

# JESSICA N. FITZSIMMONS, PH.D.

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## EDUCATION

- 2008 - 2013 **Ph.D. in Chemical Oceanography**  
Massachusetts Institute of Technology/Woods Hole Oceanographic MIT/WHOI Joint Program  
Dissertation: "The marine biogeochemistry of dissolved and colloidal iron"  
Committee: Edward Boyle (Chair), Phoebe Lam, Carl Lamborg, Mark Wells
- 2004 - 2008 **B.A. in Chemistry and Biology with a Specialization in Marine Science**  
Boston University, *summa cum laude*, with *Distinction and College Honors*, Advisor: Andrew Kurtz  
Thesis: "Development of Calcium Isotope Methodology using Thermal Ionization Mass Spectrometry"

## APPOINTMENTS

- 2020-Current *Associate Professor*, Texas A&M University, Department of Oceanography
- 2015-2020 *Assistant Professor*, Texas A&M University, Department of Oceanography
- 2014-2015 *Postdoctoral Research Associate*, Rutgers University; Advisor: Robert Sherrell
- 2013 *Postdoctoral Research Associate*, MIT; Advisor: Edward Boyle
- 2008-2013 *Ph.D. student*, MIT/WHOI Joint Program in Chemical Oceanography; Advisor: Edward Boyle
- 2006 *Hollings Scholar Intern*, NOAA, Atlantic Oceanographic and Meteorological Laboratories  
Advisor: Peter Ortner. "Nutrient dynamics of the Southwest Florida Shelf as they relate to the Comprehensive Everglades Restoration Plan"

## HONORS AND AWARDS

- 2021 International Association for the Physical Sciences of the Ocean (IAPSO) Early Career Scientists Medal in Chemical Oceanography
- 2020 Texas A&M College of Geosciences Dean's Distinguished Award for Faculty Service
- 2019 National Academy of Sciences Gulf Research Program Early Career Fellowship (\$75,000)
- 2014 Rossby Award for Best Dissertation in the MIT Programs in Atmospheres, Oceans, & Climate
- 2011 - 2012 MIT Martin Family Society Fellowship for Sustainability
- 2009 - 2012 NSF Graduate Research Fellowship
- 2008 - 2009 MIT Presidential Fellowship
- 2008 Boston University College Prize for Excellence in Chemistry (top Chemistry graduate)
- 2008 Inducted into Phi Beta Kappa, Massachusetts Epsilon Chapter

## GRANTS (all PIs at Texas A&M University unless otherwise indicated)

- 2021 TM Conway (Lead PI, USF), **JN Fitzsimmons** (Co-PI), and SG John (Co-PI, USC). Collaborative Research: U.S. GEOTRACES GP17-ANT: Dissolved concentrations, isotopes, and colloids of the bioactive trace metals. NSF-OCE 2123333. \$1,205,652 (\$410,163 TAMU portion), Oct 2021 – Sept 2024.
- 2021 Yager, P (Lead PI, U Georgia), P Madeiros (Co-PI, U Georgia), RM Sherrell (Co-PI, Rutgers), **JN Fitzsimmons** (Co-PI), P St-Laurent (Co-PI, VIMS), SE Stammerjohn (Co-PI, U Colorado Boulder). NSFGEO-NERC: Collaborative Research: Accelerating Thwaites Ecosystem Impacts for the Southern Ocean (ARTEMIS). NSF OPP-ANT O&E 1941308. \$1,864,037 (\$252,830 TAMU portion). Aug 2021 – July 2024.
- 2020 **JN Fitzsimmons** (Lead PI), TM Conway (Co-PI, USF), and SG John (Co-PI, USC). Collaborative

Research: U.S. GEOTRACES GP17-OCE: Dissolved concentrations, isotopes, and colloids of the bioactive trace metals. NSF-OCE 2049241. \$1,177,457 (\$456,770 TAMU portion), *Apr 2021 – Mar 2024*.

- 2020 **JN Fitzsimmons** (Lead PI), F Marcantonio (Co-PI), and J Kaihatu (Co-PI). Tracing Texas freshwaters into the coastal Gulf of Mexico using isotopes. Texas A&M University T3 Triad. \$34,000, *Jan 2021 – Dec 2022*.
- 2020 BS Twining (Lead PI, Bigelow), **JN Fitzsimmons** (Co-PI), G Cutter (Co-PI, ODU), C Wiederwohl (Co-PI). Collaborative research: Management and implementation of the US GEOTRACES GP17 Section: South Pacific and Southern Ocean (GP17-OCE). NSF-OCE 2023206, \$1,951,183 (\$502,824 TAMU portion), *Oct 2020 – Sept 2023*.
- 2020 J Drazen (Lead PI, U. Hawaii), G Carter (Co-PI, UH), A White (Co-PI, UH), S Ferron (Co-PI, UH), **JN Fitzsimmons** (Co-PI), E Goetze (Co-PI, UH), M Hatta (Co-PI, UH), D Lindsay (Co-PI, JAMSTEC), CI Measures (Co-PI, UH), B Popp (Co-PI, UH). Characterization and monitoring of the water column ecosystem in the eastern CCZ (NORI-D). Deep Green Metals, Inc. \$3,190,930 (\$309,516 TAMU portion), *Jul 2020 – Jun 2022*.
- 2019 CR German (Lead PI, WHOI), **JN Fitzsimmons** (Co-PI), BM Toner (Co-PI, U.Minn), JA Breier (Co-PI, UTRGV), and G Xu (Co-PI, APL-UW). Collaborative Research: Hydrothermal Estuaries: What sets the hydrothermal flux of Fe and Mn to the oceans? NSF-OCE-1851078, \$1,658,407 (\$399,558 TAMU portion), *Jun 2019 – May 2022*.
- 2019 L Campbell (Lead PI) and **JN Fitzsimmons** (Co-PI). REU Site: Observing the Ocean. NSF-OCE-1849932, \$418,547. *Mar 2019 – Feb 2022*.
- 2019 A Brandon (Lead PI, U. Houston) and **JN Fitzsimmons** (Co-PI). Lead (Pb) isotopes and heavy metal concentrations in Galveston Bay waters, sediments, and oysters. Galveston Bay Estuary Program, TCEQ. \$133,688 (\$26,439 TAMU portion), *Sept 2019-Aug 2021*.
- 2018 **JN Fitzsimmons** (Lead PI), G Gold-Bouchot (Co-PI), and K-H Chu (Co-PI). Fate of chemical pollutants in a local Texas Anthropogenic Estuary. Texas A&M University T3 Triad. \$34,000. *Apr 2018-Mar 2020*.
- 2017 **JN Fitzsimmons** (Lead PI) and C Till (Co-PI, Humboldt State University). Collaborative Research: U.S. GEOTRACES PMT: Dissolved trace metal distributions and size partitioning (Fe, Mn, Zn, Cu, Cd, Ni, Pb, & Sc). NSF-OCE-1737167, \$580,976 (\$464,498 TAMU portion), *Nov 2017 – Oct 2020*.
- 2016 EB Roark (Lead PI), **JN Fitzsimmons** (Co-PI), F Marcantonio (Co-PI), BV Miller (Co-PI), DJ Thomas (Co-PI). MRI: Acquisition of a Multicollector Inductively Coupled Plasma Mass Spectrometer and Laser Ablation System for Investigating the Evolution of the Earth's Climate, Oceans, and Tectonics at Texas A&M University. NSF-MRI-1626244, \$1,428,910, *Sept 2016 – Aug 2019*.
- 2015 **JN Fitzsimmons** (PI). Colloidal iron distribution and bioavailability along the West Antarctic Peninsula. Antarctic Science International Bursary, \$7500.
- 2015 **JN Fitzsimmons** (Lead PI) and RM Sherrell (Co-PI, Rutgers). GEOTRACES Arctic section: Dissolved micronutrient trace metal distributions and size partitioning (Fe, Mn, Zn, Cu, Cd, and Ni). NSF-OCE-1434493, \$497,314 (\$326,183 TAMU portion), *Jan 2015 - Dec 2019 (2xNCE)*.
- 2014 M Wells (Lead PI, U. Maine) and **JN Fitzsimmons** (Co-PI). Collaborative Research: Assessment of the colloidal Fe size spectrum in coastal and open ocean waters. NSF-OCE-1558722, \$468,081 (\$198,737 TAMU portion), *Sept 2014 - Aug 2019 (2xNCE)*.

**PUBLICATIONS** (\* indicates TAMU graduate student author, ‡ indicates TAMU undergrad author)

Total citations = 2001, with an H-index of 25 (Google Scholar).

**MANUSCRIPTS IN PREPARATION**

\*De Salvo, K, Wells, M, and **Fitzsimmons, JN**. A new flow-field flow fractionation method for the offline analysis of the size distribution of colloidal iron in seawater. *Manuscript in preparation for Marine Chemistry*.

**Fitzsimmons, JN**, \*Jensen, LT, Hoffman, CL, and Toner, BM. A new method for the analysis of marine colloidal

iron speciation using synchrotron Scanning Transmission X-ray Microscopy (STXM). *Manuscript drafted for Marine Chemistry*.

**Fitzsimmons, JN**, Conway, TM, Jenkins, WJ, Hatta, M, Measures, CM, Twining, B, Rauschenberg, S, and Boyle EA. Iron and helium-3 chemistry of the TAG non-buoyant hydrothermal plume. *Manuscript in preparation for Geophysical Research Letters*.

\*Jensen, LT, Cullen, JT, Gerringa, L, Bauch, D, Middag, R, Sherrell, RM, and **Fitzsimmons, JN**. A novel relationship between dissolved copper and nickel in the Arctic Ocean. *Full manuscript drafted for Journal of Geophysical Research: Oceans Special Issue on Arctic Ocean (5/2021)*.

#### MANUSCRIPTS IN REVIEW

John, SG, Kelley, RL, Bian, X, Y, S-C, Fu, F, Smith, MI, \*Lanning, NT, Liang, H, Pasquier, B, Seelen, E, Holzer, M, Conway, TM, **Fitzsimmons, JN**, and Hutchins, DA. A balance of processes controls Ni biogeochemical cycling in the modern ocean. *Submitted to Science (7/2021)*.

\*Lopez, AM, Brandon, AD, **Fitzsimmons, JN**, Ramos, FC, and Jensen, CC. Lead isotopes and heavy metal concentrations in Galveston Bay oyster tissues (*Crassostrea virginica*): Implications for estuarine heavy metal cycling. *In review at Science of the Total Environment (6/2021)*.

\*Lopez, AM, **Fitzsimmons, JN**, ~~Adams, HM~~, Dellapenna, TM, and Brandon, AD. A time-series of heavy metal geochemistry in sediments of Galveston Bay estuary, Texas, 2017-2019. *In 2<sup>nd</sup> review at Science of the Total Environment (7/2021)*.

Zhang, R, \*Jensen, LT, **Fitzsimmons, JN**, Sherrell, RM, Lam, PJ, Xiang, Y, and John, SG. Iron isotope biogeochemical cycling in the western Arctic Ocean. *In revision for Global Biogeochemical Cycles (7/2021)*.

\*Steffen, JM, Summers, BA, Conway, TM, Thyng, KM, Sherrell, RM, German, CR, and **Fitzsimmons, JN**. Short residence times for hydrothermally-sourced dissolved iron in the deep ocean. *In revision for Nature Geoscience (9/2020)*.

#### REFEREED PUBLICATIONS

45. \*Jensen, LT, \*~~Lanning, NT~~, Marsay, CM, Buck, CS, Aguilar-Islas, A, Rember, R, Landing, WJ, Sherrell, RM, and **Fitzsimmons, JN** (2021). Biogeochemical cycling of colloidal trace metals in the Arctic cryosphere. *Journal of Geophysical Research: Oceans, Special Issue on Arctic Ocean*. 126, e2021JC0177394. doi: [10.1029/2021JC017394](https://doi.org/10.1029/2021JC017394).

44. \*Lopez, AM, Brandon, AD, Ramos, RC, **Fitzsimmons, JN**, Dellapenna, TM, and ~~Adams, HM~~ (2021) Lead geochemistry of sediments in Galveston Bay, Texas. *Environmental Advances*, 4: 100057 doi: [10.1016/j.envadv.2021.100057](https://doi.org/10.1016/j.envadv.2021.100057).

43. Hoffman, CL, Schladweiler, C, Seaton, NCA, Nicholas, SL, **Fitzsimmons, JN**, Sherrell, RM, German, CR, Lam, PJ, and Toner, BM (2020). Diagnostic morphology and solid-state chemical speciation of hydrothermally derived particulate Fe in a long-range dispersing plume. *ACS Earth & Space Chemistry, Special Issue on Marine Particles*. 4: 1831-1842. doi: [10.1021/acsearthspacechem.0c00067](https://doi.org/10.1021/acsearthspacechem.0c00067).

42. \*Jensen, LT, Morton, P, Twining, BS, Heller, MI, Hatta, M, Measures, CI, John, SG, Zhang, R, Sherrell, RM, and **Fitzsimmons, JN** (2020). A comparison of marine Fe and Mn cycling: U.S. GEOTRACES GN01 Western Arctic case study. *Geochimica et Cosmochimica Acta*. 288: 138-160. doi: [10.1016/j.gca.2020.08.006](https://doi.org/10.1016/j.gca.2020.08.006).

41. Jenkins, WJ, Hatta, M, **Fitzsimmons, JN**, Schlitzer, \*Lanning, NT, R, Shiller, A, Buckley, NR, German, CR, Lott III, DE, Weiss, G, Whitmore, L, Casciotti, K, Lam, PJ, Cutter, GA, Cahill, KL (2020). An intermediate-depth source of hydrothermal <sup>3</sup>He and dissolved iron in the North Pacific. *Earth and Planetary Science Letters*, 539: 116223. doi: [10.1016/j.epsl.2020.116223](https://doi.org/10.1016/j.epsl.2020.116223).

40. Charette, MA, Kipp, LE, \*Jensen, LT, Dabrowski, JS, Whitmore, LM, **Fitzsimmons, JN**, Williford, T, Ulfso, A, Jones, E, Bundy, RM, Vivancos, SM, Pahnke, K, John, SG, Xiang, Y, Hatta, M, Petrova, M, Heimbürger-Bovaida, L-E, Bauch, D, Newton, R, Pasqualini, A, and more than 40 other authors listed alphabetically (2020). The Transpolar Drift as a source of riverine and shelf-derived trace elements to the Central Arctic Ocean. *Journal of Geophysical Research: Oceans*, 125: e2019JC015920. doi: [10.1029/2019JC015920](https://doi.org/10.1029/2019JC015920).

39. Kadko, D, Aguilar-Islas, A, Buck, C, **Fitzsimmons, JN**, Landing, WJ, Shiller, A, Till, CP, Bruland, KW, Boyle, EA,

- and Anderson, RF (2020). Sources, fluxes, and residence times of trace elements measured during the U.S. GEOTRACES East Pacific Zonal Transect. *Marine Chemistry*, 222: 103781. doi: [10.1016/j.marchem.2020.103781](https://doi.org/10.1016/j.marchem.2020.103781).
38. Hayes, CT, **Fitzsimmons, JN**, \*[Jensen, LT](#), \*[Lanning, NT](#), Hatta, M, McGee, D, and Boyle, EA. (2020) A Lagrangian view of trace elements and isotopes in the North Pacific. *Journal of Geophysical Research: Oceans*, 125, e2019JC015862. doi: [10.1029/2019JC015862](https://doi.org/10.1029/2019JC015862).
37. \*[Jensen, LT](#), Wyatt, NJ, Landing, WM, and **Fitzsimmons, JN**. (2020) Assessment of the stability, sorption, and exchangeability of marine colloidal metals. *Marine Chemistry*, 220: 103754. doi: [10.1016/j.marchem.2020./103754](https://doi.org/10.1016/j.marchem.2020./103754).
36. Carvalho, F, **Fitzsimmons, JN**, Couto, N, Gorbunov, M, Kohut, J, Oliver, MJ, Sherrell, RM, and Schofield, O. (2020) Testing the Canyon Hypothesis: Evaluating light and nutrient controls of phytoplankton growth in penguin foraging hotspots along the West Antarctic Peninsula. *Limnology & Oceanography*, 65:455-470. doi: [10.1002/lno.11313](https://doi.org/10.1002/lno.11313).
35. Zhang, R, \*[Jensen, LT](#), **Fitzsimmons, JN**, Sherrell, RM, and John, SG. (2019) Dissolved cadmium and cadmium stable isotopes in the western Arctic Ocean. *Geochimica et Cosmochimica Acta*, 258: 258-273. doi: [10.1016/j.gca.2019.05.028](https://doi.org/10.1016/j.gca.2019.05.028).
34. \*[Jensen, LT](#), Wyatt, NJ, Twining, BS, Rauschenberg, S, Landing, WM, Sherrell, RM, and **Fitzsimmons, JN** (2019). Biogeochemical cycling of dissolved zinc in the Western Arctic (GEOTRACES GN01). *Global Biogeochemical Cycles*, 33. doi: [10.1029/2018GB005975](https://doi.org/10.1029/2018GB005975).
33. Cheize, M, Planquette, H, **Fitzsimmons, JN**, Pelleter, E, , Sherrell, RM, Lambert, C, Bucciarelli, E, Sarthou, G, Boutorh, J, Le Goff, M, Liorzou, C, Cheron, S, Viollier, E, Gayet, N. (2019) Contribution of resuspended sediments to the dissolved trace metal pool: An experimental study. *Chemical Geology*, 511: 389-415. doi: [10.1016/j.chemgeo.2018.10.003](https://doi.org/10.1016/j.chemgeo.2018.10.003).
32. Boiteau, RM, Till, CP, Coale, T, **Fitzsimmons, JN**, Bruland, KW, and Repeta (2019), D. Patterns of iron and siderophore distributions across the California Current System. *Limnology & Oceanography*, 64: 376-389. doi:[10.1002/lno.11046](https://doi.org/10.1002/lno.11046).
31. Kadko, D, Aguilar-Islas, A, Bolt, C, Buck, CS, **Fitzsimmons, JN**, \*[Jensen, LT](#), Landing, WM, Marsay, CM, Rember, R, Shiller, AM, Whitmore, LM, Anderson, RM. (2019) The residence time of trace elements determined in the surface Arctic Ocean during the 2015 US Arctic GEOTRACES expedition. *Marine Chemistry*, 208: 56-69. doi: [10.1016/j.marchem.2018.10.011](https://doi.org/10.1016/j.marchem.2018.10.011).
30. Marsay, CM, Aguilar-Islas, A, **Fitzsimmons, JN**, Hatta, M, \*[Jensen, LT](#), John, SG, Kadko, D, Landing, WM, \*[Lanning, N](#), Morton, PL, Pasqualini, A, Rauschenberg, S, Sherrell, RM, Shiller, A, Twining, BS, Whitmore, L, Zhang, R, and Buck, CS (2018). Dissolved and particulate trace elements in Arctic melt ponds. *Marine Chemistry*, 204: 70-85. doi: [10.1016/j.marchem.2018.06.002](https://doi.org/10.1016/j.marchem.2018.06.002).
29. Schlitzer, R, *et al.* including hundreds of authors including **Fitzsimmons, JN** (2018). The GEOTRACES Intermediate Data Product 2017. *Chemical Geology*, **493**: 210-223. doi:[10.1016/j.chemgeo.2018.05.040](https://doi.org/10.1016/j.chemgeo.2018.05.040)
28. Sherrell, RM, Annett, AL, **Fitzsimmons, JN**, Rocanova, VJ, Meredith, MP (2018). A “shallow bathtub ring” of local sedimentary iron input maintains the Palmer Deep biological hotspot on the West Antarctic Peninsula shelf. *Philosophical Transactions of the Royal Society A*, 376 (2122): 20170171. doi: [10.1098/rsta.2017.0171](https://doi.org/10.1098/rsta.2017.0171).
27. Hoffman, CL, Nicholas, SL, Ohnemus, DC, **Fitzsimmons, JN**, Sherrell, RM, German, CR, Lee, J-M, Lam, PJ, & Toner, BT (2018). Near-field iron and carbon chemistry of non-buoyant hydrothermal plume particles, Southern East Pacific Rise 15°S. *Marine Chemistry*, 201: 183-197. doi: [10.1016/j.marchem.2018.01.011](https://doi.org/10.1016/j.marchem.2018.01.011)
26. Mellet, T, Brown, MT, Chappell, PD, Duckham, C, **Fitzsimmons, JN**, Till, CE, Maldonado, M, Sherrell, RM, & Buck, KL (2018). The biogeochemical cycling of iron, copper, nickel, cadmium, manganese, and scandium in a California Current experimental study. *Limnology & Oceanography*. 63: S425-S447. doi: [10.1002/lno.10751](https://doi.org/10.1002/lno.10751).
25. Hein, JR, Konstantinova, N, Mikesell, M, Mizell, K, **Fitzsimmons, JN**, Lam, PJ, \*[Jensen, LJ](#), Xiang, Y, Gartman, A, Cherkashov, G, Hutchinson, DR. (2017). Arctic deep-water ferromanganese-oxide deposits reflect the unique characteristics of the Arctic Ocean. *Geochemistry, Geophysics, Geosystems*, 18. doi: [10.1002/2017GC007186](https://doi.org/10.1002/2017GC007186).

24. Wilson, ST, Aylward, FO, Ribalet, F, Barone, B, Casey, JR, Connell, PE, Eppley, JA, Ferrón, S, **Fitzsimmons, JN**, Hayes, CT, Romano, AE, Turk-Kubo, KA, Vislova, A, Armbrust, EV, Caron, DA, Church, MJ, Zehr, JP, Karl, DM, DeLong, EF. (2017). Coordinated regulation of growth activity, and transcription in natural populations of the unicellular nitrogen-fixing cyanobacterium *Crocospaera*. *Nature Microbiology*: 2: 17118. doi: [10.1038/nmicrobiol.2017.118](https://doi.org/10.1038/nmicrobiol.2017.118).
23. Annett, AL, **Fitzsimmons, JN**, Séguret, M, Lagerström, M, Meredith, MP, Schofield, O, and Sherrell, RM. (2017). Controls on dissolved and particulate iron distributions in surface waters of the Western Antarctic Peninsula shelf. *Marine Chemistry*.196: 81-97. doi: [10.1016/j.marchem.2017.06.004](https://doi.org/10.1016/j.marchem.2017.06.004).
22. **Fitzsimmons, JN**, John, SG, Marsay, CM, Hoffman, C, Nicholas, S, Toner, BM, German, CR, and Sherrell, RM. (2017). Iron persistence in a distal hydrothermal plume supported by dissolved-particulate exchange. *Nature Geoscience*, 10: 195-201. doi: [10.1038/ngeo2900](https://doi.org/10.1038/ngeo2900).
21. Ohnemus, DC, Rauschenberg, S, Cutter, GA, **Fitzsimmons, JN**, Sherrell, RM, Twining, BS (2017). Elevated trace metal content of prokaryotic communities associated with marine oxygen deficient zones. *Limnology & Oceanography*, 62(1): 3-25. doi: [10.1002/lno.10363](https://doi.org/10.1002/lno.10363).
20. Boiteau, RM, Mende, DR, Hawco, NJ, McIlvin, MR, **Fitzsimmons, JN**, Saito, MA, Sedwick, PN, Delong, EF, Repeta, DJ (2016). Siderophore-based microbial adaptations to iron scarcity across the eastern Pacific Ocean. *PNAS*, 113(50): 14237-14242. doi: [10.1073/pnas.1608594113](https://doi.org/10.1073/pnas.1608594113).
19. **Fitzsimmons, JN**, Conway, TM, Lee, J-M, Kayser, RA, Thyng, KM, John, SG, Boyle, EA. (2016). Dissolved iron and iron isotopes in the Southeastern Pacific Ocean. *Global Biogeochemical Cycles*. 30. doi: [10.1002/2015GB005357](https://doi.org/10.1002/2015GB005357).
18. Fröllje, H, Pahnke, K, Schnetger, B, Brumsack, H-J, Dulai, H, & **Fitzsimmons, JN** (2016). Hawaiian imprint on dissolved Nd, and Ra isotopes and rare earth elements in the central North Pacific: Local survey and seasonal variability. *Geochimica et Cosmochimica Acta*. 189: 110-131. doi: [10.1016/j.gca.2016.06.001](https://doi.org/10.1016/j.gca.2016.06.001).
17. **Fitzsimmons, JN**, Hayes, CT, Al-Subiai, S, Zhang, R, Morton, P, Weisend, R, Ascani, F, & Boyle, EA. (2015). Daily to decadal variability of size-fractionated iron and iron-binding ligands at the Hawaii Ocean Time-series Station ALOHA. *Geochimica et Cosmochimica Acta*. 171:303-324. doi: [10.1016/j.gca.2015.08.012](https://doi.org/10.1016/j.gca.2015.08.012).
16. Hayes, CT, **Fitzsimmons, JN**, Boyle, EA, McGee, D, Anderson, RF, Weisend, R, & Morton, PL (2015). Thorium isotopes tracing the iron cycle at the Hawaii Ocean Time-series Station ALOHA. *Geochimica et Cosmochimica Acta*, 169:1-16. doi: [10.1016/j.gca.2015.07.019](https://doi.org/10.1016/j.gca.2015.07.019).
15. Wilson, ST, Barone, B, Ascani, F, Bidigare, RR, Church, MJ, del Valle, DA, Dyhrman, ST, Ferron, S, **Fitzsimmons, JN**, Juraneck, LW, Kolber, Z, Letelier, RM, Martinez-Garcia, S, Nicholson, D, Richards, KJ, Rii, YM, Rouco, M, Viviani, DA, White, AE, Zehr, JP, and Karl, DM. (2015). Short-term variability in euphotic zone biogeochemistry and primary productivity at Station ALOHA: A case study of summer 2012. *Global Biogeochemical Cycles*, 29(8): 1145-1164. doi: [10.1002/2015GB005141](https://doi.org/10.1002/2015GB005141).
14. The GEOTRACES group, including **Fitzsimmons, JN**. (2015). The GEOTRACES Intermediate Data Product 2014. *Marine Chemistry*.177: 1-8. doi: [10.1016/j.marchem.2015.04.005](https://doi.org/10.1016/j.marchem.2015.04.005).
13. **Fitzsimmons, JN**, Carrasco, GG, Wu, J, Hatta, M, Measures, CI, Conway, TM, John, SG, & Boyle, EA. (2015). Size partitioning of dissolved iron and iron isotopes along the U.S. GEOTRACES North Atlantic transect. *Deep-Sea Research II*, 116: 130-151. doi: [10.1016/j.dsr2.2014.11.014](https://doi.org/10.1016/j.dsr2.2014.11.014).
12. Measures, CI, Hatta, M, **Fitzsimmons, JN**, and Morton, P. (2015). Dissolved Al in the zonal North Atlantic section of the U.S. GEOTRACES 2010/2011 cruises. *Deep-Sea Research II*, 116: 176-186. doi: [10.1016/j.dsr2.2014.07.006](https://doi.org/10.1016/j.dsr2.2014.07.006).
11. Hatta, M, Measures, CI, Wu, J, Roshan, S, **Fitzsimmons, JN**, & Morton, P. (2015). Dissolved Fe and Mn concentrations in the North Atlantic during the GEOTRACES 2010/2011 cruises. *Deep-Sea Research II*, 116: 117-129. doi: [10.1016/j.dsr2.2014.07.005](https://doi.org/10.1016/j.dsr2.2014.07.005).
10. **Fitzsimmons, JN**, Bundy, RM, Al-Subiai, SN, Barbeau, KA, & Boyle, EA. (2015). The composition of dissolved iron in the dusty surface ocean: An exploration using size-fractionated iron-binding ligands. *Marine Chemistry*, 173: 125-135. doi: [10.1016/j.marchem.2014.09.002](https://doi.org/10.1016/j.marchem.2014.09.002).
9. **Fitzsimmons, JN**, Boyle, EA, and Jenkins, WJ (2014). Distal transport of dissolved hydrothermal iron in the

- deep South Pacific Ocean. *Proceedings of the National Academy of Sciences*, 111: 16654-16661. doi: [10.1073/pnas.1418778111](https://doi.org/10.1073/pnas.1418778111).
8. **Fitzsimmons, JN** & Boyle, EA (2014). Assessment and comparison of Anopore and cross flow filtration methods for the determination of dissolved iron size fractionation into soluble and colloidal phases in seawater. *Limnology & Oceanography: Methods*, 12: 244-261. doi: [10.4319/lom.2014.12.246](https://doi.org/10.4319/lom.2014.12.246).
  7. **Fitzsimmons, JN** & Boyle, EA (2014). Both soluble and colloidal iron phases control dissolved iron variability in the tropical North Atlantic Ocean. *Geochimica et Cosmochimica Acta*, 125: 539-550. doi: [10.1016/j.gca.2013.10.032](https://doi.org/10.1016/j.gca.2013.10.032).
  6. **Fitzsimmons, JN**, Zhang, R, & Boyle, EA (2013). Dissolved iron in the tropical North Atlantic Ocean. *Marine Chemistry*, 154: 87-99. doi: [10.1016/j.marchem.2013.05.009](https://doi.org/10.1016/j.marchem.2013.05.009).
  5. Boiteau, R, **Fitzsimmons, JN**, Repeta, D, & Boyle, EA (2013). Detection of iron ligands in seawater and marine cyanobacteria cultures by High-Performance Liquid Chromatography-Inductively Coupled Plasma-Mass Spectrometry. *Analytical Chemistry*, 85: 4357-4362. doi: [10.1021/ac3034568](https://doi.org/10.1021/ac3034568).
  4. **Fitzsimmons, JN** & Boyle, EA (2012). An intercalibration between the GEOTRACES GO-FLO and the MITESS/Vanes sampling systems for dissolved iron concentration analyses (and a closer look at adsorption effects). *Limnology & Oceanography: Methods*, 10: 437-450. doi: [10.4319/lom.2012.10.437](https://doi.org/10.4319/lom.2012.10.437).
  3. Lee, J-M, Boyle, EA, Echegoyen-Sanz, Y, **Fitzsimmons, JN**, Zhang, R, Kayser, RA (2011). Analysis of trace metals (Cu, Cd, Pb, and Fe) in seawater using single batch nitrilotriacetate resin extraction and isotope dilution inductively coupled plasma mass spectrometry. *Analytica Chimica Acta*, 686: 93-101. doi: [10.1016/j.aca.2010.11.052](https://doi.org/10.1016/j.aca.2010.11.052).
  2. Schacter, CR, Albright, LB, Dubofsky, EA, **Fitzsimmons, JN**, Focht, R, Nadler, LE, Sandercock, M, Taylor, L, Walfoort, D, Whitten, T, Williams, LJ, Rosenthal, GG (2013). Risk-sensitive resource defense in a territorial reef fish. *Environmental Biology of Fishes*, 96(9). doi: [10.1007/s10641-013-0181-z](https://doi.org/10.1007/s10641-013-0181-z).
  1. Rosenthal, GG, **Fitzsimmons, JN**, Karl, K, Gerlach, G, & Fisher, HS (2011). Tactical release of a sexually-selected pheromone in a swordtail fish. *PLoS One*, 6(1):e16994. doi: [10.1371/journal.pone.0016994](https://doi.org/10.1371/journal.pone.0016994).

#### NON-REFEREED PUBLICATIONS AND LAB PRESS

- Catania, G., Hayhoe, K., and 57 other Texas Scientists (2021) Texas scientists: Power outages show why Texas must prepare for climate change. *Opinion piece for [The Dallas Morning News](#)*.
- Agan, J. (2020) Texas A&M Oceanographer Joins Deep-Sea Mining Environmental Impact Assessment. *Press for Fitzsimmons' deep-sea mining grant from DeepGreen Metals. [Texas A&M Geoscience News](#)*.
- Lee, L. (2020) Texas A&M scientists find trace elements increasing in rapidly changing Arctic Ocean. *Press for Fitzsimmons' coauthored publication Charette et al. 2020. [Texas A&M Today](#) and [Texas A&M Geosciences News](#)*.
- Wheeling, K. (2020). Tracking trace elements across the Arctic Ocean. *Press for Fitzsimmons' coauthored publication Charette et al. 2020. [EOS](#)*.
- Kim, B. (2019). Oceanography graduate students attended the International GEOTRACES Summer School. *Press for Fitzsimmons' graduate student international experiences. [Texas A&M Geosciences News](#)*.
- Lee, L. (2019). Jessica Fitzsimmons awarded Early-Career Research Fellowship by National Academies Gulf Research Program. *Press for Fitzsimmons' national award. [Texas A&M Geosciences News](#)*.
- Ketterer, S, Dempsey, M. & Hensley, N. (2019). Spill from ITC Deer Park plant fire threatening vulnerable marsh. *Press for Fitzsimmons-led sampling of Deer Park ITC impact on Galveston Bay. [Houston Chronicle](#)*.
- Rice, J (2019). Texas A&M water researchers find waxy residue near Deer Park disaster. *Press for Fitzsimmons-led sampling of Deer Park ITC impact on Galveston Bay. [Houston Public Media](#)*.
- Rodriguez, M (2019). Texas A&M researchers help test water affected by ITC chemical spill. *Press for Fitzsimmons-led sampling of Deer Park ITC impact on Galveston Bay. [KBTX, CBS College Station](#)*.
- Lee, L. (2019). Is the ITC Deer Park incident affecting Galveston Bay? Texas A&M scientists analyze initial samples. *Press for Fitzsimmons-led sampling of Deer Park ITC impact on Galveston Bay. [Texas A&M Today](#)*.
- Swindell, R. (2019). Oceanography graduate makes waves in colloid research, and now at Texas Sea Grant. *Spotlight on Fitzsimmons lab alumna. [Texas A&M Geosciences News](#)*.
- Kim, B. (2018). Returning to Galveston Bay, Texas A&M Oceanographers continue studying Post-Harvey coast.

- Press for Fitzsimmons' High Impact Learning Experience day-cruise. [Texas A&M Geosciences News](#).
- Fuechec, T (2017). "Where I feel like I belong:" New degree draws ocean-minded Aggies. *Press for Fitzsimmons' High Impact Learning Experience day-cruise*. [Texas A&M Geosciences News](#).
- Deville, T (2017). Reaching ocean depths. *The Battalion*. *Press for Fitzsimmons et al. 2017, Nature Geoscience*. [The Battalion](#).
- Bogan, R. (2017). Pacific Ocean iron particles can travel thousands of miles, study finds. Fox News National. *Press for Fitzsimmons et al. 2017, Nature Geoscience*. [Fox News](#).
- Fitzsimmons, JN** (2014). Autobiographical Sketch. In: Women in Oceanography: A decade later. *The Oceanography Magazine*, 109.
- [GEOTRACES Electronic Atlas](#)

### **CRUISE PARTICIPATION (357 DAYS TOTAL)**

- July 2019 R/V *Pelican* (3 days). REU Ocean Observing Cruise. Chief Scientist. Cocodrie-Cocodrie (LUMCON).
- June 2019 R/V *Trident* (1 day). Hurricane Harvey Galveston Bay Research cruise. Chief Scientist. Galveston.
- March 2019 R/V *Trident* (1 day). Hurricane Harvey Galveston Bay Research cruise. Chief Scientist. Galveston.
- Nov 2018 R/V *Trident* (1 day). Hurricane Harvey Galveston Bay Research cruise. Chief Scientist. Galveston.
- Sept 2018 R/V *Trident* (1 day). Hurricane Harvey Galveston Bay Research cruise. Chief Scientist. Galveston.
- June 2018 R/V *Trident* (1 day). Hurricane Harvey Galveston Bay Research cruise. Chief Scientist. Galveston.
- June 2018 R/V *Pelican* (3 days). REU Ocean Observing Cruise. Cocodrie-Cocodrie (LUMCON).
- March 2018 R/V *Trident* (1 day). Hurricane Harvey Galveston Bay Research cruise. Chief Scientist. Galveston.
- Nov 2017 R/V *Trident* (1 day). Hurricane Harvey Galveston Bay Research. Chief Scientist. Galveston.
- Oct 2017 R/V *Point Sur* (3 days). Hurricane Harvey Rapid Response Cruise, Gulf of Mexico. Trace metal team lead. Galveston-Galveston.
- Jan-Feb 2016 R/V *Gould* (46 days). Palmer Long-Term Ecosystem Research cruise along the West Antarctic Peninsula. Team leader for the trace metal sample/incubation group. Punta Arenas – Punta Arenas.
- Aug-Oct 2015 USCGC *Healy* (64 days). Arctic GEOTRACES cruise. Dutch Harbor, AK, to the North Pole and back. Trace metal sampling and ultrafiltration.
- Jan-Feb 2015 R/V *Gould* (43 days). Palmer Long-Term Ecosystem Research cruise along the West Antarctic Peninsula. Dissolved/particulate trace metal sampling and incubations. Punta Arenas - Punta Arenas.
- July 2014 R/V *Melville* (24 days). Bruland California Current cruise. Trace metal sampling for iron isotopes and colloids, trace metal clean incubations. San Diego - San Diego.
- Sept 2013 R/V *Kilo Moana* (12 days). HOE-PhoR II cruise, Center for Microbial Oceanography: Research & Education. Trace metal sampling. Station ALOHA.
- Jul 2012 R/V *Kilo Moana* (21 days). HOE-DYLAN V cruise, Center for Microbial Oceanography: Research & Education. Served as Junior Chief Scientist. Station ALOHA.
- Nov-Dec 2011 R/V *Knorr* (36 days). GEOTRACES North Atlantic Transect (Leg 2). Co-served as Trace Metal Team Leader. Woods Hole to Praia, Cape Verde Islands.
- Apr 2011 R/V *Kilo Moana* (5 days). Hawaii Ocean Time Series cruise, trace metal sampling. Station ALOHA.
- Oct-Nov 2010 R/V *Knorr* (21 days). GEOTRACES North Atlantic Transect (Leg 1). Co-served as Trace Metal Team Leader. Lisbon, Portugal, to Mindelo, Cape Verde Islands.
- May 2009 R/V *Knorr* (24 days). GEOTRACES Pacific Intercalibration cruise. Honolulu to San Diego.
- Aug 2008 R/V *Oceanus* (30 days). Tropical North Atlantic Boyle-lab cruise. Bridgetown, Barbados, to Mindelo, Cape Verde Islands.
- June 2008 SSV *Corwith Cramer* (10 days). MIT/WHOI Joint Program orientation cruise. Northwest Atlantic Ocean.
- Jul-Aug 2006 R/V *Virginia* (2 x 3 days). Florida Bay water quality cruise.

### **CONFERENCE PROCEEDINGS** – \*denotes graduate student advisee, #denotes undergraduate advisee

86. Drazen, J, Popp, B, Goetze, E, Thuesen, E, White, A, Ferron, S, Lindsay, D, **Fitzsimmons, J**, Hatta, M, Carter, G, Assad, V, Cazares, A, Bachtel, T, Dowd, M, van der Grient, J, \*Lanning, NT, Miller, E, Montenegro, J, Perelman, J, Salazar-Estrada, A, Selig, G, Stedman, G, Summers, B. (2021) Designing environmental

- baseline surveys to detect midwater impacts of nodule mining in the eastern CCZ. Deep Sea Biology Symposium, Brest, France.
85. Chmiel, R, Tagliabue, A, Hawco, N, **Fitzsimmons, JN**, \*Lanning, NT, Moran, D, McIlvin, M, Saito, M (2021) Pacific cobalt surface stoichiometry in regions of nutrient limitation transition. ASLO Aquatic Sciences Meeting.
  84. \*Steffen, JM, Summers, B, Conway, TM, German, CG, Sherrell, RM, and **Fitzsimmons, JN** (2021). Using seawater iron isotopes to characterize the physicochemical speciation and scavenging rates of dissolved iron: Southern East Pacific Rise hydrothermal plume. Goldschmidt (virtual).
  83. Flanagan, OG, Annett, A, Sherrell, RM, **Fitzsimmons, JN**, Ohnemus, D, and Lohan, MC (2021). Controls on the distribution of particulate trace metals across the Western Antarctic Peninsula Shelf. Goldschmidt (virtual).
  82. Basak, C, Wu, Y, Haley, BA, Mutarli, J, Pena, LD, Bolge, L, **Fitzsimmons, JN**, Sherrell, RM, and Goldstein, SL. (2021). Role of suspended particulate matter in governing dissolved Nd in the Southern East Pacific Rise hydrothermal plume. Goldschmidt (virtual).
  81. Annett, A, Jones, R, Lohan, M, Flanagan, O, Cai, P, Sherrell, RM, **Fitzsimmons, JN**, Ohnemus, D, Woodward, M, Williams, J, Vora, M, Roman Gonzalez, A, Scourse, J, Sands, C. (2021) Iron sources along the melting Antarctic Peninsula. UK Antarctic Science Conference, British Antarctic Survey (virtual)
  80. \*Lopez, AM, Brandon, AD, **Fitzsimmons, JN**, Ramos, FC, and \*Adams, H. (2020) Lead isotopes and heavy metal concentrations in Galveston Bay, Texas, sediments. Geological Society of America. Virtual.
  79. Sieber, M, \*Lanning, NT, **Fitzsimmons, JN**, Weiss, G, Hatta, M, John, SG, Conway, TM (2020). Tracing the influence of Fe sources in the North Pacific using Fe isotopes (Preliminary results from GP15). Goldschmidt, Honolulu, Hawaii (moved virtual because of COVID-19).
  78. Boyle, EA, Jiang, S, **Fitzsimmons, JN**, and \*Lanning, NT (2020). Lead concentration and isotope compositions in the Central Tropical North Pacific Ocean. Goldschmidt, Honolulu, Hawaii (moved virtual because of COVID-19).
  77. **Fitzsimmons, JN**, \*Lanning, NT, #Halbeisen, D, Till, CP, Hatta, M, Weiss, G, Conway, TM, Sieber, M, John, SG, Yang, S-C, Bian, X (2020). A multi-element perspective on Pacific dissolved trace metal cycling from the GEOTRACES GP15 PMT cruise. Ocean Sciences Meeting, San Diego, CA.
  76. \*Lanning, NT, Sieber, M, \*Steffen, JM, Summers, BA, Weiss, G, German, CR, John, SG, Jenkins, WJ, Schlitzer, R, Hatta, M, Tagliabue, A, Conway, TM, and **Fitzsimmons, JN** (2020). Hydrothermal Fe flux analysis of Loihi Seamount using size partitioning and Fe isotopes. Ocean Sciences Meeting, San Diego, CA.
  75. \*Steffen, JM, Summers, B, Conway, TM, Sherrell, RM, and **Fitzsimmons, JN** (2020). Complete characterization of the physicochemical speciation of hydrothermal dissolved iron, as revealed by iron isotopes: Southern East Pacific Rise (GEOTRACES GP16). Ocean Sciences Meeting, San Diego, CA.
  74. #Adams, H, \*Jensen, LT, #Farran, B, \*Lanning, NT, and **Fitzsimmons, JN** (2020). Multi-element dissolved trace metal distributions in surface waters of the Texas-Louisiana Shelf: A synthesis from three cruises 2017-2019 showing the influence of rivers, hurricanes, sediments and biology. Ocean Sciences Meeting, San Diego, CA.
  73. \*Jensen, LT, \*Lanning, NT, Sherrell, RM, and **Fitzsimmons, JN** (2020). Biogeochemical speciation of cryospheric trace metals at the seawater-surface interface of the Arctic Ocean. Ocean Sciences Meeting, San Diego, CA.
  72. #Halbeisen, D, \*Lanning, NT, Till, CP, **Fitzsimmons, JN** (2020). A multi-element overview of upper ocean trace metal cycling in the Pacific Ocean: GEOTRACES GP15 PMT demi stations. Ocean Sciences Meeting, San Diego, CA. *Poster*.
  71. Hicks, TL, Shamberger, K, Jensen, C, and **Fitzsimmons, JN** (2020). Carbonate chemistry of Galveston Bay Estuary: Impact of Hurricane Harvey and implications for oyster reef health. Ocean Sciences Meeting, San Diego, CA. *Poster*.
  70. Freiberger, R, Tusei, C, Begorre, JI, **Fitzsimmons, JN**, Till, CP (2020). Ocean trace metal distributions across basin-scale transects: Patterns from GEOTRACES GP15 and a comparison with GP16 and GA03. Ocean Sciences Meeting, San Diego, CA. *Poster*.
  69. John, SG, Pinedo-Gonzalez, P, Hawco, N, Zhang, R, Seelen, E, Kelly, RL, Yang, S-C, Bian, X, **Fitzsimmons, JN**,



- \*Lanning, NT, Conway, TM, Sieber, M (2020). Spatial and temporal distribution of bioactive trace-metals in the North Pacific: MESO-SCOPE, Gradients, and GP15. Ocean Sciences Meeting, San Diego, CA.
68. Weiss, G, Hatta, M, Measures CI, **Fitzsimmons, JN**, \*Lanning, NT, Conway, TM, and Sieber, M (2020). Distributions of dissolved iron along the 2018 U.S. GEOTRACES GP15 Pacific Meridional Transect. Ocean Sciences Meeting, San Diego, CA.
67. Hayes, CT, Rosen, J, McGee, D, **Fitzsimmons, JN**, and Sherrell, RM (2019). Tracing continental input and organic matter export using the long-lived thorium isotopes. AGU Fall Meeting, San Francisco, CA.
66. \*Jensen, LT, Wyatt, NJ, Landing, WM, and **Fitzsimmons, JN** (2019). The stability, sorption, and exchangeability of marine dissolved and colloidal metals. Gordon Research Seminar/Conference in Chemical Oceanography. Holderness, NH. *Invited*.
65. \*Lanning, NT, Jenkins, WJ, Hatta, M, German, CR, and **Fitzsimmons, JN** (2019). Hydrothermal dissolved iron and <sup>3</sup>He from Loihi Seamount along the U.S. GEOTRACES GP15 Pacific Meridional Transect. Gordon Research Seminar/Conference in Chemical Oceanography. Holderness, NH.
64. \*Steffen, JM, Conway, TM, Summer, B, Sherrell, RM, and **Fitzsimmons, JN** (2019). Size-fractionated iron isotopes along the East Pacific Zonal Transect. Gordon Research Seminar/Conference in Chemical Oceanography. Holderness, NH.
63. **Fitzsimmons, JN**, Toner, BM, \*Jensen, LT, and Hoffman, CM (2019). Can synchrotron Scanning Transmission X-ray Microscopy be used to chemically image marine colloidal iron? Gordon Research Conference in Chemical Oceanography, Holderness, NH.
62. Yang, S-H, \*Jensen, LT, ±Adams, H, Polis, S, Chu, K-H, Gold-Bouchot, G, **Fitzsimmons, JN** (2019). Toxicity and fate of pollutants in the Galveston Bay anthropogenic estuary following Hurricane Harvey. Texas A&M University President's Excellence Fund Symposium. College Station, TX.
61. \*Lopez, AM, Brandon, AD, **Fitzsimmons, JN**, and Ramos, FC (2019). Tracing industrial pollution in Galveston Bay, Texas: Lead isotopes and heavy metal concentrations from surface sediments. Goldschmidt, Barcelona, Spain.
60. **Fitzsimmons, JN** and \*Jensen, LT (2019). Toxic and micronutrient metals in waters of Galveston Bay following Hurricane Harvey. Aquatic Sciences Meeting, San Juan, Puerto Rico.
59. ±Adams, H and **Fitzsimmons, JN** (2019). Natural and toxic heavy metals in sediments of Galveston Bay, Texas, following Hurricane Harvey. Aquatic Sciences Meeting, San Juan, Puerto Rico.
58. Sherrell, RM, **Fitzsimmons, JN**, German, CG (2018). Rare earth element (REE) scavenging in the Southeast Pacific hydrothermal plume: Implications for interpretation of paleo-REE patterns in metalliferous sediments. American Geophysical Union Meeting, Washington DC.
57. **Fitzsimmons, JN**, \*Jensen, LT, and ±Adams, H (2018). The effects of Hurricane Harvey on dissolved and sedimentary toxic metals in Galveston Bay: A time-series analysis. Hurricane Harvey Research Symposium, Port Aransas, TX.
56. **Fitzsimmons, JN**, \*De Salvo, K, Wells, M (2018). Sharing analytical techniques across fields: Applying flow-field flow fractionation coupled with ICP-MS to marine samples: Breaking open the dissolved Fe size distribution. Goldschmidt, Boston, MA.
55. **Fitzsimmons, JN**, \*Jensen, LT, Sherrell, RM (2018). A comparison of the size partitioning of micronutrient trace metals (Fe, Mn, Cu, Cd, Zn, and Ni) into soluble and colloidal phases in the Atlantic, coastal Pacific, and Arctic Oceans. Ocean Sciences Meeting, Portland.
54. \*Jensen, LT, Cullen, JT, Ball, GT, Sherrell, RM, **Fitzsimmons, JN** (2018). Dissolved Fe and Mn along US Arctic GEOTRACES GN01: Effects of scavenging in intermediate and deep waters. Ocean Sciences Meeting, Portland.
53. \*De Salvo, K, Wells, M, **Fitzsimmons, JN** (2018). Using Flow Field Flow Fractionation coupled with Inductively Coupled Plasma Mass Spectrometry to examine the physicochemical speciation of marine iron colloids in coastal Maine seawater. Ocean Sciences Meeting, Portland.
52. Annett, A, Sherrell, RM, **Fitzsimmons, JN**, \*Jensen, LT (2017). Trace metal supply from the western Antarctic Peninsula Shelf to the open ocean. Advances in Marine Biogeochemistry Conference, Scottish Association for Marine Science, Oban, Scotland.
51. **Fitzsimmons, JN** (2017). In the 'Weeds': How Multi-Element Approaches Have Necessitated a Species-Level

- Understanding of Marine Chemical Processes. Gordon Research Seminar, New London, NH. *Invited*.
50. \*Jensen, LT, Sherrell, RM, **Fitzsimmons, JN** (2017). The speciation of trace metals Fe, Cu, Zn, Ni Mn, Co, and Cd into soluble and colloidal phases along the U.S. Arctic GEOTRACES section GN01. Gordon Research Seminar & Conference. New London, NH.
  49. \*De Salvo, K, Thornton, K, Wells, M, **Fitzsimmons, JN** (2017). Using flow field-flow fractionation to study the colloidal iron phase in seawater: An early progress report. Gordon Research Seminar & Conference, New London, NH.
  48. Sherrell, RM, Annett, A, **Fitzsimmons, JN**, Seguret, M, Zurbrick, C, \*Jensen, L, Rocanova, VJ, Schofield, O, Meredith, M (2017). Dissolved and particulate Fe, Mn, Zn, Cu, Ni Cd, and Pb on the Western Antarctic Peninsula Shelf: Fe supply and phytoplankton limitation. Gordon Research Conf, New London, NH.
  47. Toner, BM, Hoffman, C, \*Jensen, LT, Johnston, C, Voelz, J, Penn, RL, **Fitzsimmons, JN** (2017). Spectroscopy of marine colloids: scanning transmission X-ray microscopy (STXM) and synchrotron infrared nano-spectroscopy (SINS). Goldschmidt, Paris, France. *Invited*.
  46. \*Jensen, LT, Sherrell, RM, and **Fitzsimmons, JN** (2017). Colloidal trace metals along U.S. Arctic GEOTRACES GN01. GEOTRACES Summer School, Brest, France.
  45. \*Jensen, LT, Sherrell, RM, and **Fitzsimmons, JN** (2017). Dissolved trace metal micronutrients Fe, Mn, Zn, Ni, Cu, and Cd in the Western Arctic Ocean (U.S. GEOTRACES GN01). Goldschmidt, Paris, France.
  44. **Fitzsimmons, JN**, \*Jensen, LT and Sherrell, RM (2017). Dissolved micronutrient metals Fe, Mn, Zn, Cu, Cd, and Ni along the U.S. GEOTRACES GN01 Western Arctic section: Effects of water masses & freshwater inputs. ASLO Aquatic Sciences Meeting, Honolulu. *Invited*.
  43. Hatta, M, Measures, C, \*Jensen, LT, and **Fitzsimmons, JN** (2017). GEOTRACES Arctic section: Shipboard determination of dissolved Fe and Mn concentrations. ASLO Aquatic Sciences Meeting, Honolulu.
  42. Hayes, CT, **Fitzsimmons, JN**, Morton, PL, McGee, D, and Boyle, EA (2017). Diel trace metal variations in the North Pacific subtropical gyre. ASLO Aquatic Sciences Meeting, Honolulu.
  41. \*Jensen, LT, Sherrell, RM, and **Fitzsimmons, JN** (2017). Size partitioning of dissolved trace metals into soluble and colloidal phases in the Western Arctic Ocean: Comparison to Atlantic & Pacific. ASLO Aquatic Sciences Meeting, Honolulu.
  40. \*Lanning, NT, \*Jensen, LT, Sherrell, RM, and **Fitzsimmons, JN** (2017). Size partitioning of dissolved trace metals into soluble and colloidal fractions in sea ice, snow, and melt ponds of the Western Arctic Ocean. ASLO Aquatic Sciences Meeting, Honolulu.
  39. Sherrell, RM, **Fitzsimmons, JN**, Annett, AL, Rocanova, VJ, Schofield, O, and Meredith, M (2017). Dissolved Fe, Mn, Zn, Cu, Ni Cd, and Pb in the Western Antarctic Peninsula shelf water column: How natural Fe fertilization works and doesn't work. ASLO Aquatic Sciences Meeting, Honolulu.
  38. **Fitzsimmons, JN**, Sherrell, RM, and Rocanova, VJ (2016). Biogeochemistry of iron on the West Antarctic Peninsula continental shelf. Goldschmidt, Yokohama, Japan.
  37. John, SG, **Fitzsimmons, JN**, Marsay, CM, German, CG, and Sherrell, RM (2016). Sinking feelings: Model and iron isotope evidence for the fate of Fe from the East Pacific Rise. Goldschmidt, Yokohama, Japan.
  36. Fröllje, H, Pahnke, K, Snetger, B, Brumsack, H-J, Dulai, H, **Fitzsimmons, JN** (2016). Hawaiian imprint on dissolved rare earth elements, Nd, and Ra isotopes at Station ALOHA. Goldschmidt, Yokohama, Japan.
  35. **Fitzsimmons, JN**, Parker, C, and Sherrell, RM (2016). Partitioning of dissolved metals (Fe, Mn, Cu, Cd, Zn, Ni, and Pb) into soluble and colloidal fractions in continental shelf and offshore waters, Northern California. Ocean Sciences, New Orleans, LA.
  34. Boiteau, R, Repeta, D, **Fitzsimmons, JN**, Parker, C, Twining, BS, Baines, S (2016) Revealing sources and chemical identity of iron ligands across the California Current System. Ocean Sciences, New Orleans.
  33. Buck, KN, **Fitzsimmons, JN**, Sherrell, RM, Sohst, B, Sedwick, P (2016) Iron-binding ligands in the Eastern Tropical South Pacific: Results from U.S. GEOTRACES cruise GP16. Ocean Sciences, New Orleans, LA.
  32. Caprara, S, **Fitzsimmons, JN**, Ohnemus, DC, Twining, BS, Chappell, PD, Sherrell, RM, Marchetti, A, Bruland, KW, Monticelli, D, Buck, KN (2016) Investigating feedbacks between natural metal-binding organic ligands and particle dissolution in central California coast seawater. Ocean Sciences, New Orleans, LA.
  31. Cheize, M, Planquette, H, **Fitzsimmons, JN**, Sherrell, RM, Pelleter, E, Lambert, C, Sarthou, G, Boutorh, J,

- Bucciarelli, E, Le Goff, M, Liorzou, C, Viollier, E, Cheron, S, Gayet, N. (2016) Contribution of resuspended sediments to the dissolved trace metal pools of Fe and Mn in the ocean: An experimental study. Ocean Sciences, New Orleans, LA.
30. Forsch, KO, **Fitzsimmons, JN**, Sherrell, RM, German, CR (2016) Long-range transport of hydrothermal iron facilitated by dissolved-particulate exchange. Ocean Sciences, New Orleans, LA.
  29. Maldonado, MT, Duckham, C, Brown, M, Bruland, KW, Buck, KN, Chappell, PD, Coale, T, **Fitzsimmons, JN**, Marchetti, A, Mellett, T, Parker, C (2016). Controls on Fe bioavailability in the Fe limitation mosaic of the California Current System. Ocean Sciences, New Orleans, LA.
  28. Sherrell, RM, **Fitzsimmons, JN**, Rocanova, VJ, Scholfield, O, Meredith, M (2016) The 3-D distribution of dissolved and colloidal Fe, Mn, Zn, Cu, Ni, Cd, and Pb in the Western Antarctic Peninsula shelf region: Implications for natural Fe fertilization. Ocean Sciences, New Orleans, LA.
  27. Wyatt, NJ, Landing, WM, **Fitzsimmons, JN**, Sherrell, RM (2016) The modification of dissolved zinc distributions along the U.S. GEOTRACES Western Arctic section. Ocean Sciences, New Orleans, LA.
  26. Boiteau, RM, Repeta, DJ, **Fitzsimmons, JN**, Hawco, NH, McIlvin, MR, Saito, MA, Suffridge, C, Webb, EA (2015). Investigating marine metal/microbe interactions with LC-ICPMS-ESIMS. AGU Fall Meeting, San Francisco, CA.
  25. Jensen, LT, **Fitzsimmons, JN**, Field, MP, and Sherrell, RM (2015). Automated offline sample preparation for ICP-MS determination of dissolved trace metals (Fe, Mn, Zn, Cu, Cd, Ni, Co, and Pb) in seawater using the ESI seaFAST pico system. Gordon Research Conference/Seminar. Holderness, NH.
  24. **Fitzsimmons, JN**, Rocanova, VJ, Parker, C, and Sherrell, RM (2015). Partitioning of dissolved metals (Fe, Mn, Cu, Cd, Zn, Ni, and Pb) into soluble and colloidal fractions along the California coast. Gordon Research Conference/Seminar. Holderness, NH.
  23. Boyle, EA and **Fitzsimmons, JN** (2015). Oceanic distribution, properties, and temporal variability of iron colloids. Goldschmidt Conference, Prague, Czech Republic.
  22. Cheize, M, Planquette, HF, **Fitzsimmons, JN**, Sherrell, RM, Sarthou, G, Bucciarelli, E, Lambert, C, Le Goff, M, Viollier, E (2015). Contribution of suspended marine particles to the dissolved trace metals pool: An experimental study with sediments from contrasting environments. ASLO Aquatic Sciences: Granada.
  21. **Fitzsimmons, JN**, Forsch, KO, Sherrell, RM, & German, CR. (2014). A 4300-km long particulate hydrothermal plume west of the Southern East Pacific Rise (15°S): Particulate minor and trace elements from the U.S. GEOTRACES Eastern Pacific Zonal Transect. AGU Fall Meeting: San Francisco.
  20. Toner, B, Lam, P, Nicholas, S, Ohnemus, D, Hoffman, C, **Fitzsimmons, JN**, Sherrell, RM, & German C (2014). The speciation of particulate iron and carbon in the East Pacific Rise 15°S near-field hydrothermal plume and underlying sediments. AGU Fall Meeting, San Francisco, CA.
  19. Morton, PL, Weisend, R, Landing, WM, **Fitzsimmons, JN**, Hayes, CT, Boyle, EA. (2014). Trace element cycling in lithogenic particles at Station ALOHA. AGU Fall Meeting, San Francisco, CA.
  18. Weisend, R, Morton, PL, Landing, WM, Fitzsimmons, JN, Hayes, CT, Boyle, EA. (2014). Particulate trace element cycling in a diatom bloom at Station ALOHA. AGU Fall Meeting, San Francisco, CA.
  17. **Fitzsimmons, JN**, Carrasco, GG, Wu, J, and Boyle, EA. (2014). Soluble and colloidal iron phases along the U.S. GEOTRACES North Atlantic Transect: A new model of dissolved Fe size partitioning. Goldschmidt Conference, Sacramento, CA.
  16. **Fitzsimmons, JN**, Zhang, R, and Boyle, EA. (2014). Short- and long-term temporal variability of iron at Station ALOHA. Ocean Sciences Meeting, Hawaii.
  15. Hayes, CT, Boyle, EA, McGee, D, **Fitzsimmons, JN**, and Anderson, RF. (2014). <sup>232</sup>Th/<sup>230</sup>Th at the Hawaii Ocean Time-series Station ALOHA: a tool for iron cycling. Ocean Sciences Meeting.
  14. Twining, BS, Rauschenberg, S, Sedwick, P, **Fitzsimmons, JN**, and Buck, KN. (2014). Iron quotas of North Atlantic phytoplankton reflect biogeochemical environment. Ocean Sciences Meeting.
  13. Boiteau, RM, Repeta, D, **Fitzsimmons, JN**, and Boyle, EA. (2014). Characterization of marine organic trace metal ligands with high pressure liquid chromatography-mass spectrometry. Ocean Sciences Meeting, Hawaii
  12. **Fitzsimmons, JN**, Conway, TM, John, SG, and Boyle, EA. (2013). Iron isotopes in seawater from the Southeast Pacific and North Atlantic Oceans. Goldschmidt Conference, Florence, Italy.

11. **Fitzsimmons, JN**, Carrasco, GC, Boyle, EA, Bundy, RM, Wu, J, Conway, TM, and John, SG. (2013). Marine dissolved iron partitioning into soluble and colloidal phases: an updated view. Gordon Research Conference in Chemical Oceanography, Biddeford, Maine.
10. **Fitzsimmons, JN**, Carrasco, GG, Wu, J, and Boyle, EA. (2013). Dissolved iron size partitioning into soluble and colloidal phases along the U.S. GEOTRACES North Atlantic transect. Aquatic Sciences Meeting, New Orleans.
9. Boiteau, R, **Fitzsimmons, JN**, Repeta, D, Boyle, EA, Coe, A, and Chisholm, S. (2013). HPLC-ICP-MS characterization of organic ligands from cyanobacteria laboratory cultures and natural seawater. Aquatic Sciences Meeting, New Orleans.
8. Carrasco, GG, **Fitzsimmons, JN**, Donat, JR, and Boyle, EA. (2013). Assessing zinc and cadmium ligands from hydrothermal plumes and rivers: points sources or global trend-setters? Aquatic Sciences Meeting, New Orleans.
7. **Fitzsimmons, JN**, Jenkins, WJ, Lee, J-M, Kayser, RA, and Boyle, EA. (2012). Distal transport of hydrothermal dissolved Fe in the deep Eastern South Pacific Ocean. AGU Fall 2012 Meeting, San Francisco.
6. **Fitzsimmons, JN**, Lee, J-M, Kayser, RA, and Boyle, EA. (2012). Dissolved iron in the Southeast Pacific Ocean: OMZ to the gyre. Goldschmidt Conference, Montreal, Canada.
5. Boyle, EA and **Fitzsimmons, JN**. (2012). Aerosol release of Fe into the ocean: the extreme cases. Goldschmidt Conference, Montreal, Canada.
4. **Fitzsimmons, JN** and Boyle, EA. (2012). Iron colloids: intercalibration and tropical North Atlantic distribution. Ocean Sciences Meeting, Salt Lake City.
3. Boiteau, R, **Fitzsimmons, JN**, Repeta, D, Boyle, EA, Waterbury, J, Suffridge, C, Webb, E, Berube, P, Chisholm, S. (2012). Characterization of trace metal organic ligands in cultures and seawater by HPLC-ICP-MS. Ocean Sciences Meeting, Salt Lake City.
2. **Fitzsimmons, JN** and Boyle, EA. (2011). Dissolved iron partitioning between soluble and colloidal fractions in the tropical North Atlantic. Goldschmidt Conference, Prague, Czech Republic.
1. **Fitzsimmons, JN**, Zhang, R, Ito, T, & Boyle, EA. (2010). GEOTRACES dissolved Fe intercalibration and application to the tropical North Atlantic Oxygen Minimum Zone. Ocean Sciences, Portland.

#### **INVITED SEMINARS**

- 2021 Micronutrient trace metal dynamics in the Western Arctic Ocean. IAMAS-IACS-IAPSO Online Seminar Series, Acceptance of IAPSO Early Career Award (virtual).
- 2021 Iron supply from deep-sea hydrothermal vents: The Southern East Pacific Rise case study. Marine Sciences Seminar, University of Connecticut (virtual).
- 2021 Iron supply from deep-sea hydrothermal vents: The Southern East Pacific Rise case study. Department of Ocean & Earth Sciences Seminar Series, Old Dominion University (virtual).
- 2019 The Ocean's Periodic Table: Tracing Mysteries of the Sea Using "Elemental Personalities." First-Year Chemistry Seminar, Texas A&M University. College Station, TX. >2000 undergraduate students attended.
- 2018 Iron and manganese supply from hydrothermal vents in the deep sea: Transformations and implications for Phytoplankton. Marine Science Department Seminar Series, University of Southern Mississippi. Stennis Space Center, MS.
- 2018 Iron supply from deep-sea hydrothermal vents: Can it reach surface phytoplankton? Ions@WORK Mass Spectrometry Symposium. Texas A&M University, College Station, TX.
- 2018 The role of colloidal iron species in the marine environment. College of Marine Sciences Seminar Series, University of South Florida. St. Petersburg, FL.
- 2016 The persistent oceanic flux of hydrothermal dissolved iron is set by reversible dissolved-particulate exchange. Oceanography Departmental Seminar Series, Texas A&M University.
- 2015 The role of colloidal iron in the marine environment. Old Dominion University, Norfolk, VA.
- 2015 Particulate trace metals in a 4300-km hydrothermal plume, East Pacific Rise. Rutgers University Earth & Planetary Sciences seminar, Piscataway, NJ.
- 2015 The role of colloidal iron in the marine environment. Temple University, Philadelphia, PA.

- 2014 Distal transport of dissolved hydrothermal iron in the deep South Pacific Ocean: A verification of the "leaky vent" hypothesis. Texas A&M University, College Station, TX.
- 2014 Distal transport of dissolved hydrothermal iron in the deep South Pacific Ocean: A verification of the "leaky vent" hypothesis. University of California Santa Cruz, Santa Cruz, CA.
- 2014 Distal transport of dissolved hydrothermal iron in the deep South Pacific Ocean: A verification of the "leaky vent" hypothesis. Rutgers University IMCS seminar, New Brunswick, NJ.
- 2013 Hydrothermal vent delivery of dissolved Fe to the deep ocean: the "leaky vent" hypothesis. University of South Carolina CEMSeminar, Columbia, SC.
- 2012 The marine biogeochemistry of colloidal iron. State Key Laboratory for Estuarine and Coastal Research: East China Normal University, Shanghai, China.
- 2012 Dissolved iron in the Southeast Pacific Ocean: OMZ to the gyre. State Key Laboratory for Estuarine and Coastal Research: East China Normal University, Shanghai, China.
- 2012 Dissolved iron partitioning between soluble and colloidal fractions: Intercalibration and tropical North Atlantic distribution. Biogeochemistry Seminar Woods Hole Oceanographic Institution.
- 2007 Uranium biogeochemistry in contrasting subterranean estuaries, Woods Hole Oceanographic Institution, MA.
- 2006 Water quality of the Southwest Florida Shelf. Hollings Scholarship Symposium, NOAA Auditorium, Silver Spring, MD.

### **STUDENT MENTORSHIP** (\*graduated)

#### GRADUATE STUDENTS MENTORED (CHAIRED COMMITTEE) (6)

- 2021-Current Shelby Gunnells – Ph.D. student
- 2021 – Awarded the NSF Graduate Research Fellowship (3 years of support)
  - 2021 – Awarded the Texas A&M University Merit Fellowship (2 years of support)
- 2021-Current Yerim Kim – Ph.D. student, co-advised by Dr. Franco Marcantonio (Geology)
- 2018-Current Janelle Steffen – Ph.D. student (4<sup>th</sup> year)
- Project: *Iron isotopes in seawater as a tracer of iron provenance and transformation*
  - 2018 - Awarded TAMU College of Geosciences Merit Fellowship (4 years of support)
  - 2019 - Elected Chair of the 2021/2023 Gordon Research Seminar in Chemical Oceanography (delayed due to pandemic)
  - 2020 – Awarded scholarship to attend the Earth Educators’ Rendezvous (“Preparing for an Academic Career”, SERC)
- 2018-Current Nathan Lanning – Ph.D. student (4<sup>th</sup> year)
- Project: *U.S. GEOTRACES GP15 Pacific Meridional Transect trace metal micronutrients*
  - 2018 - Awarded the NSF Graduate Research Fellowship (3 years of support)
- 2015-2020 \*Laramie Jensen – Ph.D. student. Graduated August 2020.
- Project: *The biogeochemical cycling of dissolved and colloidal trace metal micronutrients in the Western Arctic Ocean (GEOTRACES GN01)*
  - 2015 - Awarded Texas A&M University Merit Fellowship (4 years of support)
  - 2017 - Elected Chair of the 2019 Gordon Research Seminar in Chemical Oceanography
  - 2018 - Selected as “Trace Metal Super Technician” on the U.S. GEOTRACES GP15 Pacific Meridional Transect cruise (one of two national positions)
  - 2019 - Awarded TAMU Department of Oceanography Chapman Award for Best Graduate Research
  - Current position: Postdoctoral Fellow at the Cooperative Institute for Climate, Ocean, and Ecosystem Studies, University of Washington
- 2016-2018 \*Kimber De Salvo, Master of Science. Graduated August 2018.
- Title: *Using Flow-Field Flow Fractionation coupled to Inductively Coupled Plasma Mass Spectrometry to study the physicochemical speciation of colloidal iron in seawater*
  - Current position: Gulf Program Coordinator, Turtle Island Restoration Network

#### UNDERGRADUATE STUDENTS MENTORED (9)

- 2021 summer Sophia Smith – REU summer student, University of New Hampshire
- Title: *A multi-element analysis of the distribution of colloidal metals in seawater*
  - Current position: Senior at University of New Hampshire
- 2019 – 2021 Dylan Halbeisen, undergraduate researcher.
- Title: *A multi-element overview of upper ocean trace metal cycling in the Pacific Ocean: GEOTRACES GP15 PMT demi stations*
  - 2020 awarded a Research Experience for Undergraduates internship at Bigelow Laboratory for Ocean Sciences in Boothbay, Maine
  - Current position: PhD student at University of South Florida, College of Marine Sci.
- 2019 summer \*Brett Farran – REU summer student, Florida State University
- Title: *Dissolved lead in Galveston Bay and the surrounding Gulf of Mexico*
  - Current position: PeaceCorps
- 2018-2020 \*Hannah Adams – REU summer student (2018), Gap-Year Technician (2019-2020)
- Title: *Natural and toxic heavy metals in sediments of Galveston Bay, Texas, following Hurricane Harvey in 2017*
  - 2019 – Awarded University of Southern California Discovery Scholars Award (\$10,000) for research completed in Fitzsimmons lab during 2018 REU
  - 2020 – Awarded an Honorable Mention for an NSF Graduate Research Fellowship
  - Current position: PhD student at Scripps Institution of Oceanography/UCSD.
- 2018 \*Reagan Lucas, paid undergraduate researcher, Chemistry, Texas A&M
- 2018 \*Alexa Mendoza, paid undergraduate researcher, Chemistry, Texas A&M
- 2016-2018 \*Nathan Lanning – REU summer student, University of New Haven (2016)
- Title: *Size partitioning of trace metal micronutrients in the Western Arctic Ocean*
  - Also co-advisor of his Senior Thesis at the University of New Haven (2017-2018).
  - Current position: PhD student at Texas A&M Oceanography in Fitzsimmons lab
- 2016-2017 \*Sarah Berlanga – Undergraduate researcher, Environmental Geosciences, Texas A&M
- Current position: Lawyer, St. Mary's University School of Law graduate
- 2015 summer \*Carolyn Nesbitt – Undergraduate researcher, Environmental Geosciences, Texas A&M

#### GRADUATE STUDENT COMMITTEES SERVED (NOT CHAIRED) (13)

- 2020-Current Sarah Davis, Department of Marine Biology, Texas A&M University Galveston (Seeking: PhD)
- 2020-Current Shu Ying Wee, Department of Oceanography, Texas A&M University (Seeking: PhD)
- 2019-Current Sourav Das, Department of Civil Engineering, Texas A&M University (Seeking: PhD)
- 2019-Current Ryan Elmore, Department of Geology & Geophysics, Texas A&M University (Seeking: PhD)
- 2018-Current Alyssa Alsante, Department of Oceanography, Texas A&M University (Seeking: PhD)
- 2018-Current Tacey Hicks, Department of Oceanography, Texas A&M University (Seeking: PhD)
- 2017-2021 \*Amanda Mulcan-Lopez, Department of Earth & Atmospheric Sciences, University of Houston (PhD)
- 2017-2021 \*Tatiana Williford, Department of Oceanography, Texas A&M University (PhD)
- 2020 \*David Gonzalez-Santana, Ifremer, LEMAR, University of Brest, France (PhD)
- 2018-2019 \*Shannon Andrew, Department of Wildlife & Fisheries Sciences, Texas A&M University (Masters of Natural Resources)
- 2019 \*Thomas Holmes, Institute for Marine & Antarctic Studies, University of Tasmania (PhD)
- 2018 \*Elizabeth Shoenfelt, Columbia University/Lamont Doherty Earth Observatory (PhD)
- 2015-2018 \*Claire McKinley, Department of Oceanography, Texas A&M University (PhD)

#### CLASSROOM TEACHING EXPERIENCE

1. OCNG 251 Oceanography, online, undergraduate core curriculum course for non-majors
  - *Initial online course development in Oceanography department for OCNG 251, including training by Information Technology Services (ITS) on eCampus online course construction and researching and*

*learning to use digital recording software. I have trained the other 2 Oceanography faculty teaching online how to build online courses, based on ITS recommendations.*

- *Initial recording of all lectures, and development of online assessment materials, including online team homework, in Summer 2016.*
  - *Spring 2018 - new assignment structure created when online team homework requirement removed.*
  - *2018 Summer II: 76 undergraduates.*
  - *2018 Spring: 79 undergraduates.*
  - *2017 Spring: 100 undergraduates.*
  - *2016 Fall: 100 undergraduates.*
  - *2016 Summer I: 100 undergraduates.*
2. OCNG 453 Hydrothermal Vents & Mid-Ocean Ridges, upper-level undergraduate course
- *New course development for Fall 2019. All new course design, reading assignments, lecture material, assignments, and exams.*
  - *2020 Fall: 9 undergraduates. Taught alone, with course upgrades for 2<sup>nd</sup> time taught.*
  - *2019 Fall: 22 students. Team taught with Jason Sylvan.*
3. OCNG 640 Chemical Oceanography (core graduate course in TAMU Oceanography)
- *Major course revision in Fall 2018, including new course structure, development of all new lecture slides, problem sets, and exams.*
  - *All lectures teleconferenced to students in TAMU Galveston using WebEx. Travel to Galveston at least twice during each semester to meet with students in person.*
  - *2020 Fall: 9 graduate students.*
  - *2019 Fall: 14 graduate students.*
  - *2018 Fall: 27 graduate students.*
4. OCNG 641 Inorganic Aquatic Geochemistry, upper level graduate course
- *Updated lectures in Spring 2019 from "chalk lectures" to Powerpoint slides with large gaps for recording notes/calculations. This better incorporates the graphs/figures and definitions with the extensive calculations for this course.*
  - *Completely new course development in Spring 2017 from a class that hadn't been taught for many years. Brand-new course design, new textbooks, all new lectures and in-class activities, assignments (with answer keys), and exams.*
  - *Lectures teleconferenced to students in TAMU Galveston using WebEx and recorded for student review.*
  - *2019 Spring: 7 graduate students.*
  - *2017 Spring: 7 graduate students.*
5. OCNG 689 Classic Papers in Chemical Oceanography, upper-level graduate student seminar course
- *Course syllabus and structure have been designed and approved by departmental Curriculum Committee.*
  - *Course topics and papers have been selected.*
  - *Planned to be taught for the first time in Spring 2023.*

## **PROFESSIONAL SERVICE**

### DEPARTMENT OF OCEANOGRAPHY, TEXAS A&M UNIVERSITY

2021-current	Member, Early career mentoring panel
2021-current	Chair, Search Committee for Oceanography Assistant Professor, Tenure Track
2021	Member, Search Committee, ACES Postdoctoral Fellows
2020	Member of review committee for Joint Appointments
2019-current	Co-Director, Texas A&M Oceanography Research Experience for Undergraduates (REU) program <ul style="list-style-type: none"><li>• Site lead: Lisa Campbell (TAMU Oceanography)</li><li>• Responsibilities: <i>Lead for fieldwork campaigns and professional development workshops</i></li></ul>
2019-current	Member, Qualifying Exam Committee, Chemical Oceanography

- Responsibilities: *Develop, administer, and grade the annual Qualifying Exam within the guidelines set by the Curriculum and Advising Committee. All professors teaching the four core Oceanography graduate courses serve on this committee.*
- 2019-2020 Member, Search Committee for Ocean Data Science Assistant Professor, Tenure Track
- 2017 Member, Search Committee for Department Head, Department of Oceanography
- 2016-current Co-Instructor, Graduate Learning Community workshops for graduate students. TAMU Oceanography.
- Co-creator: Chrissy Wiederwohl (Oceanography)
  - Responsibilities: *Creation and manager of an annual series of 8 workshops per year on professional development and writing mentorship. Attendance is mandatory for all first-year Oceanography graduate students for level mentorship and cohort development.*
- 2015-2021 Member, Curriculum and Advising Committee
- Responsibilities: *Curriculum re-design (e.g. development of new undergraduate Oceanography major at TAMU); new/revised course syllabus approvals; reviews all graduate student progress reports and advises on progress to degree.*

#### COLLEGE OF GEOSCIENCES, TEXAS A&M UNIVERSITY

- 2017-current Co-Manager, R. Ken Williams Radiogenic Isotope Facility, Texas A&M University.
- Equally share management with Franco Marcantonio (Geology), Brent Miller (Geology), and Brendan Roark (Geography)
  - Responsibilities: *Oversee budgeting of the cost center (university rate study); laboratory renovations, maintenance, and upgrades; management and evaluation of the lab technician; biweekly lab/user group meetings; design of all facility press including website; recruitment of users; and management of facility safety.*
- 2020-current Member of the Diversity Committee, College of Geosciences, Texas A&M University
- Faculty leader of mentorship initiatives, alongside Associate Dean Casellas-Connors
- 2019-current University-National Oceanographic Laboratory System (UNOLS) Representative for Texas A&M University. *Attend annual meeting in Washington DC on behalf of the university.*
- 2020 Member of External Review Team for the Geochemical & Environmental Research Group
- Interview GERG administrators, scientists and tour facilities in order to write external review
- 2018 Co-hosted a College of Geosciences workshop on “Using a Learning Management System (LMS) to Improve Student Satisfaction (and Faculty Evaluations)” with Jason Sylvan (OCNG) & Lauren Dembrosky (Information Technology Services).

#### TEXAS A&M UNIVERSITY

- 2021-2022 Council of Principal Investigators Executive Committee, Representative for College of Geosciences
- 2019-current Council of Principal Investigators, Representative for College of Geosciences, Texas A&M University
- 2016 Graduate Council, Representative for the College of Geosciences, Texas A&M University

#### EXTERNAL SCIENTIFIC SERVICE

- 2019-current Co-Chief Scientist, GEOTRACES GP17 South Pacific
- 2017-current Associate Editor, *Marine Chemistry*.
- 2015 Vice-Chair, Inaugural Gordon Research Seminar for graduate students/postdocs in Chemical Oceanography
- Current National/international conference sessions convened:
- 2021, “Advances in understanding of the biogeochemical processes shaping the basin-scale distributions of trace elements and their isotopes” session, Ocean Sciences Meeting, Honolulu.
  - 2020, “Biological-Chemical Transformations of Trace Elements in the Marine Environment” session, Ocean Sciences Meeting, San Diego, CA.
  - 2019, “Oceanic research related to the 2017 Gulf of Mexico and Atlantic Hurricanes” session, Aquatic Sciences Meeting, San Juan, Puerto Rico.
  - 2018: “New insights in marine trace element biogeochemistry” session, Goldschmidt Conference, Boston, MA.



- 2018: "Abiotic and biotic retention, recycling, and remineralization of metals in the ocean" session, Ocean Sciences, Portland, OR.
  - 2016: "Oceanic cycling of trace elements using elemental, isotopic, and modeling approaches: Geotracers and beyond..." Goldschmidt Conference, Yokohama, Japan.
  - 2014: "The Colloidal Phase Contribution to Marine Biogeochemistry," Goldschmidt Conference, Florence, Italy.
  - 2012: "Sources, Sinks, and Speciation of Marine Micronutrient Trace Elements," Fall American Geophysical Union Meeting, San Francisco, CA.
  - 2011: "The GEOTRACES Program," Goldschmidt Conference, Prague, Czech Republic.
- Current Peer reviewer: Deep-Sea Research II, Earth & Planetary Science Letters, Encyclopedia of Geochemistry, Frontiers in Biogeochemistry, Geochimica et Cosmochimica Acta, Geophysical Research Letters, Global Biogeochemical Cycles, Japanese Journal of Oceanography, Journal of Geophysical Research: Oceans, Limnology & Oceanography, Marine and Freshwater Research, Marine Chemistry, Nature Geoscience, Nature Scientific Reports, Proceedings of the National Academy of Sciences.
- Current Proposal reviewer: NSF Chemical Oceanography, NSF Marine Geology & Geophysics, NSF Biological Oceanography, NSF Antarctic Programs-Ocean Sciences, NSF Antarctic Programs-Organisms & Ecosystems, NSF Major Research Instrumentation, NSF CAREER, NERC (National Environment Research Council, United Kingdom), Netherlands Polar Programme, DFG (German Research Foundation).

### **WORKSHOPS ATTENDED**

- 2020 UNOLS Annual Meeting (virtual)
- 2019 UNOLS Annual Meeting, Washington DC
- 2019 Workshop on "Gulf of Mexico RCRV Science" hosted by University of Southern Mississippi, Gulfport, MS
- 2016 Workshop on "Internal cycling of trace elements in the ocean" hosted by GEOTRACES/OCB, Lamont-Doherty Earth Observatory, Palisades, NY
- 2014 DISCO Dissertations Symposium in Chemical Oceanography XXIV, Lihue, Kaua'i, Hawai'i
- 2013 Collaborative on Oceanographic Chemical Analysis (COCA) Workshop, University of Hawaii
- 2012 Workshop on "Stable isotopes of biologically important trace metals" led by GEOTRACES/SCOR, Imperial College, London, United Kingdom
- 2012 Path to Professorship Workshop, Massachusetts Institute of Technology, Cambridge, MA
- 2012 ADVANCE Workshop for Future Faculty, Northeastern University, Boston, MA
- 2011 SFB 754 retreat on "Tropical ocean oxygen minimum zones," Lübeck, Germany
- 2010 GEOTRACES Intercalibration Workshop, Old Dominion University, Norfolk, VA

### **OUTREACH**

- 2017 Prepared four scripts on Southern Ocean biogeochemistry for a monthly series of *On the Ocean* NPR radio show, produced by Texas A&M Oceanography and KAMU-FM.  
<http://abcmgr.tamu.edu/ontheocean/>
- 2016 Prepared four scripts on Arctic Ocean climate change and oceanography for a monthly series of *On the Ocean* NPR radio show, produced by Texas A&M Oceanography and KAMU-FM.  
<http://abcmgr.tamu.edu/ontheocean/>
- 2015 Co-hosted a webinar entitled "Hydrothermal vents & Megplumes: How are hydrothermal vent fluids created and how do they move through the ocean?" with Dr. Brandy Toner. GEOTRACES webinars, COSEE. <http://cosee.umaine.edu/programs/webinars/geotracers/geotracers04/>
- 2014 & 2015 Served as a scientist at a round table discussion on climate change at the 4-H Climate and Environmental Change Teen Summit, hosted by COSEE NOW, Rutgers University
- 2005-2015 Annual outreach to ~100 first grade students in Miami, FL, on "What is a Scientist?" and "Science is Fun" including hands-on demonstrations for the students

2012                      Independently designed outreach to high school chemistry students at MAST Academy, a marine-science high school in Miami, on careers in chemistry, how I became a chemical oceanographer, and some laboratory experiments on ocean acidification

**PROFESSIONAL AFFILIATIONS & CERTIFICATIONS**

American Geophysical Union, American Society of Limnology and Oceanography, Geochemical Society, AAAS  
Scuba Schools International: Open Water Diver certified