

Abigail E. Noble, Ph.D.

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SUMMARY

Dedicated professional applying leadership, management, and problem solving skills to new projects and programs. Expert analytical chemist with a strong track record of collaborative success on multidisciplinary projects with teams from diverse backgrounds.

EDUCATION

Massachusetts Institute of Technology/Woods Hole Oceanographic Institution,

Cambridge & Woods Hole, MA

Ph.D., Chemical Oceanography, 2012

Haverford College, Haverford, PA

B.S., Organic Chemistry, 2004

PROFESSIONAL EXPERIENCE

Gradient, Cambridge, MA

March 2014 – September 2017

Associate Consultant, Environmental Chemist

- Managed fast turnaround and multi-year projects in environmental compliance and litigation.
- Drafted proposals, scopes, budgets, and managed project team, progress, and client communications.
- Provided technical support and chemistry expertise for environmental consulting projects.
- Expertise: chemistry (analytical, organic, inorganic), data quality assessment, international chemical registration, regulatory research, green chemistry initiatives, environmental sampling methods.
- Example clientele: transportation company, consumer product manufacturer, energy company, municipality, agriculture company, oil company, Superfund PRP cooperating group.

M.I.T., Cambridge, MA

January 2012 – March 2014

Postdoctoral Associate

- Investigated the evolution of dissolved lead and lead isotopes in the Atlantic Ocean through participation in the International GEOTRACES program.
- Participated in interdisciplinary research expeditions in the Pacific Ocean.
- Mentored graduate and undergraduate students, meeting regularly to discuss their research progress.

Woods Hole Oceanographic Institution, Woods Hole, MA

October 2011 – January 2012

Postdoctoral Investigator

- Investigated the ocean cycling of dissolved cobalt and cobalt chemical speciation across the North Atlantic Ocean through participation in the International GEOTRACES program.

Woods Hole Oceanographic Institution, Woods Hole, MA

June 2006 – October 2011

Graduate Research Assistant

- Investigated the ocean cycling of trace metals (Co, Fe, Mn, Cd, Ni) in several ocean basins (Ross Sea, Arctic Ocean, Equatorial Pacific, South Atlantic Ocean).
- Measured trace level (ppt) concentrations of dissolved metals in seawater using inductively coupled plasma mass spectrometry (ICP-MS), and adsorptive cathodic stripping voltammetry

M.I.T., Cambridge, MA

Spring 2010

Teaching Assistant for Graduate-level Aquatic Chemistry course

- Ran weekly recitation session, graded problem sets, met with students privately and in groups.

Woods Hole Oceanographic Institution, Woods Hole, MA

July 2004 – June 2006

Research Assistant II

- Assisted to plan, pack, order, ship for, and participate in five major research expeditions at sea.
- Measured trace level (ppt) concentrations of dissolved metals in seawater samples.
- Team member on scientific projects to study the ocean cycling of metal micronutrients in the ocean.
- Performed general lab maintenance and supply ordering.

SUMMARY OF QUALIFICATIONS

Teamwork/Problem Solving

- Extensive experience working long hours in isolated environments with research teams and ship's crew.
- Worked with a team of 5 to execute a difficult field expedition in Antarctica, camping on sea ice.
- Designed and constructed specialized lab spaces for contamination-sensitive analyses as a part of a team.
- Composed successful proposals for 3 research grants.
- Participated in 11 field expeditions, totaling > 7 months at sea.
- Member of three NCAA Div. III college varsity athletic teams

Leadership and Management

- Completed PSMJ Resources, Inc. Project Management bootcamp training.
- Tutored for General Chemistry and Organic Chemistry 2002-2004
- Resident Assistant and student mentor for incoming freshmen 2001-2002
- Musical director of the Oxford Blues a capella group 2002-2003
- Captained an NCAA Varsity Cross Country team, high school cross country team, and basketball team.

General Skills

- Proficient at Excel, Word, MacOS, iOS, and Windows
- Excellent writing skills
- Elementary HTML, CSS, JavaScript

Professional Activities

- Invited to be a grant proposal reviewer for the *National Science Foundation*.
- Invited to be a manuscript reviewer for peer reviewed scientific journals: *Marine Chemistry*, *Biogeosciences*, *Global Biogeochemical Cycles*, *Chemical Geology*, *Deep-Sea Research II*, and *Earth and Planetary and Science Letters*.
- WHOI/MIT Joint Program Treasurer - Fall 2008- Fall 2009

Community Service and Personal Activities

- Avid road cyclist and bike commuter
- Fundraiser and rider: 175 mile National Multiple Sclerosis Society, Cape Cod Getaway - 2014 - present
- Volunteer at Greater Boston Foodbank as a part of Gradient's annual service day - 2015 & 2016
- Fundraiser and rider: Vermont Foodbank Harpoon Point to Point ride - 2014

Publications

- **Noble, AE**; Tuit, CB; Maney, JP; Wait, AD. "A Review of Marine Water Sampling Methods for Trace Metals." *In prep*.
- Hawco, NJ; Lam, PJ; Lee, JM; Ohnemus, DC; **Noble, AE**; Wyatt, NJ; Lohan, MC; Saito, MA. 2017, "Cobalt scavenging in the mesopelagic ocean and its influence on global mass balance: Synthesizing water column and sedimentary fluxes." *Marine Chemistry* doi:10.1016/j.marchem.2017.09.001.
- Saito, MA; **Noble, AE**; Hawco, N; Twining, BS; Ohnemus, DC; John, SG; Lam, P; Conway, TM; Johnson, R; Moran, D; McIlvin, M. 2017, "The Acceleration of Dissolved Cobalt's Ecological Stoichiometry due to Biological Uptake, Remineralization, and Scavenging in the Atlantic Ocean." *Biogeosciences*, accepted manuscript, <https://doi.org/10.5194/bg-2016-511>.
- **Noble, AE**; Ohnemus, DC; Lam, PJ; Saito, MA. 2017, "Coastal sources, sinks and strong organic complexation of dissolved cobalt within the US North Atlantic GEOTRACES transect GA03." *Biogeosciences* 14 :2715-2739. doi: 10.5194/bg-14-2715-2017.
- The GEOTRACES Group (comprises 135 authors, of which **AE Noble** is one). "The GEOTRACES Intermediate Data Product 2014." 2015. *Marine Chemistry* doi:10.1016/j.marchem.2015.04.005.
- **Noble, AE**; Echegoyen-Sanz, Y; Boyle, EA; Ohnemus, DC; Lam, PJ; Kayser, R; Reueur, M; Wu, J; Smethie, W. 2015 "Dynamic variability of dissolved Pb and Pb isotope composition from the U.S. North Atlantic GEOTRACES Transect." *Deep-Sea Res. II*. 116(208-225)
- Guannel, ML; Harine, D; Twiner, MJ; Wang, Z; **Noble, AE**; Lee, PA; Saito, MA; Rocap, G. 2015. "Toxicogenicity and biogeography of the diatom *Pseudo-nitzschia* across distinct environmental regimes in the South Atlantic Ocean." *Marine Ecology Progress Series*. 526:67-87. doi: 10.3354/meps11027.

- Cox, AD; **Noble, AE**; Saito, MA. 2014. "Cadmium enriched stable isotope uptake and addition experiments with natural phytoplankton assemblages in the Costa Rica Upwelling Dome." *Marine Chemistry* 166: 70-81.
- Ahlgren, NA; **Noble, A**; Patton, AP; Roache-Johnson, K; Jackson, L; Robinson, D; McKay, C; Moore, LR; Saito, MA; Rocab, G. 2014. The unique trace metal and mixed layer conditions of the Costa Rica upwelling dome support a distinct and dense community of *Synechococcus*. *Limnol. and Oceanogr.* 59(6):2166-2184.
- **Noble, AE**; Moran, DM; Allen, AE; Saito, MA. 2013. "Dissolved and particulate trace metal micronutrients under the McMurdo Sound seasonal sea ice: basal sea ice communities as a capacitor for iron." *Frontiers in Chemistry* (1). doi: 10.3389/fchem.2013.00025.
- Saito, MA; **Noble, AE**; Tagliabue, A; Goepfert, TJ; Lamborg, CH; Jenkins, WJ. 2013. "Slow-spreading submarine ridges in the South Atlantic as a significant oceanic iron source." *Nature Geosciences* doi: 10.1038/NGEO1893.
- **Noble, AE**. 2012. "Influences on the Oceanic Biogeochemical Cycling of the Hybrid-Type Metals: Cobalt, Iron and Manganese [Thesis]." Submitted to MIT/WHOI. 296p.
- **Noble, AE**; Lamborg, CH; Ohnemus, DC; Lam, PJ; Goepfert, TJ; Measures, CI; Frame, CH; Casciotti, KL; DiTullio, GR; Jennings, J; Saito, MA. 2012. "Basin-scale inputs of cobalt, iron, and manganese from the Benguela-Angola front to the South Atlantic Ocean." *Limnol. and Oceanogr.* 57(4):989-1010.
- Sohm, JA; Hilton, JA; **Noble, AE**; Zehr, JP; Saito, MA; Webb, EA. 2011. "Nitrogen fixation in the South Atlantic Gyre and the Benguela Upwelling System." *Geophys. Res. Letters*. 38. doi: 10.1029/2011GL048315.
- Saito, MA; Goepfert, TJ; **Noble, AE**; Bertrand, EM; Sedwick, PN; DiTullio, GR. 2010. "A seasonal study of dissolved cobalt in the Ross Sea, Antarctica: micronutrient behavior, absence of scavenging, and relationships with Zn, Cd, and P." *Biogeosciences* 7:4059-4082.
- Hearn, MJ; Cynamon, MH; Chen, MF; Coppins, R; Davis, J; Joo-On Kang, H; **Noble, A**; Tu-Sekine, B; Terrot, MS; Trombino, D; Thai, M; Webster, ER; Wilson, R. 2009. "Preparation and antitubercular activities in vitro and in vivo of novel Schiff bases of isoniazid." *European Journal of Medicinal Chemistry* 44:4169-4178.
- **Noble, AE**; Saito, MA; Maiti, K; Benitez-Nelson, C. 2008. "Cobalt, manganese, and iron near the Hawaiian Islands: A potential concentrating mechanism for cobalt within a cyclonic eddy and implications for the hybrid-type trace metals." *Deep-Sea Res. Part II* 55:1473-1490.
- Bertrand, EM; Saito, MA; Rose, JM; Rieselmann, CM; Lohan, MC; **Noble, AE**; Lee, PA; DiTullio, GR. 2007. "Vitamin B12 and iron colimitation of phytoplankton growth in the Ross Sea." *Limnol. and Oceanogr.* 52(3): 1079-1093.
- Ma S; **Noble, A**; Butcher, D; Trouwborst, R; Luther, GW. 2006. "Removal of H₂S via an iron catalytic cycle and iron sulfide precipitation in the water column of dead end tributaries." *Estuarine and Coastal Shelf Science* 70:461-472.