

## CURRICULUM VITAE

### **BENJAMIN A. S. VAN MOOY**

*Senior Scientist*

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### **EDUCATION:**

**B.A.:** June, 1995. Chemistry and Geological Sciences (Honors). Northwestern University.

Advisors: David Hollander and Brad Sageman

Thesis: *Skeletal limestones of the Cretaceous Western Interior Seaway.*

**M.S.:** June, 2000. Chemical Oceanography. University of Washington.

Advisor: Richard G. Keil.

Thesis: *Impact of suboxia on the degradation of amino acids in sinking POC.*

**Ph.D.:** December, 2003. Chemical Oceanography. University of Washington.

Advisor: Allan H. Devol.

Thesis: *Carbon and phosphorus cycling by phylogenetically defined groups of bacteria in the North Pacific Ocean.*

### **PROFESSIONAL EXPERIENCE:**

Senior Scientist, Woods Hole Ocean. Inst., Dept. Mar. Chem. & Geochem, 2016-present

Associate Scientist, Woods Hole Ocean. Inst., Dept. Mar. Chem. & Geochem, 2008-2016

Visiting Professor, Southampton University, 2012 – 2017.

Assistant Scientist, Woods Hole Ocean. Inst., Dept. Mar. Chem. & Geochem, 2004-2008.

Postdoctoral Scholar, Woods Hole Ocean. Inst., Dept. Mar. Chem. & Geochem, 2004.

Research Assistant, University of Washington, School of Oceanography, 1998 – 2003.

Research Technician, Northwestern University, Dept. of Geological Sciences, 1996-1998.

REU Scholar, Carnegie Institution of Washington, Geophysical Laboratory, 1995.

Laboratory Assistant, Northwestern University, Dept. of Geological Sciences, 1993-1995.

### **AWARDS AND RECOGNITION:**

SCOPE Investigator, Simons Foundation, 2015-present.

Kavli Frontiers of Science Fellow, Kavli Foundation, 2013

Diamond Jubilee International Visiting Fellowship, Southampton University, 2013-2017.

Postdoctoral Award at Woods Hole Oceanographic Institution. Supported postdoctoral position.

Advisors: D. Repeta and K. Edwards, 2003.

National Estuarine Research Reserve Graduate Assistantship (NOAA). Funding for research of organic matter cycling in the sediments of Padilla Bay, Washington, 2000.

NSF Graduate Research Award. Honorable mention for proposal to study organic matter cycling on continental margins, 1998.

Egvedt Scholarship. Awarded to incoming graduate student at the School of Oceanography of high academic potential, 1998.

NSF REU Scholarship. Supported summer research at the Geophysical Laboratory, Carnegie Institution of Washington, 1998.

Schlanger Undergraduate Earth Sciences Award. Recognizes superior scholarship in the Department of Geological Sciences, Northwestern University, 1995.  
Charles Hurd Scholarship for undergraduate research. Competitive grant for undergraduate research at Northwestern University, 1993.

**PROFESSIONAL AFFILIATIONS:**

Member, American Chemical Society, 2016-present.  
Member, Geochemical Society, 2012-present.  
Member, American Geophysical Union, 1997-present.  
Member, American Society for Limnology and Oceanography, 1997-present.  
Member, American Society for Mass Spectrometry, 2015-2016.

**RESEARCH INTERESTS:**

Microbial phosphorus and organic carbon cycling in marine and aquatic environments.  
Lipidomics of plankton, sediments, and marine biofilms.  
Impact of cell-cell signaling in export of sinking organic carbon from the surface ocean.  
Algal biofuels.  
Ship's hull biofouling.  
Microbial petroleum degradation.  
New technologies for measuring microbial respiration.

**PROFESSIONAL ACTIVITIES:**

**WHOI (Non Education Related)**

*Committees:*

Scientific Staff Executive Committee. 2014-present (Chairman 2016 to 2017).  
Radiation Safety Committee. 2007-present (Chairman 2015-present)  
Search Committee for WHOI Marine Chemistry and Geochemistry Department. 2004, 2006, 2010, 2015.  
Search Committee for Director of Office of Technology Transfer. 2013.  
Search Committee for WHOI Vice President for Academic Programs and Dean. 2004-2005.  
FT-MS Facility Advisory Committee. 2008 - 2012.  
Office of Applied Oceanography Advisory Committee. 2009 - 2014.  
Development Office "Useful Chemicals" Advisory Committee. 2008 - 2014.

*Panels:*

Independent Study Review Panel. 2015 and 2017.  
WHOI Access to the Sea Review Panel. 2010.

*Development Activities:*

Presentations to Board of Trustees. 2010 and 2011.  
Innumerable presentations on behalf of WHOI Development Office  
Innumerable presentations on behalf of WHOI Office of Technology Transfer

**Outside WHOI**

*Associate Editor:*

*Limnology and Oceanography* 2016-present.  
*Geochimica et Cosmochimica Acta.* 2012-2017.  
*Frontiers in Aquatic Microbiology.* 2012-2016.

*National Committees:*

Post-Cruise Assessment Report Committee. UNOLS. 2015-present.  
Scientific Steering Committee. OCB. 2015-present.

*National Panels:*

Rolling Deck to Repository Advisory Panel. 2016-2018  
NSF EFRI Multicellular and Inter-Kingdom Signaling Review Panel. 2011.  
DoD Defense University Research Instrumentation Program. 2009.  
NSF Chemical Oceanography Review Panel. 2007, 2009.

*Proposal Reviewer:*

NSF Chemical Oceanography, NSF Biological Oceanography, NSF OTIC, NSF Molecular Cell Biology, NSF Engineering, DoD DURIP, NOAA Sea Grant, ACS Petroleum Research Fund, Institut français de la Biodiversité, UK National Environment Research Council, US-Israel Binational Science Foundation, Croatian Science Foundation, Netherlands Organisation for Scientific Research.

*Invited Workshops:*

NASA/NSF Alternative Chemistries Workshop, 2012  
SOST DWH Workshop, 2011  
OCB Scoping Workshop. A biogeochemical flux program aligned with OOI. 2011.  
OCB Scoping Workshop (Planning committee). Molecular biology of biogeochemistry. 2010.  
IMBER IMBIZO Meeting on Ecological Stoichiometry (Planning committee). 2010.  
WHOI Dark energy: the deep oceanic biosphere. 2004.

*Invited Investigator:*

Centre d'Océanologie de Marseille. 2006  
Photosynthesis Laboratory, Czech Academy of Sciences, 2005.

*Session leader:*

Infochemical Signaling. ASLO Meeting. Granada, Spain, 2015.  
Towards a definition of ocean biogeochemical provinces. GRC-Chemical Oceanography, Biddeford, ME, 2013.  
Biogeochemistry of P-limited marine environments. Ocean Sciences Meeting. Portland, OR, 2010.  
Biogeochemistry of planktonic phosphorus cycling: Genes to geochemical cycles. Ocean Sciences Meeting. Honolulu, Hawaii, 2006.  
Upper ocean plankton dynamics. Ocean Sciences Meeting. Portland, Oregon, 2004.

*Cruise- and project-related meetings:*

GBMF-MMI Infochemical Signaling Project, Woods Hole, 2011, 2013, 2015.

Pre-cruise Meeting. OUTPACE. Virtual attendee. Marseilles, France, 2014.

Pre-cruise Meeting. NA-VICE cruise. Rutgers University, 2012.

Pre-cruise Meeting. BOUM. Virtual attendee. Marseilles, France, 2007.

Post-cruise Meeting. BIOSOPE. Villefranche-sur-mer, France. 2005

*Journal Reviewer:*

*Applied and Environmental Microbiology, Aquatic Biology, Aquatic Microbial Ecology, Deep-Sea Research I & II, Environmental Microbiology, Frontiers in Aquatic Microbiology, Frontiers in Marine Science, Geochimica et Cosmochimica Acta, ISME Journal, Limnology and Oceanography, Limnology and Oceanography Methods, Marine Drugs, Marine Ecology Progress Series, Proceedings of the National Academy of Science, Nature, Nature Geoscience, Organic Geochemistry, Science.*

**PARTICIPATION IN EDUCATION:**

*Teaching:*

Instructor. MIT 12.742, Marine Chemistry (12 units). 2011.

Co-Instructor. MIT 12.742, Marine Chemistry (12 units). With E. Kujawinski 2017-2018.

Co-Instructor. MIT 12.742, Marine Chemistry (12 units). With S. Doney. 2007-2010, 2012-2015.

Co-Instructor. MIT 12.759, Marine Chemistry Seminar (6 units). With D. Repeta. 2006.

Instructor. Short-course on oceanography for BP scientists. 2011 & 2012.

Organizer. Marine Chemistry and Geochemistry Seminar Series. 2009.

Guest Lecturer, Introduction to Marine Geochemistry, University of Southampton. 2013, 2014

Guest lecturer, Marine Organic Geochemistry, MIT/WHOI Joint Program. 2005, 2007, 2013.

Guest lecturer, Phytoplankton Seminar, MIT/WHOI Joint Program. 2007.

*Advising:*

MIT/WHOI Joint Program Students

Henry Holm. 2018-present

James Collins. 2011-2017.

Bethanie Edwards. 2010-2016.

Kimberly Pependorf. 2007-2012.

Laura Hmelo. 2005-2010.

WHOI Postdoctoral Scholars

Kevin Becker. 2015-present.

Patrick Martin. 2011-2013.

Suni Shah. 2010-2014.

Timothy Shanahan. 2006-2008.

WHOI Postdoctoral Investigators

Jon Hunter. 2016-2018

Alina Ebling. 2017-present

Andreas Krupke. 2014-2015.

James Fulton. 2011-2013.

WHOI Summer Students and Guest Students

Lisa Coe (Pittsburgh), 2019

Gabriel Liguori (Yale), 2015.  
Laura Sofen (Carleton), 2010.  
Lauren Yum (KAUST), 2009.  
Rose Kantor (Carleton), 2009.  
Nick Ward (Washington) 2007  
Kim Pependorf (Caltech), 2006

Host to WHOI Guest Investigators

Jozef Nissimov, 2014.  
Assaf Vardi, 2008.

Host for Southampton/WHOI Exchange Student

Jon Hunter, 2013.  
Patrick Martin, 2009.

Host for Czech Microbiology Laboratory Graduate Students

Eva Žišková. 2010.  
Jan Pilný, 2010.

Ph.D. Committee Member,

Marianne Acker, MIT/WHOI. 2018-present  
Noelle Held, MIT/WHOI. 2016-present  
Winn Johnson, MIT/WHOI. 2014-2017.  
Patricia Tcaciuc, MIT/WHOI. Defense Chair. 2015  
Erin Bertrand, MIT/WHOI. 2009-2011.  
Jesse Kneeland, MIT/WHOI 2009-2011.  
Hunter Oates, MIT/WHOI. 2007-2008.  
Jennifer Culbertson. Boston University. 2005-2007.

Peter Smyntek. SUNY ESF. Examiner. 2007.

High School Science Fair Students

Oliver Neumann, Regional Finalist, 2010-2011.  
Pippa Ryan, Commonwealth Finalist, 2009-2010.  
MIT/WHOI Joint Program Class Advisor. 2005, 2015.

**NON-EDUCATION SUPERVISION AT WHOI:**

*Current:*

Helen Fredricks, Research Specialist. 2004-present.  
Daniel Lowenstein, Research Assistant II. 2018-present.  
Kelsey Perry, Part-time Laboratory Assistant II. 2017-present.  
Marissa Small, Part-time Laboratory Assistant II. 2018-present

*Past:*

Fiona Hopewell, Part-time Research Assistant I. 2015-2017.  
Henry Holm, Research Assistant I, 2017-2018.  
Justin Ossolinski, Senior Research Assistant. 2007-2017.  
Jenn Linton, Casual Research Assistant. 2016.  
Jeremy Tagliaferre, Research Assistant I, 2013-2014.  
Krista Longnecker, Research Associate III. 2009-2011.  
Byron Pedler, Research Assistant II. 2006-2007

Katie Barott, Research Assistant II. 2006-2007  
Oliver Newman. Part-time helper, 2012, 2014.  
Olivia Kurz. Part-time helper. 2006.  
Pia Hugus. Part-time helper. 2004.  
Suzanne Crabtree. Volunteer. 2005.

**CRUISE PARTICIPATION (\* Chief Scientist):**

\*West Antarctic Peninsula, 2018, R/V *Laurence M. Gould*  
\*West Antarctic Peninsula, 2017, R/V *Laurence M. Gould* and *Palmer Station*  
\*Western North Atlantic, 2017, R/V *Neil Armstrong*  
North Pacific subtropical gyre, 2016, R/V *Kilo Moana*  
Clayoquot Sound, 2014, R/V *Clifford Barnes*  
\* Western tropical North Atlantic, 2014, R/V *Atlantic Explorer*  
Great Salt Lake, 2013, R/V *Bonneville*  
Western North and South Atlantic, 2013 R/V *Knorr*  
\* Western North Atlantic, 2012, R/V *Knorr*.  
\* Sargasso Sea, North Atlantic, 2011. R/V *Atlantic Explorer*.  
\*North Pacific subtropical gyre, 2010. R/V *Kilo Moana*.  
Gulf of Mexico, 2010. R/V *Endeavor*.  
\*Clayoquot Sound, North Pacific, 2009. R/V *Clifford Barnes*.  
Atlantis Deep, Red Sea. 2008. R/V *Oceanus*.  
\*Nova Scotia to Bermuda, North Atlantic. 2008. R/V *Oceanus*.  
Bermuda to Puerto Rico, North Atlantic. 2007. R/V *Atlantic Explorer*.  
Sargasso Sea, North Atlantic. 2007. R/V *Atlantic Explorer*.  
\* Massachusetts shelf break, North Atlantic. 2005. R/V *Tioga*.  
Easter Island to Concepcion, Chile; South Pacific. 2004. R/V *L'Atalante*  
Hawaiian Ocean Time-Series cruise #161; North Pacific. 2004. R/V *Kilo Moana*.  
Hawaiian Ocean Time-Series cruise #157; North Pacific. 2004. R/V *Kaimikai-o-Kanaloa*  
Hawaiian Ocean Time-Series cruise #150; North Pacific. 2003. R/V *Kaimikai-o-Kanaloa*  
Hawaiian Ocean Time-Series cruise #140; North Pacific. 2002. R/V *Kaimikai-o-Kanaloa*  
Orca Basin; Gulf of Mexico. 2002. R/V *Suncoaster*.  
\* Carr Inlet, Puget Sound Washington, 2002. R/V *Clifford Barnes*.  
Transect off Washington coast; North Pacific. 2001. R/V *Thomas Thompson*.  
\*Saanich Inlet, B.C.; Strait of Georgia. 2001. R/V *Clifford Barnes*.  
\*Saanich Inlet, B.C.; Strait of Georgia . 2000. R/V *Clifford Barnes*.  
\* Carr Inlet, Washington; Puget Sound. 2000. R/V *Clifford Barnes*.  
Eastern tropical North Pacific; 2000. R/V *New Horizon*.  
Lake Michigan. 1996. R/V *Neeskay*  
Orca Basin; Gulf of Mexico. 1997. R/V *Longhorn*.  
Lake Michigan. 1996. R/V *Neeskay*  
Sargasso Sea; North Atlantic. 1995. R/V *Cape Hatteras*

**PAPERS IN REFEREED JOURNALS** (\*Member of Van Mooy Lab Group; †Guest Investigator or Engineer in the Van Mooy Lab)

83. Johnson, W.M., Longnecker, K., Kido Soule, M.C., Arnold, W.A., Bhatia, M.P., Hallam, S.J., Van Mooy, B.A., Kujawinski, E.B., *In press*. Metabolite composition of sinking particles differs from surface suspended particles across a latitudinal transect in the South Atlantic. *Limnol. Oceanogr.*
82. Kranzler, C.F., Krause, J.W., Brzezinski, M.A., Edwards, B.R., Biggs, W.P., Maniscalco, M., McCrow, J.P., \*Van Mooy, B.A.S., Bidle, K.D., Allen, A.E., Thamatrakoln, K., *In press*. Silicon limitation facilitates virus infection and mortality of marine diatoms. *Nat. Microbiol.*
81. Mackey, K.R.M., Van Mooy, B.A.S., Cade-Menun, B.J., Paytan, A., 2019. Phosphorus dynamics in the environment., in: Schmidt, T. (Ed.), *Encyclopedia of Microbiology*, 4th ed.
80. †Nissimov, J.I., Talmy, D., Haramaty, L., \*Fredricks, H.F., Zelzion, E., Knowles, B., Eren, A.M., Vandzura, R., Laber, C.P., Schieler, B.M., Johns, C.T., More, K.D., Coolen, M.J.L., Follows, M.J., Bhattacharya, D., Van Mooy, B.A.S., Bidle, K.D., 2019. Biochemical diversity of glycosphingolipid biosynthesis as a driver of Coccolithovirus competitive ecology. *Environ. Microbiol.* 21, 2182-2197.
79. Van Mooy, B.A.S., 2019. Synthesis of high molar activity <sup>33</sup>P-labeled phosphorous acid. *J. Radioanal. Nucl. Chem.* 320, 885-888.
78. Johns, C.T., Grubb, A., †Nissimov, J.I., Natale, F., Knapp, V., Mui, A., \*Fredricks, H., Van Mooy, B.A.S., Bidle, K.D., 2019. The mutual interplay between calcification and coccolithovirus infection. *Environ. Microbiol.* 21, 1896-1915.
77. Farnelid, H., Turk-Kubo, K., Ploug, H., \*Ossolinski, J.E., \*Collins, J.R., Van Mooy, B.A.S., Zehr, J.P., 2019. Diverse diazotrophs are present on sinking particles in the North Pacific Subtropical Gyre. *ISME J.* 13, 170-182.
76. Schieler, B.M., Soni, M.V., Brown, C.M., Coolen, M.J.L., \*Fredricks, H.F., Van Mooy, B.A.S., Hirsh, D.J., Bidle, K.D., 2019. Nitric oxide production and antioxidant function during viral infection of the coccolithophore *Emiliana huxleyi*. *ISME J* 13, 1019-1031.
75. \*Becker, K.W., \*Collins, J.R., Durham, B.P., Groussman, R.D., White, A.E., \*Fredricks, H.F., \*Ossolinski, J.E., Repeta, D.J., Carini, P., Armbrust, E.V., Van Mooy, B.A.S., 2018. Daily changes in phytoplankton lipidomes reveal mechanisms of energy storage in the open ocean. *Nat. Comm.* 9, 5179.
74. Frischkorn, K. R., Rouco, M., Van Mooy, B. A.S., & Dyhrman, S. T. 2018. The Trichodesmium microbiome can modulate host N<sub>2</sub> fixation. *Limnol. Oceanogr. Lett.*, 3(6), 401-408.
73. Frischkorn, K.R., \*Krupke, A., Rouco, M., Salazar Estrada, A.E., Van Mooy, B.A.S., Dyhrman, S.T., 2018. Trichodesmium physiological ecology and phosphate reduction in the western Tropical South Pacific. *Biogeosci.* 15, 5761-5788..

72. Bundy, R.M., Boiteau, R.M., McLean, C., Turk-Kubo, K.A., McIlvin, M.R., Saito, M.A., Van Mooy, B.A.S., Repeta, D.J., 2018. Distinct Siderophores Contribute to Iron Cycling in the Mesopelagic at Station ALOHA. *Front. Mar. Sci.*
71. \*Collins, J.R., \*Fredricks, H.F., Bowman, J.S., Ward, C.P., Moreno, C., Longnecker, K., Marchetti, A., Hansel, C.M., Ducklow, H.W., Van Mooy, B.A.S., 2018. The molecular products and biogeochemical significance of lipid photooxidation in West Antarctic surface waters. *Geochim. Cosmochim. Acta* 232, 244-264.
70. \*Collins, J.R., †Fucile, P.D., †McDonald, G., \*Ossolinski, J.E., Keil, R.G., †Valdes, J.R., Doney, S.C., Van Mooy, B.A.S. 2018. An autonomous, in situ light-dark bottle device for determining community respiration and net community production. *Limnol. Oceanogr. Meth.* 16, 323-338.
69. Glabonjat, R., †Raber, G., Van Mooy, B.A.S., Francesconi, K.A., 2018. Arsenobetaine in seawater: Depth profiles from selected sites in the North Atlantic. *Environ. Sci. Tech.* 52, 522-530.
68. Laber, C.P., \*Hunter, J.E., Carvalho, F., \*Collins, J.R., Hunter, E.J., Schieler, B.M., Boss, E., More, K., Frada, M., Thamatrakoln, K., Brown, C.M., Haramaty, L., \*Ossolinski, J., Fredricks, H., Nissimov, J.I., Vandzura, R., Sheyn, U., Lehahn, Y., Chant, R.J., Martins, A.M., Coolen, M.J.L., Vardi, A., DiTullio, G.R., Van Mooy, B.A.S., Bidle, K.D., 2018. Coccolithovirus facilitation of carbon export in the North Atlantic. *Nat. Microbiol.* 3, 537-547.
67. Frischkorn, K.R., Rouco, M., Van Mooy, B.A.S., Dyhrman, S.T., 2017. Epibionts dominate metabolic functional potential of *Trichodesmium* colonies from the oligotrophic ocean. *ISME J* 11, 2090-2101.
66. \*Fulton JM, \*Fredricks HF, Van Mooy BAS., 2017. Intact polar lipid export in the temperate western North Atlantic and Sargasso Sea. *Organic Geochemistry* 114:45-56.
65. \*Fulton JM, Kendrick BJ, DiTullio GR, Van Mooy BAS., 2017. Alkenone unsaturation during virus infection of *Emiliana huxleyi*. 111:82-85.
64. Johnson, Z.I., Bidigare, R.R., Blinebry, S.K., Brown, S.L., Cullen, J.J., Loftus, S., Redalje, D.G., Swink, C., Van Mooy, B.A.S., 2017. Quantification of neutral lipids from marine phytoplankton using Nile Red, In: *Consequences of Microbial Interactions with Hydrocarbons, Oils, and Lipids: Production of Fuels and Chemicals* Springer.
63. \*Collins, J.R., \*Edwards, B.R., \*Fredricks, H.F., and Van Mooy, B.A.S. 2016. LOBSTAHS: An adduct-based lipidomics strategy for discovery and identification of oxidative stress biomarkers. *Anal. Chem.* 88: 7154-7162.
62. Hansel, C.M., Buchwald, C., Diaz, J., \*Ossolinski, J.E., Dyhrman, S.T., Van Mooy, B.A.S., †Polyviou, D., 2016. Dynamics of extracellular superoxide production by *Trichodesmium* colonies from the Sargasso Sea. *Limnol. Oceanogr.* 61, 1188-1200.



61. Durkin, C.A., Van Mooy, B.A.S., Dyhrman, S.T., Buesseler, K.O., 2016. Sinking phytoplankton associated with carbon flux in the Atlantic Ocean. *Limnol. Oceanogr.* 61, 1172-1187.
60. \*Krupke, A., \*Ossolinski, J.E., Hmelo, L., Mincer, T.J., Van Mooy, B.A.S., 2016. Quorum sensing plays a complex role in regulating the enzyme hydrolysis activity of microbes associated with sinking particles in the ocean. *Front. Mar. Sci.* 3. doi: 10.3389/fmars.2016.00055.
59. Shemi, A., Schatz, D., \*Fredricks, H.F., Van Mooy, B.A.S., Porat, Z., Vardi, A., 2016. Phosphorus starvation induces membrane remodeling and recycling in *Emiliania huxleyi*. *New Phytol.*, 211: 886-898.
58. Sebastian, M., Smith, A.F., Gonzalez, J.M., \*Fredricks, H.F., Van Mooy, B.A.S., Koblizek, M., Brandsma, J., Koster, G., Mestre, M., Mostajir, B., Pitta, P., Postle, A.D., Sanchez, P., Gasol, J.M., Scanlan, D.J., Chen, Y., 2016. Lipid remodelling is a widespread strategy in marine heterotrophic bacteria upon phosphorus deficiency *ISME J.* 10, 968-978.
57. †Hunter, J. E., Frada, M. J., \*Fredricks, H. F., Vardi, A., & Van Mooy, B.A.S. 2015. Targeted and untargeted lipidomics of *Emiliania huxleyi* viral infection and life cycle phases highlights molecular biomarkers of infection, susceptibility, and ploidy. *Front. Mar. Sci.* 2. doi: 10.3389/fmars.2015.00081
56. \*Collins, J.R., \*Edwards, B.R., Thamatrakoln, K., \*Ossolinski, J.E., DiTullio, G.R., Bidle, K.D., Doney, S.C., Van Mooy, B.A.S., 2015. The multiple fates of sinking particles in the North Atlantic Ocean. *Global. Biochem. Cycles.* doi: 10.1002/2014GB005037
55. Carini, P., Van Mooy, B.A.S., Thrash, J.C., White, A., Zhao, Y., Campbell, E.O., \*Fredricks, H.F., Giovannoni, S.J., 2015. SAR11 lipid renovation in response to phosphate starvation. *Proc Natl Acad Sci USA* 112, 7767-7772.
54. Mougnot, C., Zimmerman, A.E., Bonachela, J.A., \*Fredricks, H., Allison, S.D., Van Mooy, B.A.S., Martiny, A.C., 2015. Resource allocation by the marine cyanobacterium *Synechococcus* WH8102 in response to different nutrient supply ratios. *Limnol. Oceanogr.* 60, 1634-1641.
53. \*Edwards, B.R., Bidle, K.D., Van Mooy, B.A.S., 2015. Dose dependent regulation of microbial activity on sinking particles by polyunsaturated aldehydes: Implications for the carbon cycle. *Proc. Natl. Acad. Sci. USA* 112, 5909-5914.
52. Van Mooy, B.A.S., \*Krupke, A., Dyhrman, S.T., \*Fredricks, H.F., Frischkorn, K.R., \*Ossolinski, J.E., Repeta, D.J., Rouco-Molina, M., Seewald, J.S., Sylva, S.P., 2015. Major role of planktonic phosphate reduction in the marine phosphorus redox cycle. *Science* 348, 783-785.
51. Durham, B.P., Sharma, S., Luo, H., Smith, C.B., Amin, S.A., Bender, S.J., Dearth, S.P., Van Mooy, B.A.S., Campagna, S.R., Kujawinski, E.B., Armbrust, E.V., Moran, M.A., 2015. Cryptic Carbon and Sulfur Cycling Between Surface Ocean Plankton. *Proc. Natl. Acad. Sci. USA* 112, 453-457.
50. Levitan, O., Dinamarca, J., Zelzion, E., Lun, D.S., Guerra, L.T., Kim, M.K., Kim, J., Van Mooy, B.A.S., Bhattacharya, D., Falkowski, P.G., 2015. Remodeling of intermediate

- metabolism in the diatom *Phaeodactylum tricornutum* under nitrogen stress. *Proc. Natl. Acad. Sci. USA* 112, 412-417.
49. Kendrick, B.J., DiTullio, G.R., Cyronak, T.J., \*Fulton, J.M., Van Mooy, B.A.S., Bidle, K.D., 2014. Temperature-induced viral resistance in *Emiliana huxleyi* (Prymnesiophyceae). *PLoS ONE* 9, e112134.
  48. Honjo, S., Eglinton, T.I., Taylor, C.D., Ulmer, K.M., Sievert, S.M., Bracher, A., German, C.R., Edgcomb, V., Francois, R., Iglesias-Rodriguez, M.D., Van Mooy, B.A.S., Repeta, D.J., 2014. Understanding the Role of the Biological Pump in the Global Carbon Cycle: An Imperative for Ocean Science. *Oceanography* 27, 10-16.
  47. Lehahn, Y., Koren, I., Schatz, D., Frada, M., Sheyn, U., Boss, E., Efrati, S., Rudich, Y., Trainic, M., Sharoni, S., Laber, C., DiTullio, G.R., Coolen, M.J.L., Martins, A.M., Van Mooy, B.A.S., Bidle, K.D., Vardi, A., 2014. Decoupling of physical from biological processes to assess the impact of viruses on a mesoscale algal bloom. *Curr. Biol.* 24, 1-6.
  46. Ray, J.L., Haramaty, L., Thyrrhaug, R., \*Fredricks, H.F., Van Mooy, B.A.S., Bidle, K.D., Larsen, A., Sandaa, R.-A., 2014. Virus infection of *Haptolina ericina* and *Phaeocystis pouchetii* implicates evolutionary conservation of programmed cell death induction in marine haptophyte-virus interactions. *J. Plankton Res.* 36, 943-955.
  45. †Bellinger, B.J., Van Mooy, B.A.S., Cotner, J.B., \*Fredricks, H.F., Benitez-Nelson, C.R., Thompson, J., Cotter, A., Knuth, M., Godwin, C.M., 2014. Physiological modifications by seston in response to physicochemical gradients within Lake Superior. *Limnol Oceanogr.* 59: 1011-1026.
  44. \*Martin, P., Dyhrman, S.T., Lomas, M.W., Poulton, N., Van Mooy, B.A.S., 2014 Accumulation and enhanced cycling of polyphosphate by Sargasso Sea plankton in response to low phosphorus. *Proc Natl Acad Sci USA*. 111: 8089-8094.
  43. \*Fulton, J.M., \*Fredricks, H.F., Bidle, K.D., Vardi, A., Kendrick, B.J., DiTullio, G.R., Van Mooy, B.A.S., 2014. Novel molecular determinants of viral susceptibility and resistance in the lipidome of *Emiliana huxleyi*. *Environ. Microbiol.* 16: 1137-1149.
  42. Rose, S.L., \*Fulton, J.M., Brown, C.M., Natale, F., Van Mooy, B.A.S., Bidle, K.D. 2014. Isolation and characterization of lipid rafts in *Emiliana huxleyi*: a role for membrane microdomains in host-virus interactions. *Environ. Microbiol.* 16: 1150-1166.
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17. Van Mooy, B.A.S. and A.H. Devol (2008) Assessing nutrient limitation of *Prochlorococcus* in the North Pacific subtropical gyre by using an RNA capture method. *Limnol. Oceanogr.* 53:78-88.

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9. Dyrman, S.T., Ammerman, J.W., and Van Mooy, B.A.S. (2007) Microbes and the marine phosphorus cycle. *Oceanography*. 20:110-116.
8. Buesseler, K.O., Lamborg, C.H., Boyd, P.W., Lam, P.J., Trull, T.W., Bidigare, R.R., Bishop, J.K.B., Casciotti, K.L., Dehairs, F., Elskens, M., Honda, M., Karl, D.M., Siegel, D.A., Silver, M.W., Steinberg, D.K., Valdes, J., Van Mooy, B., Wilson, S. (2007) Revisiting carbon flux through the ocean's twilight zone. *Science*. 316:567-570.
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6. Van Mooy, B.A.S., Devol, A.H., and Keil, R.G. (2004) Quantifying <sup>3</sup>H-thymidine incorporation rates by a phylogenetically defined group of marine planktonic bacteria (*Bacteroidetes* phylum). *Environ. Microbiol.* 6: 1061-1069.
5. Van Mooy, B.A.S., Devol, A.H., and Keil, R.G. (2004) Relationships between bacterial community structure, light, and carbon cycling in the eastern subarctic North Pacific. *Limnol. Oceanogr.* 49:1056-1062.
4. Van Mooy, B.A.S., Keil, R.G. and Devol, A.H. (2002) Impact of suboxia on sinking particulate organic carbon: Enhanced carbon flux and preferential degradation of amino acids via denitrification. *Geochim. Cosmochim. Acta* 66: 457-465.

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2. Van Mooy, B., MacGregor, B., Hollander, D., Nealson, K., and Stahl, D. (2001) Evidence of tight coupling between bacteria and particulate organic carbon during seasonal stratification of Lake Michigan. *Limnol. Oceanogr.* 46:1202-1208.
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**INVITED LECTURES AND PAPERS PRESENTED AT MEETINGS († Keynote, \*Tutorial):**

Van Mooy, B.A.S. (2019) Quorum sensing on marine particles and its impact on ocean biogeochemistry. *Marine Particles and Phycospheres Conference* Ascona, Switzerland

Van Mooy, B.A.S. (2019) Quorum sensing on marine particles and its impact on ocean biogeochemistry. *Biogeochemistry Workshop - Hanse-Wissenschaftskolleg Institute for Advanced Study*. Bremen, Germany.

Van Mooy, B.A.S. (2018) Microbial phosphorus reduction in the modern ocean: rapid rates of thermodynamically unexpected pathways. *Northwestern University – Department of Geosciences*. Evanston, IL.

Van Mooy, B.A.S. (2018) Marine lipidomics at rapid temporal scales and small spatial scales. *Gordon Research Conference – Organic Geochemistry*, Holderness, NH.

Van Mooy, B.A.S. (2018) The *Trichodesmium* microbiome and its role in the marine nitrogen and phosphorus cycles. *Harvard Geobiology Seminar*. Cambridge, MA.

Van Mooy, B.A.S. (2018) The *Trichodesmium* microbiome and its role in the marine nitrogen and phosphorus cycles. *WHOI Geodynamics Seminar*. Woods Hole, MA.

†Van Mooy, B.A.S. (2017) The challenges of quantifying the impact of microbial interactions on upper ocean nutrient cycling. *Goldschmidt Conference*. Paris, France.

†Van Mooy, B.A.S. (2017) The challenges of quantifying the impact of microbial communication on biogeochemical fluxes. *CIFAR-GBMF Workshop – Message in a Bottle*. Eilat, Israel.

\*Van Mooy, B.A.S. (2017) The influence of microbial interactions on biogeochemical processes in the ocean. *ASLO Meeting*, Honolulu, HI.

Van Mooy, B.A.S. (2016) The potential for chemically-mediated microbial interactions to affect the strength of the ocean's biological carbon pump. *Gordon Research Conference – Marine Microbes*. Girona, Spain.

Van Mooy, B.A.S. (2016) New insights on the chemical forms and microbial cycling of phosphorus in the upper ocean. *Biology Department Seminar, Bowling Green State University*. Bowling Green, OH.

Van Mooy, B.A.S. (2015) An intersection between infochemicals, microbial interactions, and the ocean's biological pump. *National Oceanography Centre* Southampton, UK.

Van Mooy, B.A.S. (2015) Phosphorus redox cycling in the upper ocean. *Chemical Oceanography Gordon Research Conference*, Holderness, NH.

Van Mooy, B.A.S. (2015) New insights on the chemical forms and cycling of phosphorus in oligotrophic ocean environments. *Monterey Bay Aquarium Research Institute*, Monterey, CA.

Van Mooy, B.A.S. (2015) Plankton booms and busts: biomolecules and their potential applications. *Sippican Philosophical Society*, Carver, MA.

- Van Mooy, B.A.S. (2015) Field observations of intersections between infochemicals, microbial interactions, and the ocean's biological pump. *Microscale Ocean Biophysics Conference*, Aspen.
- Van Mooy, B.A.S. (2015) Upward revision of bacterial growth rates in the ocean. *University of Rhode Island Graduate School of Oceanography*, Narragansett, RI.
- Van Mooy, B.A.S. (2015) AutoBOD: A device that greatly streamlines detection of biological oxygen demand (BOD). *MassCEC*, Boston, MA.
- Van Mooy, B.A.S. (2014) Upward revision of bacterial growth rates in the ocean. *Department of Marine Chemistry and Geochemistry, WHOI*. Woods Hole, MA.
- Van Mooy, B.A.S. (2014) Upward revision of bacterial growth rates in the ocean. *National Oceanography Centre* Southampton, UK.
- Van Mooy, B.A.S. (2014) Infochemical mediation of the degradation of sinking particulate organic matter. *Bigelow Marine Laboratory Weekly Seminar*, Boothbay Harbor, ME.
- Van Mooy, B.A.S. (2014) Infochemical mediation of the degradation of sinking particulate organic matter. *Office of Carbon Biogeochemistry Summer Workshop*. Woods Hole, MA.
- Van Mooy, B.A.S. (2013) How might microbial communications control the levels of carbon dioxide in the atmosphere. *University of Southampton*, Southampton, UK.
- Van Mooy, B.A.S. (2013) Quorum Sensing and the Marine Carbon Cycle: How Might Microbial Communications Control the Levels of Carbon Dioxide in the Atmosphere? *Twenty-fifth Annual Kavli Frontiers of Science Symposium, National Academy of Science Beckman Center*, Irvine, CA.
- Van Mooy, B.A.S. (2013) The fundamental microbial processes that contribute to the accumulation of natural biofilms on ships' hulls. *Department of Marine Chemistry and Geochemistry, WHOI*. Woods Hole, MA.
- Van Mooy, B.A.S. (2013) It take a village to raise a phytoplankter: the colonial cyanobacterium *Trichodesmium*. *Workshop for Middle- and High-School Teachers*, Woods Hole, MA.
- Van Mooy, B.A.S. (2012) Microbial sources and biogeochemical roles of non-phosphorus lipids in the upper ocean. *LDEO*, Palisades, NY.
- Van Mooy, B.A.S. (2012) Role of infochemical signaling in carbon and nutrient cycling in marine systems. *EAPS – MIT*, Cambridge, MA.
- Van Mooy, B.A.S. (2012) Role of infochemical signaling in carbon and nutrient cycling in marine systems. *NOCS*, Southampton, UK.
- Van Mooy, B.A.S. (2012) Role of infochemical signaling in carbon and nutrient cycling in marine systems. *UMass-Dartmouth*, New Bedford, MA.
- Van Mooy, B.A.S. (2012) Microbial lipids as indicators of *in situ* microbial processes in ship-hull biofilms. *ONR-SEACOAT Workshop*, Las Vegas, NV.
- Van Mooy, B.A.S., Edwards, B., Reddy, C.R., Camilli, R., Carmichael, C., Longnecker, K. (2012) Microbial respiration of oil in surface waters in close proximity to the Deepwater Horizon site. *SOST DWH Workshop*, St. Petersburg, FL.



- Van Mooy, B.A.S. (2011) Microbial sources and biogeochemical roles of non-phosphorus lipids in the upper ocean. *Gordon Research Conference – Chemical Oceanography*. Andover, NH.
- Van Mooy, B.A.S. (2011) Cell-density dependent organic carbon degradation among particle associated bacteria in the ocean. *Aquatic Microbiology Symposium – Canadian Society of Microbiologists*. St. John's, Newfoundland, Canada.
- Van Mooy, B.A.S. (2011) Microbial lipids as indicators of microbial processes and novel anti-fouling strategies in natural ship-hull biofilms. *ONR Coatings/Biofouling Program Review*. New Orleans, LA.
- Van Mooy, B.A.S. and B. Jenkins. (2011) Town Hall Meeting: Microbial biogeography and biogeochemistry. *ASLO Meeting*. San Juan, Puerto Rico.
- Van Mooy, B.A.S. (2011) Changes in the lipids of marine phytoplankton in response to environmental stressors. *Gordon Research Conference – Plant Lipids*. Galveston, TX.
- Van Mooy, B.A.S. (2010) Calculus of P-Acquisition versus P-sparing by plankton in the oligotrophic ocean. *AGU Fall Meeting*, San Fransisco, CA.
- Van Mooy, B.A.S. (2010) Calculus of P-Acquisition versus P-sparing by plankton in the Sargasso Sea. *IMBER IMBIZO II Meeting*, Heraklion, Greece.
- Van Mooy, B.A.S. (2010) Role of polar lipids in the infection of *Emiliana huxleyi* by coccolithoviruses. *Gordon Research Conference – Organic Geochemistry*. Holderness School, Holderness, NH
- Van Mooy, B.A.S. (2010) Membrane lipid dynamics in the upper ocean and the promise of lipidomics for marine microbiology. *Omics and Emerging Tools at the Interface of Chemistry and Biology – University of Tennessee*. Knoxville, TN.
- Van Mooy, B.A.S. (2009) Role of quorum sensing in the degradation of sinking particulate carbon in the upper ocean. *Marine and Coastal Sciences Seminar*. Rutgers University.
- Van Mooy, B.A.S. (2009) Role of quorum sensing in the degradation of sinking particulate carbon in the upper ocean. *Environmental Geochemistry and Geology Seminar*. Princeton University.
- Van Mooy, B.A.S., Boyd, P., Carlson, C., White, S. (2009) Assessing Bacterial Carbon Demand (and other Processes) in the Twilight Zone: Results from VERTIGO and Future Approaches. *AGU Chapman Conference – Biological Pump*. Southampton, UK.
- Van Mooy, B.A.S. (2009) Microbial lipids as indicators of microbial processes and novel anti-fouling strategies in natural ship-hull biofilms. *ONR Coatings/Biofouling Program Review*. Portland, OR.
- Van Mooy, B.A.S. (2008) Mass spectrometry-based study of microfouling community dynamics and cell-cell signaling in ship hull biofilms. *ONR Coatings/Biofouling Program Review*. Charleston, S.C.
- Van Mooy, B.A.S. (2008). Phopsholipid substitutions by phytoplankton are a universal adaptation to oligotrophy. *Marine Sciences Seminar*. University of Southern California.

- Van Mooy, B.A.S. (2008). Phospholipid substitutions by phytoplankton are a universal adaptation to oligotrophy. *Marine Chemistry Seminar*. University of South Florida. St. Petersburg, Florida.
- Van Mooy, B.A.S. (2007). Phospholipid substitutions by phytoplankton are a universal adaptation to oligotrophy. *Chemical Oceanography Seminar*. Massachusetts Institute of Technology. Cambridge, Massachusetts.
- Van Mooy, B.A.S. (2007) Mass spectrometry-based study of microfouling community dynamics and cell-cell signaling in ship hull biofilms. *ONR Coatings/Biofouling Program Review*. Monterey, California.
- Van Mooy, B.A.S. (2007) Rapid Growth by Heterotrophic Bacteria in the Subtropical Gyres. *Department of Marine Chemistry and Geochemistry Seminar*. Woods Hole Oceanographic Institution. Woods Hole, Massachusetts.
- Van Mooy, B.A.S. (2007) Turnover rates of phospholipids in the oligotrophic South Pacific: a signal of rapid microbial phosphorus cycling? *Special Seminar*. Centre d'Océanologie de Marseille, Marseille, France.
- Van Mooy, B.A.S. (2006) Overview of graduate and summer programs at Woods Hole Oceanographic Institution. *Senior Seminar*. Barnard College, New York, New York.
- Van Mooy, B.A.S. (2006) Mass spectrometry-enabled investigation of bacterial cell-cell signaling in the sea. *Brown Bag Seminar*. Barnard College, New York, New York.
- Van Mooy, B.A.S. (2006) Bacterial cell-cell signaling molecules in marine environments. *ONR Progress Review, Northeast Region*. Woods Hole Oceanographic Institution. Woods Hole, Massachusetts
- Van Mooy, B.A.S. (2006) Mass spectrometry-based study of bacterial community succession and cell-cell signaling in ship hull biofilms. *ONR Coatings/Biofouling Program Review*. Towson, Maryland.
- Van Mooy, B.A.S. (2006) Sulfolipids dramatically decrease phosphorus demand by picocyanobacteria in oligotrophic marine environments: Implications for the Proterozoic Ocean. *Department of Geological Sciences Seminar*, Northwestern University, Evanston, Illinois.
- Van Mooy, B.A.S. (2006) Sulfolipids dramatically decrease phosphorus demand by picocyanobacteria in oligotrophic marine environments. *Earth and Planetary Science Department Seminar*, Harvard University, Cambridge, Massachusetts.
- Van Mooy, B.A.S. (2005) Phospholipids in the Pacific Ocean. *Botany Seminar*. Czech Academy of Science. Ceske Budejovice, Czech Republic.
- Van Mooy, B.A.S. (2005) Phospholipid synthesis by heterotrophic bacteria was a significant biochemical sink for plankton phosphorus uptake. *BIOSCOPE Meeting*. Villefranche, France.
- Van Mooy, B.A.S. (2004) The biochemical and microbiological fates of phosphate in oligotrophic marine systems. *Department of Chemical Oceanography Seminar*. Massachusetts Institute of Technology. Cambridge, Massachusetts.

Van Mooy, B.A.S. (2004) Taxon-specific DOC and phosphorus cycling in the North Pacific subtropical gyre. *Department of Marine Chemistry and Geochemistry Seminar*. Woods Hole Oceanographic Institution. Woods Hole, Massachusetts

Van Mooy, B.A.S. (2004) Genomes, ribosomes and membranes: tracing the fate of phosphorus in plankton. *Assembly of MIT-WHOI Joint Program Students*. Woods Hole Oceanographic Institution. Woods Hole, Massachusetts

Van Mooy, B.A.S. (2003) Carbon and phosphorus cycling by phylogenetically-defined groups of bacteria in the North Pacific Ocean. *Department of Chemical Oceanography Seminar*. University of Washington. Seattle, Washington.

Van Mooy, B.A.S. (2003) Tracing taxon specific growth in aquatic systems. *Large Lakes Observatory and Department of Chemistry Seminar*. University of Minnesota, Duluth. Duluth, Minnesota.

Van Mooy, B.A.S. (2003) Application of a novel DNA-tracing method to the study of carbon cycling by heterotrophic bacteria in the North Pacific. Geophysical Laboratory. Carnegie Institution of Washington. Washington, D.C.

#### **LECTURES AND PAPERS PRESENTED AT MEETINGS:**

Van Mooy, B.A.S. and Holm, H. 2019. Lipidomics of suspended and sinking POC during EXPORTS. *EXPORTS PI Meeting*. Williamsburg, VA.

Fulton, J.M., Herckes, P., Fraser, M.P., Collins, J.R., and Van Mooy, B.A.S. 2018. Microbial Biomarkers for Native and Agricultural Soil Inputs to Atmospheric Particulate Matter. *AGU Meeting Tempe, AZ*.

Becker, K.W., Collins, J.R., Durham, B.P., Groussman, R.D., White, A.E., Fredricks, H.F., Ossolinski, J.E., Repeta, D.J., Carini, P., Armbrust, E.V., Van Mooy, B.A.S. 2018. Deciphering microbial growth and intracellular energy flux from lipidomics. Oral. *Goldschmidt Meeting*, Boston, MA.

Fulton, J.M and Van Mooy, B.A.S. 2018. Scytonemin C and N isotopic signatures in biological soil crusts, microbialites, and sediments. *Goldschmidt Meeting, Boston, MA*.

Bidle, K, Nissimov, J.I., Talmy, D., Haramaty, L., Fredricks, H.F., Zelzion, D., Murat Eren, A., Gardella, R., Laber, C., Moore, K., Coolen, M., Bhattacharya, D., Van Mooy, B.A.S., and Follows, M.J. (2018) The competitive ecology of coccolithoviruses. *Ocean Sciences Meeting*. Portland, OR.

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