

CURRICULUM VITAE

Judith Marie O'Neil

Horn Point Laboratory

University of Maryland Center for Environmental Science
Cambridge, MD 21613 USA

Phone: 410-221-8411

Fax: 410-221-8490

Email: joneil@hpl.umces.edu

<http://www.hpl.umces.edu/faculty/oneil/index.html>

I. Education

- 1983 B.S., Boston College, Chestnut Hill, MA. Biology.
- 1982 Sea Education Association, Woods Hole, MA; SEA Semester Student R/V Westward
- 1987 M.S., State University of New York at Stony Brook, NY. Marine Environmental Science.
- 1995 Ph.D., University of Maryland, College Park, MD. Marine Environmental and Estuarine Science (Biological Oceanography).

II. Professional Background

- 1995-1999 Research Officer, School of Marine Science/Zoology Department University of Queensland, Brisbane, Australia.
- 1999-2001 Australian Research Council Fellow (APDI), Botany Department and Lecturer, Centre for Marine Studies, University of Queensland, Brisbane, Australia
- 2002-2004 Lecturer (Assistant Professor), Centre for Marine Studies, University of Queensland, Brisbane, Australia (50%)
- 2002-2013 Assistant Research Professor, Horn Point Laboratory, University of Maryland Center for Environmental Science, Cambridge, MD
- 2011 Visiting Scientist, Global Change Institute, University of Queensland, Brisbane, Australia Jan-July '11- Host: Professor Ove Hoegh-Guldberg.
- 2013- Associate Research Professor, Horn Point Laboratory, University of Maryland Center for Environmental Science, Cambridge, MD

III. Awards/ Recognitions

Reviewer Award for "Exceptional Contribution to the journal *Harmful Algae*": Elsevier Publishing Co., Amsterdam, The Netherlands.

IV. Research

A. Areas of professional expertise:

Biological oceanography, cyanobacterial ecophysiology, plankton trophodynamics, harmful algal bloom ecology, nutrient dynamics, marine botany, (sub) tropical coastal marine ecology, coral reef biology.

B. Peer Reviewed Publications (Last 5 years; * indicates student paper)

In Review

*Meyer, J.A., **O'Neil, J.M.**, Crump, B.C. (in revision) Differences in microbial community composition and production within cultured isolates of *Karenia brevis* and related species. (*Aquatic Microbial Ecology*).

O'Neil, J.M., Taillie, D., Walsh, B., Dennison, W.C., Bone, E.K., Reid, D.J., ,Newton, R., Strayer, D.L., Boicourt, K., Birney, L. Janis, S. (submitted). New York Harbor: Resilience in the face of four centuries of development. World Harbour Project Special Issue: Elsevier *Regional Studies in Marine Science*.

In press

O'Neil, J.M. and Dennison, W.C. (2015) Discerning the causes of toxic cyanobacteria (*Lyngbya majuscula*) blooms in Moreton Bay, Australia. In: Glibert, P.M. and Kana T.(Eds). *Ecological Studies Series-Aquatic Microbial Ecology and Biogeochemistry: A Dual Perspective*. Springer International Publishing, Switzerland. Pp x-x.

*Gao, Y., **O'Neil, J.M.**, and Stoecker, D.R., Cornwell, J. (2014) Photosynthesis and nitrogen fixation during cyanobacterial blooms in an oligohaline / tidal fresh estuary. *Aquatic Microbial Ecology* doi: 10.3354/ame01692

O'Neil, J.M. and Heil, C.A. (Editors) (2014) "Nutrient dynamics of *Karenia brevis* red tide blooms in the Eastern Gulf of Mexico"; Special Issue of *Harmful Algae*. Volume 38: pp 1-140.

O'Neil, J.M. and O'Neil, C.A. (2014) Preface and dedication: Nutrient dynamics of *Karenia brevis* red tide blooms in the Eastern Gulf of Mexico. Special Issue of *Harmful Algae*, 38: 1-2.

*Meyer, K.A., **O'Neil, J.M.**, Hitchcock, G.L., and Heil, C.A. (2014) Microbial production along the West Florida shelf: Responses of bacteria and viruses to the presence and phase of *Karenia brevis* blooms. *Harmful Algae* 38: 110-118.

* Walsh, B.M., **O'Neil, J.M.** (2014) Zooplankton Community Composition and Copepod Grazing on the West Florida Shelf in Relation to Blooms of *Karenia brevis*. *Harmful Algae*, 38: 63-72.

Heil CA, Bronk, DA, Mulholland, MR, **O'Neil, J.M.**, Bernhardt, P. Murasko S., Havens, J.A. and Vargo, G.A. (2014) Influence of surface aggregation behavior on nutrient cycling during a *Karenia brevis* (Davis) G. Hansen & Moestrup bloom: Migration to the surface as a nutrient acquisition strategy. *Harmful Algae*, 38: 86-94.

*Killberg-Thoreson, L., Mulholland, M.R., Heil, C.A., Sanderson, M.P. **O'Neil, J.M.**, Bronk, D.A. (2014). Nitrogen uptake kinetics in field populations and cultured strains of *Karenia brevis*. *Harmful Algae*, 38: 50-62.

Mulholland M. R, P. W. Bernhardt, I. Ozmon, L. A. Procise, **O'Neil, J.M.**, Heil, C.A., Bronk, D.A. (2014) Contributions of diazotrophy to nitrogen inputs supporting *Karenia brevis* blooms in the Gulf of Mexico. *Harmful Algae*, 38: 20-29.

Heil CA, Dixon, LK, Hall, E. Garrett, M., Lenes, **J.M.**, **O'Neil, J.M.**, Walsh, B.M., Bronk, D.A., Killberg-Thoreson, L., Hitchcock GL, Meyer, K.A., Mulholland, M.R., Procise, L. Kirkpatrick G., Walsh, JJ, Weisberg R,W.(2014). *Karenia brevis* (Davis) G. Hansen & Moestrup blooms in the eastern Gulf

of Mexico: Nutrient Sources and Management Strategies based on a 5 year regional study. *Harmful Algae*, 38: 127-140.

Heil, C.A. , Bronk, D.A. Dixon, LK, Hitchcock GL, Kirkpatrick G., Mulholland MR, **O'Neil J.M.**, Walsh, J, Weisberg R, Garrett, M. (2014). The Gulf of Mexico ECOHAB: *Karenia* Program 2006-2012. *Harmful Algae*, 38: 3-7.

Bronk, D. A., Killberg-Thoreson, L. Mulholland, M. R. Sipler, R. E., Roberts, Q. N., Bernhardt, P. W., Garrett, M., **O'Neil, J. M.**, C. A. Heil. (2014). Nitrogen uptake and regeneration (ammonium regeneration, nitrification and photo-production) in waters of the West Florida Shelf prone to blooms of *Karenia brevis*. *Harmful Algae*, 38: 50-62.

Mulholland M. R, P. W. Bernhardt, I. Ozmon, L. A. Procise, **O'Neil, J.M.**, Heil, C.A., Bronk, D.A. (2014) Contributions of diazotrophy to nitrogen inputs supporting *Karenia brevis* blooms in the Gulf of Mexico. *Harmful Algae*, 38: 20-29.

*Fertig, B., **O'Neil, J.M.**, Beckert, K., Cain, C.J., Needham, D.M., Carruthers, T.R., Dennison, W.C. (2013) Cryptic nutrient sources in a coastal lagoon and catchment streams, Chincoteague Bay, Maryland, USA. *Estuarine, Coastal Shelf Science*: doi.org/10.1016/j.bbr.2011.03.031

O'Neil, J.M., Davis, T.W., Burford, M.A., Gobler, C.J. (2012) The Rise of Harmful Cyanobacteria Blooms: Potential Role of Eutrophication and Climate Change. *Harmful Algae* 14: 313-334.

C. Contracts and Grants Awarded

Current 2015

Australian Department of Education, Canberra. *U.S.-Australia Virtual Environmental Partnership*" (Phase 2 continuation of State Dept. project) \$38k (**O'Neil**) CoPIs: Costanzo and Dennison (UMCES); C. Heil (Bigelow); Subcontract through Prof. A. Campbell (Charles Darwin University, Australia): Awarded June 2013-Dec 2015 <http://www.usaus-h2o.org/>.

National Science Foundation: Curriculum and Community Enterprise for New York Harbor Restoration in New York City Public Schools and Billion Oyster Partnership-STEM-C (Science Technology, Engineering, Mathematics and Computing): Subcontract with Pace University, New York; Harbor School Foundation, NYC, Columbia University (\$415K) with Dennison, Costanzo, Jones and **O'Neil**; Awarded 1 Nov. 2014-2017 (3 years).

Maryland Department of Education/EPA (MSDE): Maryland Environmental Literacy Program. PI: Murray (UMCES) and **O'Neil**; 54K July 2015-2016 (yearly for 3 years); Teacher Workshops in Baltimore Harbor and Smith Island.

2013-2014

United States Department of State: Bureau of Educational and Cultural Affairs, Washington, DC, Fulbright-Hayes funding to administer the "Global Exchange Program *U.S.-Australia Virtual Environmental Partnership*"; \$100K (**O'Neil**) CoPIs: Costanzo and Dennison (UMCES); C. Heil (Bigelow); A. Campbell (Charles Darwin University, Australia): Current: 10/1/12-12/31/13: <http://www.usaus-h2o.org/> (Phase 1 Reporting period extension through 3/14)

D. Other proposal submitted

2015

National Science Foundation Biological Oceanography: Submitted Feb. 2015 “Coupled Bio-Physical Controls on *Sargassum* in the Atlantic” PIs Coles and **O'Neil, J.M.** (UMCES) \$980K. (unsuccessful preparing for resubmit Aug 2016).

2014

National Oceanic and Atmospheric Administration: Submitted Aug 2014-Ocean Acidification Program: “Assessing the Synergistic Effects of Acidification and Eutrophication on the Formation of Toxic Cyanobacteria Blooms and Hypoxia Events”. Greenfield, D. (USC), Mulholland, M. (ODU), **O'Neil, J.M.** (UMCES) \$186K (unsuccessful)

National Oceanic and Atmospheric Administration: ECOHAB Regional: “Understanding and Predicting the Regional Expansion and Toxicity of Harmful Cyanobacteria Blooms in Coastal Atlantic Environments: Effects of Eutrophication, Temperature and Grazing” **O'Neil, J.M.**, Coles, C., (UMCES), Howarth, R.W., Marino, R. (Cornell), Greenfield, D. (USC), Mulholland, M.R. (ODU), Engene, N. (FIU). \$828K. (unsuccessful)

2013

National Science Foundation Biological Oceanography: Submitted Aug. 2013: “Collaborative Proposal: Understanding the distribution, growth and fate of pelagic *Sargassum* in the Atlantic” PIs Coles, V., Hood, R. and **O'Neil, J.M.** (UMCES) \$980K w/ CoPIs M. Lomas (Bigelow Lab); Steinberg, D. (VIMS). (unsuccessful).

Mid-Atlantic Seagrass Regional: Submitted June 2013: “Geospatial analysis tools to characterize land-use effects on water quality in coastal watersheds of the Mid-Atlantic”. Lead PI: Mallin, M. (NC Seagrass); CoPIs: Lukenbach, M., Kellogg, M.L., Lawrence, M.A. (VA Seagrass); Glibert, P.M., **O'Neil, J.M.** (MD Seagrass); Claessens, L. York, L. (DE Seagrass); Kenneth, M.J., Fertig, B. (NJ Seagrass). \$140K (unsuccessful).

E. Conferences, Seminars and Presentations

2015

Pace University, New York City: STEM-C meeting: Invited talk: **O'Neil J.M.** *Linking Iconic Harbor Cities through Virtual Environmental Partnerships*. February 10, 2015.

NSF-NOAA sponsored Workshop Invited participant: Global Solutions to Regional Problems: Bowling Green State University, Ohio. Presentation: **O'Neil J.M.**, Gao Y, Stoecker D., Cornwell, J. *Toxic cyanobacterial blooms in the Sassafra River, a tributary of the Chesapeake Bay*. April 13-15, 2015.

2014

AGU Ocean Sciences/ Association of Limnology and Oceanography (ASLO) Annual Meeting Feb, 2014, Honolulu, HI: **O'Neil, J.M.**, Costanzo, S., Jones, A., Heil, C.A., Dennison, W.C., Campbell, A., Schwaab, “US-Australia Virtual Environmental Partnership: Engaging ‘Digital Native’ High School Students in Water Issues”.

AGU Ocean Sciences/ Association of Limnology and Oceanography (ASLO) Annual Meeting Feb, 2014, Honolulu, HI: Boardman, A.L, **O'Neil, J.M.**, Gustafson, A.B., Sellner, K.G. "Cyanobacteria Succession and Nitrogen Fixation in a Eutrophic Restored Wetland System within Chesapeake Bay.

International River Symposium, Canberra, Australia September, 2014: **O'Neil, J.M.**, Gao, Y., Stoecker, D., Cornwell, J.."Toxic Cyanobacterial Blooms in River Reaches of the Chesapeake Bay: Management Challenges"

World Harbour Program Launch Workshop: Sydney Institute of Marine Science, Australia. **O'Neil, J.M.** "Linking Iconic Harbour Cities through Virtual Environmental Partnerships".

2013

Coastal & Estuarine Research Foundation (CERF) Biennial Meeting, Nov. San Diego:
K.G. Sellner, **J.M. O'Neil**, E. Schott, T. Davis, G. Bullerjahn, A.M. Hartsig, and M. Osborn Wetlands from Dredge Material: Algal blooms, toxicities, and strategies

Association for Limnology and Oceanography (ASLO) Annual Meeting Feb. New Orleans:
Meyer, K.A., **O'Neil, J.M.**, and Crump, B.C. Changes in the bacterial community surrounding multiple stages of blooms of the red tide dinoflagellate *Karenia brevis*

Association for Limnology and Oceanography (ASLO) Annual Meeting Feb. New Orleans:
Rodriguez, C. M., **O'Neil, J. M.** Identifying nitrogen and microbial contaminant hotspots in tributaries of Johnson Bay, Maryland Coastal Bays.

12th Annual U.S. Symposium on Harmful Algal Blooms Oct. Sarasota, FL.:
Meyer, K.A., **O'Neil, J.M.**, Crump, B.C., Heil, C.A. What exactly are you growing? An assessment of the bacterial community in commonly used cultures of *Karenia brevis* and other toxic and non-toxic dinoflagellates.

12th Annual U.S. Symposium on Harmful Algal Blooms Oct. Sarasota, FL.:
Heil, C.A., Bronk, D., Dixon, L.K., Hitchcock, G., Kirkpatrick, G., Mulholland, M.R., **O'Neil, J.M.** Walsh, J., Weisberg, R.E., Garrett, M., Lenos, J., Sipler, R., Richardson, W. Nutrients supporting *Karenia brevis* blooms: Results of the ECOHAB: *Karenia* program.

F. Active Memberships in Professional Societies

American Society for Limnology and Oceanography
International Society for Study of Harmful Algae

V. Teaching and Training (2013-2015)

- A. **Biological Oceanography MEES 622** – co-instructor Fall 2009-2015 with Raleigh Hood (course coordinator) and main co-instructors: Louis Plough. Lectures on microzooplankton, energetics, harmful algae and grazing & field-laboratory work aboard *R/V Rachel Carson* and salt-marsh field trips to Poplar Island.
- B. **Harmful Algal Bloom Seminar:** Instructor Kevin Sellner: O'Neil Guest Lecturer on Cyanobacterial Harmful Algal blooms: April 2013.
- C. **Graduate Students Supervised** as Major Advisor at UM MEES program:

Kevin Meyer PhD Oceanography MEES; Dec 2013 "Microbial interactions with the red tide dinoflagellate *Karenia brevis* on the West Florida Shelf of the Gulf of Mexico

D. Graduate Students Committees at U Maryland MEES and other institutions:

Graduated

Fan Zhang	PhD	Defended 2015: IMET-Advisor: Russell Hill
Dorothea Bender	PhD	(Univ. Queensland, grad 2014) Advisor: O. Hoegh-Guldberg

Current

Sharein El-Tourky	PhD	(University of Miami, FL/RSMAS) Advisor: G. Hitchcock
Maureen Brooks	PhD	(MEES UM College Park/HPL) Advisor: Victoria Coles
Suzanne Spitzer	PhD	(MEES/Anthropology UM CP): Advisor WC Dennison

E. Research Experience for Undergraduates (REU) Program Mentor- MD Seagrant:

Adam McAnally	Suwanee, College of the South, TN 2014	(co-advised with A. Santoro)
Austin Boardman	University of Tulsa, OK	2013

F. Recent College grad Interns

Rachel Gannon (Hood College) 2014
 Dylan Taillie (Tulane University) 2015 (co-advise with S. Costanzo/W. Dennison-IAN)

VI. Outreach and Service (2013-2015)

A. Editorship: Editorial Board, *Harmful Algae*; Elsevier journal.

Associate Editor for cyanobacterial and dinoflagellate submissions (2005- present)
 Chief Editor for Special Issue *Harmful Algae* 2014 *Karenia Nutrient Dynamics, in Gulf of Mexico*

B. Public Service

- i) Member Board of Directors Chesapeake Girl Scout Council, Dover DE. Covers Eastern Shore (DE, MD, VA). Environmental representative. 2005-2011; Midshore Advisory Council and Lake Williston (Caroline County) Cyanobacteria Expert Panel, DNR 2014-2015.
- ii) Water Fowl Festival, October 2013, 2014
- iii) Volunteer Tilghman Island Bay Day, May 2015
- iv) Tidewater Environmental Health Association (TEHA) Dec 2014 Public Talk: The Rise of Slime: Harmful algal blooms and influence of humans, Wicomico Board of Health, Salisbury

C. Federal/State/Local Government

- i) UMCES Representative on Governor O'Malley's Agricultural Certainty Advisory Board-Maryland Department of Agriculture; Secretary Earl F. (Buddy) Hance (Chair). June 2013- to June 2014
- ii) Member: Harmful Algal Task Force, DNR Annapolis. 2007-present
- iii) Member: Coastal Bays Science and Technology and Advisory Committee: 2008-present

D. International: UMCES contact for the World Harbour Project, Sydney Institute of Marine Science; Workshop November 2014; Chair of Education Committee and Member of Water Quality Committee 2014-present.

E. UMCES and Laboratory:

- i) Horn Point Environmental Sustainability Committee (2007-present; Chair 2012, 2013, 2014)

- ii) Member UMCES Sustainability Committee; 45th Annual Earth Day Cleanup April 23, 2015.
- iii) Horn Point Laboratory Diving Safety Committee (2002- current)

F. **Manuscript reviewer:** *Estuarine and Coast Science, Oecologia, MERES Limnology and Oceanography; FEMS Microbiology, Hydrobiologia; Harmful Algae, Microbial Ecology, Applied and Environmental Microbiology; Nature; Oikos*