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Education

- **Ph.D. in Coastal Oceanography**, State University of New York at Stony Brook, Stony Brook, New York; August 2002 (Co-advisors: **Sergio Sañudo-Wilhelmy & Edward J. Carpenter**).
- **B.S. in Natural Resources Management (Fisheries Science)**, Cook College, Rutgers University; May 1993.

Research Experience

- Assistant Research Professor (Sept. 2007 – present); Research Associate (Dec. 2006 – August 2007); Rutgers University, Institute of Marine and Coastal Sciences.
- Postdoctoral Research Associate (Sept 2002-Nov. 2006); Princeton University. Department of Geosciences. Advisor: **François M.M. Morel**.
- Doctoral Research, State University of New York at Stony Brook, Stony Brook, New York. Marine Sciences Research Center. January 1998 – August 2002.
(Co-advisors: **Sergio Sañudo-Wilhelmy & Edward J. Carpenter**)
Dissertation title: Iron nutrition and metabolism in field and laboratory populations of the marine N₂-fixing cyanobacterium, *Trichodesmium spp.*

Peer-reviewed Publications

- Bellenger, J.P., T.D. Wichard, **A.B. Kustka**, and A.M. Krapiel. Catechol siderophores mediate molybdate and vanadate oxyanion acquisition in the nitrogen fixing bacterium, *Azotobacter vinelandii* (submitted to Nature Geosciences).
- Subramaniam, A., P.L. Yager, E. J. Carpenter, C. Mahaffey, K. Björkman, S. Cooley, **A.B. Kustka**, J.P. Montoya, S. A. Sañudo-Wilhelmy, R. Shipe, and D.G. Capone. Amazon River enhances diazotrophy and carbon sequestration in the tropical North Atlantic Ocean (submitted, Nature).
- Morel, F.M.M., **A.B. Kustka**, and Y. Shaked. The role of unchelated Fe in the Fe nutrition of phytoplankton. (in press, Limnol. Oceanogr.).
- 2007 **Kustka, A.B.**, A. Allen, and F.M.M. Morel. Sequence analysis and regulation of iron acquisition genes in two marine diatoms. *J. Phycol.* 43:715-729.
- 2006 Burns, J., J.P. Zehr, J.P. Montoya, **A.B. Kustka**, and D.G. Capone. Effects of EDTA additions on natural populations of *Trichodesmium* (Cyanophyta). *J. Phycol.* 42:900-904.

- 2006 Tovar-Sanchez, A., S. Sañudo-Wilhelmy, **A.B. Kustka**, S. Agusti, J. Dachs, D. Hutchins, C. Duarte. Impact of dust deposition and river discharges on trace metal composition of *Trichodesmium spp.* in the Tropical and Subtropical North Atlantic Ocean. *Limnol. Oceanogr.* 51: 1755-1761.
- 2005 Campbell, L., E.J. Carpenter, J.P. Montoya, **A.B. Kustka**, and D.G. Capone. Picoplankton community structure within and outside a *Trichodesmium* bloom in the southwestern Pacific Ocean. *Vie et Milieu Special Edition on Picoplankton.*
- 2005 **Kustka, A.B.**, Y. Shaked, A.J. Milligan, D.W. King, and F.M.M. Morel. Extracellular production of superoxide by marine diatoms: Contrasting effects on iron redox cycling and availability. *Limnol. Oceanogr.* 50: 1172-1180.
- 2005 Shaked, Y., **A.B. Kustka**, F.M.M. Morel. A general kinetic model for iron acquisition by eukaryotic phytoplankton. *Limnol. Oceanogr.* 50: 872-882.
- 2004 Shaked, Y., **A.B. Kustka**, Y. Erel and F.M.M. Morel. Simultaneous determination of iron reduction and uptake by phytoplankton. *Limnol. Oceanogr. Methods* 2:137-145.
- 2003 **Kustka, A.B.**, E.J. Carpenter, S. Sañudo-Wilhelmy, J. Burns, D. Capone, and W.G. Sunda. Iron requirements for N₂ and NH₄⁺ supported growth in cultures of *Trichodesmium* (IMS 101): comparison with nitrogen fixation rates and Fe: C ratios of field populations. *Limnol. Oceanogr.* 48: 1869-1884.
- 2003 **Kustka, A.B.**, S. Sañudo-Wilhelmy, E.J. Carpenter, D.G. Capone, and J.A. Raven. A revised iron use efficiency model of nitrogen fixation, with special reference to the marine N₂ fixing cyanobacterium, *Trichodesmium spp.* (Cyanophyta). *J. Phycol.* 39: 12-25.
- 2002 **Kustka, A. B.**, and S. Sañudo-Wilhelmy. Iron and marine nitrogen fixation: progress and future directions. *Res. Microbiol.* 153: 255-262.
- 2001 Sañudo-Wilhelmy, S.A., **A.B. Kustka**, C.J. Gobler, D.A. Hutchins, M. Yang, K. Lwiza, J. Burns, D.G. Capone, J.A. Raven, and E.J. Carpenter. Phosphorus limitation of nitrogen fixation by *Trichodesmium* in the central Atlantic Ocean. *Nature* 411: 86-89.
- 1997 Stefano, G., B. Salzet, C.M. Rialas, M. Pope, **A. Kustka**, K. Neenan, S. Pryor, M. Salzet. Morphine and anandamine stimulated nitric oxide production inhibits presynaptic dopamine release. *Brain Research* 763 (1): 63-68.

In preparation manuscripts

- Knapp, A.N., **A.B. Kustka**, F. Lipschultz, and D.M. Sigman. The relationships among dinitrogen fixation and dissolved organic nitrogen concentration and isotopic composition in the oligotrophic ocean. (in prep. for *Global Biogeochem. Cycles*).
- Knapp, A.N., **A.B. Kustka**, and D. Sigman. Isotopic composition of size-fractionated dissolved organic nitrogen from the oligotrophic ocean. (in prep. for *Limnol. Oceanogr.*)
- Finzi, J., **A.B. Kustka**, and D.G. Capone. Photosynthesis and diazotrophy- irradiance relationships in iron and phosphorus limited cultures of the marine cyanobacterium, *Trichodesmium* (IMS 101). (in prep. for *J. Phycol.*)

Grants

- January 2000. NSF Biocomplexity Initiative: “Biocomplexity: Factors affecting, and impact of, diazotrophic microorganisms in the western Equatorial Atlantic Ocean.”, Edward J. Carpenter, Co-P.I., \$795,000 to EJC. *(A. Kustka, assistance to EJC in grant preparation).
- September 2007 – 2010. NSF Biol. Oceanogr. Collaborative Research: Iron storage in diatoms and N₂ fixing cyanobacteria: mechanisms, regulation and biogeochemical significance. A. Kustka (PI) and B. Twining (Co-PI); \$387,693 to ABK.
- September 2007 – 2010. NSF Biol. Oceanogr.). Collaborative research: Expression profiling and functional genomics of a pennate diatom: mechanisms of iron acquisition, stress acclimation, and recovery. A. Allen (PI) and A. Kustka (Co-PI); \$313,484 to ABK.

Awards / Honors

- 2007. Frontiers in Geobiology Workshop, Gottingen, Germany.
- 2003. Dissertation Initiatives for the Advancement of Limnology and Oceanography Award Recipient, Bermuda.
- 2001. Research Fellow, Swedish Foundation for International Cooperation in Research and Education, University of Stockholm, Sweden.
- 1992. NOAA Undergraduate Research Fellow. Rutgers University Marine Field Station, Rutgers University.

Formal Teaching Experience

- Spring 2007. Guest lectures. Princeton University. Introductory Oceanography.
- Fall 1995. Teaching Assistant. SUNY Stony Brook. Foundations of Biology: Organisms to Ecosystems. Conducted three weekly laboratory sessions. Held review sessions, administered and graded exams and lab practicals.
- Spring 1999. Teaching Assistant SUNY Stony Brook. Chemical Oceanography. Held review and tutorial sessions. Gave lectures on thermodynamics and redox equilibria.

Informal Teaching Activities (*# resulted in presentation at national meeting/manuscripts in prep.)

- 2006 CEBIC Outreach undergraduate student mentor (Middlesex County Community College; Ms. Rita Mwikali).
- 2005 Summer undergraduate student mentor (Univ. British Columbia, Ms. Melissa Rohde)
- 2003-2006 Morel lab Radiation Safety Officer. Responsible for teaching new and experienced radioisotope users radiation safety concepts and practices in compliance with NRC and university regulations (in addition to regulatory duties).
- 2004 Research collaboration with U. Southern California Ph.D. student (Ms. J. Finzi)*#
- 2004 Research collaboration with Princeton Ph.D. student (Ms. Angela Knapp)#
- 2004 CEBIC Outreach undergraduate student mentor (Mercer County Community College; Mr. Kehinde Majekodunmi).
- 2004 Summer undergraduate student mentor (Rutgers University, Mr. William Seyfarth)
- 2003 Lab-Field Trip Coordinator, Cub Scouts Pack 66 (Lake Carnegie Algae and You)

- 2002 Research collaboration with Southampton College undergraduate (Ms. J. Reimer)*
- 2001 Independently supervised M.S. students on separate 6 week research expeditions (Mssrs. Nathan Buck and William Kentrup).
- 1997 Guest Lecturer. Rutgers University Academy for Life Long Learning.

Services

- 2007 Participant, *Aureococcus anophagefferens* genome annotation; *Emiliana huxleyi* genome annotation (DOE Microbial Genome Program; pending); Reviewer *Funct. Plant Biol.* 2007 ASLO Aquatic Sciences Meeting Session Chair (with Elena Litchman; <http://www.sgmeet.com/aslo/santafe2007/sessionschedule.asp?SessionID=SS34>)
- 2006 Reviewer *Limnology and Oceanography* (2), *Journal of Phycology*, *Aquatic Microbial Ecology*, *Marine Ecology Progress Series*, *NSF Chemical Oceanography* (2).
- 2005 ASLO Aquatic Sciences Meeting Session co-chair (with J.A. Raven, R.A. Armstrong; <http://aslo.org/meetings/slc2005/topical.html>; TS26); Reviewer for: *Marine Ecology Progress Series*, *Limnology and Oceanography* (2), *NSF Biological Oceanography*, *Aquatic Microbial Ecology* (2), *Environmental Microbiology*.
- 2002-2004 Reviewer for: *NSF Chemical Oceanography* (2), *Aquatic Microbial Ecology*, *Journal of Phycology* (2), *Limnology and Oceanography Methods*, *Limnology and Oceanography*, *Marine Ecology Progress Series*; ASLO Student Poster Judge.

Oceanographic Field Experience

- August-September 2003: R/V Kilo Moana; Bering Sea
- March-May 1998: R/V Roger Revelle; South Pacific.
- October-November 1999: R/V Maurice Ewing; Australia.
- January-February 2001: R/V Seward Johnson; Western Equatorial Atlantic.
- July-August 2001: R/V Knorr; Western Equatorial Atlantic.

Other Experience / Training

- 1993,1995,1997 U.S. Environmental Protection Agency Summer Internship. Region II Ambient Monitoring and Assessment Branch, Edison, New Jersey.
- 2002 Participant, Cold Spring Harbor Laboratory “The Genome Access Course”.
- 2005 Participant, Cold Spring Harbor Laboratory “Protein Purification and Characterization Course”.

Professional Society Memberships

- 2004-present American Society for Microbiology.
- 1999-present Phycological Society of America.
- 1997-present American Society of Limnology and Oceanography.
- 1999-present American Geophysical Union.