

ANGELA N. KNAPP

Professor

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EDUCATION

Ph.D. 2006, Geosciences Dept., Princeton University, Princeton, NJ.

M.A. 2002, Geosciences Dept., Princeton University, Princeton, NJ.

B.A. 1999, Biology-Geology, Whitman College, Walla Walla, WA.

PROFESSIONAL EXPERIENCE

8/2024 **Professor**, Oceanography Dept. Texas A&M University, College Station, TX

8/2019 – current **Associate Professor**, Dept. of Earth, Ocean, and Atmospheric Science, Florida State University, Tallahassee, FL

8/2013 – 8/2019 **Assistant Professor**, Dept. of Earth, Ocean, and Atmospheric Science, Florida State University, Tallahassee, FL

2010 – 8/2013 **Research Assistant Professor**, Marine and Atmospheric Chemistry Division, Rosenstiel School of Marine and Atmospheric Science, University of Miami, Miami, FL.

2009 – 2010 **Postdoctoral Researcher**, University of Miami, Rosenstiel School of Marine and Atmospheric Science, Miami, FL, Dennis Hansell, advisor.

2006 – 2008 **UCAR/NOAA Climate and Global Change Postdoctoral Fellow**, Dept. of Marine and Environmental Biological Sciences, University of Southern California, Los Angeles, CA, Doug Capone, advisor.

2000 – 2006 **NDSEG Graduate Fellow and Research Assistant**, Princeton University, Dept. of Geosciences, Princeton, NJ. Daniel Sigman, advisor.

1999 – 2000 **Laboratory Technician**, University of Washington, School of Oceanography, Jeff Richey/John Hedges lab.

Research Interests

Nitrogen cycling, especially in the ocean; using stable isotopes to identify and quantify sources, sinks, and cycling of nitrogen; N₂ fixation; inorganic and organic nutrient cycling; dissolved organic nitrogen isotopic composition, dissolved organic phosphorus concentration.

Selected Leadership, Service, Broader Impacts, and Outreach

Univ. FL/FL SeaGrant Nutrients and Red Tide State of the Science Symposium Technical Advisory Committee (8/2024-current)

FSU Faculty Leadership Development Program; nominated by the Dean of the College of Arts and Sciences (4/2023 – 3/2024)

US GEOTRACES Steering Committee Member (2019-present)

NSF RCN Aquatic N₂ fixation Steering Committee Member (2021 – present)

Associate Editor, Marine Chemistry (2020 – present)

Chair, EOAS Dept. Diversity, Equity, and Inclusion Committee (8/2020 – 8/2023)

Chair, EOAS Aqueous Trace Element Faculty Search Committee (8/2021 – 5/2022)

Mentor, Thomas University's STEMtastic program for underserved high school students (8/2020- 4/2021); "Ask a Scientist" Guest Scientist (2020, 2021, 2022, 2023); Lab host for FSU's Women in Math, Science, and Engineering (WiMSE) undergraduate scholars (2020-current); Panelist for Univ. West FL GeoScholars for undergrads applying to R1 graduate programs (1/2020); Training of undergraduate and graduate students; presentation judge for FSU's WiMSE research symposium, (4/2017, 4/2022); Lab tours for FSU WiMSE student groups (2019-current); speaker at Montford Middle School (Tallahassee, FL) "Sci Girls" club, November 2013; speaker for Growing Room Summer Camp for K-4th graders, June 2015; mentor for U. of Miami NSF-ADVANCE program activities; co-founded USC Women in Science and Engineering (WiSE) postdoctoral group; Scientific American interviewee.

Funding

Co-PI, NSF-Chemical Oceanography, \$381,692 (Knapp portion), "Collaborative Research: Contribution of allocthanous DON to biological nitrogen demand in the subtropical North Pacific", 7/1/2024-6/30/2027; total award: \$1,428,019

Lead and Sole PI, Florida Fish and Wildlife Conservation Commission, \$237,727, "West Florida Shelf nutrient and isotopic monitoring", 5/17/2023-6/15/2025.

Lead and Sole PI, FSU College of Arts and Sciences, \$150,000, matching funds for NSF award, "Collaborative Research: Linking Fe and nitrogen sources in an oligotrophic coastal margin: N₂ fixation and the role of boundary fluxes", 8/30/2022 – 7/31/2025

Lead PI, NSF-Chemical Oceanography, \$559,155 (Knapp portion), "Collaborative Research: Linking Fe and nitrogen sources in an oligotrophic coastal margin: N₂ fixation and the role of boundary fluxes", 5/1/2022-4/30/2025. Total award: \$2,270,299. Supplement, \$27,637, 5/31/2023 – 4/30/2025.

Lead and Sole PI, Florida Dept. of Environmental Protection, \$37,824, "Nutrient concentration and isotopic analysis of samples associated with discharge from Piney Point", 11/1/2021-6/30/2022.

Subcontract, NSF-Chemical Oceanography, \$42,649 (Knapp subcontract), "US GEOTRACES GP17-OCE: Nitrate isotopic signals of the Southern Ocean's circulation and biogeochemistry", 10/1/2021-9/30/2024. Lead PI, Daniel Sigman, Princeton University. Total award: \$486,515.

Lead and Sole PI, Florida Fish and Wildlife Commission, \$24,997, "Nutrient concentration and isotopic analysis of samples from the Greater Tampa Bay Region", 5/27/2021 – 6/15/2021.

Co-PI, NSF-Chemical Oceanography \$764,447 (FSU portion), "Collaborative Research: Quantifying the effects of variable light and iron on the nitrate assimilation isotope effect of phytoplankton, 2/2019 – 1/31/2022. Lead PI, Sven Kranz (FSU), Co-PI, Dreux Chappell (ODU).

Co-PI (declined), NSF-Biological Oceanography \$527,785 (FSU portion), "Collaborative Research: Mesoscale variability in nitrogen sources and food-web dynamics supporting larval southern bluefin tuna in the eastern Indian Ocean", 9/2019 – 8/2024. Total award: \$1,716,211.

Lead PI, NSF-Chemical Oceanography, \$342,689 (Knapp portion), "Collaborative Research:

Dissolved organic phosphorus controls on marine nitrogen fixation and export production”, 9/1/2018 – 8/31/2021. Co-PI, Robert Letscher, UNH. Total award: \$457,673.

Subcontract, NSF-Biological Oceanography, \$62,217 (Knapp portion), “Groundwater Sources of “new” N for Benthic Macroalgal Production in the South Atlantic Bight”, 1/1/2018 – 12/31/2022. Total award: \$993,190.

Co-PI, NOAA-RESTORE, \$218,703 (Knapp portion), “Atlantic Bluefin tuna: Nitrogen sources and food-web effects on larval habitat quality in the Gulf of Mexico, 6/1/2017 – 9/31/2021. Total award: \$1,613,288, FSU portion: \$487,515.

Sole PI, NSF Chemical Oceanography, \$300,971, “Quantifying nitrogen fixation along unique geochemical gradients in the southwest Pacific Ocean”, 8/1/2015 – 7/31/2018.

Sole PI, FSU, CRC Planning Grant, \$13,000, “Collecting and characterizing marine diazotrophs in the Gulf of Mexico”, 5/1/2015 – 4/30/2016

Sole PI, FSU, First Year Assistant Professor Award, \$20,000, Characterizing dissolved organic nitrogen released by marine nitrogen fixers, 5/5/2014-8/8/2014

Co-PI, NOAA Sea Grant, \$12,541 (Knapp portion); “Monitoring, Predicting, and Managing the Environmental Impacts of Offshore Aquaculture in the United States”. Start date: 9/1/2013; duration: 12 months. Total award: \$140,146

Co-PI, NOAA MARFIN, \$14,215 (Knapp portion); “Monitoring, Predicting, and Managing the Environmental Impacts of Offshore Aquaculture in the United States”. Start date: 7/1/2012, duration: 24 months. Total award: \$158,250

Sole PI, University of Miami Provost Research Award, 2011, \$17,000; Competitive research award

Co-PI, NSF, Chem. Oceanography, \$164,358 (*RSMAS portion*), “Collaborative Research: Documenting N₂ fixation in N deficient waters of the Eastern Tropical South Pacific”. Start date: 8/15/2009, duration: 36 months. Total award: \$1,037,065.

Co-PI, NSF, Chem. Oceanography, \$356,314, “Direct measurement of dissolved organic nitrogen concentration and 15N/14N ratio”. Start date: 10/1/2009, duration: 36 months.

Publications (h-index = 27, Google Scholar citations updated September 2024)
ORCID ID: 0000-0001-5575-3382

*Denotes undergraduate from Knapp lab; # denotes graduate student from Knapp lab
Submitted #Liang, Z., Letscher, R.T., and **A.N. Knapp**, Oligotrophic ocean new production supported by lateral transport of dissolved organic nutrients, submitted to *Global Biogeochemical Cycles*
2024 #Thomas, R.K., Fawcett, S.E., #Forrer, H.J., Robinson, C.M., and **A.N. Knapp**, Estimates of the isotope effect for nitrate assimilation in the Indian sector of the Southern Ocean, *Journal of Geophysical Research-Oceans*, 129, e2023JC020830. <https://doi.org/10.1029/2023JC020830>

- 2024 Casciotti, K.L., Marshall, T.A., Fawcett, S.E., and **A.N. Knapp**, Advances in understanding the marine nitrogen cycle in the GEOTRACES era, *Oceanography*, 37(2), <https://doi.org/10.5670/oceanog.2024.406>; **3 citations**
- 2023 [#]Liang, Z., Letscher, R.T., and **A.N. Knapp**, Global patterns of surface ocean dissolved organic matter stoichiometry, *Global Biogeochemical Cycles*, 37, e2023GB007788, doi.org/10.1029/2023GB007788, **5 citations**
- 2023 Broek, T.A.B., M.D. McCarthy, H. L. Ianiri, J.S. Vaughn, H.E. Mason, and **A.N. Knapp**, A new paradigm for dissolved organic nitrogen composition, cycling, and persistence in the ocean, *Proceedings of the National Academy of Sciences*, 120(49), doi.org/10.1073/pnas.2305763120, **4 citations**
- 2023 [#]Forrer, H., Bonnet, S., [#]Thomas, R.K., Grosso, O., Guieu, C., and **A.N. Knapp**, Quantifying N₂ fixation and its contribution to export production near the Tonga-Kermadec Arc using nitrogen isotope budgets, *Frontiers in Marine Science*, 10, doi.org/10.3389/fmars/.2023.1249115, **2 citations**
- 2023 Shao, Z., Xu, Y., Wang, H., Luo, W., Wang, L., Huang, Y., ... **Knapp, A.N.**, Luo, Y.-W., Version 2 of the global oceanic diazotroph database, *Earth System Science Data*, 15(8), 3673-3709, doi.org/10.5194/essd-15-3673-2023, **21 citations**
- 2023 ^{*}Miranda, C.; Boiteau, R.; McKenna, A.M.; and **A.N. Knapp**; Quantitative and qualitative comparison of marine dissolved organic nitrogen recovery using solid phase extraction; *Limnology & Oceanography: Methods*, doi.org/10.1002/lom3.10558; **3 citations**
- 2023 Bonnet, S., Guieu, C., Taillandier, V., Boulart, C., Bouruet-Aubertot, P., Gazeau, F., Scalabrin, C., Bressac, M., **Knapp, A.N.**, Cuypers, Y., Gonzalez-Santana, D., [#]Forrer, H.J., Grisoni, J.-M., Grosso, O., Habasque, J., Jardin-Camps, M., Leblond, N., Le Moigne, F.A.C., Lebourges-Dhaussy, A., Lory, C., Nunige, S., Pulido-Villena, E., Rizzo, A., Sarthou, G., Tilliette, C., Natural iron fertilization by shallow hydrothermal sources fuels diazotroph blooms in the Ocean, *Science*, 380, 812-817, doi:10.1126/science.abq4654, **28 citations**
- 2022 [#]Liang, Z., [#]McCabe, K., Fawcett, S.E., [#]Forrer, H.J., Hashihama, F., Jeandel, C., Marconi, D., Planquette, H., Saito, M.A., Sohm, J.A., [#]Thomas, R.K., Letscher, R.T., and **A.N. Knapp**, A global ocean dissolved organic phosphorus (DOP) concentration database (DOPv2021), *Scientific Data*, 9, 722, doi.org/10.1038/s41597-022-01873-7, **15 citations**
- 2022 Letscher, R.T., Wang, W.-L., [#]Liang, Z., and **Knapp, A.N.**, Regionally variable contribution of dissolved organic phosphorus to marine annual net community production, *Global Biogeochem. Cycles*, 36, e2022GB007354. <https://doi.org/10.1029/2022GB007354>, **8 citations**
- 2022 [#]Liang, Z., Letscher, R.T., and **A.N. Knapp**; Phosphate and iron stress control global surface ocean dissolved organic phosphorus concentrations; *Nature Geosciences*, 15(8), 651-657, doi:10.1038/s41561-022-00988-1, **29 citations**
- 2022 Gerard, T., Lamkin, J.T., Kelly, T.B., **Knapp, A.N.**, Laiz-Carrión, L., Malca, E., Selph, K.E., Shiroza, A., Shropshire, T.A., Stukel, M.R., Swalethorp, R., Yingling, N., & Landry, M.R.; Bluefin Larvae in Oligotrophic Ocean Foodwebs, Investigations of Nutrients to Zooplankton: Overview of the BLOOFINZ-Gulf of Mexico program, *J. Plankton Res.*, fbac038, doi.org/10.1093/plankt/fbac038; **23 citations**

- 2022 Pinckney, J.L., Zaunbrecher, S., Lang, S., Wilson, A., and **A.N. Knapp**, Seasonality of benthic macroalgal community abundance in shallow shelf waters, submitted to *Continental Shelf Research*, 244, 104797, doi.org/10.1016/j.csr.2022.104797, **3 citations**
- 2022 Confesor, K., Selden, C., Powell, K., Donahue, L., Mellett, T., Caprara, S., **Knapp, A.N.**, Buck, K.N., and Chappell, P.D., Defining the realized niche of the two major clades of *Trichodesmium*: a study on the West Florida Shelf, *Front. Mar. Sci.*, 9:821655, doi: 10.3389/fmars.2022.821655, **5 citations**
- 2021 **Knapp, A.N.**, #Thomas, R., Stukel, M.R., Kelly, T.B., Landry, M.R., Selph, K.E., Malca, E., Gerard, T., and J. Lamkin, Constraining the sources of nitrogen fueling export production in the Gulf of Mexico using nitrogen isotope budgets, *J. Plankton Res.*, fbab049, doi:10.1093/plankt/fbab049; **15 citations**
- 2021 Kelly, T. B., **Knapp, A. N.**, Landry, M. R., Selph, K. E., Shropshire, T. A., #Thomas, R., & Stukel, M. R.; Lateral Advection Supports Nitrogen Export in the Oligotrophic Open-Ocean Gulf of Mexico; *Nat. Communications*, 12, 3325, doi:10.1038/s41467-021-23678-9; **28 citations**
- 2021 Yingling, N., Kelly, T. B., Shropshire, T. A., Landry, M. R., Selph, K. E., **Knapp, A. N.**, Kranz, S. A., & Stukel, M. R.; Taxon-specific phytoplankton growth, nutrient utilization, and light limitation in the oligotrophic Gulf of Mexico; *J. Plankton Res.*, fbab028, doi:10.1093/plankt/fbab028; **29 citations**
- 2021 Stukel, M. R., Gerard, T., Kelly, T., **Knapp, A. N.**, Laiz-Carrión, R., Lamkin, J. T., Landry, M. R., Malca, E., Selph, K. E., Shiroza, A., Shropshire, T. A., & Swalethorp, R.; Plankton food webs in the oligotrophic Gulf of Mexico spawning grounds of Atlantic Bluefin tuna; *J. Plankton Res.*, fbab023, doi:10.1093/plankt/fbab023; **20 citations**
- 2021 Selph, K.E., Swalethorp, R., Stukel, M.R., Kelly, T.B., **Knapp, A.N.**, Fleming, K., Hernandez, T., and M.R. Landry, Phytoplankton community composition and biomass in the oligotrophic Gulf of Mexico, *J. Plankton Res.*, fbab006, doi:10.1093/plankt/fbab006, **25 citations**
- 2021 Santoro, A.E.; Buchwald, C.; **Knapp, A.N.**; Berelson, W.M.; Capone, D.G.; and K.L. Casciotti, Nitrification and nitrous oxide production in the offshore waters of the Eastern Tropical South Pacific; *Global Biogeochemical Cycles*; doi.org/10.1029/2020GB006716; **41 citations**
- 2020 *Howe, S., *Miranda, C., Hayes, C., Letscher, R., & **Knapp, A. N.**, The dual isotopic composition of nitrate in the Gulf of Mexico and Florida Straits. *Journal of Geophysical Research – Oceans*; 125, e2020JC016047, doi: 10.1029/2020JC016047; **19 citations**
- 2020 White, A. E., Granger, J., Selden, C., Gradoville, M. R., Potts, L., Bourbonnais, A., Fulweiler, R. W., **Knapp, A. N.**, Mohr, W., Moisander, P., Tobias, C. R., Wilson, S. T., Benavides, M., Bonnet, S., Mulholland, M., & Chang, B. X., A review of the ¹⁵N₂ tracer method to measure diazotrophic production in pelagic ecosystems. *Limnology and Oceanography: Methods*, 18, 129-147, doi:10.1002/lom3.10353; **72 citations**
- 2019 Redalje, D., J. Ammerman, J. Herrera, **A.N. Knapp**, J.W. Krause, D. S. Valdes, and *A. Hayward, Nutrients in the Gulf of Mexico: Distributions, Cycles, Sources, Sinks, and Processes, in *The Chemical Oceanography of the Gulf of Mexico*, Texas A&M Press, Editor: Thomas Bianchi; **4 citations**

- 2019 Wilson, S. T., Hawco, N. J., Armbrust, E. V., Barone, B., Bjorkman, K. M., Boysen, A. K., Burgos, M., Burrell, T. J., Casey, J. R., DeLong, E. F., Dugenne, M., Dutkiewicz, S., Dyhrman, S. T., Ferron, S., Follows, M. J., Foreman, R. K., Funkey, C. P., Harke, M. J., Henke, B. A., Hill, C. N., Hynes, A. M., Ingalls, A. E., Jahn, O., Kelly, R. L., **Knapp, A. N.**, Letelier, R. M., Ribalet, F., Shimabukuro, E. M., Tabata, R. K. S., Turk-Kubo, K. A., White, A. E., Zehr, J.P., John, S., and D.M. Karl, Kilauea lava fuels phytoplankton bloom in the North Pacific Ocean, *Science*, 365, 1040-1044, doi.org/10.1126/science.aax4767; **57 citations**
- 2019 Welch A., **A.N. Knapp**, S. El Tourky, Z. Daugherty, G. Hitchcock, D. Benetti, The nutrient footprint of a submerged cage offshore aquaculture facility located in the tropical Caribbean, *J. of the World Aquaculture Society*, 50, 1-18, doi: 10.1111/jwas.12593; **27 citations**
- 2018b **Knapp, A.N.**, K.L. Casciotti, M.G. Prokopenko, Dissolved organic nitrogen production and consumption in the eastern tropical South Pacific surface ocean, *Global Biogeochem. Cycles*, 32, 769-783, doi:10.1029/2017GB005875, **28 citations**
- 2018a Knapp, A.N., #K.M. McCabe, O. Grosso, N. Leblond, T. Moutin, and S. Bonnet, Distribution and rates of nitrogen fixation in the western tropical South Pacific Ocean constrained by nitrogen isotope budgets, *Biogeosciences*, 15, 2619-2628, doi:10.5194/bg-2619-2018, **33 citations**
- 2017 Marconi, D., D.M. Sigman, K.L. Casciotti, E.C. Campbell, M.A. Weigand, S.E. Fawcett, A.N. Knapp, P.A. Rafter, B.B. Ward, G.H. Haug, Tropical dominance of N₂ fixation in the North Atlantic Ocean, *Global Biogeochem. Cycles*, 31(10), 1608-1623, **53 citations**
- 2017 Fassbender, A.J., H.I. Palevsky, A.E. Ingalls, M. Gledhill, S.E. Fawcett, J.A. Brandes, L.I. Aluwihare, the participants of COME ABOARD, DISCO XXV, Perspectives on Chemical Oceanography in the 21st century: Participants of the COME ABOARD Meeting examine aspects of the field in the context of 40 years of DISCO, *Marine Chemistry*, 196, 181-190, **6 citations**
- 2016b **Knapp, A.N.**, S.E. Fawcett, A. Martinez-Garcia, N. Leblond, T. Moutin, and S. Bonnet, Nitrogen isotopic evidence for a shift from nitrate- to diazotroph-fueled export production in the VAHINE mesocosm experiments, *Biogeosciences*, 13, 4645-4657, doi:10.5194/bg-13-4645-2016, **26 citations**
- 2016 Haskell, W.Z., M.G. Prokopenko, R.H.R. Stanley, and **A.N. Knapp**, Estimates of vertical turbulent mixing used to determine a vertical gradient in net and gross oxygen production in the oligotrophic South Pacific gyre, *Geophysical Research Letters*, 43, doi:10.1002/2016GL069523, **23 citations**
- 2016a **Knapp, A.N.**, K.L. Casciotti, W.M. Berelson, M.G. Prokopenko, and D.G. Capone, Low rates of nitrogen fixation in the eastern tropical South Pacific surface waters, *Proceedings of the National Academy of Sciences*, doi:10.1073/pnas.1515641113, **112 citations**
- 2015 Letscher, R.T., **A.N. Knapp**, A.K. James, C.A. Carlson, A.E. Santoro, D.A. Hansell, Microbial community composition and nitrogen availability control DOC remineralization in the South Pacific Gyre, *Marine Chemistry*, 177, 325-334, doi:10.1016/j.marchem.2015.06.024, **54 citations**
- 2015 Berelson, W.M., W. Haskell, M.G. Prokopenko, **A.N. Knapp**, D. Hammond, N. Rollins, D.G. Capone, Biogenic rain and benthic remineralization in the Eastern

- Tropical South Pacific, *Deep-Sea Research I*, 99, 23-34, doi:10.1016/j.dsr.2014.12.006; **22 citations**
- 2015 Haskell, W.Z., D. Kadko, D.E. Hammond, **A.N. Knapp**, M.G. Prokopenko, W.M. Berelson, and D.G. Capone, Upwelling velocity and eddy diffusivity from ⁷Be measurements used to compare vertical nutrient flux to export POC flux in the Eastern Tropical South Pacific, *Marine Chemistry*, 168, 140-150, doi:10.1016/j.marchem.2014.10.004; **53 citations**
- 2014 Johnston, D.T., B.C. Gill, A. Masterson, E. Beirne, K.L. Casciotti, **A.N. Knapp**, and W. Berelson, Placing an upper limit on cryptic marine sulphur cycling, *Nature*, 513, 530-533, doi:10.1038/nature13698, **97 citations**
- 2013 Jacquot, J.E., Y. Kondo, **A.N. Knapp**, and J.W. Moffett, The speciation of copper across active gradients in nitrogen-cycle processes in the eastern tropical South Pacific, *Limnology & Oceanography*, 58, 1387-1394, DOI: 10.4319/lo.2013.58.4.1387, **58 citations**
- 2013 Letscher, R.T., D.A. Hansell, C.A. Carlson, R. Lumpkin, and **A.N. Knapp**, Dissolved organic nitrogen in the global surface ocean: Distribution and fate, *Global Biogeochem. Cycles*, 27, doi:10.1029/2012GB004449, **133 citations**
- 2012 **Knapp, A.N.**, The sensitivity of marine N₂ fixation to dissolved inorganic nitrogen, *Frontiers in Microbiology*, 3:374. doi: 10.3389/fmicb.2012.00374, **221 citations**
- 2012 **Knapp, A.N.**, J. Dekaezemacker, S. Bonnet, J.A. Sohm, and D.G. Capone, Sensitivity of *Trichodesmium* and *Crocospaera* abundance and N₂ fixation rates to varying NO₃⁻ and PO₄³⁻ concentrations in batch cultures, *Aquatic Microbial Ecology*, 66, 223-236, doi: 10.3354/ame01577, **65 citations**
- 2012 **Knapp, A.N.**, A.B. Kustka, D.M. Sigman, S.A. Sañudo-Wilhelmy, and D.G. Capone, The distinct nitrogen isotopic compositions of low and high molecular weight marine DON, *Marine Chemistry*, 136-137, 24-33, doi: 10.1016/j.marchem.2012.05.001, **28 citations**
- 2011 **Knapp, A.N.**, D.M. Sigman, F. Lipschultz, A.B. Kustka, and D.G. Capone, Interbasin isotopic correspondence between upper-ocean bulk DON and subsurface nitrate and its implications for marine nitrogen cycling, *Global Biogeochemical Cycles*, 25, GB4004, doi:10.1029/2010GB003878, **88 citations** *Featured in Scientist F1000, July 2, 2012 as a "recommended" article*
- 2011 L.E. Collins, W. Berelson, D.E. Hammond, **A. Knapp**, R. Schwartz, and D. Capone, Particle fluxes in San Pedro Basin, California: A four-year record of sedimentation and physical forcing, *Deep-Sea Research I*, 58, 898-914, **49 citations**
- 2010 **Knapp, A.N.**, M.G. Hastings, D.M. Sigman, F. Lipschultz, and J. Galloway, The flux and isotopic composition of reduced and total nitrogen in Bermuda rain, *Marine Chemistry*, 120, 83-89, doi:10.1016/j.marchem.2008.08.007 (published online in final form in 2008), **76 citations**
- 2010 Spencer, P.K., and **A.N. Knapp**, New stratigraphic markers in the late Pleistocene Palouse loess: novel fossil gastropods, absolute age constraints, and non-eolian facies, *Sedimentology*, 57, 41-52, doi: 10.1111/j.1365-3091.2009.01085.x, **12 citations**
- 2009 Sigman, D.M., P.J. DiFiore, M.P. Hain, C. Deutsch, Y. Wang, D.M. Karl, **A.N. Knapp**, M.F. Lehmann, and S. Pantoja, The dual isotopes of deep nitrate as a constraint on the cycle and budget of oceanic fixed nitrogen, *Deep-Sea Research I*, 56, 1419-1439, doi:10.1016/j.dsr.2009.04.007, **211 citations**

- 2008 **Knapp, A. N.**, P. J. DiFiore, C. Deutsch, D. M. Sigman, and F. Lipschultz, Nitrate isotopic composition between Bermuda and Puerto Rico: Implications for N₂ fixation in the Atlantic Ocean, *Global Biogeochem. Cycles*, 22, GB3014, doi:10.1029/2007GB003107; **145 citations**
- 2007 Capone, D.G. and **A.N. Knapp**, A marine nitrogen cycle fix?, *Nature*, 445, 159-160; **87 citations**
- 2005 **Knapp, A.N.**, D.M. Sigman, and F. Lipschultz, N isotopic composition of dissolved organic nitrogen and nitrate at the Bermuda Atlantic Time-series Study site, *Global Biogeochem. Cycles*, 19, GB1018, doi:10.1029/2004GB002320; **347 citations**
- 2003 Sigman, D.M., R. Robinson, **A.N. Knapp**, A. van Geen, D.C. McCorkle, J. A. Brandes, and R.C. Thunell, Distinguishing between water column and sedimentary denitrification in the Santa Barbara Basin using the stable isotopes of nitrate, *Geochemistry, Geophysics, Geosystems*, 4(5), 1040, doi:10.1029/2002GC000384, 2003; **203 citations**

Invited Talks

- 2024 Workshop on Benthic-Pelagic Coupling of Biogeochemical Processes in the Northern Gulf of Mexico, Ocean Sciences Meeting, New Orleans, LA
- 2023 Texas A&M University, Dept. of Oceanography
- 2022 Texas A&M University, Dept. of Oceanography
- 2021 Oregon State University College of Earth, Ocean, and Atmos. Sciences
- 2019 Gulf of Mexico Oil Spill and Ecosystem Science Conference, Gulf of Mexico Research Initiative (GoMRI)
- 2018 GEOTRACES Town Hall at the Ocean Sciences Meeting, Portland, OR
- 2018 University of South Carolina, Marine Science Program Seminar
- 2018 Pomona College, Geology Department, Departmental Seminar
- 2017 Georgia Institute of Technology, School of Earth and Atmospheric Sciences Departmental Seminar
- 2016 Old Dominion University, Dept. of Ocean, Earth, and Atmospheric Science Colloquium
- 2016 Florida State University, Environmental Law Guest lecture
- 2016 Environmental Controls on Marine N₂ fixation: Present Knowledge and Future Challenges, New Orleans, LA, USA
- 2016 Florida State University, Dept. of Biology, Coastal and Marine Research Seminar and Discussion Group
- 2015 19th International Congress on Nitrogen Fixation, Asilomar, CA, USA
- 2013 Florida State University, Dept. of Earth, Ocean and Atmos. Science Seminar
- 2013 Texas A&M University, Dept. of Oceanography Seminars
- 2013 University of South Florida, College of Marine Science Seminar
- 2012 Rutgers University, Institute of Marine and Coastal Sciences Seminar
- 2012 Univ. of Texas at Austin's Marine Science Institute Seminar
- 2011 Chemical Oceanography Gordon Research Conference
- 2010 CLIVAR Workshop, "Predicting the Climate of the Coming Decades", RSMAS, University of Miami (A. Clement, B. Kirtman, Organizers)
- 2008 CSU Fullerton, Geological Sciences Department seminar (M. Kirby, host)
- 2007 Scripps Institute of Oceanography Geosciences, Marine Chemistry and Geochemistry seminar (L. Aluwihare, host)
- 2006 USC Marine Environmental Biology Dept. seminar series

- 2006 UCLA Dept. of Earth and Atmospheric Sciences, Coastal Meetings seminar series (N. Gruber, host)
- 2005 SPOT-ON Symposium (J. Montoya, M. Voss and W. Naqvi, organizers)
- 2005 DISCO symposium (NSF Chemical Oceanography, host)

Honors and awards

- 2011 University of Miami Provost's Research Award
- 2011 University of Miami's "SEEDS" (NSF-ADVANCE) You Choose Award
- 2006 UCAR/NOAA Climate and Global Change Postdoctoral Fellowship
- 2005 Arnold Guyot Teaching Award, Geosciences Dept., Princeton Univ.
- 2005 Invited participant of NSF/NOAA sponsored Dissertations Symposium on Chemical Oceanography (DISCO) XIX
- 2001 American Society for Engineering Education/National Defense Science and Engineering Graduate Fellowship
- 2000 Princeton University 1st Year Graduate Student Merit Fellowship
- 2000 Princeton University Graduate Student Merit Prize
- 2000 Princeton University Geosciences Department Harry Hess First year graduate student merit prize
- 1999 NASA Our Earth Space Grant summer internship
- 1999 Sigma Xi Honor Society member
- 1999 Whitman College Geology Dept. Leeds Prize in Geology
- 1999 Whitman College Abshire Award for Independent Study Research
- 1999 Whitman College Wailatpu Honor Society

Active Professional Memberships: American Geophysical Union (AGU), American Society for Limnology and Oceanography (ASLO), Sigma Xi

Professional Service

Panelist for NSF Chemical Oceanography, NOAA Global Carbon Cycle, and NASA Exobiology programs

Proposal Referee for NSF, BSF, Gordon & Betty Moore Foundation, California Sea Grant, MIT/Massachusetts Sea Grant and Rhode Island Sea Grant proposals

Associate Editor – Marine Chemistry

Manuscript Referee for Science, Nature, Nature Geosciences, Proceedings of the National Academy of Sciences, Geophysical Research Letters, Global Biogeochemical Cycles, Environmental Science & Technology, Environmental Microbiology, Geochimica et Cosmochimica Acta, Limnology and Oceanography, Deep-Sea Research, Limnology & Oceanography Methods, Marine Chemistry, Journal of Geophysical Research-Biogeosciences, Progress in Oceanography, Geology, Biogeochemistry, Biogeosciences, Marine Ecology Progress Series, Applied Geochemistry, Annals of Glaciology, Nitrogen in the Marine Environment (book chapter), and Marine Microbiology (book chapter).

Community & Departmental Service

- 8/2024 – current Qualifying Exam Committee, Oceanography Dept., TAMU
- 8/2024 – current Stable Isotope Geosciences Facility, TAMU Executive Committee
- 8/2024 – current Promotion and Tenure Committee, Oceanography Dept., TAMU
- 9/2023-10/2023 Institutional Effectiveness Reporting, EOAS Dept., FSU
- 2021 – 2022 Chair, EOAS Aqueous Trace Element Faculty Search Committee
- 2020 – current Chair, EOAS Dept. Diversity, Equity, and Inclusion Committee

2019 - current	U.S. GEOTRACES Steering Committee
2021 – current	NSF Research Coordination Network – Aquatic N ₂ fixation Steering Committee Member
2018 – present	Southeastern Biogeochemistry Symposium – FSU Steering Cmte Rep.
2019-2020	EOAS Dept. Solid Earth Process Faculty Hiring Committee Member
2019	FSU Roads Scholar host, Nadine McQuarrie, Univ. Pittsburgh
2017 - 2019	OCB N ₂ fixation working group member
2018	Southeastern Biogeochemistry Symposium, Organizing Committee
2016	Hosted former NSF Program Manager, Prof. D. Bronk, with support from the Office of Research and Proposal Development
2015 - current	EOAS Assistant in Research Search and Supervising Committees Member
2015 – 2019	EOAS Faculty contact for Facilities in the NRB and OSB building
2014 – 2016	Faculty Advisor for Re-think Energy Florida
2014 – 2018	FSU Earth, Ocean and Atmos. Sci. Dept. Environmental Science Curricular Committee Member
2013- current	John Winchester Fund Committee Member
2013 – current	FSU Faculty Mentor, Earth, Ocean and Atmos. Sci. Dept. Representative
2013-2014	Member of Phytoplankton Ecology Faculty Position Search Committee
2010 - 2013	Multiple mentoring activities for Univ. of Miami’s NSF-ADVANCE sponsored “Scientists and Engineers Expanding Diversity for Success” (SEEDS) program.
2007 – 2008	Co-founder of Southern California “Team Nitrogen” research consortium
2006 - 2008	Co-founder of Women in Science and Engineering postdoc group at USC
2003-2004	Graduate student liaison to Princeton University Geosciences department faculty meetings.
2002	Organized Geosciences departmental retreat to Killington Ski Resort, Killington, VT. Coordinated housing, meals, transportation, lift tickets, and academic talks for ~45 people.
1997	Whitman College Resident Advisor.

Postdoc Mentees

Chelsie Bowman, FSU, 6/2023 - present

Graduate Student Advisees

Heather Forrer, FSU, Ph. D., 2020 - 2022

Heather Forrer, University of Cape Town (co-advisor), Masters, 2020

Zhou Liang, FSU, Ph.D. student, 2020 – 2024

Zhou Liang, FSU, Masters graduate, 2018-2020

Kelly McCabe, FSU, Masters student, 2016 - 2018

Rachel Thomas, FSU, Ph.D. graduate, 2016 - 2022

Joanna Avery, FSU, Masters student, 2014 - 2015

Graduate Student Committee Member

Teagan Bellitto, TAMU Ph.D. student

Caroline Anderson, U New Hampshire Masters Committee (Graduated 2024)

Tanya Marshall, Univ. Cape Town, Ph.D. Candidate, External Referee (Graduated 2023)

Merid Schwartz, FSU, Masters Committee
 Natalia Yingling, FSU, Ph.D. Committee (Graduated 2024)
 Jared Rose, FSU, Masters Committee (Graduated 2023)
 Andrea Moore, FSU, Masters Committee (Graduated 2023)
 Virginia Biede, FSU, Ph.D. Committee (2020-2024)
 Rodriguez-Marrero, Luis, FSU, Ph.D. Committee
 Corday Selden, ODU, Ph.D. Committee (Graduated 2020)
 Brooke Barber, FSU, Master's Committee (Graduated 2020)
 Bobbie Renfro, FSU, Ph.D. Committee
 Kathryn Howe, FSU, Ph.D. Committee (Graduated 2023)
 Sean Newby, FSU, Ph.D. Committee (Graduated 2023)
 Randall Funderburk, FSU, Ph.D. Committee (Graduated 2019)
 Rachel Petet, FSU, Masters Committee (Graduated 2019)
 Chelsie Bowman, FSU, Ph.D. Committee (Graduated 2020)
 Brandon Wanner, FSU, Masters Committee
 Tom Kelly, FSU, Ph.D. Committee (Graduated 2020)
 Sarah Ellen Johnston, FSU, Ph.D. Committee (Graduated 2019)
 Tristyn Bercel, FSU, Ph.D. Committee (Graduated 2021)
 Nevin Kozic, FSU, Ph.D. Committee (Graduated 2022)
 Andrew Kleinberg, FSU, Masters Committee (Graduated 2017)
 Lauren Gillies, Ph.D. Committee (Graduated 2019)
 Alina Ebling, FSU, Ph.D. Committee, Ph.D. (Graduated 2016)
 Chalermrat Sangmanee, FSU, Ph.D. Committee (Graduated 2017)
 Tyler Mauney, FSU, Masters Committee, Masters (Graduated 2015)
 Angela Dial, FSU, Masters and Ph.D. Committee, Ph.D. (Graduated 2016)
 Robert Letscher, RSMAS/Univ. Miami, Ph.D. (Graduated 2012)
 Lauren Zamora, RSMAS/Univ. Miami, Ph.D. (Graduated 2010)
 Lisa Collins, Univ. Southern California, Ph.D (Graduated 2009)

Undergraduate Honors Thesis Supervisor

2024	Andrea Emmanuelli, FSU, Geology, thesis advisor
2022	Caitlin Volante, FSU, Neuroscience, committee member
2019	Samantha Howe, FSU, Environmental Sciences, thesis advisor
2020	Emily Dailey, FSU, Environmental Sciences, thesis advisor

Chairing of a Meeting Session

2024	Co-chair, Biogeochemical Cycling in the Caribbean Sea, the Gulf of Mexico and Beyond, Ocean Sciences Meeting, New Orleans, LA, USA
2020	Co-chair, Linking the biology, geochemistry, and circulation of the Gulf of Mexico. Ocean Sciences Meeting, San Diego, CA, USA.
2019	Co-chair, “Dissolved organic matter – DOC, DON, DOP, fDOM, cDOM”, Aquatic Sciences Meeting, San Juan, Puerto Rico
2018	Co-chair with S. Kranz, W. Mohr, “New insights into marine N ₂ fixation: From single cells to ecosystems” session at the 2018 Ocean Sciences Meeting, Portland, OR
2017	Co-chair with S. Bonnet, T. Moutin, and D. Capone, Session #019: “The biological carbon pump in the tropical Pacific Ocean” at Aquatic Sciences Meeting in Honolulu, HI.

2012 Co-chair with A. Santoro, S. Bonnet, and R. Foster at Ocean Sciences Meeting, Salt Lake City, Session #53, “Nitrogen and carbon cycling in the Eastern Tropical Pacific Ocean: Linking the OMZ to the open ocean”

Professional Presentations

- Submitted Wagner, N.D., Peace, A., **Knapp, A.N.**, Sterner, R.W., McManus, R., Li, N., Favaro, A., Goeckner, A.H., Lichtman, E., Kelly, P.T., Berberich, M., Fulweiler, W., Scott, J.T., Marcarelli, A.M., Understanding nitrogen fixation in phototrophic diazotrophs: Insights from a stoichiometric model, Submitted to the 2025 Aquatic Sciences Meeting
- Submitted Liang, Z., Letscher, R.L., **A.N. Knapp**, Oligotrophic Ocean New Production Supported by Lateral Transport of Dissolved Organic Nutrients, submitted to 2025 Xiamen Symposium on Marine Environmental Sciences
- Submitted Ryu, Y., Cadeau, P., Marconi, D., Luu, Vi., Smart, S.M., Fawcett, S.E., Zhang, R., Johnson, R., Haug, G.M., Martinez-Garcia, A., **Knapp, A.N.**, Ward, B.B., and D.M. Sigman, Isotopic evidence for two sources of dissolved organic nitrogen in the deep ocean, submitted to Fall AGU Meeting
- Submitted Lindgren, A., Tamborski, J., Smith, C.G., Hunt, H., Caprara, S., Conway, T., Chappell, P.D., Buck, K.N., Boiteau, R., and **A.N. Knapp**, Assessment of submarine groundwater discharge and its role as a nutrient source to the West Florida Shelf using Radium isotopes, submitted to Fall AGU Meeting
- 2024 Chappell, P.D., Einarsson, S.V., Powell, K.E., Fawcett, S.E., Kranz, S.A., **Knapp, A.N.**, and Graves, E.E., Interactions between iron, light, and silica limitation at the Subantarctic Front, 2024 Ocean Carbon and Biogeochemistry meeting, Woods Hole, MA, poster.
- 2024 Marcarelli, A., Fulweiler, R.W., Scott, T., Berberich, M., Damashek, J., Taylor, J., Groffman, P., **Knapp, A.N.**, Halvorson, H., Sterner, R.W., Harrison, J., Stanley, E., The aquatic nitrogen fixation research coordination network: goals, plans, and progress, 2024 Society for Freshwater Science Meeting, Philadelphia, Pennsylvania
- 2024 Peace, A., Berberich, M., Favaro, A., Goeckner, A., Kelly, P., **Knapp, A.N.**, Li, N., Litchman, E., Marcarelli, A., McManus, R., Sterner, R.W., Wagner, N.D., Understanding nitrogen fixation in phototrophic diazotrophs: insights from a stoichiometric model, 2024 Aquatic Sciences Meeting, Madison, Wisconsin
- 2024 Lindgren, A., Tamborski, J.J., Smith, C.G., Hunt, H., Conway, T., Chappell, P.D., Buck, K., Boiteau, R., and **A.N. Knapp**, Quantifying submarine groundwater discharge on the West Florida Shelf using Radium isotopes, 2024 Ocean Sciences Meeting, New Orleans, Louisiana
- 2024 Liang, Z., **Knapp, A.N.**, Marconi, D., and D.M. Sigman, Evaluating the Southern Ocean source of organic nutrients to the subtropical South Pacific, 2024 Ocean Sciences Meeting, New Orleans, Louisiana
- 2024 **Knapp, A.N.**, Barnard, S., Boiteau, R.M., Buck, K.N., Caprara, S., Chappell, P.D., Cleveland, C., Confesor, K., Conway, T.M., Gao, Y., Garrett, M., Hubbard, K.A., Hunt, H., Iorillo, A., Mulbach, E., Smith, C.G., Tamborski, J.J., and E.A. Webb, Sources and cycling of dissolved organic nitrogen and dissolved organic phosphorus on the West Florida Shelf, 2024 Ocean Sciences Meeting, New Orleans, Louisiana
- 2024 Farrell, I., Bright, P., Kouba, K., Lindgren, A., **Knapp, A.N.**, Hunt, H., Caprara, S., Buck, K.N., Chappell, P.D., Conway, T.M., Smith, C.G., Tamborski, J.J.,

- Webb, E.A., and R.M. Boiteau, Molecular tracking of dissolved organic nitrogen supplied by submarine groundwater discharge to the Gulf of Mexico, 2024 Ocean Sciences Meeting, New Orleans, Louisiana
- 2024 Ryu, Y., Marconi, D., Luu, V., Smart, S.M., Fawcett, S.E., Zhang, R., Johnson, R., **Knapp, A.N.**, Ward, B.B., and D.M. Sigman, Isotopic evidence for two sources of dissolved organic nitrogen in the deep ocean, 2024 Ocean Sciences Meeting, New Orleans, Louisiana
- 2024 Conway, T.M., **Knapp, A.N.**, Buck, K.N., Caprara, S., Hunt, H.R., Mellett, T., Schlaiss, R., and B.A. Summers, Characterizing the trace element biogeochemistry of the Florida Current, 2024 Ocean Sciences Meeting, New Orleans, Louisiana
- 2024 Confesor, K., **Knapp, A.N.**, Buck, K.N., Caprara, S., Boiteau, R., Conway, T., Hunt, H., Tamborski, J., Lindgren, A., Webb, E., and P.D. Chappell, Seasonal shifts in Trichodesmium clade distributions on the oligotrophic West Florida Shelf, 2024 Ocean Sciences Meeting, New Orleans, Louisiana
- 2024 Bowman, C.N., Hubbard, K.A., Garrett, M., Caprara, S., Buck, K.N., and **A.N. Knapp**, Spatial and temporal patterns of organic and inorganic nutrients along the West Florida Shelf, 2024 Ocean Sciences Meeting, New Orleans, Louisiana
- 2024 Emmanuelli, A., Cross, J. Hansell, D.A., Bowman, C.N. and **A.N. Knapp**, Tracking the sources of nitrogen in Southeastern Alaskan fjords, 2024 Ocean Sciences Meeting, New Orleans, Louisiana
- 2023 Knapp, A.N., West Florida Shelf nutrient and isotopic monitoring, Florida Harmful Algae Bloom Task Force, talk
- 2023 Liang, Z., Letscher, R., **Knapp, A.N.**, Organic nutrient production and consumption in the global surface ocean, Chem. Oc. Gordon Res. Seminar and Conf., talk and poster.
- 2023 Hunt, H., Boiteau, R., Buck, K., Chappell, P.D., Hall, E., Hubbard, K., **Knapp, A.N.**, Smith, C., Tamborski, J., Conway, T., Tracing riverine iron through dynamic estuarine systems to the West Florida Shelf, ASLO, talk.
- 2023 Marcarelli, A., **Knapp, A.N.**, Halvorson, H., Sterner, R., Berberich, M., Fulweiler, R.W., and J.T. Scott, Building stoichiometric predictions for nitrogen fixation across the aquascape, Conference on Biological Stoichiometry, Lincoln, Nebraska, USA, poster.
- 2023 Liang, Z., Letscher, R., and **A.N. Knapp**, Comparative surface ocean DOC:DON:DOP stoichiometry between the Atlantic and Pacific Oceans, The Sixth Xiamen Symposium on Marine Environmental Sciences, Xiamen, China.
- 2022 Landry, M.R., Malca, E., Kelly, T.B., Stukel, M.R., Shiroza, A., Swalethorp, R., Shropshire, T.A., **Knapp, A.N.**, Selph, K.E., Laiz-Carrion, R., Yingling, N., Gerard, T., and Lamkin, J.T., Physical transport and preferred prey effects on larval growth habitat for Atlantic bluefin tuna (*Thunnus thynnus*) in the Gulf of Mexico, Larval Fish Conference, San Diego, CA,
- 2022 Kranz, S., **Knapp, A.N.**, Thomas, R.T., and Rose, J., Investigating the impacts of iron and light on nitrate and carbon acquisition by two Southern Ocean phytoplankton species – an isotope approach, Carbon Concentrating Mechanism Conf., Princeton, NJ, poster
- 2022 Liang, Z., Marconi, D., Sigman, D., and **Knapp, A.N.**, Dissolved organic nitrogen concentration and $\delta^{15}\text{N}$ distribution along a zonal transect in the South Pacific, Ocean Sciences 2022 Meeting, talk

- 2022 Thomas, R., Fawcett, S., Forrer, H., Kranz, S., Chappell, P.D., Einarsson, S., Ryan-Keogh, T., Graves, E., Roychoudhury, A., Haraguchi, L., and **Knapp, A.N.**, Field-based nitrate assimilation isotope effect estimates from the Atlantic sector of the Southern Ocean, Ocean Sciences 2022 Meeting, talk
- 2022 Forrer, H., Bonnet, S., Thomas, R., Grosso, O., Guieu, C., and **Knapp, A.N.**, Geochemical signatures of nitrogen fixation in the Western Subtropical South Pacific: d15N budgets and low-d15N DON, Ocean Sciences 2022 Meeting, talk
- 2022 Graves, E., Einarsson, S., Powell, K., Fawcett, S., Forrer, H., Kranz, S., **Knapp, A.**, Thomas, R., Rose, J., and Chappell, P.D., Phytoplankton community composition in relation to physico-chemical gradients in the Atlantic sector of the Southern Ocean, Ocean Sciences 2022 Meeting, talk
- 2022 Confesor, K., Selden, C., Powell, K.E., **Knapp, A.N.**, Buck, K., Caprara, S., Mellett, T., and Chappell, P.D., Defining the realized niche of the two major clades of Trichodesmium: a study on the West Florida Shelf, Ocean Sciences 2022 Meeting, talk
- 2022 Chappell, P.D., Graves, E., Einarsson, S.V., Powell, K.E., Thomas, R.K., Forrer, H.J., Fawcett, S.E., **Knapp, A.N.**, and S.A. Kranz, Phytoplankton community responses to iron and light stress in the Atlantic sector of the Subantarctic and Antarctic, Ocean Sciences 2022 Meeting, talk
- 2021 Forrer, H., Bonnet, S., Guieu, C., and **Knapp, A.N.**, *Quantifying di-nitrogen fixation and its contribution to export production using $\delta^{15}N$ budgets near the Tonga Arc in the Western Sub-tropical South Pacific*, ASLO Summer 2021 Meeting, talk
- 2021 Thomas, R.K., Fawcett, S.E., Forrer, H.J., Kranz, S.A., Chappell, P.D., Einarsson, S.V., and **Knapp, A.N.**, *Field-based nitrate assimilation isotope effect estimates from the Atlantic sector of the Subantarctic Southern Ocean*, ASLO 2021 Summer meeting, talk
- 2021 Liang, Z., Letscher, R.T., and **Knapp, A.N.**, *Phosphate and iron control global surface ocean dissolved organic phosphorus concentrations*, ASLO 2021 Summer meeting, talk
- 2021 Rose, J.M., Thomas, R.K., Haraguchi, L., Einarsson, S.V., Forrer, H.J., Fawcett, S.E., Chappell, P.D., **Knapp, A.N.**, and Kranz, S.A., *Nitrate assimilation isotope effect estimates from incubation experiments of natural communities in the Atlantic sector of the Subantarctic under light and iron stress*, ASLO 2021 Summer meeting, talk
- 2020 Liang, Z., Letscher, R. T., McCabe, K., Marconi, D., Sigman, D. M., & **Knapp, A. N.**, *Dissolved organic phosphorus (DOP) distributions in the Eastern Indian Ocean and subtropical South Pacific Ocean*. Ocean Sciences Meeting, San Diego, CA, USA
- 2020 Conway, T. M., Summers, B. A., Caprara, S., Mellett, T., Schlaiss, R., Buck, K., Chappell, P. D., & **Knapp, A. N.**, *The biogeochemical cycling of Fe and Fe isotopes in the Gulf of Mexico and the Gulf Stream system*. Ocean Sciences Meeting, San Diego, CA, USA
- 2020 **Knapp, A. N.**, Howe, S., Miranda, C., Hayes, C., & Letscher, R., *The isotopic composition of water column nitrate in the Gulf of Mexico and Florida Straits*. Ocean Sciences Meeting, San Diego, CA, USA
- 2020 Forrer, H. J., **Knapp, A. N.**, Bornman, T. G., Thomas, R. K., Waterworth, S. C., Dorrington, R. A., & Fawcett, S. E., *Toward an improved understanding of the*

- Subantarctic biological pump: Phytoplankton group-specific contributions to and potential drivers of carbon export in the Indian sector of the Subantarctic Ocean.* Ocean Sciences Meeting, San Diego, CA, USA
- 2020 Confesor, K., Selden, C., Powell, K., Donahue, L., **Knapp, A. N.**, Buck, K., & Chappell, P. D., *An examination of niche separation in two primary Trichodesmium clades along the West Florida Shelf.* Ocean Sciences Meeting, San Diego, CA, USA
- 2020 Chappell, P. D., Buck, K., Selden, C., Caprara, S., Summers, B. A., Mellett, T., Confesor, K., Powell, K., Donahue, L., Boiteau, R., Charette, M., Tamborski, J., McKenna, A., & **Knapp, A. N.**, *Correlated dissolved organic nitrogen and dissolved iron concentrations on the West Florida Shelf: signatures of submarine groundwater discharge and Trichodesmium thiebautii.* Ocean Sciences Meeting, San Diego, CA, USA
- 2020 Yingling, N., Kelly, T., Shropshire, T., Selph, K., Landry, M., **Knapp, A. N.**, Kranz, S., & Stukel, M., *Phytoplankton nutrient uptake, size structure and biomass distribution in the spawning region of Atlantic Bluefin Tuna in the oligotrophic Gulf of Mexico.* Ocean Sciences Meeting, San Diego, CA, USA
- 2019 Conway, T.M., T. Mellett, B.A. Summers, R. Schlaiss, K.N. Buch, **A.N. Knapp**, and A.D. Rosenberg, *A high-resolution biogeochemical surface transect of the Florida Current of the Southern Gulf Stream along 26.8°N between Southeast Florida and the Bahamas,* Goldschmidt Geochemistry Conference, Barcelona, Spain
- 2019 **A.N. Knapp**, K. Buck, R. Boiteau, C. Miranda, A. McKenna, Y. Corilo, S. Caprara, P.D. Chappell, *Novel observations of correlated dissolved organic nitrogen and dissolved iron concentrations in the Gulf of Mexico,* Aquatic Sciences Meeting, San Juan, Puerto Rico
- 2019 Thomas, R., S. Fawcett, H. Forrer, **A. Knapp**, *Field-based estimates of the ¹⁵N and ¹⁸O isotope effects of nitrate assimilation in the Southern Ocean,* Aquatic Sciences Meeting, San Juan, Puerto Rico
- 2019 Dailey, E., **A. Knapp**, D. Goodwin, *Setting a baseline: Interannual variability of carbonate parameters in the Western South Pacific,* Aquatic Sciences Meeting, San Juan, Puerto Rico
- 2019 Gerard, T.L., A. Shiroza, E. Malca, J. Lamkin, M. Stukel, **A. Knapp**, M. Landry, K. Selph, and R. Laiz-Carrión, *Diet composition and feeding sources of Atlantic Bluefin Tuna (Thunnus thynnus) larvae of varying early life history stages in the Gulf of Mexico,* Gulf of Mexico Oilspill and Ecosystem Science Conference, New Orleans, LA
- 2019 **A.N. Knapp**, R. Thomas, M. Stukel, T. Kelly, M. Landry, K.E. Selph, E. Malca, T. Gerard, J. Lamkin, *Constraining the sources of nitrogen fueling phytoplankton and food webs in the Gulf of Mexico using nitrogen isotope budgets,* Gulf of Mexico, Gulf of Mexico Oilspill and Ecosystem Science Conference, New Orleans, LA
- 2019 **A.N. Knapp**, K. Buck, R. Boiteau, C. Miranda, A. McKenna, Y. Corilo, S. Caprara, P.D. Chappell, *Novel observations of correlated dissolved organic nitrogen and dissolved iron concentrations in the Gulf of Mexico,* Gulf of Mexico Oil Spill and Ecosystem Science Conference, New Orleans, LA, *invited*

- 2018 Forrer, H.J., T.G Bornman, S.C. Waterworth, **A.N. Knapp**, R.K. Thomas, R.A. Dorrington, and S.E. Fawcett, Phytoplankton group-specific contributions to the Subantarctic biological pump, Polar2018, Davos, Switzerland
- 2018 **A.N. Knapp**, K. Buck, R. Boiteau, C. Miranda, A. McKenna, Y. Corilo, S. Caprara, and P.D. Chappell, Dissolved iron and dissolved organic nitrogen concentrations are correlated in Gulf of Mexico surface waters, talk, Ocean Sciences Meeting, Portland, OR
- 2017 **Knapp, A.N.**, K.N. Buck, R. Boiteau, C. Miranda, A. McKenna, S. Caprara, and P. D. Chappell, Novel observations of correlated dissolved organic nitrogen and dissolved iron concentrations in the Gulf of Mexico, Chemical Oceanography Gordon Research Conference, poster, New London, NH
- 2017 **A.N. Knapp**, O. Grosso, N. Leblond, T. Moutin, S. Bonnet, and M. Caffin, Quantifying di-nitrogen fixation and its contribution to export production using $\delta^{15}\text{N}$ budgets along unique geochemical gradients in the southwest Pacific Ocean, talk, Aquatic Sciences Meeting, Honolulu, HI
- 2017 Ebling, A.M., J.R. Westrich, E.K. Lipp, K. Buck, R. Shelly, **A.N. Knapp**, T.B. Kelly, and W.M. Landing, The biogeochemistry of trace elements in the sea surface microlayer in response to atmospheric deposition, talk, Aquatic Sciences Meeting, Honolulu, HI
- 2016 **A.N. Knapp**, K.L. Casciotti, M.G. Prokopenko, Surface ocean dissolved organic nitrogen concentration and isotopic composition in the eastern tropical South Pacific, Ocean Sciences Meeting, New Orleans, LA, USA, talk
- 2015 **A.N. Knapp**, S.E. Fawcett, A. Martinez-Garcia, N. Leblond, and S. Bonnet, Nitrogen isotopic evidence for a shift from nitrate- to diazotroph-fueled export production in large-volume marine mesocosm experiments, Chemical Oceanography Gordon Research Conference
- 2014 B. Peters, C. Buchwald, **A. Knapp**, K. Casciotti, Tracking nitrate isotopes along density surfaces in the eastern tropical south Pacific, Ocean Sciences Meeting, Hawaii
- 2014 W. Berelson, M. Prokopenko, W. Haskell, D. Capone, **A. Knapp**, D. Hammond, Export, sediment traps and sediment diagenesis provide evidence of OMZ impact on pelagic-benthic coupling in the ETSP, Ocean Sciences Meeting, Hawaii.
- 2014 M.G. Prokopenko, D.E. Hammond, W.M. Berelson, L.Y. Yeung, R. Stanley, W.Z. Haskell II, H. Brix, N. Rollins, R. Foster, D. Capone, **A. Knapp**, Linking biogeochemistry and hydrography in the transition zone between coastal upwelling regime and subtropical gyre, Ocean Sciences Meeting, Hawaii.
- 2013 R.T. Letscher, D.A. Hansell, C.A. Carlson, R. Lumpkin, **A.N. Knapp**, Global patterns of surface ocean dissolved organic nitrogen with investigation of its fate, ASLO Meeting, New Orleans.
- 2012 **A.N. Knapp**, K.L. Casciotti, C. Buchwald, S. Bonnet, J. DeKaezemacker, T. Gunderson, M. Prokopenko, W.M. Berelson, D.G. Capone, Quantifying the importance of nitrate and N_2 fixation as sources of new N for export production in the Eastern Tropical South Pacific using N isotope budgets, Ocean Sci. Meeting, Salt Lake City, talk.
- 2012 D.G. Capone, M. Tiahlo, **A. Knapp**, T. Moutin, W. Berelson, Carbon fixation and phosphorus turnover in surface waters of the Eastern Tropical South Pacific (ETSP), Ocean Sci. Meeting, Salt Lake City, talk.

- 2012 W. Berelson, N. Rollins, W. Haskell, C. Tems, C. Wolfe, M. Prokopenko, **A.N. Knapp**, K.L Casciotti, D.E. Hammond, D.G. Capone, Sedimentation and biogenic matter remineralization in the Eastern Tropical South Pacific (ETSP); sediment trap and sediment pore water fluxes, Ocean Sci. Meeting, Salt Lake City, talk.
- 2012 J. Dekaezemacker, S. Bonnet, K.A. Turk-Kubo, T. Moutin, O. Grosso, **A.N. Knapp**, D.G. Capone, Organic/inorganic nutrient control of N₂ fixation in the Eastern Tropical South Pacific, Ocean Sci. Meeting, Salt Lake City, talk.
- 2012 D.E. Hammond, M.G. Prokopenko, L.Y. Yeung, W.M. Berelson, R. Stanley, W.Z. Haskell II, **A.N. Knapp**, N. Rollins, E.D. Young, D.G. Capone, Net community and gross photosynthetic production rates in the ETSP, based on O₂/Ar ratios and triple oxygen isotopic composition of dissolved O₂, Ocean Sci. Meeting, Salt Lake City, poster.
- 2012 R.T. Letscher, **A.N. Knapp**, D.A. Hansell, Differential cycling of DOC and DON across the Eastern Tropical South Pacific, Ocean Sci. Meeting, Salt Lake City, poster.
- 2012 W.Z. Haskell II, D. Kadko, W.M. Berelson, D.E. Hammond, **A.N. Knapp**, D.G. Capone, Upwelling velocities and eddy diffusivity from ⁷Be measurements used to compare vertical nutrient fluxes to export POC flux in the ETSP, Ocean Sci. Meeting, Salt Lake City, poster.
- 2011 J. Dekaezemacker, S. Bonnet, K. Turk, T. Moutin, O. Grosso, **A. Knapp**, and D. Capone, Dinitrogen fixation above oxygen minimum zones, EUR-OCEANS Conference on ocean de-oxygenation, Toulouse, France.
- 2011 **A.N. Knapp**, D.M. Sigman, F. Lipschultz, A.B. Kustka, D.G. Capone, Isotopic analysis of bulk, LMW, and HMW DON δ¹⁵N indicates recycled nitrogen release from marine DON, Chemical Oceanography Gordon Research Conference, invited talk.
- 2011 **A.N. Knapp**, J. Dekaezemacker, S. Bonnet, J.A. Sohm, D.G. Capone, Sensitivity of *Trichodesmium* and *Crocospaera* spp. growth and N₂ fixation rates to macro nutrient variation in batch cultures, ASLO Aquatic Sciences Meeting, talk.
- 2010 **A.N. Knapp**, D.M. Sigman, F. Lipschultz, A.B. Kustka, D.G. Capone, Isotopic analysis of bulk, LMW, and HMW DON δ¹⁵N indicates recycled nitrogen release from marine DON, AGU Fall Meeting, Abstracts with program, #OS32A-02, talk.
- 2010 **A.N. Knapp**, New insights on new nitrogen: Implications for the biological pump on decadal time scales, CLIVAR Workshop, Predicting the Climate of the Coming Decades, invited talk.
- 2009 Spencer, P.K., and **A.N. Knapp**, Age, correlation, and ecology of eolian and non-eolian facies of the Palouse silt, Southeastern Washington, GSA Cordilleran Section meeting, 2009, GSA Abstracts with Programs, talk.
- 2008 M.G. Hastings, **A.N. Knapp**, D.M. Sigman, F. Lipschultz, and J.N. Galloway, The isotopic composition of fixed nitrogen species in precipitation at Bermuda: Implications for the atmosphere and ocean, AGU Fall meeting, EOS Trans., AGU, 89(53) Fall Meet. Suppl., Abstract OS14B-03.
- 2008 **A.N. Knapp**, M.G. Hastings, D.M. Sigman, F. Lipschultz, and J.N. Galloway. The flux and isotopic composition of reduced and total nitrogen in Bermuda rain. Ocean Sciences meeting, 2008, Abstracts with program, p. 124, talk.

- 2007 **A.N. Knapp**, D.M. Sigman, A. Kustka, F. Lipschultz, D.G. Capone, T. Gunderson. Oligotrophic bulk surface ocean dissolved organic nitrogen does not respond to changes in N₂ fixation rates. ASLO Spring Meeting, 2007, Abstracts with program, p. 96, talk.
- 2005 **A.N. Knapp**, D.M. Sigman, F. Lipschultz. Nitrate and DON concentration and isotopes between Bermuda and Puerto Rico. SPOT ON symposium, 2005. Abstracts with program, p.12, invited talk.
- 2004 **A.N. Knapp**, D.M. Sigman, F. Lipschultz. The nitrogen isotopes of nitrate and total nitrogen between Bermuda and Puerto Rico. AGU 2004 Fall Meeting, Abstracts with program, H51E-04, p. 367, talk.
- 2004 **A.N. Knapp**, D. M. Sigman, F. Lipschultz. The isotopic composition of dissolved organic nitrogen and nitrate at the Bermuda Atlantic Time-series Study. ESA 2004 Annual Meeting. Abstracts with program.
- 2003 **A.N. Knapp**, D.M. Sigman. Stable isotopic composition of dissolved organic nitrogen from the surface waters of BATS. ASLO Spring Meeting 2003. Abstracts with program, SS3.18; p. 78-79, talk.
- 2001 **A.N. Knapp**, D.M. Sigman, L. van Geen, D.C. McCorkle, J.A. Brandes, R.C. Thunell. Discerning between water column and sedimentary denitrification in the Santa Barbara Basin using the nitrogen isotopes of nitrate. Eos. Trans. AGU, 82(20) 2001 Spring Meet. Suppl., Abstract #H51C-06, talk.
- 1999 **A.N. Knapp** and P.K. Spencer. Gastropod molluscs of the Palouse Loess; A potentially useful biostratigraphic marker. GSA Cordilleran Section Meeting, 1999. Abstracts with Program, poster.
- 1999 **A.N. Knapp**. Aqueous Geochemistry of the Mill River Watershed, Northampton, MA. Twelfth Keck Research Symposium in Geology Proceedings. Carleton College, Northfield, Minnesota, April, 1999. p. 157-160, poster.
- 1999 **A.N. Knapp** and A.G. Monders. Aqueous geochemistry of Roaring Brook, Mill River watershed, Northampton, MA. Northwest Scientific Association Annual Meeting, Tacoma, WA, 1999. Abstracts with program, p.39, talk.

Research and Field Experience

- 2023 **Field work**, Chief Scientist on 15 day cruise aboard the R/V Endeavor in the Gulf of Mexico studying interaction of submarine groundwater discharge, nitrogen, iron, and *Trichodesmium* spp., 29 Jun – 13 Jul 2023
- 2023 **Field work**, Chief Scientist on 15 day cruise aboard the R/V Atlantic Explorer in the Gulf of Mexico studying interaction of submarine groundwater discharge, nitrogen, iron, and *Trichodesmium* spp., 20 Feb-6 March 2023
- 2019 **Field work**, Chief Scientist on 4 day cruise aboard R/V Weatherbird II studying carbon, nitrogen, and iron cycling in the Gulf of Mexico
- 2018 **Field work**, Co-Chief Scientist on 4 day cruise aboard R/V Hogarth studying carbon, nitrogen, and iron cycling in the Gulf of Mexico
- 2015 **Field work**, Co-PI on 4 day cruise aboard R/V Weatherbird II studying nitrogen cycling in the Gulf of Mexico
- 2011 **Field work**, Co-PI and Co-Chief Scientist on 5 week cruise aboard R/V Melville studying nitrogen cycling in the Eastern Tropical South Pacific
- 2010 **Field work**, Co-PI and Co-Chief Scientist on 5 week cruise aboard R/V Atlantis studying nitrogen cycling in the Eastern Tropical South Pacific.

- 2002, 2003 **Field work**, R/V Weatherbird II and R/V Revelle Collected water samples for DON and NO₃⁻ analysis between Bermuda and Puerto Rico, and off Hawaiian Islands, respectively.
- 1999-2000 **Research technician** University of Washington, Chemical Oceanography department. Supervised by Anthony Aufdenkampe, Jeffrey Richey, and John Hedges. Made [DOC] measurements, prepared samples for CHN, nutrient, and stable isotope analysis. Field work off Baja California on R/V Melville.
- 1998 – 1999 **Independent research** Completed thesis “Aqueous Geochemistry of Mill River, MA Watershed”, as well as second research project, “Biostratigraphic significance of two gastropod mollusk faunules from the Palouse loess, southeastern Washington”.
- Jul-Aug 1998 **Geologic Field camp** YBRA/U Penn Field Camp, Red Lodge, MT.

Teaching experience

- Fall 2024 OCNG, Communicating Ocean Sciences, TAMU
- Fall 2021 Professional Skills Development, OCC-5930, OCE-4930, Florida State University
- Spring+Fall 2021, Chemical Oceanography Seminar, OCC-5939, Florida State University
Fall 2022, Spring 2023
- Spring 2020, 2024 History of Earth Systems, ESC-3100, Florida State University
- Spring 2017, 2019, Geochemical Ocean Tracers, OCC-5417, Florida State University
2021, 2023
- Spring 2016, 2018 Habitable Planet, OCE-3555, Florida State University
- Fall 2014-2023 Basic Chemical Oceanography, OCC-4002, OCC-5050, Florida State University
- 2011 Guest lecturer, Univ. of Miami, BIL/MSC 315, Marine Biota and Biogeochemical Cycles
- 2009 - 2012 Guest lecturer; Univ. of Miami, RSMAS MAC 605, Marine and Atmospheric Chemistry
- 2004 – 2006 Teaching transcript, Princeton University. McGraw Center for Teaching and Learning program for training graduate students in pedagogical technique.
- Fall 2004 Assistant in instruction, Princeton University. Led discussion and problem solving sessions for GEO 207, “A Guided Tour of the Solar System” taught by Prof. Thomas Duffy.
- Fall 2003 Assistant in instruction, Princeton University. Developed, taught, and graded labs for Freshman Seminar, “The Ocean Environment” as well as organized and participated in week-long field trip to Bermuda Institute of Ocean Sciences. Taught by Prof. Daniel Sigman.
- 1998 – 1999 Teaching assistant, Whitman College. Assisted in instruction for both introductory and historical geology laboratories, which included field trips, stream table, rock identification, and paleontology.

Undergraduate Mentoring

- 2024-current Alexa Liebhart, TAMU Oceanography undergraduate
- 2024 Katharine Thomas, FSU Env. Sci. undergraduate
- 2024 Lauren Pinder, FSU Env. Sci. undergraduate, WiMSE scholar
- 2024 Justice Stewart, FSU Env. Sci. undergraduate

2024 Gavin Coleman, FSU Env. Sci. graduate, pre-Env. Law
 2022 – 2023 Isabella Lizalda, FSU undergraduate Env. Sci. major, WiMSE scholar
 2021 - 2024 Andrea Emmanuelli, FSU Geology undergraduate, WiMSE scholar
 2021 – 2022 Emily-Elizabeth Grams, FSU Geology undergraduate
 2021 – 2022 Christine Cremeans, FSU Biochemistry undergraduate
 2021 – 2022 Troy Placid, FSU Biochemistry undergraduate
 2020 – 2021 Dylan Opitz, FSU Geology undergraduate
 2020 Caitlin Volante, FSU Psychology undergraduate, WiMSE scholar
 2019 Roberto Gamez, FSU Environmental Chemistry undergraduate
 2018 – 2019 Emily Dailey, FSU undergraduate honors thesis
 2018 – 2021 Luciana Villarroel, FSU Environmental Chemistry undergraduate
 2018 – 2019 Stephanie Hefelfinger, FSU undergraduate
 2018 – 2019 Juliet Tretler, FSU undergraduate
 2017 – 2019 Samantha Howe, FSU undergraduate honors thesis
 2016 – 2018 Jennifer Magi, FSU undergraduate, NOAA Hollings Fellow
 2016-2017 Yuliya Danuk, FSU undergraduate honors committee member
 2015 – 2017 Isaiah Rivera, FSU undergraduate
 2015 – 2017 Anna Hayward, FSU undergraduate
 2013 – 2019 Carlos Miranda, FSU undergraduate
 2013 – 2014 Herbert Johnson, FSU undergraduate
 2012 – 2013 Blaire Umhau, RSMAS Undergraduate honors thesis
 2011 – 2012 Jeremy Whitehead, RSMAS, Undergraduate student, NO₃ analysis
 2011 – 2013 Stephanie Cortes, RSMAS, Undergraduate student, NO₃ analysis
 2011 – 2013 Julie Sanders, RSMAS, Undergraduate student, NO₃, DON analysis
 2011 – 2012 Andrew Christopher, RSMAS, Undergraduate student, NO₃ analysis
 2011 – 2012 Joseph Kelly, RSMAS, Undergraduate student, NO₃ analysis
 2009 – 2011 Brian Peters, RSMAS, Undergraduate honors thesis, NO₃, DON analysis
 2007 – 2008 Zack Porter, USC work study, training on NO_x box, Berelson lab
 2007 Carla Steinbring, USC, REU summer student, DON/DOP project