synthesis using Geomimicry. K Robinson, I Gould, C Bockisch, E Shock, H Hartnett, L Williams. (ASU invention ID: D19-209; ; US patent application #62/915,334)

P-2. Nickel-Catalyzed Reduction and Deoxygenation. C Bockisch, I Gould, **H Hartnett**, E Shock, L Williams. (ASU Invention ID: D18-169)

P-1. Arctic Ice Management Wind-Powered Pumping Device. S Desch, **H Hartnett**, C Groppi. (ASU Invention ID: D17-104)

INVITED CONFERENCE PRESENTATIONS

2020 Co-evolution of Earth and Life. CIDER2020. Santa Barbara California. Jul. 2020

2020 Exoplanet Biogeochemistry. Plenary Lecture. AGU-JpGU Joint Meeting. Chiba, Japan, May 2020.

2020 TEDxProvincetown. Geomimicry. August 2020.

- 2019 **Geochemistry of Exoplanets. 2019 Sagan Summer Workshop. Pasedena, CA. Jul. 2019**
- 2019 **Materials of the Universe. Organic Geochemistry and Materials. Tempe, AZ. Apr. 2019**
- 2018 The co-evolution of life and biosignatures: A geochemical perspective on an ecological problem. National Academy of Sciences committee on Astrobiology Science Strategy for the Search for Life in the Universe. Irvine CA. Jan 2018
- 2018 PlanetWorks, visioning positive climate futures. Broto: Art, Science, and Collaboration Conference. Provincetown, MA. May 2018
- 2018 Biogeochemistry of ancient and modern oceans. ESLI-EON Winter School. Tokyo Technical University. Japan. Feb. 2018
- 2018 *Geomimicry*: mechanisms for mineral-catalyzed hydrothermal organic reactions. Earth-Life Science Institute (ELSI), Tokyo Technical University, Japan. Jan. 2018
- 2016 Organic-mineral interactions: from geomimicry to biofuels. Gordon Research Conference – Organic Geochemistry. Holderness School, Plymouth NH. August 2016
- 2016 3D fluorescence spectroscopy as a tool for tracing organic carbon dynamics in aquatic systems. DCU Water Institute/Agilent Symposium. Dublin College University, Jan. 2016
- 2015 Sphalerite is a geochemical catalyst for carbon-hydrogen bond activation. ACS National meeting. Denver, CO. May. 2015
- 2011 Major-element and trace-element biogeochemistry in contrasting hydrothermal ecosystems: Tengchong, P.R.C. and Yellowstone National Park, U.S.A. 1st International Conference on Geomicrobial Ecotoxicology, Wuhan, China. Jun. 2011
- 2010 H Hartnett. Nitrogen Cycling in Yellowstone National Park Hot Springs. US-China Geomicrobiology Workshop. Pennsylvania State University, State College, PA. June 2010
- 2005 Oxygen isotope fractionation during respiration in marine sediments. 15th V.M. Goldschmidt Conference. Moscow, ID
- 1999 Oxygen exposure time as a control on carbon preservation in continental margin sediments. Dissertations in Chemical Oceanography (DISCO) Workshop, Honolulu, HI

INVITED LECTURES

- 2020 A deep-time/deep-future perspective on sustainability. Broto3: Art, Science, and Collaboration. Provincetown MA May 2020
- 2020 Chasing Colorado River Carbon: Content and Composition. Northern Arizona University, Jan. 21 2020.
- 2019 **Chasing Colorado River Carbon: Content and Composition. Georgia Tech. Sept. 12, 2019**
- 2019 **(Bio)Geochemistry of Exoplanets. Georgia Tech. Sept. 13, 2019**
- 2019 **SESE Colloquium: Exoplanetary Ecosystems. Arizona State University, Sept. 2019.**
- 2019 **Planetary-scale Sustainability. Broto2: Art, Science, and Collaboration. Provincetown MA**
- 2019 **Anoxic Worlds: Ecology and Astrobiology. American Museum of Natural History, New York. March 2019.**
- 2018 Colorado River biogeochemistry: Where does all the carbon go? Yachay Technical University. Ecuador. March 2018 (cancelled).
- 2016 Tracing photochemical and microbial carbon degradation: A 3D-fluorescence approach.

- Carnegie Geophysical Lab, CIS, Washington D.C., March 2016.
- 2016 *Geomimicry*: Exploring mechanisms for mineral-catalyzed hydrothermal organic reactions. Center for Bioenergy & Photosynthesis Seminar. Arizona State University. Nov. 2016.
- 2016 Climate change and anthropogenic CO₂. ASU Study Abroad, Florence, Italy. June 2016
- 2013 Fluorescence characterization of dissolved organic carbon in terrestrial and aquatic systems. Max Planck Research Group for Marine Geochemistry, Univ. Oldenburg, Germany.
- 2011 Developing a geochemical context for the US-China collaborative investigation of hot springs in Tengchong, Yunnan Prov., China. Thermophiles 2011, Big Sky MT.
- 2011 Provenance of fluids from the LUSI Mud Volcano. Surabaya, Indonesia.
- 2011 Major-element and trace-element biogeochemistry in contrasting hydrothermal ecosystems: Tengchong, China & Yellowstone National Park, U.S.A. Yunnan University, Kunming, PRC.
- 2011 Carbon and nitrogen dynamics in hydrothermal ecosystems: insights from the lab and the field. Dept. of Geological Sciences. Univ. of Nevada, Las Vegas.

↑ *post-tenure invited lectures*

↓ *pre-tenure invited lectures*

- 2010 Characterization of dissolved organic carbon in aquatic ecosystems. NOAA-NMFS Hatfield Marine Science Center, Newport, OR.
- 2010 Carbon and nitrogen cycling in hydrothermal ecosystems. Ecosystems Engineering Seminar. Arizona State University. Tempe, AZ.
- 2009 Environmental biogeochemistry: Carbon and nutrient dynamics in extreme environments. Department of Chemistry and Biochemistry. Arizona State University.
- 2007 Biogeochemistry of desert crusts: Organic carbon and trace element dynamics. 1st Annual Crust Day. Arizona State University.
- 2007 Concentration and composition of carbon cooked in the cauldrons of a cordilleran caldera. Processes in Earth & Planetary Surfaces and Interiors (PEPSI) Seminar. Arizona State Univ.
- 2006 Biogeochemical transformations of dissolved organic carbon in the Verde River. Geological Sciences Colloquium. Arizona State University.
- 2005 A primer on ElectroSpray Ionization Mass Spectrometry. Topics in Analytical Geochemistry (TAG) Seminar, Arizona State University.
- 2004 So, what is all that SMALL stuff?? Biogeochemistry Interest Group (BIG), ASU.
- 2003 Dissolved organic nitrogen in rainwater: Chemical characterization and bioavailability. New Jersey Atmospheric Deposition Network Project Review Workshop. New Brunswick, NJ
- 2000 Denitrification rates in Antarctic continental shelf sediments. Princeton University
- 1999 Organic carbon input, degradation and preservation in the continental margin sediments of NW Mexico. Institute of Marine and Coastal Sciences, Rutgers University
- 1997 Mid-depth N₂/Ar anomalies in the Pacific and Indian Oceans. Chemical Oceanography Department. University of Washington.
- 1997 Oxygen exposure time as a control on carbon preservation in continental margin sediments. Carnegie Geophysical Laboratory. Washington D.C.

PUBLIC LECTURES AND PRESENTATIONS

- 2020 TEDxProvincetown. Geomimicry. August 2020.
- 2019 **Halfway to Madagascar in search of past climate.** School of Earth and Space Exploration New Discoveries Lecture Series. October 3rd.
- 2019 **Halfway to Madagascar: Searching for Southern Ocean Climate Signals.** ASU OpenDoor, Tempe AZ. Feb. 23rd.
- 2019 **Can art extend sustainability science to planetary scales? Broto2: Art, Science, and Collaboration.** Provincetown MA. May 17th.
- 2018 Climate 3.0. Broto1: Art, Science, and Collaboration. Provincetown MA May 7th. https://www.youtube.com/watch?v=XaVpdPB7_M
- 2018 Panel Discussion. Broto: Art, Science, and Collaboration Conference, Provincetown, MA. May 8th. Imagining a world made sustainable: <https://www.youtube.com/watch?v=Q1yuIjv15cs>
- 2017 Managing Earth as a planet: How astrobiology and exploration inform a perspective of planetary stewardship. Astrobiology Science Conference, April 2017.
- 2017 Arctic Ice Management. School of Earth and Space Exploration Open House. April 2017.
- 2016 Living in a wet desert: an Arizona story. School of Earth and Space Exploration New Discoveries Lecture Series. March 2016.

PRESENTATIONS AT PROFESSIONAL CONFERENCES

100+ presentations since tenure in 2010; 64 led by students or postdocs and 6 led by undergraduates (unless noted 1st author is presenter). ‡: published abstract; *italics*: postdoctoral advisee, underline/double underline: Hartnett graduate/undergraduate advisee, */** : other graduate/undergraduate student). ♦: *other notes and clarifications to authorship*

2020

‡N Hinkel, H Hartnett. From star to planet to microbe using the stellar abundances of interdisciplinary elements. Abstract#: 2020-RC-2898-AAS. 235th Annual AAS meeting, Honolulu HI

2019

‡NB Grimm, S Earl, RL Hale, HE Hartnett, K Kemmitt*, MM Palta, L McPhillips. **Ecohydrological and biogeochemical dynamics of urban stormwater in arid central Arizona.** Abstract# 495322. 2019 AGU Fall Meeting. San Francisco, CA

‡A Anbar and H Hartnett. **Biogeosciences beyond: inventing a science of living worlds.** Abstract# 627785. 2019 AGU Fall Meeting. San Francisco, CA

‡D Glaser, D Finn, H Cadillo-Quiroz, S Perez-Montano, SJ Desch, HE Hartnett. **Microenvironments of Habitability in the Hyperarid Atacama Desert.** Abstract #569006. 2019 AGU Fall Meeting. San Francisco, CA

‡H Hartnett, N Hinkel, A Anbar, S Desch, T Fisher*, H Furukawa*, D Glaser, J Okie, C Unterborn, P Virgeli, S Walker, P Young. **The biogeosciences are a critical step on the path toward detecting life on exoplanets.** Abstract #591068. 2019 AGU Fall Meeting. San Francisco, CA

‡P Vergeli*, S Romaniello, H Hartnett, A Anbar. **Experimental examination of iron photochemistry in ancient oceans.** Abstract #340396. 2019 GSA Annual Meeting, Phoenix, AZ

‡K Redding, A Layton*, P Baker, H Hartnett. **Engineering of the primitive phototroph *Heliobacterium modesticaldum* to test the ability of lateral gene transfer to drive major**

transitions in central metabolism and bioenergetics. Abstract 327-258. AbSciCon2019, Seattle, WA.

- ‡ [D Glaser](#) and [H Hartnett](#). Understanding the water limitations of life in the hyperarid Atacama Desert. Abstract 343-373. AbSciCon2019, Seattle, WA.
- ‡ [Hinkel, N](#) and [H Hartnett](#). One periodic table to rule them all: Interdisciplinary elements for Astrobiology. Abstract 119-019. AbSciCon2019, Seattle, WA. ♦: *NEXSS highlighted poster*.
- ‡ [Hartnett, H](#) and [N Hinkel](#). Stellar abundance of P and N: Implications for exoplanets and astrobiology. Abstract 114-2. AbSciCon2019, Seattle, WA.
- ‡ [C Bockisch**](#), [Z Yang](#), [H Hartnett](#), [L Williams](#), [E Shock](#), [I Gould](#). Geomimicry: Chemists learning from Geologists. Abstracts of the Papers of the American Chemical Society. Vol. 257.
- ‡ [C Estrada](#), [C Bockish](#), [K Fecteau](#), [I Gould](#), [H Hartnett](#), [K Robinson](#), [L Williams](#), [E Shock](#). Goethite surface inhibition of the dehydration of cis-1,2 cyclohexanediol at 200 degrees C. Abstracts of the Papers of the American Chemical Society. Vol. 257.
- [T Fisher](#) and [H Hartnett](#). High-resolution monitoring of water quality in Tempe Town Lake. CAP-LTER All Scientists Meeting. Tempe, AZ.
- [M Juarez Rivera](#) and [H Hartnett](#). Do Abiotic processes contribute to O₂ super-saturation in Tempe Town Lake? CAP-LTER All Scientists Meeting. Tempe, AZ.

2018

- ‡ [A York](#), [H Hartnett](#), [D Bowman](#), [S Romaniello](#), [S Burnsilver](#). Governance architecture for planetary management: assessing the institutions for geoengineering in the Arctic. 2018 Utrecht Conference on Earth systems Governance.
- [H Hartnett](#). River network carbon cycling – the Colorado River case study. 2018 LTER All Scientists Meeting, Pacific Grove, CA.
- ‡ [H Hartnett](#), [C Till](#), [A Anbar](#), [D Glaser](#), [M Guild*](#), [K Iacovino](#), [A Johnson*](#), [J Leong](#), [C Ostrander*](#). Solid earth processes are key drivers in the evolution of Earth's redox state and set the stage for the great oxidation event. 2018 Goldschmidt Conference. Boston, MA
- [H Hartnett](#) and [J Nye](#). Fluorescence characterization of hydrothermal organic matter. Gordon Research Conf. – Organic Geochemistry. Holderness, NH. August 2018

2017

- ‡ [S Desch](#), [H Hartnett](#), [C Groppi](#), [S Romaniello](#). Arctic Ice Management: an integrated approach to climate engineering. Abstract: GC53H-04, 2017 AGU Fall Meeting. New Orleans LA.
- ‡ [H Hartnett](#), [M Palta](#), [N Grimm](#), [A Ruhi](#), [M van Shaijik](#). Temporal patterns in DOC composition in an urban lake. Abstract: B44D-07, 2017 AGU Fall Meeting. New Orleans LA.
- ‡ [T Fisher**](#), [S Walker](#), [S Desch](#), [H Hartnett](#), [S Glaser**](#). Limitations of primary productivity on Aqua planets: Implications for detectability. [#4109] Habitable Worlds 2017. Laramie WY.
- ‡ [S Desch](#), [H Hartnett](#), [S Kane](#), [S Walker](#). Detectability, not habitability [#4070]. Habitable Worlds 2017. Laramie WY.
- ‡ [H Hartnett](#). Signs of life on anoxic worlds? [#4081]. Habitable Worlds 2017. Laramie WY.
- ‡ [H Hartnett](#), [S Desch](#), [C Groppi](#), [S Romaniello](#). Arctic ice management. Climate Engineering Conference 2017. Berlin, Germany. 9-12 October.
- ‡ [K Johnson](#), [I Gould](#), [L Williams](#), [H Hartnett](#), [E Shock](#). Carboxylic acid transformations in the

presence of mineral surfaces. AbSciCon2017, Mesa AZ, 24-28 Apr.

‡ [K Robinson](#), I Gould, H Hartnett, L Williams, E Shock. Hydrothermal reactions of model amines as proxies for prebiotic chemistry. AbSciCon2017, Mesa AZ, 24-28 Apr.

‡ [CD Bockisch](#), L Williams, HE Hartnett, EL Shock, IR Gould. Nickel-catalyzed reductions and deoxygenations at hydrothermal conditions. AbSciCon2017, AZ, 24-28 Apr.

‡ [J Nye](#) and H Hartnett. Organic composition as an indicator of hot spring habitability. AbSciCon2017, Mesa AZ, 24-28 Apr.

‡ [J Nye](#) and H Hartnett. Characterization of hot spring organic carbon by 3D Fluorescence Spectroscopy: A new PARAFAC model. AbSciCon2017, Mesa AZ, 24-28 Apr.

‡ [D Glaser](#) and H Hartnett. O₂ and CO₂ fluxes in biological soil crusts under a simulated Archean atmosphere. AbSciCon2017, Mesa AZ, 24-28 Apr.

‡ [S Buessecker**](#), K Tylor, [J Nye](#), KE Holbert, HE Hartnett, JB Glass, H Cadillo-Quiroz. Artifacts and pitfalls of sterilization techniques to assess abiotic N₂O production from soil. AbSciCon2017.

2016

‡ H Hartnett and G Hamilton*. Urban soot black carbon biodegradation rates. Abstract B22C-08, presented at 2016 Fall Meeting, AGU, San Francisco, CA, 12-16 Dec. (1 citation)

‡ A Anbar and H Hartnett. Planetary intelligence: Managing Earth's future. Session U11A presented at 2016 Fall Meeting, AGU, San Francisco, CA, 12-16 Dec.

‡ A Anbar, H Hartnett, L Rowan, K Caldiera. Managing Earth's future: Global self-restraint for the common good or domination by incentive and power. Abstract U11A-01 presented at 2016 Fall Meeting, AGU, San Francisco, CA, 12-16 Dec.

‡ A Anbar, H Hartnett, A York, C Selin. The Anthropocene: A planetary perspective. Abstract U13A-06, 2016 Fall Meeting, AGU, San Francisco, CA, 12-16 Dec. ♦ *INVITED* (1 citation)

C Bockisch*, I Gould, L Williams, E Shock, H Hartnett. Hydrothermal organic reactions and useful geomimicry. Gordon Research Conference – Organic Geochemistry. Holderness, NH.

K Robinson*, E Shock, H Hartnett, L Williams, I Gould. Hydrothermal reactions of amines: Kinetics, mechanisms and equilibria. Gordon Research Conf. – Organic Geochemistry. Holderness, NH.

K Johnson*, H Hartnett, L Williams, I Gould, E Shock. Probing organic compound transformations under hydrothermal conditions: carboxylic acids on mineral surfaces. Gordon Research Conference – Organic Geochemistry. Holderness, NH.

KM Fecteau*, IR Gould, LB Williams, HE Hartnett, KN Johnson, EL Shock. Gold catalysis in hydrothermal experiments: a case study with benzaldehyde and benzyl alcohol. Gordon Research Conference – Organic Geochemistry. Holderness, NH.

HE Hartnett. Organic-mineral interactions: From geomimicry to biofuels. Gordon Research Conference – Organic Geochemistry. Holderness, NH. August 2016 ♦ *INVITED*

‡ HE Hartnett. 3D Fluorescence Spectroscopy as a tool for tracing organic carbon dynamics in aquatic systems. DCU Water Institute/Agilent Symposium. Dublin City University ♦ *INVITED*

2015

‡ S Rochelle*, A Anbar, H Hartnett, S Romaniello, A Poret-Peterson. Developing a metal proxy for the rise of early terrestrial life. B21A-0415, 2015 Fall Meeting, AGU, San Francisco, CA. (1 citation)

‡ CD Bockisch*, L Williams, H Hartnett, E Shock and I Gould. Dehydration and deoxygenation of organic compounds under hydrothermal conditions. Abstract 25-18. 2015 GSA Meeting, Baltimore,

MD

- ‡KN Johnson*, L Williams, I Gould, H Hartnett and E Shock. Mineral-assisted organic transformation of carboxylic acids at hydrothermal conditions. Abstract 55-2. 2015 GSA Meeting, Baltimore, MD
- HE Hartnett, J Eager* and P Herckes. Relationships between haboob events and water chemistry in an urban lake. 2015 LTER Network All Scientists Meeting. Estes Park, CO.
- HE Hartnett, *MM Palta*, A Ruhi, M van Shaijik*, NB Grimm. DOC reactivity in an urban lake. 2015 LTER Network All Scientists Meeting. Estes Park, CO.
- ‡*MM Palta*, NB Grimm and HE Hartnett. Pathogen and nutrient pulsing and attenuation in ‘accidental’ urban wetland networks along the Salt River in Phoenix, AZ, USA. HydroEco2015, Vienna, Austria.
- ‡H Hartnett and M Bowman. Bioavailability of photo-oxidized DOC in the Colorado River System. *Goldschmidt Abstracts*, 1195. Goldschmidt-2015 Conference, Prague, Czech Republic.
- ‡H Hartnett, J Shipp, I Gould, L Williams, E Shock. Sphalerite is a geochemical catalyst for carbon-hydrogen bond activation. ACS National meeting. Denver, CO. Mar. 2015 ♦ *INVITED*
- 2014
- H Hartnett, J Shipp, I Gould, L Williams, E Shock. Sphalerite is a geochemical catalyst for carbon-hydrogen bond activation. Gordon Research Conference: Organic Geochemistry. Aug. 2014.
- ‡ HE Hartnett and GA Hamilton. Photochemical and biological lability of soot black carbon in soils from Phoenix, AZ. Goldschmidt2014 Conference, Sacramento, CA.
- ‡ H Hartnett, Z Smith, M Bowman, M Raleigh, G Pavlovic. Climate and water management effects on terrestrial and aquatic DOM inputs to an urban lake. 2014 Joint Aquatic Sci. Meeting, Portland, OR.
- ‡ H Hartnett, Z Smith, M Bowman, M Raleigh. Transformation of DOC in the Colorado River: Implications for export of labile carbon from rivers. 2014 Ocean Sciences Meeting, Honolulu, HI.
- ‡ K Noonan, A Anbar, F Garcia-Pichel, H Hartnett. Biological soil crusts are early colonizers of extreme environments and alter metal solubility and soil fertility. SME Meeting, Salt Lake City, UT.
- H Hartnett and *M Palta*. Long-term patterns in Tempe Town Lake Carbon Cycling. CAP-LTER All Scientists Meeting. Tempe, AZ.
- 2013
- ‡ J Oiler*, E Shock, H Hartnett, H Yu. MEMS harsh environment sensor array-enabled hot spring mapping. IEEE Sensors 2013, Baltimore, MD, 4-6 Nov. Abstract-7225.
- ‡ H Dong, H Jiang, W Hou, S Wang, Q Huang, B Briggs, L Huang, W Hust, B Hedlund, C Zhang, H Hartnett, P Dijkstra, B Hungate. Linking geochemistry to microbial ecology in hot springs: examples from southeastern Asia. B31D-0428, 2013 Fall Meeting, AGU, San Francisco, CA.
- ‡ H Hartnett, J Coe, Z Smith. Fluorescence characterization of DOC from marine and terrestrial hydrothermal systems. B13B-0466, 2013 Fall Meeting, AGU, San Francisco, CA.
- ‡ *L Vanderkluyzen*, HE Hartnett, AB Clarke, MR Burton. Origin of fluids and eruption dynamics at LUSI mud volcano (East Java, Indonesia). T51B-2461, 2013 Fall Meeting, AGU.
- ‡ K Fecteau*, I Gould; H Hartnett; L Williams; E Shock. The kinetic behavior of benzaldehyde under hydrothermal conditions. B13B-0471, 2013 AGU Fall Meeting, San Francisco, CA.
- ‡ K Robinson*, E Shock, H Hartnett, L Williams, I Gould. Hydrothermal reactivity of amines. Abstract B13B-0473, 2013 Fall Meeting, AGU, San Francisco, CA, 9-13 Dec. (1 citation)
- ‡ H Hartnett, J Coe, Z Smith, G Hamilton. Overview of the geochemistry of Tengchong hot springs -

sources and dynamics of dissolved organic carbon. 2nd PIRE Scientific Meeting, Yunnan Univ., Kunming, China. ♦ *INVITED*

- ‡ J Coe, H Hartnett, Z Smith, G Hamilton. Dissolved organic carbon characterization by 3D fluorescence and parallel factor (PARAFAC) analysis. 2nd PIRE Scientific Meeting, Yunnan University, Kunming, China.
- ‡ J Ishibashi, Y Miyoshi, H Inoue, C Yeats, S Hollis, J Corona, S Bowden, S Yang, G Southam, Y Masaki, H Hartnett, IODP Expedition 331 Scientists. Subseafloor structure of a submarine hydrothermal system within volcanoclastic sediments: a modern analogue for 'Kuroko-type' VMS. 12th SGA Biennial Meeting, Upsala, Sweden. (5 citations)
- ‡ J Oiler*, EL Shock, HE Hartnett, H Yu. Micro-sensor array-enabled hot spring mapping. Goldschmidt2013 Conference, Florence, Italy.
- ‡ S Roy*, L Gan, A Dutta, G Hamilton, T Groy, H Hartnett, A Jones. Artificial hydrogenases: Utilization of peptide and redox non-innocent ligands in [FeFe] and [NiFe] complexes. Abstracts Papers of the Am. Chem. Soc. (668-ENFL) 245th ACS Nat'l Meeting, New Orleans, LA. (1 citation)
- ‡ M Bowman, M Raleigh, Z Smith, J Coe, H Hartnett. Photoreactivity of dissolved organic carbon in the Colorado River. (#11573) 2013 ASLO Aquatic Sciences Meeting, New Orleans, LA.
- ‡ M Raleigh, M Bowman, Z Smith, J Coe, H Hartnett. Microbial bioavailability of dissolved organic carbon in the Colorado River. (#11575) 2013 ASLO Aquatic Sciences Meeting, New Orleans, LA.
- ‡ Z Smith, M Bowman, M Raleigh, J Coe, H Hartnett. Distribution and fluorescence characterization of dissolved organic carbon in the Colorado River. (#11105) 2013 ASLO Aquatic Sciences Meeting, New Orleans, LA.
- ‡ H Hartnett. Investigating carbon transport and transformation in the Colorado River through field-based teaching. (#11100) 2013 ASLO Aquatic Sciences Meeting, New Orleans, LA.
- ‡ J Ramos* and H Hartnett. Linking terrestrial land-cover with aquatic biogeochemical properties in the Colorado river system. (#11457) 2013 Aquatic Sciences Meeting, New Orleans, LA.
- H Hartnett, J Coe, Z Smith, M Bowman, M Raleigh, A Chesley, G Pavlovic. 3D Fluorescence analysis of DOC in Tempe Town Lake. 15th CAP-LTER All Scientists Meeting, Tempe, AZ
- H Hartnett and G Hamilton*. Land-use patterns and photo-oxidation of soot black carbon. 15th CAP-LTER All Scientists Meeting, Tempe, AZ
- MM Palta* and HE Hartnett. Assessment of temporal patterns in Tempe Town Lake dissolved organic carbon. 15th CAP-LTER All Scientists Meeting, Tempe, AZ
- 2012
- ‡ *L Vanderkluyzen*, M Burton, A Clarke, H Hartnett, J-F Smekens**. Periodic gas release from the LUSI mud volcano (East Java, Indonesia). Abstract NH41A-1590, 2012 Fall Meeting, AGU, San Francisco, CA, 3-7 Dec.
- ‡ *A Poret-Peterson*, S Romaniello, M Bose, P Williams, J Elser, E Shock, A Anbar, H Hartnett. Nitrogen assimilation by single cells in hot springs. Abstract B51G-0646, 2012 Fall Meeting, AGU, San Francisco, CA, 3-7 Dec.
- ‡ Y Masaki, K Takai, M Mottl, H Hartnett, M Kinoshita (2012) Hydrothermal circulation regime of the Iheya-North field in the Okinawa trough inferred from drilling results and in-situ temperature during the IODP Expedition 331. 199th Meeting Geological Society of Japan. Osaka.
- H Hartnett. Characterization of interstitial water dissolved organic carbon and nitrogen in cores from the Iheya North hydrothermal field, IODP Leg 331. 2nd Post-cruise Meeting, Kona, HI.

Y Masaki, H Hartnett, and M Kinoshita. Hydrothermal regime of the Iheya-North hydrothermal field inferred from surface heat flow data and in-situ temperature measurement, and numerical modeling. 2nd Post-cruise Meeting, Kona, HI.

GA Hamilton and HE Hartnett. Photo-oxidation of soot black carbon in Central Arizona. 2012 LTER Network All Scientists Meeting. Estes Park, CO.

‡ G Marliyani*, *L Vanderkluysen*, A Clarke, H Hartnett, R Arrowsmith. Long term thermal monitoring of the LUSI mud volcano (east Java, Indonesia) from satellite remote sensing. 2012 AOGS-AGU WPGM Joint Assembly. Singapore

‡ *L Vanderkluysen*, A Clarke, H Hartnett, M Burton, JF Smekens*. Cyclic activity of the LUSI mud volcano, East Java, Indonesia. 2012 AOGS-AGU WPGM Joint Assembly. Singapore

‡ H Hartnett, *L Vanderkluysen*, A Clarke. LUSI mud volcano: Insights and implications from fluid geochemistry. 2012 AOGS-AGU WPGM Joint Assembly. Singapore

2011

‡ K Noonan, A Anbar, F Garcia-Pichel, *A Poret-Peterson*, H Hartnett. Six siderophore-producing microorganisms identified in biological soil crusts. B32A-04, 2011 AGU Fall Meeting. (2 citations)

‡ J Shipp, H Hartnett, I Gould, E Shock, L Williams. Reversible interconversion between alkanes, alkenes, alcohols & ketones under hydrothermal conditions. V11B-2522, 2011 AGU Fall Meeting.

‡ Z Yang, H Hartnett, I Gould, E Shock, L Williams. Pathways and mechanisms for hydrothermal reactions of ketones. V11B-2518, 2011 AGU Fall Meeting.

‡ H Hartnett. Chasing carbon down the Colorado River: mid-stream challenges to engaging undergraduates in field-based research. ED43B-0570, 2011 AGU Fall Meeting. (1 citation)

‡ *L Vanderkluysen*, A Clarke, H Hartnett. Cyclic activity of the LUSI mud volcano (East Java, Indonesia). V53A-2593, 2011 AGU Fall Meeting.

‡ H Hartnett, *L Vanderkluysen*, A Clarke, and JF Smekens*. Fluid geochemistry of the LUSI mud volcano (Indonesia) and implications for eruption dynamics. V53A-2594, 2011 AGU Fall Meeting.

‡ J Oiler, K Schliep, HE Hartnett, E Shock, and H Yu. Using MEMS sensor arrays to measure temperature at small spatial scales in hot spring environments. B14A-01, 2011 AGU Fall Meeting.

‡ Y Masaki, K Takai, MJ Mottl, HE Hartnett, M Kinoshita. Hydrothermal regime of the Iheya-North hydrothermal field inferred from surface heat flow data and, IODP Expedition 331 drilling results. OS11B-1476, 2011 AGU Fall Meeting. (1 citation)

‡ S Romaniello, H Hartnett, A Anbar, J Elser, E Shock. Nitrogen limitation in extremophilic hydrothermal ecosystems of Yellowstone Nat'l Park. Goldschmidt2011, Prague, Czech Repub.

‡ H Hartnett, *L Vanderkluysen*, A Clarke. Evolution of the LUSI mud volcano: fluid chemistry and remote sensing. Goldschmidt2011 Conference, Prague, Czech Republic.

‡ H Hartnett. Developing a geochemical context for the US-China collaborative investigation of the Tengchong geothermal region, Yunnan, China. Thermophiles 2011. Big Sky, Montana. ♦ *INVITED*

S Roy*, S Yang*, S Shinde*, GA Hamilton, HE Hartnett, AK Jones. Artificial hydrogenases: construction of peptide models of [FeFe]-hydrogenases. International Conference of Bioinorganic Chemistry. Vancouver, Canada. August 2011.

H Hartnett. Major- and trace-element biogeochemistry in hydrothermal ecosystems of Tengchong, P.R.C. and Yellowstone Nat'l Park, U.S.A. Yunnan Univ., Kunming, China. ♦ *INVITED*

H Hartnett. Major-element and trace-element biogeochemistry in contrasting hydrothermal

ecosystems: Tengchong, P.R.C. and Yellowstone National Park, U.S.A. 1st International Conference on Geomicrobial Ecotoxicology, Wuhan, China. ♦ *INVITED*

2010

C Ross, R Miller-Coleman, J Dodsworth, E Shock, H Hartnett, A McDonald, B Hedlund. A support vector classifier for *Korarchaeota* containing hot springs. 2010 International Society for Computational Biology Meeting. Aspen, CO.

H Hartnett. Nitrogen Cycling in Yellowstone National Park Hot Springs. US-China Geomicrobiology Workshop. Pennsylvania State University, State College, PA. ♦ *INVITED*

H Hartnett. Investigations of carbon and nitrogen cycling in Yellowstone National Park hot springs. ICG²⁰¹⁰ – International Geobiology Conference. Wuhan, China. ♦ *INVITED*

‡ H Hartnett and G Hamilton. Black carbon in Phoenix-area soils: distribution and relationship with land use across a desert city. *Geochim Cosmochim Acta* **74**(12S): A385. Goldschmidt 2010 Conference. Knoxville, TN. (1 citation)

‡ J Holloway, L Williams, B Canfield, J Dick, C Glein, H Hartnett, E Shock. Abiotic organic synthesis in clays. *Geochim Cosmochim Acta* **74**(12S): A413. Goldschmidt 2010. Knoxville, TN.

‡ Z Yang, I Gould, L Williams, H Hartnett, E Shock. Reversible functional group interconversion in organic hydrothermal reactions. *Geochim Cosmochim Acta* **74**(12S): A1179. Goldschmidt 2010 Conference. Knoxville, TN.

‡ C Glein, I Gould, L Williams, H Hartnett, E Shock. Mechanistic organic chemistry of carboxylic acids. *Geochim Cosmochim Acta* **74**(12S): A338. Goldschmidt 2010 Conference. Knoxville, TN.

‡ J Shipp, H Hartnett, I Gould, E Shock, L Williams. Minerals affect the interconversion between alkanes and alkenes in hydrothermal systems. *Geochim Cosmochim Acta* **74**(12S): A954. Goldschmidt 2010 Conference. Knoxville, TN. (1 citation)

A Dutta*, A Hamilton, HE Hartnett, AK Jones. Synthesis of [Ni-M_x] complexes in a peptide scaffold: Biomimetic peptidic models of [NiFe]-hydrogenases. 9th Int'l Hydrogenase Conf. Uppsala, Sweden.

↑ *post-tenure presentations*

↓ *pre-tenure presentations*

A Hamilton and H Hartnett. Black carbon concentration and isotopic composition in central Arizona-Phoenix. CAP LTER 12th Annual Symposium. Tempe, AZ.

‡ H Hartnett, S Romaniello, B Johnson, M Kyle, T Anderson, A Anbar, J Elser, E Shock (2010) Geochemical evidence for denitrification in a Yellowstone Nat'l Park hot spring. Abscon2010.

‡ K Alexander, D Lui, T Viliborghi, AD Anbar, F Garcia-Pichel, HE Hartnett. (2010) Response of biological soil crusts to porewater metal additions. Abscon2010. (1 citation)

2009

‡ NB Grimm, EM Cook*, S Earl, RL Hale*, SJ Hall, HE Hartnett, D Iwaniec*, EK Larson, M McHale, RA Sponseller (2009) Ecosystem biogeochemical function and services in an urbanizing desert region. *Eos Trans. Am. Geophys. Union* **90**(52). Fall Meeting Suppl., B13E-06. (1 citation)

‡ H Hartnett, D Lui, L Puglisi, J Shipp, H Waterman (2009) Effects of water management and monsoon storms on dissolved organic carbon (DOC) content and composition in an urban lake. *Eos Trans. Am. Geophys. Union* **90**(52). Fall Meeting Suppl., B13E-07. (1 citation)

‡ K Alexander, D Lui, AD Anbar, F Garcia-Pichel, HE Hartnett (2009) Effect of nitrogen and metal additions on nitrogen fixation activity in biological soil crusts. *Eos Trans. Am. Geophys. Union* **90**(52). Fall Meeting Suppl., EP53C-0628. (1 citation)

H Hartnett, J Shipp, D Lui. Effects of water management and monsoon storms on dissolved organic carbon (DOC) content and composition in an urban lake. LTER Network ASM. Estes Park, CO.

A Hamilton and H Hartnett. Black carbon concentration and isotopic composition in central Arizona-Phoenix. LTER Network ASM. Estes Park, CO.

EK Larson, S Earl, E Hagen, R Hale, HE Hartnett, M McCrackin, M McHale, NB Grimm. Arid urban aquatic ecosystems: A case study of ecology, design, and restoration in the Central Arizona-Phoenix LTER. LTER Network All Scientists Meeting. Estes Park, CO.

H Hartnett, J Shipp, D Lui, H Waterman. Temporal patterns in dissolved organic carbon content and composition in an urban lake: effects of water management and monsoon rains. 2009 Dynamic Deserts Conference, Tempe AZ.

‡ H Hartnett, J Shipp, D Lui, H Waterman. Seasonal and interannual changes in DOC content and composition in an urban lake: effects of water management and monsoon storms. 2009 ASLO Aquatic Sciences Meeting. Nice, France.

H Hartnett, J Shipp, D Lui, H Waterman. Effects of water management and monsoon storms on dissolved organic carbon dynamics in Tempe Town Lake, Tempe, AZ. CAP LTER 11th Annual Symposium. Tempe, AZ.

J Shipp, H Hartnett, D Lui, H Waterman. Temporal trends in trace element dynamics in Tempe Town Lake, Tempe, AZ. CAP LTER 11th Annual Symposium. Tempe, AZ.

A Hamilton and H Hartnett. Distribution and composition of black carbon in Phoenix-area soils. CAP LTER 11th Annual Symposium. Tempe, AZ.

2008

‡ A Hamilton and H Hartnett (2008) Black carbon concentrations in urban and rural arid-land soils. San Francisco, CA. Abstract: *Eos Trans. Am. Geophys. Union* **89**(53). B23D-0478. (2 citations)

K Alexander, A Anbar, F Garcia-Pichel, H Hartnett. Nutrient and metal limitation in cyanobacterial soil crusts. EBIC Gordon Research Conference. Waterville, NH.

‡ H Hartnett, K Alexander, A Anbar, F Garcia-Pichel. (2008) Production of dissolved organic carbon by desert biological soil crusts during simulated rainfall experiments. *Astrobiology*. **8**(2) 428. Abstract: 28-06-O, AbSciCon2008. Santa Clara, CA.

‡ J Lockard, H Hartnett, J Farmer (2008) Biosignature capture and preservation in sulfate evaporites: Implications for mars exploration. *Astrobiology*. **8**(2) 410. AbSciCon2008. Santa Clara, CA.

‡ M Kelly and H Hartnett. Seasonal processes affect the composition of dissolved organic carbon in an urban lake. *Abstracts of Papers of the American Chemical Society*, **235**: 63-GEOC. ACS 235th National Meeting. New Orleans, LA.

M Kelly and H Hartnett. Temporal composition changes in DOC in Tempe Town Lake. CAP LTER 10th Annual Symposium. Tempe, AZ

H Hartnett, M Kelly, H Waterman. Dissolved organic carbon in Tempe Town Lake: an update on a time series. CAP LTER 10th Annual Symposium. Tempe, AZ

B Hedlund, K Costa, T Vick, J Dodsworth, E Shock, H Hartnett, J Wiegel, C Romanek, C Zhang. Geochemistry and microbiology of Great Basin hot springs: different from Yellowstone Springs? Yellowstone RCN Meeting. Mammoth Lodge, WY.

2007

‡ J Lockard, H Hartnett, J Farmer (2007) Microbial biosignature capture and preservation in sulfate

evaporites: Implications for mars exploration. Geological Society of America *Abstracts with Programs*. 39(6) 65. Denver, CO.

‡ H Hartnett and B Brown. Transformation of riverine dissolved organic carbon: Exploring biogeochemical processes using ESI mass spectrometry. 2007 ASLO Aquatic Sciences Meeting. Santa Fe, NM. SS04-01-04, Abstract 977.

‡ A Pasulka, H Hartnett, S Neuer. Role of phagotrophic protists in shaping the spectrum of marine DOC. 2007 ASLO Aquatic Sci. Meeting. Santa Fe, NM. SS04-04-05, Abstract 689.

H Hartnett. Session Convener (SS44), Plankton as an Artistic Inspiration. 2007 ASLO Aquatic Sciences Meeting. Santa Fe, NM.

2006

‡ K Alexander, H Hartnett, A Anbar, F Garcia-Pichel. (2006) Isotopic Composition of Organic and Inorganic Carbon in Desert Biological Soil Crust Systems. San Francisco, CA. Abstract: *Eos Trans. Am. Geophys. Union*, **87**(52). Fall Meeting Suppl., B13C-1116.

‡ H Hartnett, K Alexander, E Shock., S Klonowski, T Windman (2006) Dissolved Organic Matter Concentration and Composition in Hot Spring Ecosystems. San Francisco, CA. *Eos Trans. Am. Geophys. Union*, **87**(52), Fall Meeting Suppl., Abstract: B33A-1164.

‡ E Shock, J Havig, T Windman, D Meyer-Dombard, A Michaud, H Hartnett. (2006) Hydrothermal Biogeochemistry. San Francisco, CA. *Eos Trans. Am. Geophys. Union*, **87**(52), Fall Meeting Suppl., Abstract: B11D-02.

‡ R Sherrell, L We, HE Hartnett, DJ DeMaster. (2006) Phytoplankton metal quotas estimated from particulate element data on the transects across the Drake Passage. Abstract: *EOS, Trans. Am. Geophys. Union*, **87**(36). (1 citation)

H Beraldi-Campesi, F Garcia-Pichel, A Anbar, H Hartnett. Potential biosignatures of Biological Soil Crusts. XI Argentinian Meeting of Sedimentology. San Carlos, Argentina.

H Hartnett. Characterization of Dissolved Organic Carbon in the Verde River System by ESI-MS. ASU-NSF Water Quality Center Spring Meeting. Tucson, AZ.

B Brown and H Hartnett. Determination of Bulk Dissolved Organic Carbon Content in the Verde River-Reservoir System. CAP LTER 8th Annual Symposium. Tempe, AZ

H Hartnett and B Brown. DOC Concentrations in Tempe Town Lake: biogeochemical & hydrologic processes. CAP LTER 8th Annual Symposium. Tempe, AZ.

2005

‡ H. Hartnett, A. Devol, J. Brandes, B. Chang* (2005) Oxygen isotope fractionation during respiration in marine sediments. *Geochim. Cosmochim. Acta* **69**(10S): A579. 15th V.M. Goldschmidt Conference. Moscow, ID. (4 citations) ♦ *INVITED*.

H. Hartnett. Characterization of Dissolved Organic Carbon in the Verde River System by ESI-MS. ASU-NSF Water Quality Center Winter Meeting. Tempe, AZ.

H. Hartnett. Characterization of Dissolved Organic Carbon in the Verde River System by ESI-MS. ASU-NSF Water Quality Center Spring Meeting. Tucson, AZ.

2004

‡ H. Hartnett, A. Devol, J. Brandes (2004) Porewater Profiles of Dissolved N₂/Ar Gas Ratios in Gulf of Mexico Continental Margin Sediments. San Francisco, CA. Abstract: *Eos Trans. Am. Geophys. Union*, 85(47), Fall Meeting Suppl., OS13B-0534.

- ‡ H. Hartnett, S. Seitzinger, G. Spyres, R. Lauck (2004) Chemical Characterization of Urban and Rural Rainwater DOM by Electrospray Ionization Mass Spectrometry (ESI-MS). Portland, OR. Abstract: *Eos Trans. Am. Geophys. Union*, 84(52), Ocean Sciences Meeting Suppl., OS21D-06.
- ‡ S. Seitzinger, H. Hartnett, R. Lauck, M. Mazurek, T. Minegishi**, G. Spyres, R. Styles. Molecular-level chemical characterization and bioavailability of DOM in aquatic systems using ESI mass spectrometry. ASLO/TOS Ocean Research Conference. Honolulu, HI. Abstract: SS5.08.1
- ‡ G. Spyres, S. Seitzinger, H. Hartnett, R. Lauck. Bioavailable DOM in rainwater: linking compound level information to ecosystem effects. ASLO/TOS Conference, Honolulu, HI. Abstract: SS5.08.11
- H. Hartnett and S. Seitzinger. Membrane-inlet probe for N₂/O₂/Ar in marine sediments. New Approaches in Marine Organic Biogeochemistry Symposium. Friday Harbor Labs. Univ. WA.
- ‡ G. Spyres, S. Seitzinger, H. Hartnett, R. Lauck. The chemical signature and bioavailability of dissolved organic matter in urban and rural rainwater. 2003 ASLO Aquatic Sciences Meeting. Salt Lake City, UT. Abstract: SS3.08.
- ‡ S. Seitzinger, H. Hartnett, G. Spyres, T. Wiegner*. From Trees to Seas: A cross-system comparison of DON lability and composition. 2003 ASLO Aquatic Sciences Meeting. Salt Lake City, UT. SS3.09. ♦ *INVITED*, presented by Hartnett

2002

- ‡ H. Hartnett and E. Minor. Session Conveners – OS21G. Novel techniques for chemical characterization in marine systems. 2002 AGU Ocean Sciences Meeting, Honolulu, HI.
- ‡ H. Hartnett, S. Boehme, C. Thomas, D. DeMaster, C. Smith (2002) Seasonal and annual denitrification rates in Antarctic Peninsula shelf sediments. Honolulu, HI. Abstract: *Eos Trans. Am. Geophys. Union*, 83(4), Ocean Sciences Meeting Suppl., OS31N-05.
- ‡ C. Thomas, D. DeMaster, S Boehme, H Hartnett, C Smith (2002) Benthic fluxes and carbon diagenesis in the Palmer LTER Area. Honolulu, HI. Abstract: *Eos Trans. Am. Geophys. Union*, 83(4), Ocean Sciences Meeting Suppl., OS31N-04.
- ‡ M. Gallinari*, O Ragueneau, D. DeMaster, H. Hartnett (2002) Benthic-Pelagic Coupling and Biogenic Silica Early Diagenesis: two case Studies in the Abyssal Northeast Atlantic and in an Antarctic Continental Shelf. Honolulu, HI. Abstract: *Eos Trans. Am. Geophys. Union*, 83(4), Ocean Sciences Meeting Suppl., OS31N 07.
- ‡ S. Seitzinger, H. Hartnett, R. Styles, R. Lauck, M. Mazurek, T. Minegishi** (2002) Chemical characterization and bioavailability of DOM using APESI-MS. Honolulu, HI. Abstract: *Eos Trans. Am. Geophys. Union*, 83(4), Ocean Sciences Meeting Suppl., OS12G-09.

2001

- ‡ H. Hartnett, S. Boehme, D. DeMaster, C. Thomas. Nitrogen, oxygen and nutrient fluxes in continental shelf sediments from the western Antarctic peninsula. ASLO Aquatic Sciences Meeting. Albuquerque, NM. SS08-01-10.
- ‡ T. Minegishi**, H. Hartnett, S. Seitzinger (2001) Sources and forms of dissolved nitrogen in runoff from regions with different land-use activities. Estuarine Research Federation. St. Petersburg. FL.
- ‡ S. Seitzinger, R. Lauck, M. Mazurek, R. Styles, H. Hartnett (2001) Characterization of bioavailable and refractory components of estuarine DOM. Estuarine Research Society. St. Petersburg. FL.

2000

- ‡ H. Hartnett and A. Devol (2000) Oxidant availability indicated by porewater O₂ and nutrient distributions in continental margin sediments. San Antonio, TX. Abstract: *Eos Trans. Am. Geophys.*

Union, 80(49), Ocean Sciences Meet. Suppl., OS41Q-05. ♦ *INVITED*

‡ H. Hartnett, C. Reimers, S. Seitzinger (2000) Nitrogen gas profiles in sediment porewaters using membrane-inlet mass spectrometry. San Antonio, TX. Abstract: *Eos Trans. Am. Geophys. Union*, 80(49), Ocean Sciences Meeting Suppl., OS11H-03.

1998

‡ H. Hartnett and A.H. Devol (1998) Isotopic fractionation of oxygen during sediment respiration. *Mineralogical Mag.* **62A**(1), 577-578. 8th Goldschmidt Conference, Toulouse, France. (1 citation)

‡ A. Devol and H. Hartnett (1998) The effect of the water column oxygen minimum zone on sedimentary organic carbon diagenesis. *Mineralogical Mag.* **62A**(1), 377-378. 8th Goldschmidt Conference, Toulouse, France. (1 citation)

‡ H. Hartnett, A. Devol, R. Keil (1998) DOC production in oxic and anoxic incubations of sediments from the oxygen minimum zones of Washington and Mexico. San Diego, CA. Abstract: *Eos Trans. Am. Geophys. Union*, **79**(1), Ocean Sciences Meeting Suppl., OS52H-11.

1996

‡ H. Hartnett, A. Devol, R. Keil (1996) Oxygen exposure time as a control on carbon preservation in continental margin sediments. *Abstracts of Papers of the American Chemical Society*, **212**: 32-GEOC. ACS 212th National Meeting. Orlando, FL. (4 citations)

1994

‡ H. Hartnett, A. Devol, R. Keil (1994) Organic Carbon: Surface Area ratios for the Washington and Mexican continental margins. San Francisco, CA. Abstract: *Eos Trans. Am. Geophys. Union*, 75(44), Fall Meeting Suppl., O21B-18

‡ A. Devol and H. Hartnett (1994) Carbon oxidation in sediments of continental margins in contact and not in contact with an oxygen deficient zone. San Francisco, CA. Abstract: *Eos Trans. Am. Geophys. Union*, 75(44), Fall Meeting Suppl., O11F-0

TEACHING AND MENTORING

In addition to my formal teaching, I advise ~30 hours of graduate research/thesis, undergraduate research, and honors thesis credits each semester. (*: cross-listed courses; †: courses I developed; ‡: team-taught courses; **: 4xx/5xx course enrollment is followed by the undergrad/graduate student breakdown)

Year	Term	Title (course listing)	Credit Hours	Enrollment (ugrad/grad)**
2020	Fall	<i>Approved administrative release – SESE AD Grad. Initiatives</i>	--	--
2020	Spr	Water Planet (GLG108)	4	~100
			<i>total: 4 h</i>	
2019	Fall	Environmental Chemistry (CHM 302)	3	50
2019	Spr	Marine Chemistry†* (GLG 490/598, CHM 494/598)	3	12 (3/9)
2019	Spr	Planetary Life Detection‡ (SES494/598)	0.5	21 (12/9)
			<i>total: 6.5 h</i>	
2018	Fall	<i>Approved teaching release</i>	--	
2018	Spr	<i>Sabbatical Leave</i>	--	
2017	Fall	<i>Sabbatical Leave</i>	--	
2017	Spr	Geochemistry†* (GLG 481/598, CHM 481/598)	3	34 (29/5)
			<i>total: 3 hrs</i>	
2016	Fall	Oceanography†* (GLG 325, BIO 325, CHM 385, BIO 598)	3	140 (138/2)
2016	Spr	Field Geochemistry†* (GLG 598/490, CHM 598/494)	3	10 (5/5)
			<i>total: 6 hrs</i>	

2015	Fall	<i>Teaching Release – SESE AD Undergraduate Programs</i>	--	
2015	Spr	Field Geochemistry ^{†*} (GLG 598/490, CHM 598/494)	3	8 (6/2)
			<i>total: 3 hrs</i>	
2014	Fall	Marine Chemistry ^{†*} (GLG 490/598, CHM 494/598)	3	11
2014	Fall	Geo/Environmental Chemistry Seminar (CHM 501)	1	7
2014	Spr	Geochemistry ^{†*} (GLG 481/598, CHM 481/598)	3	32 (21/11)
			<i>total: 7 hrs</i>	
2013	Fall	Oceanography ^{†*} (GLG 325, BIO 325, CHM 394, BIO 598)	3	130
2013	Spr	Geochemistry ^{†*} (GLG 481/598, CHM 481/598)	3	29 (18/11)
2013	Spr	GeoDesigning the Arctic [‡] (AST 591)	1	10
			<i>total: 7 hrs</i>	
2012	Fall	Oceanography ^{†*} (GLG 325, BIO 325, CHM 394, BIO 598)	3	110
2012	Fall	Geo/Environmental Chemistry Seminar (CHM501)	1	20
2012	Spr	Field Geochemistry ^{†*} (GLG 598/490, CHM 598/494)	3	15 (11/4)
			<i>total: 6 hrs</i>	
2011	Fall	Oceanography ^{†*} (GLG 325, BIO 325, CHM 394, BIO 598)	1.5	120 (118/2)
2011	Fall	Environmental Chemistry [‡] (CHM302)	1.5	120
2011	Spr	<i>Sabbatical Leave</i>	--	
			<i>total: 3 hrs</i>	
2010	Fall	<i>Sabbatical Leave</i>	--	
<i>Tenure granted in Spring 2010</i>				
2010	Spr	Geochemistry ^{†*} (GLG 481/598, CHM 481/598)	3	28 (21/8)
2010	Spr	Geo/Environmental Chemistry Seminar (CHM 501)	1	17
			<i>total: 4 hrs</i>	
2009	Fall	Oceanography ^{†*} (GLG 325, BIO 325, CHM 394)	3	32
2009	Spr	Geochemistry ^{†*} (GLG 481/598, CHM 481/598)	3	26 (20/6)
2009	Spr	Geo/Environmental Chemistry Seminar (CHM 501)	1	14
			<i>total: 7 hrs</i>	
2008	Fall	Advanced Biogeochemistry ^{†*} (GLG 598/490, CHM 598/494)	3	7 (0/7)
2008	Spr	Geochemistry ^{†*} (GLG 481/598, CHM 481/598)	3	29 (18/11)
2008	Spr	Geo/Environmental Chemistry Seminar (CHM 501)	1	10
			<i>total: 7 hrs</i>	
<i>In 2007 I received pre-tenure teaching release in the form of a slightly lighter load</i>				
2007	Fall	Geological Sciences Colloquium (GLG 400/500)	1	26 (6/20)
2007	Fall	Intro. Liberal Arts & Sci., 1 st -yr Success Course (LIA 294)	1	14
2007	Spr	Geological Sciences Colloquium (GLG 400/500)	1	22 (7/15)
			<i>total: 3 hrs</i>	
2006	Fall	Field Geochemistry ^{†*} (GLG 598/490, CHM 598/494)	3	8 (5/3)
2006	Fall	Geo/Environmental Chemistry Seminar (CHM 501)	1	10
2006	Spr	Introduction to Physical Geology (GLG 101)	3	218
			<i>total: 7 hrs</i>	
2005	Fall	Field Geochemistry ^{†*} (GLG 598/490, CHM 598/494)	1.5	7 (0/7)
2005	Fall	Weathering, Diagenesis & Alteration ^{†*} (GLG 598/490, CHM 598/494)	1.5	12
2005	Spr	Geochemistry ^{†*} (GLG 481/598, CHM 481/598)	3	22 (15/7)
			<i>total: 6 hrs</i>	
2004	Fall	Advanced Biogeochemistry ^{†*} (GLG 598/490, CHM 598/494)	3	7 (0/7)
2004	Fall	Geo/Environmental Chemistry Seminar (CHM 501)	1	12
2004	Spr	Geochemistry ^{†*} (GLG 481/598, CHM 481/598)	3	29 (24/5)
			<i>total: 7 hrs</i>	

Other Teaching and Mentoring Activities

2019 Faculty Panelist: *Interdisciplinarity and the Job Search*. CAP-LTER Graduate Student Seminar

- 2017 Guest Lecture: *What makes a compelling figure?* CHM598 - Scientific Writing
- 2016 Faculty Mentor: MET Women in STEM for Peoria Central School District
- 2015 Faculty Panelist: *Becoming a Colleague*, CLAS workshop for new Asst. Professors
- 2015 Guest Lectures: Ocean Acidification and the Looming Shellfish Crisis, CHM598; *Mapping the Ocean: from loglines to satellites*, GLG/BIO325, CHM385
- 2013 Guest Lecture: *Challenges in Climate Change*, ELS 501; Invited Lecture.
- 2012 Guest Lecture: *Climate Change and Anthropogenic CO₂*, Hazards (GLG 110); Invited lecture: *Urban Aquatic Biogeochemistry*. Urban Sustainability (SOS 598)
- 2011 Guest Lecture: *Climate Change and Anthropogenic CO₂*, Hazards (GLG 110). Guest Lecture: *Electrospray Ionization Mass Spectrometry*. Analytical Instruments (GLG 490)
- 2010 Guest Lecture: *Water Resources in AZ*. Environmental Chemistry (CHM 301)
- 2009 Faculty Panelist. *Interdisciplinarity and Careers in the Geosciences* (GLG 494)
- 2008 Produced CLTE Podcasts on using classroom participation systems in large classes. <http://clte.asu.edu/podcasts/> (see podcasts 001a & 001b)
- 2008 Guest Lectures: *ESI Mass Spectrometry*. Analytical Instruments (GLG 490); *Water Resources in AZ*. Science for Sustainability (SOS 513)
- 2006 Panelist for CLTE workshop on large-format lecture courses and CLTE workshop on the use of classroom participation systems (CPS)
- 2006 Guest Lecturer: *Organic geochemistry of soils & sediments*. Soil Ecology (BIO 494)

Professional Development Related to Teaching, Instruction, and Mentoring

- 2019 Invited participant. Diversity, Equity, and Inclusion in the Earth & Environmental Sciences: Supporting the Success of All Students. InTeGrate Workshop. Developed best-practices and an action plan for DEI activities in SESE with an emphasis on students.**
- 2005-06 Invited participant. Tri-University Collaboration on Learner-Centered Practice. This ABOR-funded project developed best-practices for learner-centered education to provide resources for implementing LCE techniques at the three AZ universities.
- 2005 5th-annual Minority Graduate Education at Mountain States Alliance (MGE@MSA) Arizona Faculty Doctoral Mentoring Institute. Tempe, AZ. MGE@MSA aims to improve retention of STEM minority graduate students by providing mentoring tactics and empowering faculty mentors.
- 2005 Process-Oriented Guided-Inquiry Learning (POGIL) Workshop. Tempe, AZ. A program to improve chemistry teaching via active engagement and self-managed collaborative teams.
- 2004 On the Cutting Edge. Early-career Geoscience Faculty: Teaching, Research & Managing your Career. Williamsburg, VA. Best-practices for teaching, course design, establishing research programs, student mentoring, personal/professional responsibilities, and time-management.
- 2004 Faculty “Rookie Camp”, Center for Learning and Teaching Excellence (CLTE), ASU. Seminar introducing new faculty to resources and strategies for teaching.

MENTORING AND TRAINING

Summary

- PhD supervisor: 8 students (6 as Chair, 2 as co-Chair)
- SESE 2nd project advisor: 9 students
- PhD committee member: 48 students
- PhD candidacy exams: 21 students (7 as Chair)

MS supervision: 20 students (2 as Chair, 18 as Committee Member)
 Honors Thesis supervision: 11 students (5 as Chair, 6 as Committee Member)
 Undergraduate Researcher supervision: 52 students
 High-school students: 4
 Post-doctoral Fellows: 6
 Co-Authorship with Mentees: 80% of peer-reviewed publications since tenure in 2010.

Awards

Nominee, ASU Committee for Campus Inclusion Excellence Catalyst Award (2019)
 Nominee, ASU Faculty Women’s Association Outstanding Mentor Award (2015)
 Nominee, ASU Committee for Campus Inclusion Excellence in Diversity and Inclusion Award (2015)

Graduate Thesis Advisees

Unit abbreviations – SESE: School of Earth & Space Exploration; SMS: School of Molecular Sciences, CB: Dept. Chemistry & Biochemistry; ChmE: Chemical Engineering; ELS: Environmental Life Sciences; SoLS: School of Life Sciences; SoS: School of Sustainability. †: denotes student/postdoc with whom I have co-authored publications or manuscripts in process.

Current students for whom I am primary supervisor

Joshua Nye†	PhD candidate (SMS)	expected completion, January 2020
Donald Glaser†	PhD candidate (SMS)	expected completion 2021
Nicholas Elms	PhD (SMS)	entered 2018
Pilar Carmela Vergeli†	PhD (SESE)	entered 2018 (co-advised with A Anbar)
Sarah Bearman	PhD (SESE)	entered Jan. 2019 (co-advised with JD Das)

Past graduate students

Margaret Bowman†	MS 2015 (SMS)	PhD Student, CU Boulder
George Alex Hamilton†	PhD 2013 (CB)	Sr. Scientist, Clorox Co., US
Jessie Shipp Stinson†	PhD 2013 (CB)	Sr. Researcher, Los Alamos National Lab
Kathryn A Noonan†	PhD 2012 (SESE)	Proj. Manager, ERM: Env. Resources Mgmt
Brent Lance	2006-07 (CB)	Chemist, Premier Magnesia, LLC
Bradley Brown	MS 2006 (CB)	Scientist, Nestle Purina

SESE 2nd Project Advisees

These projects are a ~2 year graduate research activity that students undertake with an advisor as part of the SESE PhD candidacy requirements. Under ideal circumstances these projects lead to a publication and generally, these students’ primary discipline is outside of biogeochemistry.

John Malloy	2018-present (network theory)	PhD student
Tessa Fisher†	2017-present (astrobiology)	PhD candidate
Melissa Sedler	2017-19 (geobiology)	PhD student
Marisol Juarez Rivera†	2016-18 (geobiology)	PhD candidate
Kristen Whitney	2016-18 (hydrology)	PhD candidate
James Leong†	2014-16 (petrol./geochem.)	PhD candidate
Keith Morrison	2010-12 (geology)	Lawrence Livermore Nat’l. Lab
Jon Oiler†	2009-11 (engineering)	Avago Technologies
Patty Lin	2007-08 (geophysics)	Taiwan Ocean Research Inst. (TORI)

Graduate Thesis Committees

I am a very active committee member. In all cases, where I agree to be a thesis committee member, I meet regularly with students; I also read and make detailed comment on their dissertations.

Current graduate students (15 total; [§]2019 oral exam; *2020 graduation expected)

Steffen Buessecker[†] (PhD, ELS)	Aleisha Johnson[†] (PhD, SESE)	Camerian Milsaps (PhD, SESE)
Tessa Fisher[†] (PhD, SESE)	Erin Kuhn[§] (MFA, Herberger)	Marisol Juarez Rivera[†] (PhD, SESE)
Hikaru Furukawa[§] (PhD, SESE)	Grant Loescher* (MS, SMS)	
Dylan Gagler (PhD, SESE)	James Leong^{†*} (PhD, SESE)	Melissa Sedler (PhD, SESE)
Megan Guild* (PhD, SESE)	John Malloy (PhD, SESE)	Garrett Shaver (PhD, SMS)
		Kristen Whitney (PhD, SESE)

Past Graduate students (45 total)

Amalia Handler^{†*} (PhD-19, ELS)	Carolina Londoño [†] (PhD-16, SESE)	Tracy Lund (MS-10, SESE)
Alyssa Sherry (MS-19, SMS)	Francesca de Martini (PhD-16, SoLS)	Jill Lockard (MS-09, SESE)
Alexandria Layton (MS-19, SMS)	Megan Wolverton (MS-16, SoLS)	Kade Hutcheson (MS-09, SESE)
Katherine Kemmitt[†] (MS-18, ELS)	Chris Mead (PhD-14, SESE)	Vanessa Escobar (MS-09, SESE)
Feifei Zhang, (PhD-18, SESE)	Kyle Kinzler (MS-14, SoLS)	Heide McIlwraith (MS-08, CB)
Christiana Bockisch[†] (PhD-18, CB)	Jon Oiler [†] (PhD-13, SESE)	Susan Schultz (PhD-07, SESE)
Grayson Boyer (PhD-18, CB)	Chris Glein [†] (PhD-12, SESE)	Brandon McLean (MS-07, SESE)
Hannah Schonwald (MS-18, SEBE)	Arnab Dutta [†] (PhD-12, CB)	Jennifer Smith (MS-06, CB)
Kirtland Robinson[†] (PhD-17, CB)	Stephen Romaniello [†] (PhD-12, SESE)	Brandon Canfield (PhD-06, CB)
Kristin Johnson[†] (PhD-17, CB)	Xiaoqing Cai (PhD-11, CB)	Nicole Royer (MNS-06, CB)
Julie Mitchell[†] (PhD-17, SESE)	Yun Duan (PhD-10, SESE)	Kavita Thakore (MNS-05, CB)
Brian St. Clair (PhD-17, ELS)	Jennifer Glass [†] (PhD-10, SESE)	Ken Voglesonger (PhD-04, GLG)
Peter Canovas (PhD-16, SESE)	Elisabeth Larson [†] (PhD-10, SoLS)	Leslie Field (MNS-04, GLG)
Kristopher Fecteau[†] (PhD-16, CB)	Michelle McCrackin (PhD-10, SoLS)	
Rebecca Smith (PhD-16, SESE)	Angela Bond (MS-10, SESE)	
Gayatri Marliyani (PhD-16, SESE)	Hansina Hill [†] (MS-10, CB)	

Other Graduate Students Mentored

These are students for whom I served in a significant advisory role, or who started in my group but did not complete a degree.

Sam Rochelle (SESE)	Hagit Ben-Daat (CB)	Michael Thomas (GLG)
Wei Deng (SoLS)	Audrey Stewart (MNS, CB)	Kat McFadden (GLG)

Candidacy Exam Committees (23 total; *denotes committee chair)

Erin Khune (Herberger, 2019)	Xinming Chen (CB, 2014)	Wendy Hawley (SESE, 2008)
Hikaru Furukawa (SESE, 2019)	Kirtland Robinson (CB, 2012)	Patty Lin (SESE, 2008)
Samantha Donovan (CB, 2017)	Brett Carr* (SESE, 2012)	Mike Evans (CB, 2007)
Denise Napolitano* (CB, 2016)	Ian Pakh* (CB, 2012)	Michele Meighan (CB, 2006)
Feifei Zhang* (SESE, 2016)	Jinwei Zhang (CB, 2012)	Sara Bowen* (CB, 2006)
Alicia Gonzales (SESE, 2015)	Keith Morrison (SESE, 2012)	Shaji Nair (SESE, 2006)
Shannon Huey* (CB, 2015)	Alicia Griffin (SESE, 2009)	Spencer Riley (SESE, 2004)
Brian St. Clair (ELS, 2014)	Xiaoqing Cai* (CB, 2008)	

Undergraduate Honors Thesis Students

Students in the ASU Barrett Honors College work closely with an advisor for 1-2 years conducting an independent project, writing, and defending an Honors thesis.

Current Honors advisees

Elinor Sauer **BS (Env. Chemistry)** **expected 2020**

Past Honors Thesis advisees

Stephanie Bone	4/1 MS 2016 (Civil Eng.)	Engineer, GeoSyntec
Gordana Pavlovic, PharmD	BS 2014 (Biochem.)	Pharmacist
Marie Nahlik, DDS	BS 2012 (Chemistry)	Dentist
Hilary Waterman	BS 2010 (Chemical Eng.)	Scientist, AZ Public Service (APS) Phoenix
Megan Kelly, Ph.D.	BS 2008 (Env. Chem.)	Lecturer, Arrupe College Loyola University

Undergraduate Research Students Mentored

These are students who have conducted undergraduate research in my laboratory; 23 of these students have gone on to graduate work and 4 of them now hold faculty positions.

(52 total; **bold**: current student, underline: AZ SpaceGrant student, ‡: Honors thesis committee, *italics*: Barrett Fellow, *exchange student, †student went on to graduate school, blue: students who are now university professors)

<u>Antonio Acuna</u>	Chelsea Codd	Brad Kassing	Gordana Pavlovic ^{‡†}
Arya Akhavan ^{‡†}	Jesse Coe [†]	<u>Megan Kelly</u> ^{‡†}	<u>Giovanni Pieve</u>
Stephanie Banno	Stephen Coe	Surim Meagan Kim*	Lauren Puglisi
Aaron Boydston [†]	<u>Connor Companik</u>	Nicholas Knott [‡]	<u>Melissa Raleigh</u>
Jason Bergeron [†]	Alysia Cox ^{‡†}	<u>Nikita Kowal</u>	Mark Reineke ^{‡†}
<u>Stephanie Bone</u> ^{‡†}	Ashley Diamond [†]	David Kwan Liu [†]	<u>Elinor Sauer</u> [‡]
Matthew Bouffard	Nick Dionisio	Rebecca Martin ^{‡†}	Josh Smith
Maggie Bowman [†]	Josh DiPietro	<u>Katherine Mayer</u>	Zachary Smith [†]
Delaney Broom	<u>Alexa Drew</u> [†]	Taeko Minegishi [†]	<u>Allie Stern</u>
Kyle Brown [‡]	Austin Fox [†]	<u>Marie Nahlik</u> ^{‡†}	Zaruhi Torosyan [†]
Ben Brugman [†]	Patrick Hall	Kanishka Nirmale	Tyler Viliborghi
<u>Kathryn Chamberlin</u>	Ben Johnson	<u>Alexis Pasulka</u> [†]	Hillary Waterman [‡]
Aaron Chesley	Dylan Joralman [†]	Jordan Pacheco	<u>Alexander Witthus</u>

Other Undergraduates Mentored

These are students whom I mentored outside of my research laboratory, either as a SESE advisor or in some other informal role. These are all students for whom I have written letters of recommendation.

Emily Apel (SMS), Sarah Bearman (SESE), Tristyn Bercel (SESE), James Bracchio (GLG), Travis Bryant (Biology), Rachel Henderson (CB), Alizee Jenck (CB), Sarah Kempkes (CB), Sara Khalid (SESE), Alyssa Morgan (CB), David Olney (CB), Xiao Qi (CUGB), Sarah Robinson (GLG), Bharath Tata (ChemE)

High-school Students Mentored in the Hartnett laboratory

Nikita Kowal, Hillary Waterman, Avinash Maganty, Joshua Shapiro

Early-Career Scientists Mentored

Natalie Hinkel, PhD	2018-present	Sr. Research Scientist, SWRI
Christy Till, PhD	2014-present	Assist. Prof., SESE
Sara Imari Walker, PhD	2013-present	Assoc. Prof., SESE
Zachary Smith	2012-15	Scientist, U. North Dakota
Jesse Coe	2012-13	Post-Doc, SLAC

Post-Doctoral Mentoring

Hua Wang (SESE Fellow, co-advisor: Yu)	2010-11	unknown
Amisha Poret-Peterson [†] (NAI)	2011-14	Scientists USDA/UC Davis

Loÿc Vanderkluysen [†] (SESE Fellow, co-advisor: Clarke) 2010-13	Asst. Prof. Drexel Univ.
Monica Palta [†] (SESE Fellow, co-advisor: Vivoni) 2014-16	Asst. Prof. Pace Univ.
Adam Monroe [†] (NExSS) 2015-16	Galileo Analytical
Damien Finn [†] (NExSS, co-advisor: Cadillo-Quiroz) 2016-18	U Queensland, Brisbane AUS

Visiting/Affiliated Scientists

Surim Megan Kim, summer student	2019	Yonsei University, Korea
Dehlia Hannah, Ph.D.	2018-present	Research Assoc., Aalborg, Univ.

SERVICE

Service to the Profession

2020-22 President, Organic Geochemistry Division of the Geochemical Society; Board member, Geochemical Society ♦ this term will be followed by 2 years as past-president (2022-24).

2018-20 President-Elect, Organic Geochemistry Division of the Geochemical Society;

2019 Science Organizing Committee: *Materials of the Universe* Workshop, Apr. 2019

2017 Chair, Joint Fellows Committee: Geochemical Society/European Assoc. Geochemistry

2016-17 Local Organizing Committee, Astrobiology Science Conference 2017

2016-17 Science Organizing Committee, Astrobiology Science Conference 2017

2016 Science Organizing Committee, NASA/NExSS Biosignatures Workshop, Seattle, WA.

2016 AGI Special Awards Judge: International Science and Engineering Fair, Phoenix AZ

2016 Group Chief, NASA PSTAR Review Panel.

2015 Faculty Panelist: *Becoming a Colleague*, CLAS workshop for Assistant Professors.

2015-17 Member, Joint Fellows Committee: Geochemical Society/European Assoc. Geochem.

2015-17 Associate Editor: *Encyclopedia of Geochemistry*

2014-18 Secretary, Organic Geochemistry Division of the Geochemical Society; Board Member, The Geochemical Society.

2013 Review Panelist: NASA Astrobiology Program, Washington D.C. Oct. 2013

2013 AGI Special Awards Judge: International Science and Engineering Fair, Phoenix AZ

2010-15 Review Editor. *Frontiers in Terrestrial Microbiology*.

2006-07 Organizing Committee Member: ASLO National Meeting, Santa Fe, NM

2007 Review Panelist: NASA Astrobiology Program, Washington D.C. June 2007

2005 Grand Awards Judge: INTEL International Science & Engineering Fair, Phoenix AZ

2003-04 Moderator/Judge: National Ocean Sciences Bowl, New Brunswick, NJ

Session Convener: **AGU Fall Meetings: 2019, 2018, 2016, 2011, 2010**; JpGU-AGU Meeting, 2020; **AbSciCon 2017**; ASLO Meeting, 2007; AGU Ocean Sciences Meeting, 2002

Student Poster Judge: AGU, Geochemical Society, ASLO, AbSciCon (2003-present)

Early Career Mentor: Goldschmidt Conference: 2015, 2014, 2011.

Proposal reviewer (~5-10 proposals/yr)

NSF-EAR; NSF-OCE; NSF-DEB NASA; DOE; DOD; NOAA; IODP; French National Res. Agency (ANR); Petroleum Research Fund.

Manuscript reviewer (~5-10 papers/yr)

Biogeosciences, Earth & Planetary Science Lett.; EOS; Global Biogeochemical Cycles; Geochimica et Cosmochimica Acta; Geophysical Res. Lett.; Nature; Science; Limnology &

Oceanography; Limnology & Oceanography Methods; Deep-Sea Res.; Marine Geology; Marine Chemistry; Aquatic Microbial Ecol.; J. Sedimentary Res.; Estuaries; Estuarine, Coastal & Shelf Sci.; J. Geoscience Educ.; Marine & Freshwater Res.; Rapid Comm. in Mass Spectrometry

Service to Arizona State University

- 2019-present Steering Committee Member, Center for the Materials of the Universe (MOTU)**
- 2019 Review Panelist for internal submission process.**
- 2018 Faculty Expert. *Developing a successful research program*. CLAS Workshop for Asst. Professors.
- 2016-present Co-lead, Climate Adaptation & Mitigation Campaign (ASU 2020 Campaign)
- 2016-17 GIOS/OKED TeamLA Leadership Academy Fellow, Arizona State University
- 2015-present Co-lead ASU PlanetWorks, ♦this is a significant activity.**
- 2015-16 Co-chair, ASU *TransferMatters* Initiative - Philosophy Dimension committee
- 2015-18 Member, University Laboratory Safety Committee
- 2015 Faculty Panelist: *Becoming a Colleague*, CLAS workshop for Assistant. Professors.
- 2015-18 Executive Committee, Center for Bioenergy and Photosynthesis
- 2014-15 GIOS/OKED Leadership Academy Fellow, Arizona State University
- 2014-15 Member, CLAS *First-YearForward* Initiative - Faculty Dimension committee
- 2014-15 Member, Faculty Search Committee - SW Borderlands Initiative
- 2013-present Faculty Honors Advisor, Barrett the Honors College at ASU.**
- 2012-16 Steering Committee Member, ASU/NASA Space Grant
- 2011-13 Criterion Team Leader: ASU/Higher Learning Commission Re-Accreditation Self-Study.
- 2007-10 Executive Committee, Center for BioEnergy & Photosynthesis
- 2007 Faculty Search Committee (Sch. of Sustainability)

Service to SESE and SMS

- 2019-20 Member, Center for Meteorite Studies Director Search Committee**
- 2019-present Associate Director for Graduate Programs, SESE ♦significant service load.**
- 2019-present Associate Director for Inclusive Community, SESE ♦significant service load.**
- 2019-21 SMS Personnel and Budget Committee ♦significant service load.**
- 2018-19 SMS Director search committee**
- 2018 SMS Undergraduate Curriculum Reform Committee
- 2016-2020 SESE Undergraduate Curriculum Design Committee**
- 2016-17 Chair, Isotope Geochemistry Faculty Search Committee
- 2014-17 Associate Director for Undergraduate Programs, SESE ♦significant service load.
- 2011-14 SESE Exploration Postdoctoral Fellowship Program Coordinator
- 2013 Member, SESE Director Search Committee
- 2013-14 Chair, SESE Graduate Committee
- 2012-14 SESE Graduate Committee; SESE Committee on Computing, member; SESE Ad-Hoc Committee on web-tool development
- 2011-14 Chemistry & Biochemistry: Graduate Students' Liaison; member, Committee on Development, Outreach & Alumni Relations (Chemistry)
- 2009-13 SESE: member, Ad-Hoc Bylaws committee; member, Undergrad. Programs committee
- 2009-10 Faculty Search Committee of the whole (SESE)

- 2008-09 SESE Curriculum committee member
- 2007-08 Committee for Undergraduate Research and Mentoring (Chemistry), Seminars Committee (Chemistry); Strategic Planning Committee: Chemistry of Global Sustainability (Chemistry); Faculty Search Committee (SESE)
- 2007-08 External Chair Search Committee (Chemistry)
- 2006-07 Faculty Search Committee (SESE), Undergrad Research & Mentoring (Chemistry)
- 2005-08 Biogeochemistry Interest Group (BIG) Seminar Coordinator
- 2005-06 Topics in Analytical Geochemistry (TAG) Seminar Coordinator
- 2004-05 SESE Curriculum Committee; SESE Steering Committee
- 2003-05 Graduate Programs committee (Chemistry)
- 2003-04 Seminars Committee (Chemistry)
- 2003-present 50+ PhD candidacy exam committees (SESE, Chemistry, SoLS, ELS)

COMMUNITY EMBEDDEDNESS

Outreach Activities

- 2019** SESE New Discoveries Lecture. *Halfway to Madagascar* and Public Lab Tour.
- 2019** 2019 Sagan Summer Workshop. *Geochemistry of Exoplanets*.
<https://www.youtube.com/watch?v=mlInPQDAsmA>
- 2019** ASU Graduate College Video: Professional Development for Graduate Students
- 2019** NSF 2026 Idea Machine. *Geomimicry*. CoP's: I Gould, H Hartnett, C Estrada, K Robinson, E Shock This was one of 30 selected from 800 for Stage 2 evaluate and video production. <https://nsf2026imgallery.skild.com/entries/geomimicry>
- 2018 LTER Video: Advice for Undergraduates. <https://youtu.be/b1YSeoFbnMU>
- 2018 LTER Video: All Scientist Meeting Reflections. <https://lternet.edu/stories/new-video-nsf-lter-all-scientists-meeting-reflections/> or <https://youtu.be/zwtxaZm0g0Y>
- 2018 Science Editor, 2018 ASU Climate Fiction Contest
- 2018 Speaker. Climate 3.0. Broto1: Art, Science, and Collaboration. Provincetown MA, May 7th. https://www.youtube.com/watch?v=XaVpdPB7_M
- 2018 Panelist. Imagining a world made sustainable. Broto1: Art, Science, and Collaboration Conference. Provincetown, MA. <https://www.youtube.com/watch?v=Q1yuIjvl5cs>
- 2016 Faculty mentor. Peoria Central School District – STEM education event
- 2012-present Night of the Open Door Arizona SciTech Festival
- 2012 Speaker. *Future STEM Sun Devil Family Night*, Arizona Science Center.
- 2009-10 Panelist. MudMax film premier. Tempe, AZ; Sydney, AUS.
- 2009 Oceanographer. Ocean Adventure Demonstration, Changing Hands Books. Tempe, AZ.
- 2006-present Earth and Space Exploration Day, Presenter: Dr. Water, ASU.
- 2006 Research mentor for High-School students. SW Center for Education and the Natural Environment (SCENE), ASU.
- 2005 GELSS Student Symposium Judge
- 2004-05 Earth Science Day, Presenter. Dr. Water, ASU.
- 2004 GELSS Student Symposium Judge
- 2001-02 Instructor. Douglass Collage Science Institute, Rutgers University.
- 1994-97 Coordinator, University of Washington Oceanography Outreach Program.

- 1995-96 Science consultant, curriculum development team. Washington Initiative for Science Education – Science Teacher Enhancement Program (WISE-STEP). Seattle, WA.
- 1994-97 Instructor, Expanding Your Horizons Workshop, 5-8th grade girls. Seattle, WA.

Press and Media Coverage

- 2019 **BBC Science in Action, Report from the 2019 AGU meeting.**
<https://www.bbc.co.uk/sounds/play/w3csym2t?fbclid=IwAR2-xohBujFaQuB2TPjrX6-UrdfCjn4VV5o0Nz-KIz3uNOImasyUwxmvL0w>
- 2019 **ASU Oceanographer explores the ocean floor for the history and future of Earth's climate.** <https://asunow.asu.edu/20191002-asu-oceanographer-and-biogeochemist-explores-ocean-floor-history-and-future-earth-climate>
- 2019 **Grand Canyon Anniversary Story.** <https://asunow.asu.edu/20190225-arizona-impact-asu-voices-grand-canyon>
- 2018 Urban Biogeochemistry. ASU Now. *Tempe Town Lake Sends Message in a Bottle.*
<https://asunow.asu.edu/20181030-arizona-impact-tempe-town-lake-sends-message-bottle>
- 2018 Astrobiology. Radio interview, KJZZ. *Experts Push Limits Of Science And Tech In Search Of Life On Exoplanets.* <https://kjzz.org/content/705924/experts-push-limits-science-and-tech-search-life-exoplanets>
- 2017 >25 media and radio interviews. Climate Expert, *Arctic Ice Management*. Selected examples:
<https://www.livescience.com/57968-pumps-could-freeze-arctic-sea-ice.html>
<https://omny.fm/shows/kelly-cutrara/dr-hilairy-hartnett-talks-plan-to-refreeze-arctic>
<http://www.nbcnews.com/mach/environment/scientists-want-put-10-million-windmills-arctic-here-s-why-n756481>
<https://gizmodo.com/the-arctic-is-in-such-bad-shape-that-scientists-propose-1792384678>
<https://www.fastcompany.com/3068476/what-if-we-installed-millions-of-wind-powered-pumps-in-the-arctic-to-grow-more-ice>
<https://www.newsdeeply.com/oceans/articles/2017/12/13/scientists-warily-look-to-geoengineering-to-stave-off-polar-catastrophe>
<https://asunow.asu.edu/20161222-solutions-asu-scientists-propose-restoring-arctic-ice-10-million-windmills>
- 2017 Astrobiology. What purple can tell us about life on other planets.
<https://www.cnn.com/2017/08/04/health/colors-purple/index.html>
- 2017 Broto Eco Workshop. <https://www.capecodtimes.com/entertainmentlife/20180415/driscoll-fine-arts-work-center-marks-50th-year>
- 2015 Featured scientist. *ASU Connections Podcast*. <https://player.fm/series/asu-connections-podcast/hilairy-hartnett>
- 2010 Oceanographer. AZ Ch.13 television news interview on the Gulf of Mexico Oil Spill.
- 2008 Featured Scientist. *ASU Spotlight – School of Earth and Space Exploration*, a TV/DVD production of Eight/KAET. <https://www.youtube.com/watch?v=diAX2FYv9iQ>
- 2007 Carbon cycle expert. *Carbon Nation*, documentary film by Peter Byck on climate solutions.

SYNERGISTIC ACTIVITIES

- 2019-present **Advisory Board Member: BROTO - An art-science collaboration**
- 2019-present **Materials of the Universe Workshop organizer and Steering Committee Member.**

- 2019 **Rocky Planet Diversity Workshop, a joint NExSS/ELSI project to complete writing on a book project of the same title**
- 2018 *Materials of the Universe* Initiative, Team leader
- 2018 Co-convener, ASU-UW Arctic Ice Modelling Workshop, Seattle, WA
- 2016-18 **NAI CAN8 Primary Investigator *Signs of Life on Anoxic Worlds*. ♦I led a team of 30+ investigators to prepare this \$10M proposal.**
- 2016-17 GIOS/OKED TeamLA Leadership Academy, Arizona State University
- 2017-present **Deputy-PI, ASU NExSS project *Exoplanetary Ecosystems***
- 2015-present **Co-PI and Life Processes Team Leader, ASU NExSS project *Exoplanetary Ecosystems***
- 2015-present **ASU PlanetWorks, co-lead**
- 2015 ASU Climate Design Initiative, Co-leader
- 2015-present **Team Leader. LTER Water & Fluxes Interdisciplinary Research Theme (IRT). CAP-LTER renewal proposal writing team member.**
- 2014-15 GIOS/OKED Leadership Academy Graduate, Arizona State University
- 2013 Organizer. LTER Synthesis Group: Linking aquatic and soil organic matter across ecosystems through characterization of optical properties. CU/INSTAR. May 2013.
- 2010-2015 IPA Team Member. Fluxes of Materials and Socio-Ecosystem Response, Central Arizona Phoenix Long Term Ecosystem Research (CAP LTER) Program
- 2009 Invited Participant. *The Critical Zone: An NSF-sponsored workshop on the biological aspects of weathering*. Washington, D.C.
- 2008 Panelist. *Storm water management and urban ecology*. CAPLTER 10th ASM Tempe, AZ.
- 2008 NSF RCN Denitrification Methods & Applications Workshop. Horn Point Marine Lab
- 2004-present **Biogeochemistry Reading Group. Arizona State University**
- 2003 Participant. *New Approaches in Marine Organic Biogeochemistry*. Friday Harbor Laboratories, UW

ACTIVITIES ASSOCIATED WITH ASU PLANETWORKS

- 2019 **Participant, Climate Engineering Workshop, Global Futures Initiative, ASU. Education for the Anthropocene Working Group**
- 2018 Co-convener: *Can we manage Earth's Future*, Union Session AGU Fall Meeting; Workshop convener, *Education for the Anthropocene* (Oct 15); Workshop convener, *Arctic Ice Modeling*, Seattle WA (Jun 11-14); Co-PI, *ASU DECISIVE* project, Ice Management.
- 2017 Coordinator, *Climate 3.0 - 2nd Workshop* (Jan 14); Collaborative meeting with H. Wang, Univ. of Manitoba (AIM project); 2017 Climate Engineering Conf. participant, Berlin.
- 2016 Coordinator, *Planetary Design Climate 3.0 Workshop* (Jan).

CRUISES/FIELD EXPEDITIONS

- South Indian/Southern Ocean (CROCCA-2S. Team Lead, multicoring), R/*V Thompson*, Nov-Dec 2018
- Atacama Desert, Soil gas flux measurements. 2017-18
- Colorado Plateau, Microbial soil crusts. 2005-present
- Yellowstone National Park, Investigations of hot springs. 2005-present
- Arizona Lakes and Rivers. 2004-present
- Tengchong Geothermal Field, Yunnan Province, P.R.C. 2011-2015.
- Mud Volcanoes, East Java Indonesia; 2007-present

IODP Leg 331: Deep Hot Biosphere; Okinawa Trough, *D/V Chikyū*, Oct 2010
Gulf of Mexico (GOMex-04, 03), *R/V Seward Johnson*; Oct 2003, 2004
Antarctic Peninsula (FOODBANCS II-V), *R/V L. M. Gould*, Mar/Jun/Oct 2000, Feb 2001
Gulf of Mexico, *R/V Gyre*, Jun 1997
Vancouver Island Fjords, *R/V Barnes*, May 1997
Pacific Coast Transect (STUPEX 96; Student PI), *R/V Thompson*, Jul 1996
Mexican Margin, *R/V New Horizon*, Nov-Dec 1996, Nov-Dec 1993
Washington Margin, *R/V Wecoma*, Aug-Sep 1997, Aug-Sep 1994, Jul-Aug 1988

RESEARCH TECHNIQUES AND ANALYTICAL METHODS (selected)

Mass Spectrometry (continuous flow, dual-inlet, & quadrupole MS: $\delta^{18}\text{O}$, $\delta^{15}\text{N}$, $\delta^{13}\text{C}$, $\text{O}_2/\text{N}_2/\text{Ar}$;
molecular mass spec.: LC ESI-MS, MIMS, GCMS), 3D-Fluorescence spectroscopy, Microelectrodes
(Solid-state voltammetric microelectrodes, O_2 and CO_2 microelectrodes), Solid-phase analyses
(POC/N, BET surface-area, XRD), Aqueous analyses (including, but not limited to: DOC, TDN,
 O_2 , TCO_2 , alkalinity, nutrients), *In situ* benthic chamber techniques, Sediment coring (multi-coring,
box coring, gravity coring, and piston coring), Sediment traps (moored and floating arrays), Radio-
chemical techniques (^{210}Pb and ^{14}C sediment accumulation, $^{35}\text{S}\text{-SO}_4^-$ reduction assays)

PROFESSIONAL AFFILIATIONS

American Geophysical Union (AGU); The Geochemical Society (Organic Geochemistry Division);
Assoc. for the Sciences of Limnology & Oceanography (ASLO); American Chemical Society (ACS)

GRADUATE AND POST-DOCTORAL ADVISORS

Allan H. Devol (Ph.D. advisor; retired), Sybil Seitzinger and Clare Reimers (Post-Doctoral advisors)