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Grants and Awards

2019-2020 State of Florida, $25,000 to Buck as flow-through from Florida Fish and Wildlife: *Trace metal measurements in support of SECOORA efforts with a focus on the 2019* Karenia brevis *event.*

2019-2020 State of Florida, $310,000 to Buck as flow-through from Florida Fish and Wildlife: *Nutrients and iron biogeochemistry studies to enhance red tide monitoring and mitigation strategies.*

2019-2020 $45,000 to Buck and T. Kenney (co-PI): Supplemental Shiptime Request for R/V Weatherbird II, Florida Institute of Oceanography, five subsidized ship-days.

2018-2022 NSF OCE-1756433, $381,815 to Buck: *Collaborative Research: Diatoms, Food Webs and Carbon Expert – Leveraging NASA EXPORTS to test the role of diatom physiology in the biological carbon pump.* Collaborators: Bethany Jenkins (URI), Mark Brzezinski (UCSB).

2018-2021 NSF OCE-1829777, $338,566 to Buck: *NSFGEO-NERC: Collaborative Research: Using Time-series Field Observations to Constrain an Ocean Iron Model.* Collaborators: Peter Sedwick (ODU), Ben Twining (Bigelow), Dan Ohnemus (Skidaway), Rod Johnson (BIOS), Alessandro Tagliabue (U Liverpool).

2018-2021 NSF OCE-1829753, $347,472 to Buck: *Collaborative Research: The Effect of Ocean Acidification on Fe Availability to Phytoplankton in Coastal and Oceanic Waters of the Eastern North Pacific.* Collaborators: Mark Wells (-2 (amm7 (k .6 (a)-3o)-3.2 (at)-8.8 (er)r.7 (l)0.) nfMeato06(a)-3oerk.op82 (ti -5.8 (.2 (at).J/TT1o)-3P

2017-2018 Supplemental Shiptime Request for R/V Hogarth, Florida Institute of Oceanography, $32,000: four subsidized ship-days.

2015-2018 NSF OPP-1443483, $299,479 to Buck: *Collaborative Research: Investigating iron-binding ligands in Southern Ocean diatom communities: The role of diatom-bacteria associations.* Collaborators: Bethany Jenkins (URI), Dreux Chappell (ODU).

2015 Office of Research and Innovation One-to-One Cost Match, University of South Florida, $33,024 to Buck and F. Muller-Karger: Lachat QuickChem8500 Flow Injection Analysis System.

2014-2015 Supplemental Shiptime Request for R/V Weatherbird II, Florida Institute of Oceanography, $30,000: three subsidized ship-days.

2013-2017	NSF OCE-1333566, $206,117 to Buck: *Collaborative Research: Experimental constraints on marine Fe isotope effects – Biology, ligands and particles.* Collaborator: Seth John (USC).
2013-2017	NSF OCE-1233882, $319,000 to Buck: *Collaborative Research: US GEOTRACES Pacific Section-Measurement of the organic complexation of dissolved iron, copper and cobalt, and total dissolved cobalt.* Collaborators: Kathy Barbeau (SIO/UCSD), Mak Saito (WHOI).
2013	Roger Thayer Stone Fellowship, $8,099 and C&H Montgomery Moore Fellowship, $3,304: support funds for student internship, Veronique Oldham.
2012-2016	Scientific Committee of Oceanic Research (SCOR) Working Group 139, with co-chairs Maeve Lohan (NOC Southampton, UK

2005	UCSC Outstanding Ocean Sciences Student Award Nominee
2004-2006	Ida Benson Lynn Graduate Fellow in Ocean Health
2001-2004	Graduate Assistance in Areas of National Need (GAANN) Doctoral Fellowship
2001	University of California Regents Fellowship

Field Experience

2016 Sept/Oct	R/V I/B Nathaniel B. Palmer; West Antarctic Peninsula/ Southern Ocean
2015 June	R/V Weatherbird II; Eastern Gulf of Mexico, West Florida Shelf [Chief Scientist]
2014 July	R/V Melville; Central California Coast
2013 Oct	R/V Endeavor; UNOLS Training Cruise, Hudson River Shelf, New England [co-Chief Scientist]
2013 Jan	R/V Atlantic Explorer; BATS/Hydro S, Sargasso Sea, Bermuda
2011 Apr	R/V Polaris; USGS Water Quality Sampling Cruise, San Francisco Bay, California
2010 Oct/Nov	R/V Knorr; GEOTRACES North Atlantic Section, Northeast Atlantic
2010 Apr	R/V Atlantic Explorer; Ocean Flux Program, Sargasso Sea, Bermuda
2009 Jun	R/V Atlantic Explorer; Sargasso Sea, Bermuda
2009 May	R/V Knorr; GEOTRACES Intercalibration II, Central North Pacific (SAFe Station)
2008 Nov	R/V Polaris; USGS Water Quality Sampling Cruise, San Francisco Bay, California
2008 Oct	R/V Melville; CCE-LTER Process Cruise, Southern California Coast
2008 June/July	R/V New Horizon; Deep Chlorophyll Maximum and Suboxic Zone, Southern Baja, Mexico
2007 July/Aug	R/V New Horizon; Deep Chlorophyll Maximum, Southern California
2007 April	R/V Thompson; CCE-LTER Process Cruise, Southern California Coast
2006 July/Aug	R/V I/B Nathaniel B. Palmer; Shackleton Gap/ Southern Ocean
2004 Oct/Nov	R/V Melville; SAFe: Sampling & Analysis of Fe, Intercalibration exercise
2004 July	R/V Wecoma; RISE Program, Columbia River/ Oregon/ Washington
2004 June	R/V Point Sur; Coastal Oregon/ Washington/ Northern and Central California
2003 Aug/Sep	R/V Kilo Moana; Bering Sea, Alaska
2003 Mar	R/V David Johnson; San Francisco Bay, California
2003 Feb	R/V Point Sur; Central California Coast
2003 Jan	R/V David Johnson; San Francisco Bay, California

Peer-Reviewed Publications (supervised students underlined)

41. Mellett, T., and **K.N. Buck** (in review). Spatial and temporal variability of bioactive trace metals in surface waters of the eastern Gulf of Mexico. *Marine Chemistry*.

40. Hollister, A.P., K.A. Hubbard, M. Robert, C.L. Tilney, and **K.N. Buck** (accepted). Regeneration of macronut 0.003.Tw 14.77 01o 0 T1.5 (A.)(2003 M)m(J( )Tj0.251 0 Td(()Tj-0.0)Tj(J( )y0 T1.5acr)-7.34[(R/)-4.7 st alnk4 ( )-5t.7 (er)

17. Oldham, V.E., M.M. Swenson, and K.N. Buck (2014). Spatial variability of total dissolved copper and copper speciation in the inshore waters of Bermuda. *Marine Pollution Bulletin*, 79: 314-320.

Urban Jr., E.R., A.R. Bowie, P.W. Boyd, **K.N. Buck**, M.C. Lohan, S.G. Sander, R. Schlitzer, A. Tagliabue, and D. Turner (in press 2020). The importance of bottom-up approaches to international cooperation in ocean science: The iron story. *Oceanography*.

Hogle, S., C.L. Dupont, B. Hopkinson, A.L. King, **K.N. Buck**, K.L. Roe, R.K. Stuart, A.E. Allen, E.L. Mann, Z.I. Johnson, and K.A. Barbeau (2018). Pervasive iron limitation at subsurface chlorophyll maxima of the California Current. *EarthArXiv*, DOI: 10.31223/osf.io/s37te

K.N. Buck, M.C. Lohan, S.G. Sander, C. Hassler and I. Pižeta (2017). Organic ligands in trace metal biogeochemistry. *Frontiers in Marine Science*, eBook compilation of Research Topic, doi: 10.3389/978-2-88945-376-4.

K.N. Buck, M.C. Lohan, S.G. Sander, C. Hassler and I. Pižeta (2017). Editorial: Organic Ligands – A Key Control on Trace Metal Biogeochemistry in the Ocean. *Frontiers in Marine Science*, doi: 10.3389/fmars.2017.00313.

K.N. Buck, C. Bonnain and R.M. Bundy (2016). Biogeochemical cycling of organic iron-binding ligands: Insights from GEOTRACES data in the Atlantic Ocean. *Ocean Carbon and Biogeochemistry Newsletter*, Summer. Invited article.

2015-2016	Chemical Oceanography Search Committee Member, University of South Florida
2014-2015	Guest Editor, Special Issue on Women in Oceanography, Oceanography Magazine
2014-2015	Guest Editor, Marine Chemistry, SCOR WG 139
2014-present	Review Editor, Frontiers in Marine Biogeochemistry
2014-2016	Scientific Steering Committee, Ocean Carbon and Biogeochemistry (OCB)
2014-2016	Chemical Oceanography Councilor, The Oceanography Society (TOS)
2014-2016	Annual Review Committee Member, University of South Florida, College of Marine Science
2014-present	Safety Committee Member, University of South Florida, College of Marine Science
2014-present	Admissions Committee Member, University of South Florida, College of Marine Science
2014	Biological Oceanography Search Committee Member, University of South Florida
2014	Renate E. Bernstein Outstanding Authorship Award Committee Member, University of South Florida, College of Marine Science
2011-present	Reviewer of proposals for Sea Grant programs
2010-present	Reviewer of NSF proposals for Chemical Oceanography, Office of Polar Programs, Ocean Technology and Interdisciplinary Coordination programs
2005-present	Reviewer of manuscripts for Environmental Science & Technology, Limnology and Oceanography, Marine Chemistry, Limnology and Oceanography- Methods, Geophysical Research Letters, Global Biogeochemical Cycles, Applied Geochemistry, Oceanography, Environmental Research, Deep Sea Research I and II, Marine Environmental Research, and Estuarine, Coastal and Shelf Science
2009-2013	Participant in presenting research highlights to weekly public tours at BIOS
2009-2013	Participant in annual Marine Science Day public outreach activities at BIOS, including presentations for “Ask a Scientist” venue and coordination of “Plankton Lab”
2012	Reviewer of proposals for Gulf of Mexico Research Initiative II
2010-2012	Co-Chair, Safety and Health Committee, BIOS
2010	Science liaison officer, BIOS Marine Science Day 2010, included two local radio interviews
2009	

2016 Aug	GEOTRACES-OCB Joint Synthesis Workshop on Internal Cycling, Lamont-Doherty Earth Observatory, Palisades, NY, USA: **Buck, K.N.** Metal speciation and ligand production.
2016 Jun	Marine Chemistry and Geochemistry Seminar, Scripps Institution of Oceanography, La Jolla, CA, USA: **Buck, K.N.** Iron-binding ligands in the oceans: Insights from GEOTRACES.
2015 Dec	AGU Fall Meeting, San Francisco, CA, USA: **Buck, K.N.**, R. Bundy, S. Sander, M. Wells, D. Biller, K. Bruland, and K. Barbeau. Copper, iron and the organic ligands that bind them – updates from San Francisco Bay and beyond.
2015 Oct	Chemistry Department Seminar, University of North Florida: **Buck, K.N.** The importance of ligands in the biogeochemistry of Fe and Cu: Insights from field and experimental studies.
2014 May	Florida American Chemical Society Meeting (FAME), Innisbrook, FL, USA: **Buck, K.N.** Heavy Metal Hookups: The importance of ligands in Fe and Cu biogeochemistry.
2014 Jan	University of South Florida College of Marine Science, First Friday Seminar Series: **Buck, K.N.** Trace metal biogeochemistry, GEOTRACES, and the role of ligands.
2013 Aug	Gordon Research Conference: Chemical Oceanography, Biddeford, Maine: **Buck, K.N.** Fe-binding ligands from the U.S. GEOTRACES North Atlantic section.
2012 Oct	COST 801 "Voltammetry and GEOTRACES" Workshop, Rudjer Boskovic Institute, Sibenik, Croatia: **Buck, K.N.** The organic complexation of Fe along U.S. GEOTRACES North Atlantic Section, Leg 1.
2011 Dec	Environmental Geochemistry and Geology Seminar Series, Princeton University: **Buck, K.N.** The organic complexation of iron in the ocean.
2010 Aug	COST Action ES0801/735 Joint Workshop, IFM-GEOMAR, University of Kiel, Germany: **Buck, K.N.** The "State of the Art": Dissolved Fe and Cu speciation in the open ocean.
2010 June	Gordon Research Conference: Environmental BioInorganic Chemistry (EBIC), Newport, RI, USA: **Buck, K.N.**, A. King, R. Bundy, and K. Barbeau. High throughput studies of Fe speciation.
2008 March	Department of Marine Environmental Biology, University of Southern California: **Buck, K.N.**, K. Barbeau, K.W. Bruland, K. Selph, C. Measures, and W. Landing. Controls on dissolved iron concentrations in the world ocean: Recent studies of iron speciation in natural and model systems.
2008 Feb	Division of Geological and Planetary Sciences, California Institute of Technology: **Buck, K.N.**, K. Barbeau, K.W. Bruland, K. Selph, C. Measures, and W. Landing. Controls on dissolved iron concentrations in the world ocean: Recent studies of iron speciation in natural and model systems.
2007 June	Department of Geosciences, Marine Chemistry and Geochemistry, (,)-1p(on i)-7.9nN3 (r)(i)-2.5 ((ni)-8 (a I)-3.2 (n

2011 Feb-May	Lazare Akpetou, Ivory Coast: *Copper speciation near a waste dump in Castle Harbour, Bermuda.*
2011 Feb-May	Yosra Khammeri, Tunisia, co-mentored with Dr. Simon Ussher: *The effect of atmospheric dust on phytoplankton growth in the Sargasso Sea.*
2010 Feb-May	Bennet Foli, Ghana: *Copper and zinc distributions in Castle Harbour, Bermuda using a chemical leach method.*

Teaching Experience

2020 Spring	Co-Instructor, Professional Development II, USF.
2019 Fall	Co-Instructor, Professional Development I, USF.
2019 Fall	Co-Instructor, Chemical Oceanography core course, USF.
2018 Fall	Co-Instructor, Chemical Oceanography core course, USF.
2018 Spring	Lead Instructor, Chemical Oceanography core course, USF.
2018 Spring	Co-Instructor, Professional Development II, USF.
2017 Fall	Co-Instructor, Deciphering DOC seminar course, USF.
2017 Fall	Co-Instructor, Metals and Microbes seminar course, USF.
2017 Aug	Lead Instructor, Voltammetry Workshop, GEOTRACES Summer School, Brest, FRANCE.
2017 Spring	Co-Instructor, Chemical Oceanography core course, USF.
2016 Spring	Co-Instructor, Chemical Oceanography core course, USF.
2015 Fall	Instructor, Periodic Table in the Marine Environment seminar course, USF.
2015 Spring	Lead Instructor, Chemical Oceanography core course, USF.
2014 Fall	Co-Instructor, Professional Development II, USF.
2014 Spring	Guest Lectures, Chemical Oceanography core course, USF: Trace metals and phytoplankton; Trace metal sampling and the GEOTRACES program.
2013 Sept	Guest Lecture, Global Marine Biology field course, Newcastle University, BIOS: Phytoplankton nutrient limitation and the role of trace metals.
2013 May	Co-Instructor, Oceans and Human Health course for Furman University, BIOS
2013 May	Guest Lecture, Washington College, BIOS: Oceanography: An introduction to the discipline and research topics.
2012 Dec	Instructor, Chemical Oceanography Module, Center of Excellence in Observational Oceanography (CoEOO) program, BIOS
2012 Oct	Instructor, General Oceanography Module, CoEOO program, BIOS
2012 Apr, Sept	Guest Lecture, Global Marine Biology field course, Newcastle University, BIOS: Phytoplankton nutrient limitation and the role of trace metals.
2012 Apr	Guest Lecture, Waynflete School, BIOS: Oceanography: An introduction to the discipline and research topics.
2011-2012	Co-Instructor, Science Writing Module, POGO (Partnership for Observation of the Global Oceans) program, BIOS
2011 Oct	Instructor, Chemical Oceanography Module, POGO program, BIOS
2011 Sept	Guest Lecture, Global Marine Biology field course, Newcastle University, BIOS: Phytoplankton nutrient limitation and the role of trace metals.
2011 Aug	Instructor, General Oceanography Module, POGO program, BIOS
2011 Mar	Guest Lecture, Elderhostel: Science in Bermuda Shorts, BIOS: An overview of oceanography, from the perspective of a trace metal chemist.
2010 Sept	Instructor, Chemical Oceanography Module, POGO program, BIOS
2010 Aug	Co-Instructor, General Oceanography Module, POGO program, BIOS
2009 Sept	Instructor, Chemical Oceanography Module, POGO program, BIOS
2009 Aug	Instructor, General Oceanography Module, POGO program, BIOS
2008	Guest Lecturer, SIO 101: California Coastal Oceanography, SIO
2007	Guest Lecturer, SIO 263: Aqueous Chemistry, SIO

2007

Knapp, A.N., K.N. Buck

Buck, K.N., D. Biller, K.W. Bruland, and K.A. Barbeau. Evaluating copper toxicity in the San Francisco Bay Delta and Estuary: Copper speciation and dissolved trace metal concentrations. Poster, ASLO/TOS/AGU Ocean Sciences Meeting, 23-28 Feb 2014, Honolulu, HI, USA.

Aguilar-Islas, A.M., M. Seguret, R. Rember, D. Stockwell, and K.N. Buck. Iron and related parameters along the Gulf of Alaska shelf. Presentation, ASLO/TOS/AGU Ocean Sciences Meeting, 23-28 Feb 2014, Honolulu, HI, USA.

Barbeau, K.A., A.L. King, B.M. Hopkinson, K.N. Buck, and R.M. Bundy. Investigations of iron biogeochemistry in the Southern California Current System. Presentation, ASLO/TOS/AGU Ocean Sciences Meeting, 23-28 Feb 2014, Honolulu, HI, USA.

Coale, T.H., and K.N. Buck. Distribution of dissolved trace metals at time-series sites in the Sargasso Sea. Poster, ASLO/TOS/AGU Ocean Sciences Meeting, 23-28 Feb 2014, Honolulu, HI, USA.

Glass, J.B., K.N. Buck, L.A. Bristow, B. Thamdrup, and F.J. Stewart. Bioessential trace metal and nitrogen cycling in the Eastern Tropical North Pacific oxygen minimum zone. Presentation, ASLO/TOS/AGU Ocean Sciences Meeting, 23-28 Feb 2014, Honolulu, HI, USA.

Twining, B.S., S. Rauschenberg, P.N. Sedwick, J.N. Fitzsimmons, and K.N. Buck. Iron quotas of North Atlantic phytoplankton reflect biogeochemical environment. Presentation, ASLO/TOS/AGU Ocean Sciences Meeting, 23-28 Feb 2014, Honolulu, HI, USA.

Wu, J., S. Roshan, M. Hatta, C. Measures, and K. Buck. Dissolved Fe enrichment in the oxygen minimum zone of the Eastern Tropical North Atlantic Ocean. Presentation, ASLO/TOS/AGU Ocean Sciences Meeting, 23-28 Feb 2014, Honolulu, HI, USA.

Fishwick, M.P., S.J. Ussher, P.N. Sedwick, M.C. Lohan, P.J. Worsfold, and K.N. Buck. The impact of environmental change on aerosol iron dissolution. Presentation, 5th Annual Biogeochemistry Conference, 12 Dec 2013, Plymouth, UK.

Fishwick, M.P., S.J. Ussher, P.N. Sedwick, M.C. Lohan, P.J. Worsfold, and K.N. Buck. The impact of environmental change on aerosol iron dissolution. Presentation, Making Waves 2013, 28 Nov 2013, Plymouth, UK.

Fishwick, M.P., S.J. Ussher, P.N. Sedwick, M.C. Lohan, P.J. Worsfold, and K.N. Buck. Understanding the role of iron in the oceans. Video Presentation, World Ocean Week, 10 Nov 2013, Xiamen, CHINA.

Fishwick, M.P., S.J. Ussher, P.N. Sedwick, M.C. Lohan, P.J. Worsfold, and K.N. Buck. Dissolution of aerosol derived iron in North Atlantic seawater. Poster and Presentation, SOLAS Summer School, 30 Aug 2013, Xiamen, CHINA.

Fishwick, M.P., S.J. Ussher, P.N. Sedwick, M.C. Lohan, P.J. Worsfold, and K.N. Buck. Delivery of trace metals to the surface of the Sarg

2.62 (h)1.1 (e)1.8 (h)1.7 (e)1.1 (h)3.1 (e)5.3 (h)5.6 (e)1.9 (h)2.3 (e)1.2 (h)1.1 (e)1.

Fishwick, M.P., S.J. Ussher, P.N. Sedwick, M.C. Lohan, P.J. Worsfold, and K.N. Buck. Determination of the concentration of iron in seawater using flow injection analysis. Presentation, 4th Annual Biogeochemistry Conference, 17 Dec 2012, Plymouth, UK.

Buck, K.N., D. Biller, K.W. Bruland, K.A. Barbeau. Evaluating copper toxicity in the San Francisco Bay Delta and Estuary: Copper speciation and dissolved trace metal concentrations. Poster presented *in absentia*, 7th Biennial Bay-Delta Science Conference, 16-18 Oct 2012, Sacramento, California, USA.

Khammeri, Y., S. Ussher, K.N. Buck. The effect of atmospheric dust on phytoplankton growth in the Sargasso Sea. Poster presented by Y. Khammeri, 15th Biennial Challenger Conference for Marine Sciences, 3-6 Sept 2012, University of East Anglia, Norwich, UK.

Buck, K.N. The organic complexation of dissolved Fe in NE Atlantic depth profiles: Preliminary results from leg 1 of the U.S. GEOTRACES North Atlantic Section. Poster, Ocean Carbon Biogeochemistry (OCB) Summer Workshop, 16-19 Jul 2012, Woods Hole, Massachusetts, USA.

Buck, K.N., B.M. Sohst, and P.N. Sedwick. The organic complexation of dissolved Fe on leg 1 of the U.S. GEOTRACES North Atlantic section. Poster, ASLO/AGU/TOS Ocean Sciences Meeting, 19-24 Feb 2012, Salt Lake City, Utah, USA.

Aguilar-Islas, A.M., and K.N. Buck. The fractional solubility of aerosol-derived iron in seawater. Presentation, ASLO/AGU/TOS Ocean Sciences Meeting, 19-24 Feb 2012, Salt Lake City, Utah, USA.

Bundy, R.M., K.A. Barbeau, and K.N. Buck. Sources of strong copper-binding ligands in Antarctic Peninsula surface waters. Presentation, ASLO/AGU/TOS Ocean Sciences Meeting, 19-24 Feb 2012, Salt Lake City, Utah, USA.

Farst, C., W.M. Landing, A. Stenson, and K.N. Buck. Natural marine siderophore isolation through immobilized metal affinity chromatography with electrospray mass spectrometric analysis. Presentation, ASLO/AGU/TOS Ocean Sciences Meeting, 19-24 Feb 2012, Salt Lake City, Utah, USA.

Buck, K.N., B. Foli, S. Ussher, K.A. Barbeau. Copper speciation in the San Francisco Bay Delta and Estuary: Evaluating current and future likelihood of copper toxicity events in a perturbed ecosystem. Poster presented *in absentia*, 6th Biennial Bay-Delta Science Conference, 27-29 Sept 2010, Sacramento, California, USA.

Buck, K.N., R. Bundy, K. Barbeau, Y. Kondo, J. Moffett, J. Wu, K. Bin Mohamed, E. Achterberg. GEOTRACES Intercalibration II: Dissolved Fe and Cu speciation. Presentation, ASLO/AGU/TOS Ocean Sciences Meeting, 21-27 Feb 2010, Portland, Oregon, USA.

Professional Memberships

2014-present	American Association for the Advancement of Science
2014-present	American Chemical Society
2004-present	The Oceanography Society
2003-present	American Geophysical Union
2001-present	Association for the Sciences of Limnology and Oceanography