Theresa O'Meara
Oak Ridge National Laboratory
1 Bethel Valley Rd
MS6301, Blg 4500N, Rm F129M
Oak Ridge, TN 37831-6301

P: +1 865 576-0449 **omearat@si.edu, omearata@ornl.gov**

2018- Postdoctoral Fellow, Smithsonian Environmental Research Center, Edgewater, MD, Advisor: Dr. J. Patrick Megonigal, Oak Ridge National Laboratory, Oak Ridge, TN, Advisor: Dr. Peter Thornton

2014-2017 Postdoctoral Fellow, University of Auckland, Auckland, New Zealand, Advisor: Prof. Simon Thrush

Education:

May 2014 Ph.D., University of North Carolina at Chapel Hill, Gillings School of Global Public Health, Department of Environmental Science and Engineering, Advisor: Dr. Michael F. Piehler

May 2008 B.S. Chemistry, Hope College, Magna Cum Laude, Minor: Environmental Sciences

May 2008 B.A. Biology, Hope College, Magna Cum Laude, Minor: Environmental Sciences

Grants:

2018 Department of Energy, Office of Science, Biological and Environmental Research, Environmental Systems Science, *co-investigator*, PI: Dr. J. Patrick Megonigal

2016 National Science Challenge, Sustainable Seas, co-investigator, PI: Prof. Simon Thrush

2013 UNC-CH Off Campus Dissertation Fellowship, Advisor: Dr. Michael F. Piehler

2012 North Carolina Coastal Reserve-North Carolina Sea Grant Fellowship
Advisor: Dr. Michael F. Piehler

2006 Michigan Space Grant Consortium Fellow, Hope College, Holland, MI, Advisors: Dr. Jonathan W. Peterson and Dr. Michael D. Seymour

Scholarships and Awards:

2016 1st place, invited presenters, FoS Postdoctoral Society, University of Auckland
2008 Sigma Xi Student Research Award (Chemistry Department)
2008 Sigma Xi Student Research Award (Biology Department)
2004-2008 Presidential Scholarship, merit based, Hope College

Peer-Reviewed Publications:

O'Meara T, E Gibbs, SF Thrush (2018) Rapid organic matter assay (ROMA) of carbon degradation across depth gradients in marine sediments, Methods in Ecology and Evolution 9: 245-253.

Ray N, T O'Meara, T Williamson, JL Izursa (2018). Carbon dioxide release from shell formation must be included in LCA of bivalves. International Journal of Life Cycle Assessment

O'Meara T, JR Hillman, SF Thrush (2017) Rising tides, cumulative impacts and cascading changes to estuarine ecosystem functions, Scientific Reports 7, Article number: 10218, DOI:10.1038/s41598-017-11058-7

O'Meara T, SP Thompson, MF Piehler (2015). Effects of shoreline hardening on nitrogen processing in estuarine marshes of the US Mid-Atlantic Coast. Wetlands Ecology and Management. 23(3): 385-394

Peterson JW, TA O'Meara, MD Seymour (2014) Effects of Added Fe°, Fe_3O_4 and Fe_2O_3 on Sorption of Cephalosporin Antibiotic in Quartz-rich Sands. Journal of Environmental Engineering 140(1): 40-47

Keeler A, L Dubbs, T O'Meara (2013) Permitting, Risk, and Marine Hydrokinetic Energy Development. The Electricity Journal 26(10): 64-74

Peterson JW, TA O'Meara, MD Seymour, W Wang, B Gu (2009) Sorption mechanisms of cephapirin, a veterinary antibiotic, onto quartz and feldspar minerals as detected by Raman spectroscopy. Environmental Pollution 157(6): 1849-1856

Peterson JW, TA O'Meara, MD Seymour (2008) Experimental Investigation of Cephapirin Adsorption to Quartz Filter Sands and Dune Sands. Hydrogeology Journal 16(5): 879-892

Publications (only completed manuscripts listed as *in prep*):
O'Meara T (*In prep*) Denitrifiers in the coastal gradient

O'Meara T, SP Thompson, J Fear, MF Piehler (*In prep*) Impacts of shoreline hardening on salt marsh primary producer distribution, diversity, and richness

O'Meara T and MF Piehler (*In prep*) Effects of temperature on macroalgal and microphytobenthic abundance: Implications for shifts in algal dominance as global temperatures rise

Final Reports:
O'Meara, T (2013) Changes in denitrification rate from the maritime forest to the shallow sub-tidal in natural and altered salt marsh systems. 2012 NC Coastal Reserve-NC Sea Grant Coastal Research Fellowship. Final Report.

Fear JM, Currin CA (2012) Sustainable Estuarine Stabilization: Research, Education and Public policy in North Carolina. Final Report. The NOAA/UNH Cooperative Institute for
Coastal and Estuarine Environmental Technology (CICEET). Grant Number NA06NOS4190167, *Contributing author on nutrient cycling*

Invited Presentations:
O'Meara T (2018) Rapid assessment of organic matter degradation in marine sediments (ROMA method). Oak Ridge National Laboratory, Oak Ridge, TN February 23, 2018.

O'Meara T, SF Thrush (2016) Effects of multiple environmental stressors on networked ecosystem functions. University of New South Wales, Sydney, Australia March 14, 2017.

O'Meara T, SF Thrush (2016) Estuaries and the Anthropocene. Faculty of Science Postdoctoral Society. University of Auckland, Auckland, New Zealand November 15, 2016.

O'Meara T (2012) Denitrification from the Maritime Forest to the Shallow Subtidal. *Poster.* The 2012 National Estuarine Research Reserve/National Estuarine Research Reserve Association (NERR/NERRA) Annual Meeting, Shepherdstown, WV, November 2012

O'Meara T (2012) Changes in denitrification from the maritime forest to the shallow subtidal in natural and restored systems. *Oral Presentation*. National Estuarine Research Reserve Staff Meeting, Pivers Island, NC May 1, 2012

O'Meara TA (2006), Experimental Investigation of Antiobiotic Adsorption in Sand-Iron Systems. *Oral Presentation*. Michigan Academy of Science, Arts, and Letters Annual Meeting, Rochester, MI, March 2006

O'Meara TA, JW Peterson, and MD Seymour (2006) Experimental Investigation of Antibiotic Adsorption in Sand-Iron Systems: Implications for Transport in Groundwater. *Oral Presentation*. Michigan Space Grant Consortium Annual Meeting, Ann Arbor, MI, October 2006

O'Meara TA, JW Peterson, and MD Seymour (2006) Adsorption of antibiotics to sands amended with magnetite, hematite, and zero-valent Fe. *Poster.* Hope College Celebration of Undergraduate Research, Holland, MI, March 2006

O'Meara TA, JW Peterson, and MD Seymour (2005) Fate and transport of antibiotics in sand aquifers. *Poster*. Hope College Celebration of Undergraduate Research, Holland, MI March 2005.

Meeting Presentations:
O'Meara T, JR Hillman, and SF Thrush (2018) Mussels vs mud: Using mussels to restore ecosystem function across turbidity gradients. *Oral presentation.* World Conference on Marine Biodiversity, Montréal, Canada May 2018

O'Meara T, JR Hillman, and SF Thrush (2017) Rising tides, cumulative impacts and cascading changes to estuarine ecosystem functions. *Oral presentation.* New Zealand Marine Sciences Society, Christchurch, New Zealand July 2017

O'Meara T (2016) Getting tanked up in preparation for climate change. *Oral Presentation.* Estuarine Coastal Sciences Association, Bremen, Germany September 2016.

O'Meara T (2015) Denitrifiers in the coastal gradient. *Oral Presentation.* New Zealand Marine Sciences Society Conference, Auckland, New Zealand July 2015

O'Meara T and MF Piehler (2014) Denitrifiers in the coastal gradient: Potential Contributions to the N_2O budget. *Poster*. Joint Aquatic Sciences Meeting, Portland, OR, May 2014

O'Meara T and MF Piehler (2011) Dueling Algae: macro- vs micro- algal dominance in a warming world. *Oral Presentation*. UNC Institute of Marine Science Student-Led Symposium, Morehead City, NC, September 2011

O'Meara T and MF Piehler (2011) Effects of shoreline hardening on nitrogen processing in salt marshes. *Poster*. 11th International Estuarine Biogeochemistry Symposium, Atlantic Beach, NC May 2011

O'Meara TA, JW Peterson, and MD Seymour (2005) Experimental Investigation of Cephapirin Adsorption to Sands: Implications for Transport of Antibiotics in Groundwater. *Poster*. Annual Meeting of the Geological Society of America, Salt Lake City, UT October 15-19, 2005

O'Meara TA, JW Peterson, and MD Seymour (2006) Cephapirin Adsorption in Sand-Iron Systems: Effects of Hematite, Magnetite, and Zero-valent Iron. *Oral Presentation*. Annual Meeting of the Geological Society of America, Philadelphia, PA, October 22-25, 2006

Advising:

2016-	Stefano Schenone PhD (in progress)
2015-2016	Emma Gibbs, MSc (graduated)
2015	Hazel Maria Canizales Flores, MSc (National Autonomous University of Mexico)
2014	Will McKay (undergraduate summer researcher)

Teaching Experience:

2017	MARINE 701 Current Issues in Marine Science, lecture on the Life and Times of *Macomona* (23 Symonds Street, Auckland 1010, New Zealand)
2017	ENVSCI 733 Biodiversity Management and Conservation, lecture on Marine Conservation and Ecosystem Based Management (23 Symonds Street, Auckland 1010, New Zealand)
2016	Module coordinator/lecturer, Marine Science 302, Dynamics of Marine Systems module 5 – Coastal ecosystem and nutrient processing in marine sediments (23 Symonds Street, Auckland 1010, New Zealand)
2014	Research Experience for Undergraduates (REU) Coordinator, Samford University, teaching statistics in R, Excel, and Research Ethics and coordinating student trips/coursework/field work, and editing papers (800 Lakeshore Drive, Homewood, AL 35209)
2011	Guest Lecturer, UNC-Chapel Hill ENVR 400 Seminar, "Dueling algae: macro- vs micro- algal dominance in response to a changing climate"
2008-2009	Teaching Assistant/Web moderator, UNC-Chapel Hill, Environmental Health, graduate level/continuing education 3431 Arendell Street, Morehead City, NC 28516
Spring 2008	Teaching Assistant, Inorganic Chemistry Lab, Hope College 141 E 12th Street, Holland, MI, 49423
Spring 2008	Teaching Assistant, Organismal Biology Lab, Hope College 141 E 12th Street, Holland, MI, 49423
Fall 2007	Teaching Assistant, Organic Chemistry Lab, Hope College 141 E 12th Street, Holland, MI, 49423
Fall 2006	Teaching Assistant, Ecology and Evolutionary Biology Lab, Hope College 141 E 12th Street, Holland, MI, 49423
2005-2006	Homework Assistant/Tutor, General Chemistry, Hope College 141 E 12th Street, Holland, MI, 49423

Community Involvement:

2017	Dive against debris, Ti Point (New Zealand) clean up, March
2015	Volunteer session moderator, student presentation judge, NZMSS-OCS, Auckland, New Zealand July 6-9, 2015
2013	Volunteer session moderator/abstract selection committee, Water Microbiology Conference, Chapel Hill, NC May 5-7, 2014
2013	Volunteer/videographer assistant, Scientific Research and Education Networking (SciREN) Event, Pine Knoll Shores Aquarium, NC April 25, 2013
2012-2014	Volunteer, Sunshine Lady Boys and Girls Club, Morehead City, NC
2011	Volunteer, Higher Education Readiness Opportunity (HERO) Program, marine science introduction, Morehead City, NC, August 2, 2011
2010-	Mentor, 2 undergraduate students from the Environmental Science and Engineering Department, main campus at UNC Chapel Hill, NC
2007	Study Abroad, University of Otago, Dunedin, New Zealand, June-November

Skills:

Software/Modelling

Proficient: R (including ggplot), Microsoft Office, HOBOware, Omnion,
Familiar: Adobe Illustrator, SPSS, ImageJ, GCSolution, D-OptoLog
Basic: GIS, Energy Exascale Earth System Model (E3SM), PFLOTRAN (model)

Analytical Instrumentation Experience

Proficient: D-OPTO loggers**,** O_2 planar optodes**,** ECD, GC/MS, LC/MS, MIMS, HPLC, HOBO water level, temperature, and light loggers, InSitu water level loggers, YSI Sondes, ISCO water samplers, Fluorometry, Spectrophotometry UV/Vis, LI-COR PAR detector, Lachat nutrient auto analyzer
Familiar: NMR Spectroscopy (Proton and Carbon), Photosynthetron, FTIR Spectroscopy, AA Spectroscopy

Basic: LI-COR CO_2/O_2 and leaf area measurement

Boating/water related

Canoeing, kayaking, New Zealand Coast Guard Boatmaster, PADI rescue diver, reserve crewmember for R/V Capricorn (UNC-Chapel Hill)

Miscellaneous field projects

Mussel Bed restoration; Whole stream metabolism; Oyster recruitment, settlement, and growth; Tidal freshwater denitrification; Stream monitoring at Camp Lejeune, NC; Surface elevation table (SET) installation; Shark tagging; Spider hunting; Groundwater well installation and maintenance; Developing colonies of *Folsomia candida*