CURRICULUM VITAE

(updated June 20, 2016)

JAMES R. "JAMIE" COLLINS

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EDUCATION

2011 – Ph.D., Chemical Oceanography (expected 2016)
MIT/WHOI Joint Program in Oceanography/Applied Ocean Science and Engineering
Advisor: Dr. Ben Van Mooy
Working thesis title: "The remineralization of marine organic matter by diverse biological and abiotic processes"

2011 M.E.Sc., **Yale School of Forestry & Environmental Studies**, New Haven, CT
Advisor: Dr. Pete Raymond
Thesis: "Estimates of new and total productivity in central Long Island Sound from *in situ* measurements of nitrate and dissolved oxygen"

2004 B.A., **Yale College**, New Haven, CT
Political Science, with distinction

HONORS AND AWARDS

2016 Invited Participant, DISCO XXV (Dissertations Symposium on Chemical Oceanography)

2012 EPA Science to Achieve Results (STAR) Graduate Fellowship

2011 Provost's Distinguished Graduate Fellowship, College of Oceanic and Atmospheric Science, Oregon State University (declined)

2009 Post-9/11 G.I. Bill "Yellow Ribbon" Program Recipient, Yale School of Forestry & Environmental Studies
John A. MacLean Scholarship, Yale School of Forestry & Environmental Studies (declined)

2004 Montaigne Prize, Yale College, for excellence in spoken and written French

2000 Golub Foundation Founder's Scholarship, Yale College
William A. Henry III Scholarship, Yale College

PROFESSIONAL PUBLICATIONS

Collins, J. R., B. R. Edwards, Helen F. Fredricks, and B. A. S. Van Mooy. LOBSTAHS: An adduct-based lipidomics strategy for discovery and identification of oxidative stress biomarkers. *Analytical Chemistry*, *accepted*; doi:10.1021/acs.analchem.6b01260

Collins, J. R., B. R. Edwards, K. Thamatrakoln, J. E. Ossolinski, G. R. DiTullio, K. D. Bidle, S. C. Doney, and B. A. S. Van Mooy. 2015. The multiple fates of sinking particles in the North Atlantic Ocean. *Global Biogeochemical Cycles* **29**:1471-1494; doi:10.1002/2014GB005037

Collins, J. R., P. A. Raymond, W. F. Bohlen, and M. M. Howard-Strobel. 2013. Estimates of new and total productivity in central Long Island Sound from *in situ* measurements of nitrate and dissolved oxygen. *Estuaries and Coasts* **36**:74-97; doi:10.1007/s12237-012-9560-5

SOFTWARE AUTHORSHIP

Collins, J. R., B. R. Edwards, Helen F. Fredricks, and B. A. S. Van Mooy. 2016. LOBSTAHS: Lipid and Oxylipin Biomarker Screening through Adduct Hierarchy Sequences. R package version 0.99.6; https://github.com/vanmooylipidomics/LOBSTAHS

PATENTS

Adduct-Based Lipidomics System and Methods for Discovery and Identification of Oxidative Stress Biomarkers. U.S. Provisional Patent Application No. 62345175. **Collins, J. R.**, B. A. S. Van Mooy, Helen F. Fredricks, and B. R. Edwards.

INVITED TALKS & LECTURES

Collins, J. R., B. R. Edwards, Helen F. Fredricks, K. W. Becker, and B. A. S. Van Mooy. June 2016. *Fort Johnson Marine Science Seminar*. "Investigating oxidative stress and metabolic function in marine microbes using new a tool for environmental lipidomics." National Institute of Standards and Technology, Hollings Marine Laboratory, Charleston, SC.

Collins, J. R., B. R. Edwards, K. Thamatrakoln, J. E. Ossolinski, G. R. DiTullio, K. D. Bidle, S. C. Doney, and B. A. S. Van Mooy. September 2015. "Balancing the direct and indirect removal of sinking particles in the North Atlantic Ocean." *Departmental Seminar*. Department of Marine Chemistry & Geochemistry, Woods Hole Oceanographic Institution, Woods Hole, MA.

Collins, J. R., and P. A. Raymond. March 2012. "Controls on new production and nitrate inventory in central Long Island Sound." *Biogeochemistry Seminar*. Department of Marine Chemistry & Geochemistry, Woods Hole Oceanographic Institution, Woods Hole, MA.

CONFERENCE PRESENTATIONS & POSTERS

Collins, J. R., B. R. Edwards, H. F. Fredricks, and B. A. S. Van Mooy. January 2016. Discovery and identification of biomarkers for oxidative stress in phytoplankton using LOBSTAHS, a new pipeline for semi-untargeted lipidomics. *Poster*. EMBO/EMBL Symposium: A New Age of Discovery for Aquatic Microeukaryotes, European Molecular Biology Laboratory, Heidelberg, Germany.

Becker, K. W., H. F. Fredricks, **J. R. Collins**, J. E. Ossolinski, J. Wingenroth, D. J. Repeta, D. A. Caron, S. W. Chisholm, and B. A. S. Van Mooy. May 2016. The microbial lipidome of subtropical Pacific surface waters

dominated by *Prochlorococcus*. *Poster.* 12th Workshop on Cyanobacteria, Arizona State University, Tempe, AZ.

Fredricks, H. F., **J. R. Collins**, B. R. Edwards, and B. A. S. Van Mooy. June 2015. Lipidomics of marine microorganisms under stress: Solving the needle / haystack problem with a large database and open-source software. *Poster.* Annual Conference, American Society for Mass Spectrometry, St. Louis, MO.

Collins, J. R., H. F. Fredricks, H. W. Ducklow, and B. A. S. Van Mooy. February 2015. Photochemical production of oxylipin infochemicals in West Antarctica: An approach using new tools for semi-untargeted lipidomics. *Poster.* ASLO Aquatic Sciences Meeting, Granada, Spain.

Edwards, B. R., **J. R. Collins**, H. F. Fredricks, J. E. Ossolinski, H. McNair, M. A. Brzezinski, J. W. Krause, K. Thamatrakoln, K. D. Bidle, and B. A. S. Van Mooy. Comparative lipidomics link bloom decline to infochemical production in the California upwelling zone. *Oral presentation.* ASLO Aquatic Sciences Meeting, Granada, Spain.

Collins, J. R., B. R. Edwards, K. Thamatrakoln, J. E. Ossolinski, G. R. DiTullio, S. C. Doney, and B. A. S. Van Mooy. July 2014. Constraints on observationally intractable aspects of the mesopelagic carbon cycle: Comparison of direct observations and results from multi-parameter sensitivity analyses. *Poster*. Ocean Carbon and Biogeochemistry Workshop, Woods Hole, MA.

Collins, J. R., J. E. Ossolinski, B. R. Edwards, K. Thamatrakoln, J. Tagliaferre and B. A. S. Van Mooy. February 2014. Constraining carbon cycle parameters in the North Atlantic through independent measurements of bacterial production, respiration, and particulate carbon export. *Poster*. Ocean Sciences Meeting, Honolulu, HI.

Fulton, J. M., B. A. S. Van Mooy, **J. R. Collins**, J. E. Hunter, and K. Bidle. February 2014. Lipid connections between viral termination of coccolithophore blooms and carbon export. *Poster.* Ocean Sciences Meeting, Honolulu, HI.

Collins, J. R., J. R. Valdes, J. E. Ossolinski, R. G. Keil, and B. A. S. Van Mooy. February 2013. The *PHORCYS*: An autonomous, dual-chamber *in situ* incubator for the estimation of community metabolism. *Oral presentation.* ASLO Aquatic Sciences Meeting, New Orleans, LA.

Collins, J. R., P. A. Raymond, W. F. Bohlen, and M. M. Howard-Strobel. November 2011. Metabolism in central Long Island Sound, minute by minute: Estimates from *in situ* oxygen and nitrate measurements. *Poster.* Coastal and Estuarine Research Federation (CERF) Biennial Conference, Daytona Beach, FL.

Collins, J. R., and P. A. Raymond. April 2011. Controls on nutrient flux and productivity over multiple time scales in Long Island Sound. *Poster.* Master's Student Colloquium, 2011, Yale School of Forestry & Environmental Studies, New Haven, CT.

PROFESSIONAL SERVICE

Reviewer for *Analytical Chemistry*, *Biogeosciences, Estuaries and Coasts, Deep-Sea Research Part II, The ISME Journal, Journal of Geophysical Research – Oceans, Limnology & Oceanography: Methods*

GRANTS AND RESEARCH SUPPORT

2014 Stanley W. Watson Student Fellowship, Woods Hole Oceanographic Institution

2013 Ocean Ventures Fund, Woods Hole Oceanographic Institution ($7,000)

2010 The Sounds Conservancy Grant, Quebec-Labrador Foundation ($500)
Carpenter/Sperry Research Fund, Yale School of Forestry & Environmental Studies ($1,810)

2009 Yale/Connecticut Sea Grant Student Research Internship ($1,474)

TEACHING EXPERIENCE

Fall 2014	Teaching Assistant for Marine Chemistry (12.742), Massachusetts Institute of Technology. Assisted students with understanding and interpretation of lecture material from introductory chemical oceanography survey course; graded problem sets; prepared and led weekly recitation (one hour) on lecture concepts and additional topics of my choice
Fall 2012	Two invited guest lectures to BP plc scientists as part of two-week industry partner resident course, Woods Hole Oceanographic Institution, Woods Hole, MA
Fall 2011	Three invited guest lectures in Organic Pollutants in the Environment, graduate-level course, Yale School of Forestry & Environmental Studies, New Haven, CT

CRUISE PARTICIPATION & FIELD EXPERIENCE

Oct-Dec 2015	Field Team Member, Palmer Long Term Ecological Research (LTER) study, Palmer Station, Antarctica: Conducted field operations and laboratory analysis for microbial/biogeochemical component of NSF LTER study. Operator of Zodiac small boats for sample collection.
Jul-Aug 2015	*R/V KA'IMIKAI-O-KANALOA*, Station Aloha, North Pacific Ocean, 11 days: Simons Collaboration on Ocean Processes and Ecology (SCOPE)
Sep 2014	*R/V CLIFFORD BARNES*, Clayoquot Sound, British Columbia, 8 days
Jan-Feb 2014	*R/V LAURENCE M. GOULD*, Bellingshausen Sea (West Antarctica), 35 days as part of Palmer LTER study cruise
Oct-Dec 2013	Field Team Member, Palmer LTER study, Palmer Station, Antarctica
June-July 2012	*R/V KNORR*, North Atlantic Ocean, 35 days: Ponta Delgada, Azores, to Reykjavik, Iceland
April-May 2012	*R/V KNORR*, North Atlantic Ocean, 14 days: Woods Hole, MA, to Bermuda
December 2010	*M/V SARAH BORDELON*, Northern Gulf of Mexico, 11 days: NOAA/ Deepwater Horizon Cooperative Cruise, site of Deepwater Horizon wellhead
2009-2011	Yale/Peabody Marine Station, Guilford, CT: Managed marine research operations on Long Island Sound for laboratory of Dr. Peter Raymond and six other investigators; over 40 day cruises on Long Island Sound and Connecticut River as U.S. Coast Guard licensed operator of 23-foot research boat *R/V CATCH THE JOY*

PUBLICATIONS (NON-REFEREED)

Collins, J.R. 2010. YIBS Center for Field Ecology: Long Island Sound project. *Yale Environmental News*, Yale Institute for Biospheric Studies **15** (2): 27.

Collins, J. R. 2010. Community respiration in coastal Connecticut: How fast does an aquatic ecosystem breathe? *News of the Center for Coastal and Watershed Systems*, Yale School of Forestry & Environmental Studies, Spring 2010: 4-5.

LECTURES, TALKS, and OUTREACH (GENERAL AUDIENCE)

Collins, J.R. May 2014. "Anthropogenic impacts in coastal environments: Long Island Sound and the West Antarctica Peninsula." Lecture to members of Pittsburgh, PA, chapter, World Presidents' Organization.

Collins, J. R. August 2011. "Two months in Mobile: A Coast Guard Reservist's reflections on the Deepwater Horizon oil spill." MIT/WHOI Joint Program "Jelly Talk," Woods Hole Oceanographic Institution, Woods Hole, MA.

Collins, J. R. May 2011. "Oil, water, boom, and beaches: Select aspects of the Deepwater Horizon disaster." Two special lectures to high-school students. Bridgeport Regional Aquaculture Science and Technology Education Center, Bridgeport, CT.

P. T. Anastas, J. D. Kessler, M. S. Schrope, and **J. R. Collins.** December 2010. "Disaster in the Gulf: A Panel Discussion on the Deepwater Horizon Oil Spill." One of four invited panelists. Yale Climate & Energy Institute, New Haven, CT.

PROFESSIONAL ASSOCIATIONS

2015 – Member, The Oceanography Society
2011 – Member, American Society of Limnology & Oceanography (ASLO)
2009 – Member, American Geophysical Union (AGU)
2009 – Member, Coastal & Estuarine Research Federation (CERF)

ADVISING AND MENTORSHIP

2015 Primary supervisor to WHOI summer Guest Student Gabriel Roy Liguori (Yale University)
2014 – Peer mentor to MIT/WHOI Joint Program Student Kevin Sutherland

EXTRACURRICULAR ACTIVITIES AND VOLUNTEER SERVICE

2013 – 2015 Student representative, Institutional Safety Committee, Woods Hole Oceanographic Institution
2012 – 2013 Science education outreach volunteer, Charlestown High School, Boston, MA
2012 – 2015 Librarian, John W. Farrington Collection, Woods Hole Oceanographic Institution
2011 – 2013 Steering Committee member, Yale Veterans Association
2010 – 2011 President, Fresh & Salty (student organization for water science and policy, Yale School of Forestry & Environmental Studies)
2010 – 2011 Communications Chair, Yale Veterans Council
2010 – 2011 Graduate Affiliate, Berkeley College, Yale University
2009 – 2011 Student member, Environmental Stewardship Committee, Yale School of Forestry & Environmental Studies
2005 – Undergraduate admissions interviewer (volunteer), Yale Alumni Schools Committee
2003 – 2004 Managing Editor, Yale Daily News (Yale College)

MILITARY SERVICE

Current rank: LCDR/O-4
Branch of service: U.S. Coast Guard Reserve (2009 to present)
U.S. Coast Guard (2004-2009)

Date of rank: 1 September 2015

PROFESSIONAL CREDENTIALS & SKILLS

Commercial master's license (U.S. Coast Guard): Master of Steam or Motor Vessels, 100 Tons (Near Coastal), with Assistance Towing Endorsement; issued April 2016

Current certifications: BLS-CPR/Advanced First Aid (American Heart Association); OSHA 40-hour HAZWOPER; Critical Incident Stress Management (CISM) counselor

National Incident Management System (NIMS) Incident Command System (ICS) qualifications (Type 3, U.S. Coast Guard): Operations Section Chief; Situation Unit Leader; Division/Group Supervisor. Formal training: 100, 200, 300, 339, 341, 347, 400, 700, and 800 levels.

U.S. Coast Guard professional education and qualifications: U.S. Coast Guard Pollution Incident Response (Yorktown, VA); U.S. Coast Guard Boarding Officer and Radiation Detection Level 2 Operator (Federal Law Enforcement Training Center, Charleston, SC); Northeast Fisheries Boarding Officer (U.S. Northeast Regional Fisheries Training Center, Falmouth, MA); Maritime Search & Rescue Planning, National Search and Rescue School (Yorktown, VA)

Languages: French (fluent); Spanish (proficient); Haitian Creole (conversational)