JESSICA N. FITZSIMMONS, PH.D.

Department of Oceanography, Texas A&M University
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EDUCATION

2008 - 2013 Ph.D. in Chemical Oceanography
MIT/Woods Hole Oceanographic Institution Joint Program, Advisor: Edward Boyle
Dissertation: "The marine biogeochemistry of dissolved and colloidal iron"

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: Andy Kurtz
Thesis: "Development of Calcium Isotope Methodology using Thermal Ionization Mass Spectrometry"

APPOINTMENTS

2015 - current *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"

GRANTS

2017 **JN Fitzsimmons** and C Till (Humboldt State University). U.S. GEOTRACES PMT: Dissolved trace metal distributions and size partitioning (Fe, Mn, Zn, Cu, Cd, Ni, Pb, & Sc). NSF-OCE-1737167, $464,498 (TAMU portion), *Nov 2017 – Oct 2020*.

2016 EB Roark, **JN Fitzsimmons**, F Marcantonio, BV Miller, DJ Thomas. 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**. Colloidal iron distribution and bioavailability along the West Antarctic Peninsula. Antarctic Science Bursary, $7500.

2015 **JN Fitzsimmons** and RM Sherrell (Rutgers). GEOTRACES Arctic section: Dissolved micronutrient trace metal distributions and size partitioning (Fe, Mn, Zn, Cu, Cd, and Ni). NSF-OCE-1434493, $497,314, *Jan 2015 - Dec 2017*.

2014 M Wells (U. Maine) and **JN Fitzsimmons**. Collaborative Research: Assessment of the colloidal Fe size spectrum in coastal and open ocean waters. NSF-OCE-1558722, $198,737 (TAMU portion), *Sept 2014 - July 2017*.

HONORS AND AWARDS

2015 Institute for Marine & Coastal Sciences (IMCS) Postdoctoral Fellowship, Rutgers University
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, Boston University

2006 Ernest F. Hollings Undergraduate Scholarship and Internship, NOAA
2006 Lara Vincent Award for Most Original Research, Boston University Marine Program

PUBLICATIONS

MANUSCRIPTS IN PREPARATION

Marsay, CM, **Fitzsimmons, JN**, Morton, PL, Landing, WM, Lanning*, N, Jensen*, LT, Buck, CS. Dissolved and particulate trace metals in Arctic melt ponds. *Manuscript drafted for Limnology & Oceanography.*

Fitzsimmons, JN, Field, MP, Sherrell, RM. 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. *Manuscript drafted for Marine Chemistry.*

Cheize, M, Planquette, H, **Fitzsimmons, JN**, Sherrell, RM, Pelleter, E, Lambert, C, Sarthou, G, Boutorh, J, Bucciarelli, E, Le Goff, M, Liorzou, C, Cheron, S, Gayet, N. Contribution of resuspended sediments to the dissolved trace metal pool: An experimental study. *Manuscript drafted for Frontiers in Marine Science.*

MANUSCRIPTS IN REVIEW

Mellet, T, Brown, MT, Chappell, PD, Duckham, C, **Fitzsimmons, JN**, Till, CE, Maldonado, M, Sherrell, RM, & Buck, KN. The biogeochemical cycling of iron, copper, nickel, cadmium, manganese, and scandium in a California Current experimental study. *In 2nd review for Limnology & Oceanography (8/2017).*

Hein, JR, Konstantinova, N, Mikesell, M, Mizell, K, **Fitzsimmons, JN,** Lam, PJ, Jensen*, LJ, Xiang, Y, Gartman, A, Cherkashov, G, Hutchinson, DR. Western Arctic deep-water ferromanganese-oxide deposits reflect the unique characteristics of the Arctic Ocean. *In 2nd review at Geochemistry, Geophysics, Geosystems (8/2017).*

Hoffman, CL, Nicholas, SL, Ohnemus, DC, **Fitzsimmons, JN**, Sherrell, RM, German, CR, Lee, J-M, Lam, PJ, & Toner, BT. Near-field iron and carbon chemistry of non-buoyant hydrothermal plume particles, Southern East Pacific Rise 15°S. *In review at Marine Chemistry (7/2017).*

PUBLISHED ARTICLES

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 *Crocosphaera*. *Nature Microbiology*: 2: 17118. doi: 10.1038/nmicrobiol.2017.118
23. Annett, AL, **Fitzsimmons, JN**, Séguret, M, Lagerström, M, Meredith, MP, Schofield, O, and Sherrell, RM. (in press) Controls on dissolved and particulate iron distributions in surface waters of the Western Antarctic Peninsula shelf. *Marine Chemistry*. doi: 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
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
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
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
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.
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.

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.
15. Wilson, ST, Barone, B, Ascani, F, Bidigare, RR, Church, MJ, del Valle, DA, Dyhrman, ST, Ferron, S, **Fitzsimmons, JN**, Juranek, 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.
14. The GEOTRACES group, including **Fitzsimmons, JN**. (2015). The GEOTRACES Intermediate Data Product 2014. *Marine Chemistry.*177: 1-8.
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.
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.
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.
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.
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.
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.
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.
6. **Fitzsimmons, JN**, Zhang, R, & Boyle, EA (2013). Dissolved iron in the tropical North Atlantic Ocean. *Marine Chemistry*, 154: 87-99.
5. Boiteau, R, **Fitzsimmons, JN**, Repeta, D, & Boyle, EA (2013). A method for the characterization of iron ligands in seawater and marine cyanobacteria cultures by HPLC-ICPMS. *Analytical Chemistry*, 85: 4357-4362.
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.
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.
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).
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.

CRUISE PARTICIPATION AND FIELD WORK

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 student*

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.

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*.

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 Long, NH.

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.

Sherrell, RM, Annett, A, **Fitzsimmons, JN**, Seguret, M, Zurbrick, C, **Jensen, L*, Roccanova, 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.

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 talk.*

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.

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 talk.*

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.

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.

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.

*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.

Sherrell, RM, **Fitzsimmons, JN**, Annett, AL, Roccanova, 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.

Fitzsimmons, JN, Sherrell, RM, and Roccanova, VJ (2016). Biogeochemistry of iron on the West Antarctic Peninsula continental shelf. Goldschmidt, Yokohama, Japan.

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.

*Fröllje, H, Pahnke, K, Scnetger, 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.

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.

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.

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.

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.

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.

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.

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.

Sherrell, RM, **Fitzsimmons, JN**, Roccanova, 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.

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.

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.

*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.

Fitzsimmons, JN, Roccanova, 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.

Boyle, EA and **Fitzsimmons, JN** (2015). Oceanic distribution, properties, and temporal variability of iron colloids. Goldschmidt Conference, Prague, Czech Republic.

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.

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, CA.

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.

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.

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.

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.

Fitzsimmons, JN, Zhang, R, and Boyle, EA. (2014). Short- and long-term temporal variability of iron at Station ALOHA. Ocean Sciences Meeting, Hawaii.

Hayes, CT, Boyle, EA, McGee, D, **Fitzsimmons, JN**, and Anderson, RF. (2014). $^{232}Th/^{230}Th$ at the Hawaii Ocean Time-series Station ALOHA: a tool for iron cycling. Ocean Sciences Meeting.

Twining, BS, Rauschenberg, S, Sedwick, P, **Fitzsimmons, JN**, and Buck, KN. (2014). Iron quotas of North Atlantic phytoplankton reflect biogeochemical environment. Ocean Sciences Meeting.

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.

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.

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.

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.

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.

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.

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.

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.

Boyle, EA and **Fitzsimmons, JN**. (2012). Aerosol release of Fe into the ocean: the extreme cases. Goldschmidt Conference, Montreal, Canada.

Fitzsimmons, JN and Boyle, EA. (2012). Iron colloids: intercalibration and tropical North Atlantic distribution. Ocean Sciences Meeting, Salt Lake City.

Boiteau, R, **Fitzsimmons, JN**, Repeta, D, Boyle, EA, Waterbury, J, Suffridge, C, Webb, E, Berube, P, Chisholm, S, and Moffett, J. (2012). Characterization of trace metal organic ligands in cultures and seawater by HPLC-ICP-MS. Ocean Sciences Meeting, Salt Lake City.

Fitzsimmons, JN and Boyle, EA. (2011). Dissolved iron partitioning between soluble and colloidal fractions in the tropical North Atlantic. Goldschmidt Conference, Prague, Czech Republic.

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

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, Nofolk, 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.

TEACHING EXPERIENCE

STUDENTS MENTORED

2016-current	Kimber De Salvo – Texas A&M MS student
2016 summer	Nathan Lanning – REU summer student from University of New Haven
2016-2017	Sarah Berlanga – Texas A&M undergraduate (1 year)
2015-current	Laramie Jensen – Texas A&M PhD student
2015 summer	Carolyn Nesbitt – Texas A&M undergraduate (Summer II)
2015	Nicholas Morgan – Rutgers MA student: trace metal clean analytical techniques
2014	Alexandra Malinina – Rutgers undergraduate: trace metal clean analytical techniques
2013	Sherain al-Subiai – MIT-Kuwait scientist: Fe and Cu ligands by electrochemistry
2012-2013	Molly Martin – MIT undergraduate thesis: Dissolved Cu and Zn in the Southeast Pacific Ocean

COURSES TAUGHT

2017	OCNG 641 Inorganic Aquatic Geochemistry, Spring semester, 7 graduate students, TAMU
2017	OCNG 251 Oceanography, online, Spring semester, 100 undergraduates, TAMU
2016	OCNG 251 Oceanography, online, Fall semester, 100 undergraduates, TAMU
2016	OCNG 251 Oceanography, online, Summer I, 100 undergraduates, TAMU
2014	Rutgers Chemical Oceanography: taught one lecture on marine iron biogeochemistry
2012	MIT 1.76 Graduate Aquatic Chemistry (TA): taught weekly recitation
2011	MIT 12.119 Undergraduate Analytical Techniques for studying Environmental and Geologic samples (TA): Taught laboratory session twice weekly
2008	Boston University Organic Chemistry Preparatory Course (Instructor)

ACADEMIC SERVICE

2016-current Co-organizer of the Graduate Learning Community, Texas A&M Oceanography. Hosting all departmental graduate students every ~3 weeks for my series of professional development workshops

2016	College of Geoscience representative to the Graduate Council, Texas A&M University
2014-2015	Co-organizer of the Yadda Yadda seminar series for postdocs, Rutgers IMCS
2012-2014	EDventures Review Panel, Center for Microbial Oceanography: Research and Education. Triannual proposal review for internal funding for students/post-docs
2009-2013	Organized and managed the Chemical Oceanography section of the annual Open House visit to MIT for newly admitted graduate students to the MIT/WHOI Joint Program
2010-2011	Organized/managed the weekly MIT seminar in Chemical Oceanography & Geobiology
Current	Peer reviewer for: Deep-Sea Research II, Earth & Planetary Science Letters, Geochimica et Cosmochimica Acta, Marine Chemistry, PNAS, Geophysical Research Letters, Frontiers in Biogeochemistry, Japanese Journal of Oceanography
Current	Proposal reviewer for: NSF Chemical Oceanography, NSF Marine Geology & Geophysics, NSF Biological Oceanography, NSF Polar Programs, NSF Major Research Instrumentation, NERC

WORKSHOPS AND CONVENED SESSIONS

2018 Co-convenor: “Abiotic and biotic retention, recycling, and remineralization of metals in the ocean” session, Ocean Sciences, Portland, OR
2016 Workshop on “Internal cycling of trace elements in the ocean” hosted by GEOTRACES/OCB, Lamont-Doherty Earth Observatory, NY
2016 Co-convenor: “Oceanic cycling of trace elements using elemental, isotopic, and modeling approaches: Geotracers and beyond…” Goldschmidt Conference, Yokohama, Japan.
2015 Vice-Chair: Gordon Research Seminar for grad students/postdocs in Chemical Oceanography
2014 DISCO DIssertations Symposium in Chemical Oceanography XXIV, Lihue, Kaua’i, Hawai’i
2014 Co-convenor: "The Colloidal Phase Contribution to Marine Biogeochemistry," Goldschmidt Conference Florence
2013 Collaborative on Oceanographic Chemical Analysis (COCA), University of Hawaii
2012 Workshop on "Stable isotopes of biologically important trace metals," Imperial College, London
2012 Co-convenor: "Sources, Sinks, and Speciation of Marine Micronutrient Trace Elements," Fall AGU
2012 Path of Professorship Workshop, MIT, Cambridge, MA
2012 ADVANCE Workshop for Future Faculty, Northeastern University, Boston, MA
2011 Co-convenor: "The GEOTRACES Program," Goldschmidt Conference, Prague
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/geotraces/geotraces04/
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
Scuba Schools International: Open Water Diver certified