

CURRICULUM VITAE

William M. Landing, M.S., Ph.D.
Department of Earth, Ocean, and Atmospheric Science
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PERSONAL:

Born: March 16, 1953 Boston, Massachusetts. U.S. Citizen

EDUCATION:

Ph.D. (Chemistry) University of California, Santa Cruz	1983
M.S. (Chemical Oceanography) University of Washington	1978
B.A. (Chemistry) University of California, Santa Cruz	1975

ACADEMIC POSITIONS:

Professor, Department of Earth, Ocean, and Atmospheric Science, Florida State University	2010-Present
Courtesy Professor, Department of Chemistry and Biochemistry, Florida State University	2000-Present
Honorary Visiting Professor with the Faculty of Science, University of Plymouth, UK	2009-Present
Professor, Department of Oceanography, Florida State University	1996-2010
Associate Professor, Department of Oceanography, Florida State University	1991-1996
Assistant Professor, Department of Oceanography, Florida State University	1985-1991
NSF/NATO Post-Doctoral Fellow	1984-1985
Department of Analytical and Marine Chemistry Chalmers University of Technology and University of Göteborg, Sweden	
Post-Doctoral Research Associate, University of California, Santa Cruz	1983-1984
Adjunct Lecturer, Chemistry Board, University of California, Santa Cruz	1982, 1983

RESEARCH INTERESTS:

Environmental chemistry, chemical oceanography, low-temperature aqueous geochemistry, mercury cycling in the environment, atmospheric chemistry and deposition.

- (1) Biogeochemistry of trace elements in marine and fresh waters with emphasis on the effects of biological and inorganic processes on dissolved - particulate fractionation, solution speciation, and redox chemistry;
- (2) Development of analytical schemes for studies of trace element concentrations, equilibrium complexes and redox states in natural waters and the atmosphere.
- (3) Chemistry and deposition of atmospheric aerosols and precipitation.
- (4) Mercury cycling in the atmospheric and in aquatic environments.

SOCIETY MEMBERSHIPS:

Alpha Chi Sigma
American Chemical Society
American Geophysical Union
American Society of Limnology and Oceanography
The Oceanographic Society
Union of Concerned Scientists

HONORS AND AWARDS:

1974 USC Oncology Training Fellowship
1980 NOAA Distinguished Authorship Award
1982 Dissertations Symposium in Chemical Oceanography (DISCO-IV) Participant
1984 NSF/NATO Post-Doctoral Fellowship
2007 Editor's citation for Excellence in Refereeing; JGR-Oceans

NATIONAL/INTERNATIONAL SERVICE:

- 1987 Invited participant. CHEMRAWN IV, modern chemistry and chemical technology applied to the oceans and its resources. Keystone, Co.
- 1988 AGU/ASLO Ocean Sciences Meeting, Session Chairman, "Biogeochemistry and Diagenetic Processes in Suboxic and Anoxic Marine Environments."
- 1989 American Chemical Society Fall National Meeting, Session Chairman, "Symposium on Aqueous Chemistry and Geochemical Cycles of Iron and Manganese: Geochemistry of Marine and Estuarine Systems."
- 1990 UNESCO/IOC Trace Metals Baseline Expedition in the Southeast Atlantic, Coordinator/"Designated Sampler" for U.S. participation.
- 1990 NSF Chemical Oceanography Proposal Evaluation/Review Panel.
- 1991 NSF Steering Committee Member, "Analysis and Characterization of Marine Particles."
- 1991 NSF Chemical Oceanography Proposal Evaluation/Review Panel.
- 1991 NOAA Proposal Evaluation/Review Panel.
- 1992 American Geophysical Union Ocean Sciences Meeting, Session Chairman, "Biogeochemical Cycling in the Atlantic Ocean," Session I and II.
- 1993 UNESCO/IOC Trace Metals Baseline Expedition in the North Atlantic, Coordinator for U.S. participation.
- 1994 International Conference on Mercury as a Global Pollutant, Whistler, BC, Session Chairman.
- 1995 American Chemical Society Fall National Meeting, Symposium organizer and session chairman, "Mercury Deposition and Cycling," Sessions 1-4.
- 1999 American Chemical Society Fall National Meeting, Symposium organizer and session chairman, "Geochemistry and Bioavailability of Nitrogen and Phosphorus in Dissolved Organic Compounds".
- 1999 (to present) Associate Editor, MARINE CHEMISTRY (Elsevier).
- 2001 Program Chair-Elect, Geochemistry Division, American Chemical Society
- 2002 Program Chair and Chair-Elect, Geochemistry Division, American Chemical Society
- 2002 American Geophysical Union Fall National Meeting, Session Chair, "Impacts of Air/Sea Exchange on Biogeochemical Processes in the Ocean I."
- 2002 American Geophysical Union Fall National Meeting, Session Chair, "Impacts of Air/Sea Exchange on Biogeochemical Processes in the Ocean II Posters."
- 2003 Chair, Geochemistry Division, American Chemical Society.
- 2005 Member, US GEOTRACES Steering Committee (through 2014).
- 2013 UNESCO-SCOR Working Group 141 Sea-Surface Microlayers; Full Member (to present).
- 2015 Member, International GEOTRACES Data Management Committee (to present).

GRADUATE STUDENTS:

	Date Entered:	Date Graduated (degree):
Paulo Barrocas	Jan-1998	December, 2003 (Ph.D.)
Clifton Buck	Aug-2001	August, 2008 (Ph.D.)
Sara D. Cleveland	Sep-2003	April 2007 (M.S.)
Angela Dial	Sep-2010	April 2013 (MS); August 2016 (Ph.D.)
Alina Ebling	Jul-2009	December 2016 (Ph.D.)
Carley Farst (Chemistry Department)	Jan-2010	December 2015 (Ph.D.)
Kathleen Gosnell	Sep-2006	December, 2009 (M.S.)
Jane L. Guentzel	Jan-1990	February, 1997 (Ph.D.)
Paul Hansard	Sep-2002	August, 2008 (Ph.D.)
Nishanth Krishnamurthy	Aug-2008	Continuing
Christopher J. Lach	Sep-1988	June, 1991 (MS)
Brent L. Lewis	Sep-1986	December, 1990 (Ph.D.)
Rodney T. Powell	Sep-1988	December, 1991 (MS); December 1995 (Ph.D.)
John Rolison	Jul-2009	June 2012 (M.S.)

Scott Sigler
Jintu Wang

Jan-1995
Sep-1988

December, 1998 (MS)
November, 1992 (MS)

CURRENT POST-DOCTORAL RESEARCH ASSOCIATES:

Rachel Shelley (2017-present)

FORMER POST-DOCTORAL RESEARCH ASSOCIATES:

Johan Schijf (1994-1995), Associate Professor, University of Maryland, MD, USA

David Kurk (2000-2002), Research Scientist, US Army Center for Health Promotion and Preventive Medicine, MD, USA

Angela Milne (2007-2010), Research Scientist, University of Plymouth, Plymouth, UK

Peter L. Morton (2010-2014), Assistant Scholar Scientist, FSU NHMFL, USA

Rachel U. Shelley (2010-2013), Research Scientist, University of Brest, France.

Clifton S. Buck (2011-2013), Assistant Professor, Skidaway Institute of Oceanography, University of Georgia.

Neil J. Wyatt (2014-2017)

COURSES TAUGHT:

UC Santa Cruz:

CHEM 120 Principles of Instrumental Analysis (upper-division undergraduate course) (1982, 1983).

Florida State University:

OCE-1001 Elementary Oceanography (undergraduate "breadth" requirement for non-science majors).
Lecture and Online-only versions.

ISC-2003 Global Change: Its Scientific and Human Dimensions (undergraduate interdisciplinary course)

OCE-4008 Principles of Oceanography (upper division non-specialist course)

OCC-5050 Basic Chemical Oceanography (graduate level core-course)

OCC-5052 Aquatic Chemistry (thermodynamics, speciation, kinetics)

OCC-5065 Environmental Chemistry (anthropogenic influences on the environment)

OCC-5939 Chemical Oceanography Seminar (invited speakers and student presentations)

OCC-5415 Marine Geochemistry (cosmogogenesis, terrestrial and marine geochemical cycles)

OCC-5417 Geochemical Ocean Tracers (physical modeling, tracers)

OTHER SIGNIFICANT TEACHING EFFORTS:

Individual Research Project Sponsor; FSU Young Scholars Program Summer Science and Math Camp (two students per summer; 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2004, 2005, 2007, 2009, 2010, 2011, 2014).

Undergraduate Research Sponsor; CHEM 1051L Honors Program (1-2 students each year; 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2010, 2011).

Undergraduate Research Sponsor; ONR Program in Environmental Numerical Modeling Support for Under-Represented Groups (Prof. J.J. O'Brien, Dr. Patricia Stith); (1 undergraduate student each year; 1994, 1995).

Undergraduate Research Sponsor: NSF Research Experiences for Undergraduates Program; (support each year for undergraduate research assistants).

Undergraduate Research Sponsor: FSU Women in Math Science and Engineering Program (WIMSE) (2009, 2012, 2013, 2014, 2015, 2016).

REFEREED PUBLICATIONS (Graduate Students in BOLD):

1. R.A. Feely, E.T. Baker, J.D. Schumacher, G.J. Massoth, and **W.M. Landing**. Processes affecting the distribution and transport of suspended matter in the Northeast Gulf of Alaska. *Deep-Sea Research* 26(4), 445-464. 1979.
2. **W.M. Landing** and K.W. Bruland. Manganese in the North Pacific. *Earth and Planetary Science Letters* 49, 45-56. 1980.
3. **W.M. Landing** and R.A. Feely. The chemistry and vertical flux of particles in the Northeastern Gulf of Alaska. *Deep-Sea Research* 28(1), 19-37. 1981.
4. R.A. Feely, G.J. Massoth, and **W.M. Landing**. Major and trace element composition of suspended matter in

- the N.E. Gulf of Alaska: relationships with major sources. *Marine Chemistry* 10, 431-453. 1981.
5. K.W. Bruland, **R.P. Franks**, **W.M. Landing** and A. Soutar. Southern California inner basin sediment trap calibration. *Earth and Planetary Science Letters* 53, 400-408. 1981.
 6. W.M. Landing, **C. Haraldsson**, and **N. Paxeus**. Vinyl polymer agglomerate based transition metal cation chelating ion-exchange resin containing the 8-hydroxyquinoline functional group. *Analytical Chemistry* 58, 3031-3035. 1986.
 7. **W.M. Landing** and K.W. Bruland. The contrasting biogeochemistry of iron and manganese in the Pacific Ocean. *Geochimica et Cosmochimica Acta* 51, 29-43. 1987.
 8. W.M. Landing and S. Westerlund. The solution chemistry of ferrous iron in Framvaren Fjord. *Marine Chemistry* 23, 329-343. 1988.
 9. W.C. Burnett, W.M. Landing, W.B. Lyons, and W.H. Orem. Jellyfish Lake, Palau: a model anoxic environment for geochemical studies. *EOS Transactions of the American Geophysical Union*, 70(33), 777-783. 1989.
 10. **S.A. Gropper**, K. Anderson, W.M. Landing, and P.B. Acosta. The selenium status of formula-fed and cow's milk-fed infants. *Journal of the American Dietetic Association*, 90(11), 1547-1550. 1990.
 11. W.H. Orem, W.C. Burnett, W.M. Landing, W.B. Lyons, and W. Showers. Jellyfish Lake, Palau: early diagenesis of organic matter. *Limnology and Oceanography*, 36(3), 526-543. 1991.
 12. W.M. Landing, W.C. Burnett, W.B. Lyons, and W.H. Orem. Nutrient cycling and the biogeochemistry of manganese, iron, and zinc in Jellyfish Lake, Palau. *Limnology and Oceanography*, 36(3), 515-525. 1991.
 13. **B.L. Lewis** and W.M. Landing. The biogeochemistry of manganese and iron in the Black Sea. *Deep-Sea Research* 38, 773-803. 1991.
 14. **J. Schijf**, H.J.W. de Baar, J.R. Wijbrans, and W.M. Landing. Dissolved rare earth elements in the Black Sea. *Deep-Sea Research* 38, 805-824. 1991.
 15. W.M. Landing and **B.L. Lewis**. Thermodynamic modeling of trace metal speciation in the Black Sea. In: NATO-ASI Symposium Series "Black Sea Oceanography", E. Izdar and J.W. Murray (eds.), 125-160. 1991.
 16. W.M. Landing and P.A. Yeats. The analysis and characterization of marine particles: sample manipulation and speciation. Chapter 2, 23-32. In: *Geophysical Monograph 63, Marine Particles: Analysis and Characterization*, David C. Hurd and Derek W. Spencer (eds), American Geophysical Union, Washington D.C., 472 pp. 1991.
 17. W.M. Landing and **B.L. Lewis**. Collection, processing, and analysis of marine particulate and colloidal material for transition metals, Chapter 5, 263-272. In: *Geophysical Monograph 63, Marine Particles: Analysis and Characterization*, David C. Hurd and Derek W. Spencer (eds), American Geophysical Union, Washington D.C., 472 pp. 1991.
 18. **B.L. Lewis** and W.M. Landing. The investigation of dissolved and suspended-particulate trace metal fractionation in the Black Sea. *Marine Chemistry* 40, 105-141. 1992.
 19. **K. Kenison Falkner**, G.P. Klinkhammer, **T.S. Bowers**, J.F. Todd, **B.L. Lewis**, W.M. Landing, and J.M. Edmond. The behavior of barium in anoxic marine waters. *Geochimica et Cosmochimica Acta* 57, 537-554. 1993.
 20. E.R. Sholkovitz, W.M. Landing, and **B.L. Lewis**. Ocean particle chemistry: the fractionation of rare earth elements between suspended particles and seawater. *Geochimica et Cosmochimica Acta* 58, 1567-1579. 1994.
 21. W.M. Landing, G.A. Cutter, J.A. Dalziel, A.R. Flegal, **R.T. Powell**, D. Schmidt, A. Shiller, P. Statham, S. Westerlund, and **J. Resing**. Analytical intercomparison results from the 1990 Intergovernmental Oceanographic Commission Open-Ocean Baseline Survey for Trace Metals: Atlantic Ocean. *Marine Chemistry* 49, 253-265. 1995.
 22. C. Pollman, G. Gill, W. Landing, **J. Guentzel**, D. Bare, D. Porcella, E. Zillioux, and T. Atkeson. Overview of the Florida Atmospheric Mercury Study (FAMS). *Water, Air and Soil Pollution* 80, 285-290. 1995.
 23. G.A. Gill, **J.L. Guentzel**, W.M. Landing, and C.D. Pollman. Total gaseous mercury measurements in Florida: The FAMS project (1992-1994). *Water, Air and Soil Pollution* 80, 235-244. 1995.
 24. **J.L. Guentzel**, W.M. Landing, G.A. Gill, and C.D. Pollman. Atmospheric deposition of mercury in Florida: The FAMS Project (1992-1994). *Water, Air and Soil Pollution* 80, 393-402. 1995.
 25. W.M. Landing, **J.J. Perry, jr.**, **J.L. Guentzel**, G.A. Gill, and C.D. Pollman. Relationships between the atmospheric deposition of trace elements, major ions, and mercury in Florida: The FAMS Project (1992-1993). *Water, Air, and Soil Pollution* 80, 343-352. 1995.

26. **R.T. Powell**, D.W. King, and W.M. Landing. Iron distributions in surface waters of the south Atlantic. *Marine Chemistry* 50, 13-20. 1995.
27. **R.T. Powell**, W.M. Landing, and J.E. Bauer. Colloidal trace metals, organic carbon, and nitrogen in a southeastern U.S. estuary. *Marine Chemistry* 55, 165-176. 1996.
28. **J.L. Guentzel**, **R.T. Powell**, W.M. Landing, and R.P. Mason. Mercury associated with colloidal material in an estuarine and an open ocean environment. *Marine Chemistry* 55, 177-188. 1996.
29. G.A. Cutter, W.M. Landing, C.T. Measures, and P.A. Yeats. The IOC Baseline Survey for Trace Contaminants in the Atlantic Ocean. *EOS Trans. of the American Geophysical Union*, Vol. 77(2), 9-13. 1996.
30. K.O. Buesseler, J.E. Bauer, R.F. Chen, T.I. Eglinton, **O. Gustafsson**, W.M. Landing, K. Mopper, S.B. Moran, P.H. Santschi, and R. Vernon-Clark. An intercomparison of cross-flow filtration techniques for sampling marine colloids - Overview and organic carbon results. *Marine Chemistry* 55, 1-31. 1996.
31. **R. Reitmeyer**, **R.T. Powell**, W.M. Landing, and C.I. Measures. Colloidal aluminum and iron in seawater - an intercomparison between various cross-flow ultrafiltration systems. *Marine Chemistry* 55, 75-91. 1996.
32. W.B. Lyons, R.M. Lent, W.C. Burnett, **P.Chin**, W.M. Landing, W.H. Orem, and J.M. McArthur. Jellyfish Lake, Palau: Regeneration of C, N, Si, and P in anoxic marine lake sediments. *Limnology and Oceanography* 41(7), 1394-1403. 1996.
33. S.B. Moran, **M.A. Charette**, J.A. Hoff, R.L. Edwards, and W.M. Landing. Distribution of Th-230 in the Labrador Sea and its relation to ventilation. *Earth and Planetary Science Letters*, 150, 151-160. 1997.
34. W.M. Landing, **J.L. Guentzel**, G.A. Gill, and C.D. Pollman. Methods for measuring mercury in rainfall and aerosols in Florida. *Atmospheric Environment*, 32/5, 909-918. 1998.
35. **J.L. Guentzel**, W.M. Landing, G.A. Gill, and C.D. Pollman. Mercury and major ions in rainfall, throughfall, and foliage from the Florida Everglades. *The Science of the Total Environment* 213, 43-51. 1998.
36. P.J. Statham, P.A. Yeats, and W.M. Landing. Manganese in the eastern Atlantic Ocean: processes influencing deep and surface water distributions. *Marine Chemistry* 61, 55-68. 1998.
37. R. Ebinghaus, S.G. Jennings, W.H. Schroeder, T. Berg, T. Donaghy, **J. Guentzel**, C. Kenny, .H. Kock1, K. Kviatkus, W. Landing, T. Mühleck, J. Munthe, E.M. Prestbo, D. Schneeberger, F. Slemr, J. Sommar, A. Urba, D. Wallschläger, Z. Xiao. International field intercomparison measurements of atmospheric mercury species at Mace Head, Ireland. *Atmospheric Environment* 33(18), 3063-3073. 1999.
38. **Mortazavi, B.** Iverson-R-L. Landing-W-M. Lewis-F-G. Huang-W., Control of phytoplankton production and biomass in a river-dominated estuary: Apalachicola Bay, Florida, USA., *Marine Ecology progress Series*, 198, 19-31. 2000.
39. **Mortazavi, B.** Iverson RL, Landing WM, Huang W. Phosphorus Budget of Apalachicola Bay: a River-Dominated Estuary in the Northeastern Gulf of Mexico. *Marine Ecology Progress Series* 198, 33-42. 2000.
40. **H. Dierssen**, W. Balzer, and W.M. Landing. Simplified synthesis of a cation-chelating resin: application to trace metal profiles from Jellyfish Lake, Palau. *Marine Chemistry* 73, 173-192. 2001.
41. **J.L. Guentzel**, W.M. Landing, G.A. Gill, and C.D. Pollman. Processes influencing rainfall deposition of mercury in Florida: The FAMS Project (1992-1996), *Environmental Science and Technology* 35, 863-873. 2001.
42. Wang, Y., Hsieh, Y. P., Landing, W., Choi, Y., Salters, V., and Campbell, D. Chemical and carbon isotopic evidence for the source and fate of dissolved organic matter in the Florida Everglades. *Biogeochemistry* 61(3), 269-289. 2002.
43. **Jennifer M. Llewelyn**, William M. Landing, Alan G. Marshall and William T. Cooper. Electrospray Ionization Fourier Transform Ion Cyclotron Resonance Mass Spectrometry of Dissolved Organic Phosphorus Species in a Treatment Wetland after Selective Isolation and Concentration. *Analytical Chemistry* 74 (3): 600-606. 2002.
44. C.D. Pollman, W.M. Landing, **J.J.Perry jr.**, and T. Fitzpatrick. Wet deposition of phosphorus in Florida. *Atmospheric Environment* 36 (14): 2309-2318. 2002.
45. **Alexandra C. Stenson**, William M. Landing, Alan G. Marshall and William T. Cooper. Ionization and Fragmentation of Humic Substances in Electrospray Ionization Fourier Transform Ion Cyclotron Resonance Mass Spectrometry. *Analytical Chemistry*, 74, 4397-4409. 2002.
46. **M.T. Brown**, W. M. Landing, C.I. Measures. Dissolved and particulate Fe in the western and central North Pacific: Results from the 2002 IOC Cruise. *Geochemistry, Geophysics, Geosystems* 6(10), 1-20. 2005.

47. **Buck, C. S.**, W. M. Landing, J. A. Resing, and G. T. Lebon. Aerosol iron and aluminum solubility in the northwest Pacific Ocean: Results from the 2002 IOC cruise, *Geochemistry, Geophysics, Geosystems*, 7, Q04M07, doi:10.1029/2005GC000977. 2006.
48. Measures, C. I., G. A. Cutter, W. M. Landing, and **R. T. Powell**. Hydrographic observations during the 2002 IOC Contaminant Baseline Survey in the western Pacific Ocean, *Geochemistry, Geophysics, Geosystems*, 7, Q03M06, doi:10.1029/2004GC000855. 2006.
49. Andrew R. Bowie, Simon J. Ussher, William M. Landing, and Paul J. Worsfold. Intercomparison between FI-CL and ICP-MS for the determination of dissolved iron in Atlantic seawater. *Environmental Chemistry*, 4, 1–4. doi:10.1071/EN06073, 2007.
50. Kenneth S. Johnson, Virginia Elrod, Steve Fitzwater, and Joshua Plant, Edward Boyle and **Bridget Bergquist**, Kenneth Bruland, **Ana Aguilar- Islas**, **Kristen Buck**, Maeve Lohan, Geoffrey J. Smith, and Bettina Sohst, Kenneth Coale, Michael Gordon, and Sara Tanner, Chris Measures, James Moffett, Katherine Barbeau and **Andrew King**, Andrew Bowie, Zanna Chase, Jay Cullen, Patrick Laan, William Landing, **Jeffrey Mendez**, Angela Milne, Hajime Obata and Takashi Doi, **Lia Ossiander**, Geraldine Sarthou, Peter Sedwick, Stan Van den Berg and Luis Laglera- Baquer, Jingfeng Wu and Yihua Cai. Developing Standards for Dissolved Iron in Seawater, *EOS-Transactions of the American Geophysical Union*, Vol. 88, No. 11, 13 March 2007.
51. Measures, C. I., W. M. Landing, **M. T. Brown**, and **C. S. Buck**, High-resolution Al and Fe data from the Atlantic Ocean CLIVAR-CO2 Repeat Hydrography A16N transect: Extensive linkages between atmospheric dust and upper ocean geochemistry, *Global Biogeochem. Cycles*, 22, GB1005, doi:10.1029/2007GB003042. 2008.
52. Measures, C.I., Landing, W.M., Brown, **M.T.**, **Buck, C.S.**, A commercially available rosette system for trace metal–clean sampling, *Limnology and Oceanography: Methods*, 6, 384–394, 2008.
53. **Buck, C.S.**, Landing W.M., Resing, J.A., Measures, C.I., The solubility and deposition of aerosol Fe and other trace elements in the North Atlantic Ocean: Observations from the A16N CLIVAR/CO2 repeat hydrography section, *Marine Chemistry*, Volume 120, Issues 1–4, 20, 57–70, 2010.
54. **Buck, C.S.**, William M. Landing and Joseph A. Resing. Particle size and aerosol iron solubility: A high-resolution analysis of Atlantic aerosols. *Marine Chemistry*, Volume 120, Issues 1–4, 20, 14–24, 2010.
55. **Hansard, S.P.**, and W.M. Landing. Determination of iron(II) in acidified seawater samples by luminol chemiluminescence. *Limnology and Oceanography Methods*, 7, 222–234, 2009.
56. **Hansard, S.P.**, W.M. Landing, C.I. Measures, B.M. Voelker. Dissolved iron(II) in the Pacific Ocean: Measurements from the PO2 and P16N CLIVAR/CO2 repeat hydrography expeditions. *Deep Sea Research-I*, 56, 1117–1129, 2009.
57. Sunderland, E.M., David P. Krabbenhoft, John W. Moreau, Sarah A. Strode, and William M. Landing. Mercury sources, distribution, and bioavailability in the North Pacific Ocean: Insights from data and models. *Global Biogeochemical Cycles*, VOL. 23, GB2010, doi:10.1029/2008GB003425, 2009.
58. Ussher, S.J., Angela Milne, William M. Landing, **Kakar Attiq-ur-Rehman**, **Marie J. M. Séguret**, Toby Holland, Eric P. Achterberg, Abdul Nabi, and Paul J. Worsfold. Investigation of iron(III) reduction and trace metal interferences in the determination of dissolved iron in seawater using flow injection with luminol chemiluminescence detection. *Analytica Chimica Acta* 652, 259–265, 2009.
59. Prospero, J.M., and W.M. Landing, African Dust Deposition to Florida: How well do dust models perform? *IOP Conf.Series: Earth and Environmental Science* 7, doi:10.1088/1755-1307/7/1/012015, 2009.
60. Prospero, J. M., W. M. Landing, and M. Schulz. African Dust Deposition to Florida: Temporal and Spatial Variability and Comparisons to Models, *J. Geophys. Res.*, doi:10.1029/2009JD012773, 2009.
61. **Ranville, Mara A.**, Gregory A. Cutter, **Cliff S. Buck**, William M. Landing, Lynda S. Cutter, Joseph A. Resing, and A. Russell Flegal. Aeolian contamination of Se and Ag in the North Pacific from Asian fossil fuel combustion. *Environmental Science and Technology*, 44, 1587–1593, 2010.
62. Landing, W.M., Caffrey, J.M., **Nolek, S.D.**, **Gosnell, K.J.** and Parker, W.C. Atmospheric wet deposition of mercury and other trace elements in Pensacola, Florida. *Atmos. Chem. Phys.*, 10, 4867–4877, 2010.
63. Caffrey, J.M., W.M. Landing, **S.D. Nolek**, **K.J. Gosnell**, S.S. Bagui, and S.C. Bagui. Atmospheric deposition of mercury and major ions to the Pensacola (Florida) watershed: spatial, seasonal, and inter-annual variability. *Atmos. Chem. Phys.*, 10, 5425–5434, 2010.

64. Paulo R G Barrocas, William M Landing, Robert J M Hudson. Assessment of mercury(II) bioavailability using a bioluminescent bacterial biosensor: Practical and theoretical challenges. *Journal of Environmental Sciences* 22(8) 1137–1143, 2010.
65. Angela Milne, William Landing, Michael Bizimis, **Peter Morton**. Determination of Mn, Fe, Co, Ni, Cu, Zn, Cd and Pb in seawater using high resolution magnetic sector inductively coupled mass spectrometry (HR-ICP-MS), *Analytica Chimica Acta* 665, 200–207, 2010.
66. Huneus, N., Schulz, M., Balkanski, Y., Griesfeller, J., Prospero, J., Kinne, S., Bauer, S., Boucher, O., Chin, M., Dentener, F., Diehl, T., Easter, R., Fillmore, D., Ghan, S., Ginoux, P., Grini, A., Horowitz, L., Koch, D., Krol, M. C., Landing, W., Liu, X., Mahowald, N., Miller, R., Morcrette, J.-J., Myhre, G., Penner, J., Perlwitz, J., Stier, P., Takemura, T., and Zender, C. S.: Global dust model intercomparison in AeroCom phase I, *Atmos. Chem. Phys.*, 11, 7781-7816, doi:10.5194/acp-11-7781-2011, 2011.
67. **Gallon, Céline; Ranville, Mara**; Conaway, Christopher; Landing, William; **Buck, Clifton; Morton, Peter**; Flegal, Arthur. Asian Industrial Lead Inputs to the North Pacific Evidenced by Lead Concentrations and Isotopic Compositions in Surface Waters and Aerosols. *Environmental Science & Technology*, 45, 9874–9882, 2011.
68. J.M. Lenes, J.M. Prospero, W.M. Landing, J.I. Virmani, J.J. Walsh. A model of Saharan dust deposition to the eastern Gulf of Mexico. *Marine Chemistry* 134–135, pg. 1–9, 2012.
69. **Kathleen J. Gosnell**, William M. Landing, and Angela Milne. Fluorometric detection of Total Dissolved Zinc in the Southern Indian Ocean. *Marine Chemistry*, 132-133, pg. 68–76, 2012.
70. **C. M. Zurbrick**, P. Morton, C. Gallon, A. Shiller, W.M. Landing, and A.R. Flegal. Intercal: Intercalibration of cadmium and lead concentration measurements in the northwest Pacific Ocean. *Limnology and Oceanography: Methods*, 10, 2012, 270–277, 2012.
71. **Pamela M. Barrett**, Joseph A. Resing, Nathaniel J. Buck, Clifton S. Buck, William M. Landing, and Christopher I. Measures. The trace element composition of suspended particulate matter in the upper 1000m of the eastern North Atlantic Ocean: A16N. *Marine Chemistry* 142–144, 41–53. 2012.
72. Monica F. Costa, William M. Landing, Helena A. Kehrig, Mário Barletta, Christopher D. Holmes, Paulo R.G. Barrocas, David C. Evers, David G. Buck, Ana Claudia Vasconcellos, Sandra S. Hacon, Josino C. Moreira, Olaf Malm. Mercury in tropical and subtropical coastal environments. *Environmental Research* 119, 88-100. 2012.
73. Reed Harris, Curtis Pollman, William Landing, David Evans, Donald Axelrad, David Hutchinson , Steven L. Morey, Darren Rumbold, Dmitry Dukhovskoy, Douglas H. Adams, Krish Vijayaraghavan, Christopher Holmes , R. Dwight Atkinson, and Tom Myers, and Elsie Sunderland. Mercury in the Gulf of Mexico: Sources to Receptors. *Environmental Research* 119, 42–52. 2012.
74. Reed Harris; Curtis Pollman; David Hutchinson; William Landing; Donald Axelrad; Steven Morey; Dmitry Dukhovskoy; Krish Vijayaraghavan. A Screening Model Analysis of Mercury Sources, Fate and Bioaccumulation in the Gulf of Mexico. *Environmental Research* 119, 53–63. 2012.
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NON-REFEREED PUBLICATIONS:

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2. W.M. Landing. The Biogeochemistry of Manganese and Iron in the Pacific Ocean. Ph.D. Dissertation, University of California, Santa Cruz, California, 202 pp. 1983.
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7. Cunliffe, M., Wurl, O., Landing, W.M. et al. “Guide to best practices to study the ocean’s surface”. Occasional Publications of the Marine Biological Association of the United Kingdom. Plymouth, UK. 118 pp. ISSN 0260-2784, 2014.

PRESENTATIONS FROM THE LAST FIVE YEARS:

INVITED LECTURES:

- 2011 W.M. Landing. Global ocean survey of dissolved iron and aluminum and aerosol iron and aluminum solubility supporting the CLIVAR/CO₂ Repeat Hydrography project. Florida Annual Meeting and Exposition, Florida Section American Chemical Society, May 2011.
- 2011 W.M. Landing. Fertilizing the Photic Zone: where do the bioactive trace elements come from? Gordon Research Conference in Chemical Oceanography.
- 2012 W.M. Landing. Rainfall deposition of mercury and trace elements to the northern Gulf of Mexico. Texas A&M, Corpus Christi, March 30, 2012.
- 2012 W.M. Landing. Fertilizing the Photic Zone: where do the bioactive trace elements come from? University of South Florida, April 6, 2012.
- 2012 W.M. Landing. A Novel Tracer Technique to Quantify the Atmospheric Flux of Trace Elements to the Oceans. University of Victoria, April 30, 2012.
- 2012 W.M. Landing. Fertilizing the Photic Zone: where do the bioactive trace elements come from? University of British Columbia, May 1, 2012.
- 2012 W.M. Landing. Fertilizing the Photic Zone: where do the bioactive trace elements come from? University of Delaware, May 15, 2012.

NATIONAL and INTERNATIONAL MEETINGS (Graduate Students in BOLD): (speaker underlined, ¹invited, ²published abstract)

- 2011 Peter L. Morton, William M. Landing, and Angela Milne. Standardizing aerosol dust collection and analysis: Results from the 2008/2009 GEOTRACES aerosol intercalibration study. 43rd International Liege Colloquium: Traces and Tracers. Liege, Belgium.
- 2011 **10th International Conference on Mercury as a Global Pollutant, Halifax, NS.**
Arnout ter Schure, Jane Caffrey, Mae Gustin, Chris Holmes, Anthony Hynes, Bill Landing, Matthew Landis, Dennis Laudel, Leonard Levin, Udaysankar Nair, John Jansen, Jeff Ryan, Justin Walters, James Schauer, Rainer Volkamer, Dwain Waters, and Peter Weiss. An Integrated Approach to Assess Elevated Mercury Wet Deposition and Concentrations in the South Eastern United States.
- J.M. Rolison**, S. Misra, W.M. Landing. Isotopic Composition of Atmospheric Mercury in the Coastal Region of the Northern Gulf of Mexico.
- Reed C. Harris, Curtis D. Pollman, William M. Landing, Donald M. Axelrad, Steven Morey, David W. Evans, David H. Hutchinson, Dmitry Dukhovskoy, Douglas H. Adams, Darren Rumbold, Elsie M. Sunderland. Mercury Cycling, Bioaccumulation, and Options to Reduce Risk in the Gulf of Mexico.
- William Landing, Christopher D. Holmes. Transport and Deposition of Atmospheric Mercury in the Tropics and the Gulf of Mexico.
- Nishanth Krishnamurthy**, William M. Landing, Jane M. Caffrey, Christopher D. Holmes. RAINFALL DEPOSITION OF MERCURY AND OTHER TRACE ELEMENTS TO THE NORTHERN GULF OF MEXICO.
- Monica F Costa, Paulo R Barrocas, Mario Barletta, Helena A Kehrig, Olaf Malm, Sandra Hacon, Josino C Moreira, Ana C Vasconcellos, William Landing, David Evers, David Bucks. Are we changing Mercury cycling patterns in tropical and sub-tropical coastal environments?
- Jane M. Caffrey, **Nishanth Krishnamurthy**, William M. Landing, Sikha Bagui, Jesse Brown, Subhash Bagui, Christopher D. Holmes. ROLE OF CLIMATE AND LOCAL EMISSION SOURCES IN THE WET DEPOSITION OF MERCURY AND MAJOR IONS IN THE PENSACOLA BAY REGION.
- Elsie M. Sunderland, David P. Krabbenhoft, Elizabeth S. Corbitt, William M. Landing. Distributions of mercury and methylmercury in the Indian Ocean.
- 2012 **2012 AGU/ASLO Ocean Sciences Meeting, Feb. 20-24, 2012 Salt Lake City, UT.**
Morton, P. L.; Landing, W. M.; Milne, A.; FINAL RESULTS FROM THE 2008 GEOTRACES AEROSOL INTERCALIBRATION STUDY (Abstract ID: 10532)
Landing, W. M.; Kadko, D. C.; Kilgore, B.; Galfond, B.; Krishnamurthy, N.; A NOVEL TRACER TECHNIQUE TO QUANTIFY THE ATMOSPHERIC FLUX OF TRACE ELEMENTS TO THE OCEANS (Abstract ID: 10605)
Shelley, R. U.; Landing, W. M.; Morton, P. L.; SOLUBILITY OF TRACE METALS FROM NORTH

ATLANTIC AEROSOL DUSTS (Abstract ID: 10644)

Buck, C. S.; Landing, W. M.; Resing, J. A.; Buck, N.; ON THE SIZE DISTRIBUTION, COMPOSITION, AND SOLUBILITY OF PACIFIC OCEAN AEROSOLS (Abstract ID: 11291)

Farst, C.; Landing, W. M.; Stenson, A.; Buck, K.; NATURAL MARINE SIDEROPHORE ISOLATION THROUGH IMMOBILIZED METAL AFFINITY CHROMATOGRAPHY WITH ELECTROSPRAY MASS SPECTROMETRIC ANALYSIS (Abstract ID: 11731)

Measures, C. I.; Grand, M. M.; Olivera, H.; Landing, W. M.; Kilgore, B.; DISTRIBUTION OF DISSOLVED TRACE ELEMENTS IN THE UPPER 1000 M OF THE SOUTH PACIFIC DURING THE CLIVAR S4P CRUISE. (Abstract ID: 11899)

Krishnamurthy, N.; Landing, W. M.; Caffrey, J. M.; RAINFALL DEPOSITION OF MERCURY AND OTHER TRACE ELEMENTS TO THE NORTHERN GULF OF MEXICO AND CONTRIBUTIONS FROM LOCAL AND REGIONAL ANTHROPOGENIC SOURCES (Abstract ID: 12493)

2013 ASLO Aquatic Sciences Meeting (New Orleans, LA; Feb. 17-22, 2013)

Ebling, A. M.; Landing, W. M.; TRACE METALS IN THE SEA SURFACE MICROLAYER (Abstract ID: 10593)

Farst, C. M.; Stenson, A.; Buck, K. N.; Landing, W. M.; ISOLATION AND CHARACTERIZATION OF MARINE SIDEROPHORES BY ELECTROSPRAY IONIZATION MASS SPECTROMETRY AND CLE-ACSV (Abstract ID: 10806)

Shelley, R. U.; Landing, W. M.; THE SOLUBILITY OF TRACE METALS FROM NORTH ATLANTIC AEROSOLS (US GEOTRACES) (Abstract ID: 11111)

Ohnemus, D. C.; Lam, P. J.; Shelley, R.; Landing, W. M.; LITHOGENIC PARTICULATE TRACERS IN THE NORTH ATLANTIC U.S. GEOTRACES SECTION: INPUTS, SCAVENGING, BIOLOGICAL UPTAKE (Abstract ID: 11137)

Harper, A. R.; Chanton, J.; Landing, W.; STABLE ISOTOPE ³⁴S, ¹³C, AND ¹⁵N TRACING OF METHYLMERCURY PRODUCTION AND BIOACCUMULATION IN FLORIDA BIG BEND SEA-GRASS BEDS (Abstract ID: 11522)

Landing, W. M.; Shelley, R. U.; PARTICLE SIZE EFFECTS ON AEROSOL IRON SOLUBILITY FROM THE U.S. GEOTRACES NORTH ATLANTIC ZONAL TRANSECT (2010, 2011) (Abstract ID: 11645)

Buck, C. S.; Landing, A. M.; Bowman, K. L.; Gill, G. A.; Hammerschmidt, C.; Landing, W. M.; RIVERINE SUPPLY OF INORGANIC AND METHYL MERCURY TO THE GULF OF MEXICO (Abstract ID: 11674)

Gurganus, S. C.; Wozniak, A. S.; Shelley, R. U.; Willoughby, A. S.; Sleighter, R. L.; Abdulla, H. A.; Landing, W. M.; Hatcher, P. G.; TRACE METAL AND ORGANIC MATTER CHARACTERISTICS OF AEROSOLS FROM MARINE AIR MASSES (Abstract ID: 11710)

Wozniak, A. S.; Shelley, R. U.; Gurganus, S. C.; Sleighter, R. L.; Abdulla, H. A.; Willoughby, A. S.; Landing, W. M.; Hatcher, P. G.; EXPLORING THE RELATIONSHIPS BETWEEN ORGANIC MATTER MOLECULAR CHARACTERISTICS AND TRACE METAL SOLUBILITIES OF COMBUSTION- AND DUST-INFLUENCED MARINE AEROSOLS (Abstract ID: 11723)

Morton, P. L.; Landing, W. M.; Measures, C. I.; Buck, C. S.; Gosnell, K. J.; Grand, M.; Hatta, M.; Hiscock, W. T.; DISSOLVED CD, CO, CU, NI, MN AND PB ALONG THE CLIVAR I8S/I9N INDIAN OCEAN TRANSECTS (Abstract ID: 11731)

2014 AGU/ASLO Ocean Sciences Meeting (Honolulu, HI; Feb. 23-28, 2014)

Barrett, P. M.; Resing, J. A.; Buck, N. J.; Landing, W. M.; DECADEAL COMPARISON OF THE DISTRIBUTION OF PARTICULATE TRACE ELEMENTS IN THE TOP 1000 M OF THE NORTH ATLANTIC OCEAN ALONG CLIVAR SECTION A16N: 2003–2013 (Abstract ID: 13042)

Galfond, B.; Kadko, D.; Shelley, R.; Landing, W.; A NOVEL METHOD OF DETERMINING ATMOSPHERIC DEPOSITION OF TRACE ELEMENTS TO THE OCEAN/ICE SYSTEM OF THE ARCTIC (Abstract ID: 13088)

Shelley, R. U.; Morton, P. L.; Landing, W. M.; ELEMENTAL COMPOSITION OF NORTH ATLANTIC AEROSOLS (US GEOTRACES) (Abstract ID: 14189)

Ebling, A. M.; Landing, W. M.; RESIDENCE TIMES OF TRACE METALS IN THE SEA SURFACE

MICROLAYER (Abstract ID: 14291)

Buck, C. S.; Bowman, K.; Gill, G.; Hammerschmidt, C.; Landing, W. M.; PARTITIONING, SPECIATION, AND FLUX OF MERCURY IN GULF OF MEXICO ESTUARIES (Abstract ID: 14826)

Landing, W. M.; Morton, P. L.; Shelley, R. U.; Resing, J. A.; Barrett, P. M.; DISSOLVED TRACE METALS IN THE NORTH ATLANTIC FROM 2003 TO 2013: RESULTS FROM THE A16N CLIVAR/REPEAT HYDROGRAPHY SECTIONS (Abstract ID: 14852)

Morton, P. L.; Landing, W. M.; DISSOLVED TRACE METALS IN THE INDIAN OCEAN: RESULTS FROM THE CLIVAR/REPEAT HYDROGRAPHY I8S/I9N AND I5 CRUISES (Abstract ID: 14861)

Farst, C. M.; Landing, W. M.; ISOLATION AND CHARACTERIZATION OF MARINE SIDEROPHORES (Abstract ID: 14873)

Grand, M. M.; Measures, C. I.; Hatta, M.; Morton, P. L.; Landing, W. M.; BIOGEOCHEMISTRY OF DISSOLVED FE AND AL IN THE EASTERN INDIAN OCEAN: INSIGHTS FROM THE ANTARCTIC MARGIN TO THE BAY OF BENGAL ALONG 95°E (Abstract ID: 15438)

McElhenie, S. D.; Wozniak, A. S.; Shelley, R. U.; Landing, W. M.; Hatcher, P. G.; SOURCE-SPECIFIC CHARACTERISTICS OF AEROSOL ORGANIC MATTER OVER THE NORTH ATLANTIC OCEAN: IMPLICATIONS FOR THE IDENTITY OF POTENTIAL IRON BINDING LIGANDS (Abstract ID: 16338)

Wozniak, A. S.; Shelley, R. U.; McElhenie, S. D.; Landing, W. M.; Hatcher, P. G.; AEROSOL WATER SOLUBLE ORGANIC MATTER MOLECULAR CHARACTERISTICS AND IRON SOLUBILITY FROM THE 2010-11 US GEOTRACES CRUISES IN THE NORTH ATLANTIC OCEAN (Abstract ID: 16937)

2014 AGU Fall Meeting (San Francisco, CA; Dec. 15-19, 2014)

Pamela Barrett, Maxime Grand, William Landing, Chris Measures, Joseph Resing. OS23E1256. Trace Metal Composition of Suspended Particulate Matter Along Meridional and Zonal CLIVAR Sections in the Indian Ocean.

Clifton Buck, William Landing, Ana Aguilar-Islas, Robert Rember. OS23E1269. Trace Element Fractional Solubility in Ultrapure Water From Samples Collected During the US GEOTRACES Eastern Tropical South Pacific Section.

David Krabbenhoft, Morgan Maglio, Jacob Ogorek, William Landing, Peter Morton, Rachel Shelley, Elsie Sunderland. OS51F05. Mercury and Methylmercury Distributions Along a Longitudinal Transect of the North Atlantic Ocean.

William Landing, Rachel Shelley, David Kadko. OS23D1245. Recent Rainfall and Aerosol Chemistry From Bermuda.

Peter Morton, Rachel Weisend, William Landing, Jessica Fitzsimmons, Christopher Hayes, Edward Boyle. OS23D1239. Trace Element Cycling in Lithogenic Particles at Station ALOHA.

Rachel Weisend, Peter Morton, William Landing, Jessica Fitzsimmons, Christopher Hayes, Edward Boyle. OS23D1240. Particulate Trace Element Cycling in a Diatom Bloom at Station ALOHA.

2016 AGU/ASLO Ocean Sciences Meeting (New Orleans, LA Feb. 2016)

Alina Ebling, WM Landing, et al. A24C-2595 Trace Elements in the Sea Surface Microlayer: Results from a Two Year Study in the Florida Keys

Tom Conway, WM Landing, et al. CT11A-04 Tracing anthropogenic aerosol Fe sources in the North Atlantic Ocean using dissolved Fe isotope ratios

Chris Measures, WM Landing, et al. CT11A-08 Dissolved Al in the A16S CLIVAR Repeat Hydrography Section and Its Implication for Aerosol Deposition in the South Atlantic

Mariko Hatta, WM Landing et al. CT12A-01 Dissolved Fe and Mn During the A16S CLIVAR Repeat Hydrography Transect in the South Atlantic

Rachel Weisend, WM Landing et al. CT14A-0116 Supply of Natural and Industrial Aerosols to the Indian Ocean

Ana Aguilar-Islas, WM Landing et al. CT14A-0121 Constraining the Solubility of Aerosol Fe using US GEOTRACES Data

WM Landing et al. CT14A-0123 Quantifying the Fluxes of Atmospherically Derived Trace Elements in

the Arctic Ocean/Ice System using ^7Be
 Yuan Gao, WM Landing et al. CT14A-0124 Mass-size distributions of selected nutrient elements in aerosols and their air-to-sea fluxes to the Arctic Ocean: Preliminary results from the US GEOTRACES Arctic Cruise in summer 2015.
 Chris Marsay, WM Landing et al. CT14A-0125 Atmospheric Deposition to the Arctic Ocean: Concentrations of Dissolved Trace Elements in Melt Ponds During US GEOTRACES Western Arctic Section
 Susan Little, WM Landing et al. CT14B-0132 Isotopic composition of dissolved and particulate Cu in the North Atlantic: Constraining the atmospheric deposition of aerosol Cu
 Clifton Buck, WM Landing et al. CT14B-0134 Flux of Total and Methyl Mercury to the Northern Gulf of Mexico from U.S. Estuaries
 Peter Morton, WM Landing et al. CT14B-0139 A Margin Source of Cd in the Western North Pacific Ocean
 Brent Summers, WM Landing et al. CT24A-0154 Elemental Ratios of Bioactive Trace Metals in the Bay of Bengal
 Neil Wyatt, WM Landing et al. CT31A-07 THE MODIFICATION OF DISSOLVED ZINC DISTRIBUTIONS ALONG THE U.S. GEOTRACES WESTERN ARCTIC SECTION

2017 Goldschmidt Conference (August 14-18, 2017 Paris, France)

Landing W, Shelley R, Ebling A & Morton P. Fluxes of Bio-Active Aerosol Trace Elements in the North Atlantic.
 Buck C, Landing W, Aguilar-Islas A, Marsay C & Kadko D. Invited: Aerosol Deposition and Fractional Solubility of Trace Elements in the Remote Ocean.
 Ito A, Myriokefalitakis S, Kanakidou M, Mahowald N, Baker A, Jickells T, Sarin M, Bikkina S, Gao Y, Shelley R, Buck C, Landing W, Bowie A, Perron M, Meskhidze N, Johnson M, Feng Y & Duce R. Evaluation of Labile Iron Processing in Atmospheric Models
 Shelley R, Wyatt N & Landing W. Trace Elements in Aerosols, Rain, and the Sea-Surface Microlayer of the South Pacific Ocean Under Low Wind Conditions.

REGIONAL MEETINGS: (speaker underlined, ¹invited, ²published abstract):

2015 Southeastern Biogeochemistry Symposium (March 27-29, 2015)

Brent A. Summers, Peter L. Morton, Nathaniel Buck, William M. Landing, and Joseph Resing. Total and Soluble Trace Element Concentrations in Aerosols in the Indian Ocean.
 Angela Dial, Sambuddha Misra, Vincent Salters, and William Landing. The Magnesium Isotopic Composition of Foraminifera: Implications as a Paleoclimate Proxy.
 Alina Ebling, Neil Wyatt, and William Landing. The Missing Link: Characterizing Trace Elements within the Atmosphere, Sea Surface Microlayer, and Underlying Water Column.
 Amelia Longo, Yan Feng, Barry Lai, William Landing, Athanasios Nenes, Nikos Mihalopoulos, Kaliopi Violaki, and Ellery Ingall. Key Factors Controlling the Solubility of Iron in Saharan Dust.

STATE/LOCAL MEETINGS: (speaker underlined, ¹invited, ²published abstract):

- 2011 Florida Annual Meeting and Exposition, Florida Section American Chemical Society, May 2011.**
 William M. Landing¹. GLOBAL OCEAN SURVEY OF DISSOLVED IRON AND ALUMINUM AND AEROSOL IRON AND ALUMINUM SOLUBILITY SUPPORTING THE CLIVAR/CO₂ REPEAT HYDROGRAPHY PROJECT.
- 2013 Florida Annual Meeting and Exposition, Florida Section American Chemical Society, May 2013.**
 B.M. Mwashote and W. M. Landing. DEVELOPMENT OF THE CONTINUITY DEVICE, VoST, AND ITS APPLICATION IN SUBMARINE GROUNDWATER DISCHARGE STUDIES.
 William M. Landing, Clifton S. Buck, Alexandra M. Landing. RIVERINE SUPPLY OF INORGANIC AND METHYL MERCURY TO THE GULF OF MEXICO.
- 2014 Florida Annual Meeting and Exposition, Florida Section American Chemical Society, May 2014.**
 Carley Farst, William Landing, Alexandra Stenson. ISOLATION OF MARINE SIDEROPHORES.
 Angela R. Dial, Sambuddha Misra, Vincent J. M. Salters, & William M. Landing. MAGNESIUM

ISOTOPES AS A GEOCHEMICAL PROXY FOR PALEOCLIMATE.

William M. Landing, Rachel Shelley, Brian Kilgore, and Nishanth Krishnamurthy, Dave Kadko and Ben Galfond. USING BERYLIUM-7 TO QUANTIFY THE FLUXES OF TRACE ELEMENTS FROM THE ATMOSPHERE TO THE OCEANS.

CURRENT RESEARCH SUPPORT:

National Science Foundation (OCE, OPP 1355833). Collaborative Research: Management and Implementation of the US Arctic GEOTRACES Study. \$338,109. 07/01/2014-06/30/2017.

National Science Foundation (Chemical Oceanography OCE-1437266). Collaborative Research: GEOTRACES Arctic Section: Collection and analysis of atmospheric deposition. \$104,290, 10/01/2014-09/30/2017.

National Science Foundation (Chemical Oceanography OCE-1357140). Collaborative Research: Vibrio as a model microbe for opportunistic heterotrophic response to Saharan dust deposition events in marine waters. \$200,584, 04/01/2014-03/31/2017.

PRIOR RESEARCH SUPPORT:

National Science Foundation (Chemical Oceanography OCE- 1260287), Collaborative Research: Trace metal deposition and cycling in the North Atlantic on the 2013 CLIVAR/Repeat Hydrography expedition. \$162,000, 02/01/13-01/31/16.

National Science Foundation (Chemical Oceanography OCE-1234646), Collaborative Proposal: GEOTRACES Pacific Section: Collection and analysis of atmospheric deposition. \$199,380, 12/01/2012-11/30/15.

National Science Foundation (Chemical Oceanography OCE-0962158). Collaborative Research: Global Ocean Survey of Dissolved and Particulate Iron and Aluminum and Aerosol Iron and Aluminum Solubility Supporting the CLIVAR Repeat Hydrography Project (2010-2014). \$490,223, 1/01/2010-12/31/2015.

National Science Foundation (Chemical Oceanography OCE-1034764). Collaborative research: A novel tracer approach to estimate the atmospheric input of trace elements into the global ocean. \$221,185, 01/01/2011-12/31/2014.

National Science Foundation (Office of Polar Programs ARC-1202992), Collaborative Research: Sample Analysis to Test a Novel Method of Determining Atmospheric Deposition of Trace Elements to the Ocean/Ice System of the Arctic. \$30,234 09/01/2012-08/31/2014.

National Science Foundation (Chemical Oceanography OCE- 1061354). Acquisition of a sector magnet ICP-MS for Ocean and Earth Science Research at Florida State University. \$250,000, 01/01/11-12/31/12.

National Science Foundation (Chemical Oceanography OCE-1132766). GEOTRACES Atlantic Section: Aerosol and rainfall collection and analysis. \$327,566, 08/15/2009-07/31/2012.

National Science Foundation (Chemical Oceanography OCE-1132766). GEOTRACES Atlantic Section: Aerosol and rainfall collection and analysis (RAPID supplemental funding). \$27,091, 08/11/2011-07/31/2012.

National Science Foundation (Chemical Oceanography OCE-0752832). GEOTRACES: Intercalibration for Aerosol Sampling and Analysis. \$220,117, 02/15/2008-01/31/2012.

National Science Foundation (Chemical Oceanography OCE-0752351). Collaborative Research: Participation in the GEOTRACES Intercalibration Cruise. \$70,585, 02/15/2008-01/31/2010.

National Science Foundation (Chemical Oceanography OCE-0649639). Collaborative Research: Global Ocean Survey of Dissolved and Particulate Iron and Aluminum and Aerosol Iron and Aluminum Solubility Supporting the CLIVAR Repeat Hydrography Project (2007-2009). \$391,710, 1/01/07-12/31/09.

National Science Foundation (Chemical Oceanography OCE-0550317). Trace Element Analysis of Aerosol and Seawater Samples Collected on the A16N, P02, and P16S CLIVAR Cruises. \$320,229, 1/01/06-12/31/08.

National Science Foundation (EAR-0521201). The Acquisition of a Multi Collector Inductively Coupled Plasma Mass Spectrometer and Laser Ablation System for Earth and Ocean Sciences at Florida State University. \$287,294, 09/01/05-08/30/07.

National Science Foundation (Chemical Oceanography OCE-0223378). Collaborative Research: Global ocean survey of dissolved iron and aluminum and aerosol iron and aluminum solubility supporting the Repeat Hydrography (CO₂) project. 1368-887-22, \$305,276, 1/15/03-1/14/06.

National Science Foundation (Chemical Oceanography OCE-0117655): Collaborative research: Biogeochemistry of trace elements in the western Pacific: atmospheric input and upper ocean cycling. 1368-804-22, \$243,403, 8/1/2001-8/31/2004.

National Science Foundation (EAR-0106789). Mercury Isotope Investigations of Pre- and Post-Industrial

Atmospheric Deposition. \$158,898, Odom, Salters, and Landing, co-PIs., 7/1/2001-6/30/2003.

National Science Foundation (Chemical Oceanography OCE-9911339): Influences of Atmospheric Deposition, Organic Complexation, and Photochemical Processes on the Redox Cycle of Iron in Surface Waters. 1368-776-22, \$208,024, 4/1/2000-9/31/2003.

National Science Foundation (Division of Earth Sciences): Acquisition of a high resolution ICPMS for elemental concentration analysis in Earth Science research. EAR-9601952, \$267,500, G.A. Zindler, V.J. Salters, W.M. Landing and P.C. Ragland, co-PIs, 8/1/96-7/31/99.

National Science Foundation (Chemical Oceanography OCE-9531848): Trace element input and cycling in the western south Atlantic. \$161,290, 10/1/95-4/30/98.

National Science Foundation (Chemical Oceanography OCE-9302562): Colloidal trace metals and DOC/DON in the surface waters of the North Atlantic Ocean. \$121,354, W.M. Landing, 4/1/93-12/31/95. Research Experiences for Undergraduates Supplements, \$4,000 (1993), \$4,000 (1994).

National Science Foundation (Chemical Oceanography OCE-9102559): Sources and properties of colloidal trace metals in the oceans, \$111,951, W.M. Landing and James E. Bauer, co-PIs. 4/1/91 - 3/31/93. Research Experiences for Undergraduates Supplement, \$4,000 (1991), \$4,000 (1992).

National Science Foundation (Chemical Oceanography OCE-8613638): Trace Metal Biogeochemistry in the Black Sea. \$154,057, 11-1-87 to 10-31-89, Research Experiences for Undergraduates Supplement, \$4,000 (1987), \$4,000 (1988), Supplement for participation in the IOC-Trace Metals Baseline Cruise in the South Atlantic, \$8,640 (1990).

National Science Foundation (Chemical Oceanography and Marine Geology): \$17,000 (1986-1987) supplement for WML (to W.C. Burnett's NSF grant) to participate in a study of Jellyfish Lake, Palau Islands.

National Oceanic and Atmospheric Administration (NA090AR4600198). FSU Southeastern Consortium for the Study of Mercury in the Atmosphere. \$400,000, 09/01/2009 – 02/28/2013.

GoMRI, Deep-C: Impacts on mercury cycling from a massive oil spill in the Gulf of Mexico. \$238,003, 10/01/2011-09/30/2014. Co-PIs Landing and Salters.

National Oceanic and Atmospheric Administration (NA10AR4600209). FSU Southeastern Consortium for the Study of Mercury in the Atmosphere: Phase II. \$487,500, 09/01/2010 – 02/28/2013.

U.S. Environmental Protection Agency and University of West Florida: PERCH project. Atmospheric Deposition of Mercury, Trace Metals and Major Ions in the Pensacola Bay Watershed. \$104,040, 5/1/2005-4/30/2008.

U.S. Environmental Protection Agency STAR Program, Natural mercury isotopes as tracers of sources, cycling, and deposition of atmospheric mercury. \$827,147 (10/1/02-9/30/05). Landing, Odom, and Salters, co-PIs.

Electric Power Research Institute (EP-P33676/C15484), Mercury Isotopes In The Pensacola Bay Watershed. \$159,613.00, 04/01/2010-06/30/2013.

Electric Power Research Institute, Collection and analysis of atmospheric deposition of mercury and trace metals to the Pensacola Bay watershed. \$370,216, 01/01/2008-12/31/2012.

Electric Power Research Institute: Florida Aquatic Ecosystem Mercury Cycling and Modeling Project (FAEMCMP). \$134,316, 9/1/95-6/30/98.

Electric Power Research Institute: Atmospheric deposition of mercury and other trace metals in north central Florida, south Florida, and the Everglades. \$147,391, 3/1/94-12/31/97.

Electric Power Research Institute: Florida Atmospheric Mercury Study. \$350,000, 9/1/92-12/31/97.

Florida Department of Environmental Protection (RM115). Mercury Species Fluxes and Cycling in Gulf of Mexico Estuaries, \$179,443, 03/27/2012-03/15/2013.

Florida State University, Equipment and Infrastructure Enhancement Grant (EIEG). Separation of monomethyl mercury from food web samples for isotopic analysis. \$40,000, 11/21/2011-11/20/2012.

Florida State University Council on Research and Creativity Planning Grant, Development of a volume-salinity-temperature (VoST) continuity device to quantify submarine groundwater discharge (SGD) and the impact of heavy metals to the coastal ocean. FSU-CRC 069000-140-161426, \$12,000, 4/1/2011-09/30/2012.

Florida Department of Environmental Protection. Continuous Remote Sensing of Nitrate using a Moored Instrument. FL Coastal Ocean Observing System, \$97,839, 1/1/08-6/30/08.

University of West Florida, Atmospheric deposition of mercury and trace metals to the Pensacola Bay watershed.

\$104,040, 05/01/05-04/30/08.

Florida Department of Environmental Protection: Apalachicola NERRS Nutrient Project. \$99,600, Landing, Iverson and Kostka, co-PIs., 2/15/02-2/28/07

Florida State University, Council for Research and Creativity. A workshop and seminar series supporting the FSU Interdisciplinary Program in Biogeochemical Dynamics. \$24,943, 02/01/04-06/30/05.

Florida State University Cornerstone program, Program Enhancement Grant; Determining the Speciation of Metals and Nutrients in Natural Waters. \$100,000, Salters, Cooper, and Landing, co-PIs. 4/1/2000-3/31/2002.

Florida State University Cornerstone program, Program Enhancement Grant; Developing Solid-State Microelectrode and Optical Waveguide Sensors for Measuring Trace Elements and Redox Species in Natural And Contaminated Waters. \$100,000 (4/1/2000-3/31/2002). Landing, Kostka, and Dahmen, co-PIs.

Florida Department of Environmental Protection (SP-507), Developing a Bacterial Biosensor for Aquatic Mercury(II) Speciation and Bioavailability. \$159,310, Landing and Proctor, co-PIs. 12/01/98-6/30/02.

South Florida Water Management District: Speciation and sources of dissolved phosphorus in the Everglades. \$185,000, V.J. Salters, W.T. Cooper, W.M. Landing, L.M. Proctor, Y.Wang, co-PIs, 8/1/97-3/15/99.

Northwest Florida Water Management District: Nutrient transport and primary production in the Apalachicola River and Bay. \$304,252, R.L. Iverson and W.M. Landing, co-PIs. 2/1/93-9/30/98.

Florida Department of Environmental Protection: Florida Atmospheric Mercury Study: Phase III. \$1,350,000 (\$353,608 to FSU), W.M. Landing, Gary A. Gill (TAMU-Galveston), C.D. Pollman (KBN Engineering), co-PIs. 9/1/92-12/31/97.

Florida Department of Environmental Regulation: Atmospheric deposition of mercury and other trace metals in Florida. FDER WM-412, \$199,864, W.M. Landing, Gary A. Gill (UC Santa Cruz), and C.D. Pollman (KBN Engineering), co-PIs. 5/1/92-4/30/93. (\$104,260 to FSU).

Florida Department of Environmental Regulation: Atmospheric supply of pollutants to estuarine and coastal waters. \$50,000, W.M. Landing and J.W. Winchester, co-PIs. 9/30/91-9/29/92.

Northwest Florida Water Management District: Chemical analysis of sediments in Ford's Arm, Lake Jackson. \$37,500, 6/13/91-2/28/92.

Florida Department of Environmental Regulation: Atmospheric contribution of nutrients to a Florida estuary: the role of acid rain and acid deposition. FDER CM-298, \$42,000, John W. Winchester and W.M. Landing, co-PIs. 1/1/91-12/31/91.

Florida Department of Environmental Regulation: Deterioration of Lake Water Quality by Urban Runoff: Remediation using Artificial Wetlands. FDER WM-345, \$100,000, Paul A. LaRock and W.M. Landing, co-PIs. 9/1/90-11/15/91.

Northwest Florida Water Management District: Lake Water Quality Assessment: Lakes under the jurisdiction of the Northwest Florida Water Management District. \$51,907, Paul A. LaRock and W.M. Landing, co-PIs. 6/30/90-11/15/90.

Northwest Florida Water Management District: Chemical analysis of sediments in Meginnis Arm, Lake Jackson. \$10,000, 7/27/89-4/30/90.