

PHOEBE J. LAM

DEPARTMENT OF MARINE CHEMISTRY AND GEOCHEMISTRY, CLARK 461
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EDUCATION

MIT S.B., Environmental Engineering Science, June 1997
Princeton University M.A., Department of Geosciences, May 1999
UC Berkeley Ph.D., Earth and Planetary Science, December 2005

PROFESSIONAL EXPERIENCE

July 2011-present: *Associate Scientist without tenure*, Department of Marine Chemistry and Geochemistry, Woods Hole Oceanographic Institution, Woods Hole, MA.
June 2007-July 2011: *Assistant Scientist*, Department of Marine Chemistry and Geochemistry, Woods Hole Oceanographic Institution, Woods Hole, MA.
Dec 2005-May 2007: *Postdoctoral Scholar*, Department of Marine Chemistry and Geochemistry, Woods Hole Oceanographic Institution, Woods Hole, MA.

AWARDS

- Woods Hole Oceanographic Institution Postdoctoral Award, December 2005
- Dissertation Symposium on Chemical Oceanography (DISCO XIX), Waikoloa, HI, May 1-7, 2005
- Outstanding Student Paper Award, AGU, Ocean Sciences Section, San Francisco, CA, Dec 2004
- NSERC Postgraduate Scholarship A, 1998-2000
- Scholarship Award, the Society of General Physiologists, Marine Biological Laboratory, 1998
- 1st Year Merit Fellowship in Natural Sciences and Mathematics, Princeton University, 1997-98
- Richard Lee Russel Award, Dept. of Civil and Environmental Engineering, MIT, 1997

PROFESSIONAL AFFILIATIONS

Member, American Geophysical Union, 2001-present.
Member, Geochemical Society, 2011-present.
Member, Association for the Sciences of Limnology and Oceanography, 2012-present.

RESEARCH INTERESTS

Speciation and bioavailability of particulate iron; geochemistry of marine particles; particle dynamics; factors affecting the strength and efficiency of the biological carbon pump.

PROFESSIONAL ACTIVITIES

OUTSIDE WHOI:

- International GEOTRACES Programme
 - Co-organizer, International GEOTRACES particle intercalibration
 - Intercalibration, March 2013-present
 - Planning workshop, Honolulu, HI (Mar 24-25, 2013)
 - Member, International Scientific Steering Committee for the International GEOTRACES Program, January 2012-present
 - Member of planning committee for 3rd GEOTRACES Data/Model Synergy Workshop on particles, held in Barcelona, Spain, November 2011
- Board of Directors, OceanQuest, Inc., a marine education non-profit organization, January 2012-September 2013.

- Session co-convener at meetings
 - ASLO 2013 Aquatic Sciences Meeting, Feb 17-22, 2013, New Orleans, LA: “SS26: Coccolithophores: biogeochemical impacts and response to a changing ocean”
 - Session co-convener, Goldschmidt 2012, June 24-29, Montreal, Canada: “17e: Investigating biogeochemical cycling using micro-scale techniques”
- Reviewer
 - External Reviewer: Canadian Light Source Facility, October 2009-present.
 - Panelist for NSF Chemical Oceanography, May 2011
 - *Ad-hoc* Reviewer: Biogeosciences, Deep Sea Research I, Deep Sea Research II, Earth and Planetary Science Letters, Geophysical Research Letters, Global Biogeochemical Cycles, Journal of Geophysical Research—Oceans, Limnology and Oceanography, Marine Chemistry, Science, NSF, NERC.
- Contributor to IOC-commissioned initial drafting group for “Ocean Fertilization: A scientific summary for policy makers” document.

PARTICIPATION IN EDUCATION PROGRAM

COMMITTEES:

- MIT-WHOI Joint Program Strategic Planning Committee, 2010-2011.
- MIT-WHOI Joint Program Admissions Advisory Committee, 2009-2010.
- Post-doc mentoring committee, Marine Chemistry and Geochemistry, WHOI, April 2011 — present.

ADVISING:

- Postdoctoral co-advisor for Doherty Postdoctoral Scholar Tristan Horner (Dec 2012-present)
- Graduate Research Advisor for MIT-WHOI Joint Program students Daniel Ohnemus (summer 2008-October 2013 PhD), Sarah Rosengard (September 2011-present), Paul Lerner (June 2013-present)
- Thesis committee member for Joint Program students Andrew McDonnell (PhD Dec 2010), Abigail Noble (PhD Sept 2011), Stephanie Owens (PhD Nov 2012), Jong-Mi Lee (PhD May 2013), Jessica Fitzsimmons (PhD September 2013)
- Research advisor for undergraduate Guest Student John Swartz (Fall 2011)
- Summer Research Advisor for Partnership in Education Program (PEP) for undergraduates Janeea Ventour and Courtnee DePass (Summer 2011, 2012)
- Co-advisor for the 2007 MIT-WHOI Joint Program incoming class of graduate students

TEACHING:

- Guest lecture for 12.755—Marine Bioinorganic Chemistry (Fall 2009, 2011)
- Co-Instructor, MIT-WHOI Joint Program, 12.759—Classic Papers in Marine Chemistry seminar (Spring 2008, 2010)

OUTREACH:

- Research co-mentor to Troy Pettit and Connor Cobb for Falmouth High School Science fair project (2011-2012 school year)
- Career Panelist for the Partnership in Education Program, a Woods Hole Diversity Committee Initiative, June 2010
- Mentor for the Minorities Striving and Pursuing Higher Degrees of Success in Earth System Science (MS PHDS) Program during 2009 OCB summer workshop
- Keynote speaker to Woods Hole Summer Student Fellow Welcoming Dinner, June 2010
- Guest lecture to the Linden Ponds retirement community, May 2010

- Guest teacher for a day at the Children's School of Science (10-11 year olds) in Woods Hole, MA in summer 2009
- "Communicating Ocean Sciences" Workshop participant, Woods Hole Oceanographic Institution, Woods Hole, MA (October 19, 2007).
- Radio Interview, "Science in Action" with Gareth Mitchell, on iron fertilization in the ocean. Broadcast April 23, 2004 on BBC World Service

SUPERVISION AT WHOI

- Current: Maureen Auro Wisch, Research Associate II (July 1, 2010-present)
- Past: Tammy Catanach, Part-time helper (July 2012); Molly Burtis, Part-time helper (July 2011-November 2011); Kristine Bunker, Falmouth High School student part-time helper (Summer 2009, 2010); Tracy Atwood, Research Assistant (Oct 2008-June 2009)

CRUISE PARTICIPATION

- Southern Ocean, Atlantic sector, South African National Antarctic Expedition voyage 53 (SANAE53), particulate iron speciation and bioavailability, SA Agulhas II, Dec 25, 2013-Feb 13, 2014.
- Subantarctic South Indian Ocean, The Great Calcite Belt 2, ²³⁴Th and McLane pumps, R/V Revelle, Feb-Mar 2012 (35 days)
- Ross Sea, Iron sources to the summer Ross Sea ecosystem, McLane pumps, R/V N.B. Palmer, Jan-Feb 2011 (28 days)
- Subantarctic South Atlantic, The Great Calcite Belt 1, ²³⁴Th and McLane pumps, R/V Melville, Jan-Feb 2011 (sent Res.Assocs. M.Auro and S. Pike)
- North Atlantic, U.S. GEOTRACES North Atlantic Zonal Transect, McLane pumps, R/V Knorr, October 2010 (sent student, D. Ohnemus)
- North Pacific, Particle sampling methods—MULVFS, GEOTRACES Intercalibration cruise 2, R/V Knorr, May 2009 (24 days).
- Tropical Eastern North Atlantic Time-Series Observatory (TENATSO), SIRENA part 2, McLane pumps—**Chief Scientist**, R/V Islandia, March 2009 (2 days).
- Tropical North Atlantic, Sources of Iron to the Eastern Tropical North Atlantic (SIRENA), McLane pumps—**Chief Scientist**, R/V Oceanus, September 2008 (11 days).
- Tropical North Atlantic, Iron in the tropical and subtropical Atlantic, McLane pumps, R/V Oceanus, August 2008 (30 days).
- North Atlantic, Particle sampling methods—MULVFS, GEOTRACES Intercalibration cruise 1, R/V Knorr, July 2008 (13 days).
- Tropical South Atlantic, CoFeMUG, Geochemistry of particles, McLane pumps, R/V Knorr, Nov-Dec 2007 (28 days).
- Southern Ocean, Subantarctic Zone Sensitivity Study (SAZ-SENSE), Aurora Australis, ²³⁴Th and McLane pumps, Jan-Feb 2007 (34 days).
- North Atlantic (A16N-leg 1), Particulate inorganic carbon sensor testing and calibration, R/V R.H. Brown, June-July 2003 (22 days).
- California Current, Carbon sensor development, R/V Gordon Sproul, August 2003 (2 days).
- Southern Ocean, Southern Ocean Iron Enrichment Experiment (SOFeX)—MULVFS, R/V Roger Revelle, Jan-Feb 2002 (40 days).
- California Current, Transect of coastal to oligotrophic waters—MULVFS, R/V New Horizon, Aug 2001 (14 days).
- Subarctic Pacific (Lines P & Z), Coccolithophore response to trace metal additions, CCGS J.P. Tully, Aug-Sep 1999 (20 days).

- Gulf of Maine, Coccolithophore response to pCO₂ and trace metals, R/V Edwin Link, June 1999 (7 days).
- Sargasso Sea, Picoplankton and copper stress, R/V Oceanus, June 1996 (14 days).

PAPERS IN REFEREED JOURNALS AND BOOKS

SUBMITTED (* INDICATES STUDENT IN LAM LAB)

- Jeandel, C., Rutgers van der Loeff, M., **Lam, P.J.**, Roy-Barman, M., Sherrell, R.M., Kretschmer, S., German, C.R., Dehairs, F., submitted. What did we learn on the oceanic particle dynamic from the GEOSECS-JGOFS times? Submitted to *Progress in Oceanography* (special issue on particles).
- Lam, P.J.**, Ohnemus, D.C., Auro, M.E., Size fractionated major particle composition and mass from the US GEOTRACES North Atlantic Zonal Transect. Submitted to *Deep Sea Research Part II*.
- Lam, P.J.**, Twining, B.S., Jeandel, C., Roychoudhury, A.N., Resing, J.A., Geibert, W., Santschi, P.H., Anderson, R.F., Methods for analyzing the concentration and speciation of major and trace elements in marine particles. Submitted to *Progress in Oceanography* (special issue on particles).
- McDonnell, A.M.P., **P.J. Lam**, C.H. Lamborg, K.O. Buesseler, R. Sanders, J.S. Riley, C. Marsay, H. Smith, E.C. Sargent, R.S. Lampitt, J.K.B. Bishop. The oceanographic toolbox for the collection of sinking and suspended marine particles. Submitted to *Progress in Oceanography* (special issue on particles).
- *Ohnemus, D.C. and **P.J. Lam**. Cycling of Lithogenic Marine Particulates in the US GEOTRACES North Atlantic Zonal Transect. Submitted to *Deep-Sea Research II*.
- Revels, B.N., D.C. Ohnemus, **P.J. Lam**, T.M. Conway, S.G. John. The isotopic signature and distribution of particulate iron in the North Atlantic Ocean. Submitted to *Deep-Sea Research II*.
- Twining, B.S., Rauschenberg, S., Morton, P., Ohnemus, D.C., **Lam, P.J.** Comparison of particulate trace element concentrations in the North Atlantic Ocean as determined with discrete bottle sampling and in situ pumping. Submitted to *Deep Sea Research Part II*.

ACCEPTED (* INDICATES STUDENT IN LAM LAB)

- *Ohnemus, D.C., **P.J. Lam**, R.M. Sherrell, P.L. Morton, S.M. Rauschenberg, B.S. Twining. Piranha: a chemical method for dissolution of polyethersulfone filters and laboratory inter-comparison of marine particulate digests. Accepted pending minor revisions by *Limnology and Oceanography, Methods*.

PUBLISHED

- Lima, I.D., **P.J. Lam**, and S.C. Doney, 2013. Dynamics of particulate organic carbon flux in a global ocean model. *Biogeosciences*, 11 (4), 1177-1198. doi:10.5194/bg-11-1177-2014.
- Marcus, M.A. and **P.J. Lam**, Visualising Fe speciation diversity in ocean particulate samples by micro-XANES, *Environmental Chemistry*, 11 (1): 10-17, doi: 10.1071/EN13075.
- Lam, P.J.**, Robinson, L.F., Blusztajn, J., Li, C., Cook, M.S., McManus, J.F., Keigwin, L.D., 2013. Transient stratification as the cause of the North Pacific productivity spike during deglaciation. *Nature Geoscience* 6, 622-626. doi:10.1038/ngeo1873.
- Bishop, J.K.B., **P.J. Lam**, T.J. Wood, 2012. Getting good particles: accurate sampling of particles by large volume in-situ filtration. *Limnology and Oceanography Methods* 10, 681-710. doi:10.4319/lom.2012.10.681.
- Marchal, O. and **P.J. Lam**. 2012. What can paired measurements of Th isotope activity and particle concentration tell us about particle cycling in the ocean? *Geochimica et Cosmochimica Acta* 90, 126-148. doi:10.1016/j.gca.2012.05.009.
- Noble, A.E., C.H. Lamborg, D.C. Ohnemus, **P.J. Lam**, T.J. Goepfert, C.I. Measures, C.H. Frame, K.L. Casciotti, G.R. DiTullio, J. Jennings, and M.A. Saito. 2012. Basin-scale inputs of cobalt, iron, and manganese from the Benguela-Angola front to the South Atlantic Ocean. *Limnology and Oceanography* 57, 989-1010. doi:10.4319/lo.2012.57.4.0989.
- Lam, P. J.**, D. C. Ohnemus, and M.A. Marcus. 2012. The speciation of marine particulate iron adjacent to active and passive continental margins, *Geochimica et Cosmochimica Acta*, 80, 108-124, doi: 10.1016/j.gca.2011.11.044.
- Lam, P. J.**, S.C. Doney, and J. K. B. Bishop. 2011. The dynamic ocean biological pump: insights from a global compilation of Particulate Organic Carbon, CaCO₃, and opal concentration profiles from the mesopelagic. *Global Biogeochemical Cycles*, 25(3): GB3009, doi:10.1029/2010GB003868.

- Jacquet, S.H.M, **Lam, P. J.**, T. Trull, and F. Dehairs. 2011. Carbon export production in the Subantarctic Zone and Polar Front Zone south of Tasmania. *Deep Sea Research II*, **58(21-22)**: 2222-2234, doi: 10.1016/j.dsr2.2011.05.035.
- Lannuzel, D., T. Remenyi, **P. Lam**, A. Townsend, E. Ibsanmi, E. Butler, T. Wagener, V. Schoemann, and A.R. Bowie. 2011. Distributions of dissolved and particulate iron in the sub-Antarctic and Polar Frontal Southern Ocean (Australian sector). *Deep Sea Research II*, **58(21-22)**: 2094-2112, doi: 10.1016/j.dsr2.2011.05.027.
- Bowie, A.R, D. Lannuzel, T.A. Remenyi, T. Wagener, **P.J. Lam**, P.W. Boyd, C. Guieu, A. T. Townsend, and T. W. Trull. 2009. Different processes drive biogeochemical iron budgets in the subantarctic and polar Southern Ocean during summer. *Global Biogeochemical Cycles*, **23**, GB4034, doi:10.1029/2009GB003500.
- Lamborg, C.H. K.O. Buesseler and **P.J. Lam**. 2008. Sinking fluxes of minor and trace elements in the North Pacific Ocean measured during the VERTIGO program, *Deep Sea Research II*, **55(14-15)**: 1564-1577, doi:10.1016/j.dsr2.2008.04.012.
- Buesseler, K.O., T.W. Trull, D.K. Steinberg, M.W. Silver, D. Siegel, S.-I. Saitoh, C.H. Lamborg, **P.J. Lam**, D.M. Karl, N.Z. Jiao, M.C. Honda, M. Elskens, F. Dehairs, S.L. Brown, P.W. Boyd, J.K.B. Bishop, R.R. Bidigare. 2008. VERTIGO (VERTical Transport In the Global Ocean): a study of particle sources and flux attenuation in the North Pacific. *Deep Sea Research II*, **55(14-15)**: 1522-1539, doi:10.1016/j.dsr2.2008.04.024.
- Lam, P. J.** and J. K. B. Bishop. 2008. The continental margin is a key source of iron to the HNLC North Pacific Ocean, *Geophys. Res. Lett.*, **35**, L07608, doi:10.1029/2008GL033294.
- Buesseler, K.O., C.H. Lamborg, P.W. Boyd, **P.J. Lam**, T.W. Trull, R.R. Bidigare, J.K.B. Bishop, K. L. Casciotti, F. Dehairs, M. Elskens, M. Honda, D.M. Karl, D. Siegel, M.W. Silver, D.K. Steinberg, J. Valdes, B. Van Mooy and S. Wilson. 2007. Revisiting Carbon Flux through the Ocean's Twilight Zone. *Science*, **316**: 567-570, DOI: 10.1126/science.1137959.
- Lam, P.J.** and J.K.B. Bishop. 2007. High Biomass Low Export Regimes in the Southern Ocean. *Deep Sea Research II: The Role of Marine Organic Carbon and Calcite Fluxes in Driving Climate Change, Past and Future*, **54**: 601-638, DOI: 10.1016/j.dsr2.2007.01.013.
- Lam, P.J.**, J.K.B. Bishop, C.C. Henning, M.A. Marcus, G.A. Waychunas, I.Y. Fung. 2006. Wintertime phytoplankton bloom in the Subarctic Pacific supported by continental margin iron. *Global Biogeochemical Cycles*, **20(1)**, GB1006, DOI: 10.1029/2005GB002557.
- Lam, P.J.**, P.D. Tortell, and F.M.M. Morel. 2001. Differential effects of iron additions on organic and inorganic carbon production by phytoplankton. *Limnology and Oceanography*, **46(5)**: 1199-1202.
- Rosenthal, Y., **P. Lam**, E.A. Boyle, and J. Thomson. 1995. Authigenic cadmium enrichments in suboxic sediments: Precipitation and postdepositional mobility. *Earth and Planetary Science Letters*, **132**: 99-111.

OTHER PUBLICATIONS

- Lam, P.J.** and P.J. Morris. In situ marine sample collection system and methods. Patent Pending. U.S. Non Provisional Patent Application No. 13/864,655, submitted April 17, 2013.
- Lam, P.J.**, J.K.B. Bishop, R. Sherrell, P.J. Morris, B.S. Twining, T.J. Wood, D.C. Ohnemus, M. Charette. In-situ pumping sampling protocols for particulate trace metals for GEOTRACES. *In Sampling and Sample-handling Protocols for GEOTRACES Cruises*, edited by the 2010 GEOTRACES Standards and Intercalibration Committee.
- Wallace, D., C. Law, P. Boyd, Y. Collos, P. Croot, K. Denman, **P. Lam**, U. Riebesell, S. Takeda, P. Williamson. 2010. Ocean Fertilization: A summary for policy makers. A report commissioned by the Intergovernmental Oceanographic Commission.

Lam, P.J. and S.W. Chisholm. 2002. Iron fertilization of the Oceans: Reconciling Commercial Claims with Published Models. White Paper available at:
http://chisholmlab.mit.edu/publications/2002_lam_ironfertilization.pdf

PUBLISHED ABSTRACTS, PAPERS PRESENTED AT MEETINGS, INVITED LECTURES

*INDICATES STUDENTS IN THE LAM LAB

2014:

- **Lam, P.J.**, D.C. Ohnemus, J. Swartz, M.E. Auro, J. Kohut, M. Hatta. Sediments as a source of iron in the Ross Sea: sediment characteristics and particulate iron. Poster at 2014 Ocean Sciences Meeting, Honolulu, HI, Feb 23-28, 2014.
- *Ohnemus, D.C., **P.J. Lam**. Bioavailability of mineral iron-57 to HNLC surface communities. Poster at 2014 Ocean Sciences Meeting, Honolulu, HI, Feb 23-28, 2014.

2013:

- Was iron limiting the deglacial and glacial Subarctic Pacific? Marine Chemistry and Geochemistry Seminar Series. WHOI. September 17, 2013.
- Charismatic particles and other particular tales from the US North Atlantic GEOTRACES section. 2013 Gordon Research Conference on Chemical Oceanography, University of New England, Biddeford, ME, Aug 4-9, 2013. (**Invited Speaker**)
- **Lam, P.J.** (2013). Relating particulate organic carbon stocks to fluxes: the case of Vertigo. Talk presented at ASLO 2013 Aquatic Sciences Meeting, New Orleans, LA, Feb 17-22, 2013.
- *Rosengard, S.Z., **P.J. Lam**, M.E. Auro, S.M. Pike, W.M. Balch (2013). Organic carbon export across the Great Calcite Belt: Investigating ballast in calcite-rich surface waters of the Southern Ocean. Talk presented at ASLO 2013 Aquatic Sciences Meeting, New Orleans, LA, Feb 17-22, 2013.
- *Ohnemus, D.C., **P.J. Lam**, R. Shelley, W.M. Landing (2013). Lithogenic particulate tracers in the North Atlantic U.S. GEOTRACES section: inputs, scavenging, biological uptake. Talk presented at ASLO 2013 Aquatic Sciences Meeting, New Orleans, LA, Feb 17-22, 2013.
- Spectroscopic techniques for determining the speciation of particulate trace metals: Implications for source and bioavailability. Future Trends in Marine Chemistry Symposium. University of Bremen, Bremen, Germany, February 4-5, 2013. (**Invited Speaker**)

2012:

- Did iron cause a deglacial productivity spike in the Northwest Pacific? Department of Ocean, Earth and Atmospheric Sciences Seminar, Old Dominion University, Norfolk, VA, October 11, 2012. (**Invited Speaker**)
- Can we use microprobe and single-particle spectroscopic techniques to gain a statistically representative view of a system: the case of Fe in marine particles. Particle Speciation Workshop. LEGOS, Toulouse, France, September 27-28, 2012. (**Invited Keynote Speaker**)
- Particle mass and composition (major and minor) results from the US GEOTRACES North Atlantic section. Particle Speciation Workshop. LEGOS, Toulouse, France, September 27-28, 2012. (**Invited Keynote Speaker**)
- Using Nd isotopes to reconstruct paleo-Fe supply to the Northwest Pacific over the last glacial cycle. LEGOS Seminar. Laboratoire d'Etudes en Géophysique et Océanographie Spatiales (LEGOS), Toulouse, France. September 13, 2012. (**Invited Speaker**)
- Illuminating the black box of particulate iron speciation in the ocean. L-CABIE seminar. Laboratoire de Chimie Analytique, Bio-inorganique et Environnement (L-CABIE), Pau, France. September 14, 2012. (**Invited Speaker**)
- **Lam, P.J.**, M.E. Auro, D.C. Ohnemus (2012). Size-fractionated particle mass and composition during the U.S. GEOTRACES North Atlantic Zonal Transect. Talk presented at Goldschmidt 2012, Montreal, Canada. June 24-29, 2012.

- *Ohnemus, D.C. and **P.J. Lam** (2012). Trace element composition of size-fractionated particulates in the North Atlantic U.S. GEOTRACES section. Talk presented at Goldschmidt 2012, Montreal, Canada. June 24-29, 2012.
- Marcus, M.A., T. Lenoir, **P.J. Lam**, A. Manceau (2012). Making sense of large sets of XANES spectra. Talk presented at Goldschmidt 2012, Montreal, Canada. June 24-29, 2012.
- Severmann, S., D. Ohnemus, **P.J. Lam** (2012). The iron isotopic imprint of benthic iron release in suspended particles from the African oxygen minimum zone. Talk presented at Goldschmidt 2012, Montreal, Canada. June 24-29, 2012.

2011:

- **Lam, P.J.**, L. R. Robinson, J. Blusztajn, J.F. McManus, M.S. Cook, L.D. Keigwin (2011). Paleo-iron supply to the Western Subarctic Pacific since the last glaciation. Abstract PP41C-1788 presented at 2011 Fall Meeting, AGU, San Francisco, CA, 5-9 Dec.
- The speciation of marine particulate iron adjacent to active and passive continental margins. Chemical Oceanography and Biogeochemistry Seminar. MIT EAPS department. September 23, 2011. (**Invited**)
- **Lam, P.J.**, Ohnemus, D.C., and Marcus, M.A. The speciation of marine particulate iron adjacent to active and passive continental margins. Poster presented at Goldschmidt 2011, Prague, Czech Republic. August 14-19, 2011.
- *Ohnemus, D.C. and **Lam, P.J.** Trace element composition of size-fractionated particulates in the Mauritanian upwelling zone of the eastern North Atlantic U.S. GEOTRACES section. Talk at Goldschmidt 2011, Prague, Czech Republic. August 14-19, 2011.
- **Lam, P.J.**, Doney, S.C., and Bishop, J.K.B. The dynamic biological pump: insights from a global compilation of particulate organic carbon (POC), CaCO₃, and opal concentration profiles from the mesopelagic. Poster presented at the Ocean Carbon and Biogeochemistry Summer Workshop, WHOI, July 18-21, 2011.
- Illuminating the black box of particulate iron speciation in the ocean. Marine Sciences Program seminar series. University of South Carolina, March 4, 2011. (**Invited**)

2010:

- **Lam, P. J.** (2010) A global compilation of POC, CaCO₃, and Opal concentration profiles in the mesopelagic, *Eos Trans. AGU*, 91(26), Ocean Sci. Meet. Appl., Abstract BO24B-06.
- *Ohnemus, D.C., **P.J. Lam**, J.K.B. Bishop (2010) The mini-MULVFS holder: A new 142mm filter holder design for particulate sampling from in-situ pumps, *Eos Trans. AGU*, 91(26), Ocean Sci. Meet. Suppl., Abstract CO25B-05.
- Wood, T.J., J.K. Bishop, **P.J. Lam** (2010) Large and small particle collection by in-situ filtration during GEOTRACES inter-calibration expeditions. *Eos Trans. AGU*, 91(26), Ocean Sci. Meet. Suppl., Abstract CO23A-01.
- Dehairs, F., S. Jacquet, A. Cavagna, D. Cardinal, **P.J. Lam**, B. Griffiths, T. Trull. (2010) Export and twilight zone carbon remineralization efficiencies in SAZ and PFZ of the Southern Ocean. *Eos Trans. AGU*, 91(26), Ocean Sci. Meet. Appl., Abstract BO25G-13.
- Illuminating the black box of particulate iron speciation in the ocean. Marine Chemistry and Geochemistry Seminar Series. WHOI. Nov 2, 2010.

2009:

- The biological pump in the Southern Ocean and beyond. Marine Chemistry and Geochemistry Seminar Series. WHOI. Sep 29, 2009.
- The export of pyrite from the African continental margin into the water column (and other insights from synchrotron chemical mapping). Poster at Gordon Research Conference on Chemical Oceanography, Tilton, NH. Aug 2-7, 2009.
- Southern Ocean (and beyond) particle fluxes: efficiency of shallow POC export and export to the mesopelagic. Ocean Carbon and Biogeochemistry (OCB) summer workshop, WHOI, Jul 20-23, 2009. (**Invited**)
- SIRENA: Sources of Iron to the Eastern North Atlantic. WHOI biogeochemistry seminar. June 3, 2009.

2008:

- **Lam, P. J.**, J.K. Bishop, J.M. Lee, T.J. Wood (2008) Tracing the source of iron to the HNLC western subarctic Pacific. 2008 Ocean Sciences Meeting, March 2-7, 2008, Orlando, Florida. **(Invited)**
- SAZ-SENSE: the SubAntarctic Zone Sensitivity Project. WHOI biogeochemistry seminar. May 28, 2008.
- Using synchrotron x-ray radiation to trace the source of iron to the open ocean. Dept. of Physics, U Mass Dartmouth, Apr 11, 2008. **(Invited)**

2007:

- Community Structure, Ballast, and POC profiles in the mesopelagic Twilight Zone. Dept. of Estuarine and Ocean Sciences seminar series, School of Marine Science and Technology, University of Massachusetts, Dartmouth, Oct 24, 2007. **(Invited)**
- Lateral transport of elements from the margin to the open ocean: using particles to trace the sources of iron. Gordon Research Conference on Chemical Oceanography, Tilton, NH. Aug 5-10, 2007. **(Invited)**
- The speciation of marine particulate iron from an active margin: a tracer of source and particle dynamics. WHOI biogeochemistry seminar. July 18, 2007.
- The continental margin as a source of iron to the open ocean. Geochemistry Division Seminar, Lamont-Doherty Earth Observatory, Apr 4, 2007. **(Invited)**
- Iron supply and biological productivity in the ocean. Dept. of Earth Sciences, University of New Hampshire. Apr 2, 2007. **(Invited)**
- The continental margin as a source of iron to the open ocean. School of Earth and Atmospheric Sciences, Georgia Tech. Mar 15, 2007. **(Invited)**

2006:

- **Lam, P. J.**, J.K. Bishop (2006) Ballasting and remineralization of POC in the Twilight Zone of the Southern Ocean. *Eos Trans. AGU*, 86(36), Ocean Sci. Meet. Suppl., Abstract OS24H-05.
- The continental margin as a source of iron to the open ocean. Dept. of Oceanography, SOEST, University of Hawaii. Nov 2, 2006. **(Invited)**
- Who needs dust? The continental margin as a source of iron to the open ocean. E34 Oceanography and Geobiology Seminar, Dept. of Earth, Atmospheric, and Planetary Science. MIT. Oct 20, 2006. **(Invited)**
- Hunting for an Fe source in the Northwest Pacific. WHOI biogeochemistry seminar. Sept 26, 2006.
- Iron supply and primary productivity in the ocean. Dept. of Civil and Environmental Engineering Seminar. MIT. Apr 4, 2006. **(Invited)**
- The continental margin as a source of iron to the open ocean. Marine Chemistry and Geochemistry Seminar Series. WHOI. Jan 31, 2006.

2005:

- Ballasting in the Twilight Zone? AGU Chapman Conference on Marine Organic Carbon and Calcite Fluxes, WHOI. Jul 2005. **(Invited)**
- Iron supply, marine productivity, and the biological carbon pump. Department of Earth and Planetary Science, McGill University, Montreal, Canada. Apr 18, 2005. **(Invited)**

2004:

Lam, P. J., J.K. Bishop, C.C. Henning, M.A. Marcus, G.A. Waychunas, I.Y. Fung (2004) Continental delivery of iron to Ocean Station Papa in the Subarctic Pacific. *Eos Trans. AGU*, 85(47), Fall Meet. Suppl., Abstract OS43A-0532.

2002:

Lam, P. J., T.J. Wood, J.K. Bishop (2002) Large volume in-situ filtration during SOFeX: an overview of preliminary results. *Eos Trans. AGU*, 83(47), Fall Meet. Suppl., Abstract OS11A-0218, 2002.