

# Melanie L. Jackson

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## Education

- 8/2016–*present* University of Maryland Center for Environmental Science (UMCES),  
Marine Estuarine Environmental Science Program (MEES)  
Horn Point Laboratory, Cambridge, MD  
Ph.D. candidate
- 9/2013–8/2016 University of Maryland Center for Environmental Science (UMCES),  
Marine Estuarine Environmental Science Program (MEES)  
Horn Point Laboratory, Cambridge, MD  
M.S.
- 8/2008–5/2012 University of Miami  
Rosenstiel School of Marine and Atmospheric Science, Coral Gables, FL  
B.S. Marine Science and Biology
- 1/2011–7/2011 University of Copenhagen  
Study Abroad, Copenhagen K, Denmark  
Advanced in Danish language

## Research Interests

Nitrogen biogeochemistry, nutrient cycling processes in estuarine systems impacted by anthropogenic nutrients

## Research and Professional Experience

- 8/2016–*present* University of Maryland Center for Environmental Science, Cambridge, MD  
*Graduate Research Assistant*, Oceanography  
*Advisor*: Dr. Jeff Cornwell  
*Project*: A comparison of denitrification rates on restored oyster reefs and multiple aquaculture gear types

- Measured nutrient fluxes on Harris Creek and Choptank River
- Designed novel tripod/diaphragm pump setup to collect dissolved gas and nutrient samples from discrete water depths
- Determined the decomposition rates of oyster biodeposits
- Performed large scale oyster reef incubations for biogeochemistry and nutrient analyses
- Collected samples from below six oyster aquaculture gear types to compare denitrification rates

- Operated a gas chromatograph for the determination of greenhouse gas fluxes (N<sub>2</sub>O and CO<sub>2</sub>)
- Analyzed samples for aquatic denitrification using MIMS N<sub>2</sub>:Ar

9/2013–8/2016      **University of Maryland Center for Environmental Science, Cambridge, MD**  
*Graduate Research Assistant, Oceanography*  
*Advisor: Dr. Patricia Glibert*  
*Project: Determining the effect of NH<sub>4</sub><sup>+</sup> on algal community composition and physiology in nutrient polluted waters*

- Measured nutrient fluxes in the San Francisco Bay Delta
- Analyzed phytoplankton community composition with FlowCAM and flow cytometry
- Measured algal physiology with WATER-PAM WALZ
- Executed enrichment experiments and stable isotope techniques in the Anacostia River and West Lake, Hangzhou, China

8/2012–7/2013      **New Jersey Department of Environmental Protection, Hackensack, NJ**  
*AmeriCorps Watershed Ambassador at Hackensack Riverkeeper*

- Performed environmental education outreach presentations to K-12 and college level on the watershed
- Conducted biological and visual stream assessments and trained volunteer stream monitors
- Organized river cleanups after Hurricane Sandy and assisted in immediate relief efforts
- Received Rutgers paraprofessional training on storm water management
- Conducted illegal fishing assessments and recorded undisclosed Combined Sewer Overflows
- Led primary subwatershed study on biodiversity of macroinvertebrates in streams

1/2009–5/2012      **Rosenstiel School of Marine and Atmospheric Science (RSMAS), Key Biscayne, FL**  
*Research Assistant, Marine Biology*  
*Undergraduate Advisor: Dr. Sharon Smith*

- Performed research on the R/V *Melville* for five weeks in the Costa Rica Dome
- Deployed and recovered MOCNESS, Live zooplankton tows, and CTD
- Performed research for senior thesis published at RSMAS titled “Distribution of Eucalanidae (copepod) within the Costa Rica Dome Area of the Eastern Tropical Pacific Ocean”
- Conducted egg production experiments
- Identified and dissected zooplankton samples from the Costa Rica Dome and Arabian Sea
- Received training in hazardous and laboratory safety

### Peer-Reviewed Publications

Jackson, M.L., Yang, J., Li, Y., Tong, M., and P.M. Glibert. Influence of nitrogen form on phytoplankton community composition in West Lake, Hangzhou, China. *PLoSone (in Review)*.

Jackson, M.L., and S.L. Smith. 2016. Vertical distribution of Eucalanoid copepods within the Costa Rica Dome area of the Eastern Tropical Pacific. *Journal of Plankton Research*. doi: 10.1093/plankt/fbv117.

### **Honors and Awards**

Midshore Riverkeeper Conservancy Award (2016)  
Horn Point Laboratory Student Travel Award to Ocean Science Meeting (2016)  
Waterfowl Chesapeake Fellowship (2015)  
National Science Foundation East Asia and Pacific Summer Institutes (2015)  
Explorers Club Washington Group- Young Explorers (2015)  
New Jersey Clean Communities Excellence in Education Award (2013)  
Segal AmeriCorps Education Award (2013)  
Departmental Honors in Marine and Atmospheric Science (2012)

### **Teaching Experience**

Field Methods in Environmental Science (ENV 292), *Guest Lecturer* (Washington College)  
Biogeochemistry (ENV 312), *Guest Lecturer* (Washington College)  
Scientific Writing and Communication (MEES 608D), *Teaching Assistant* (UMCES)  
Land Margins Interactions (MEES 610), *Teaching Assistant* (UMCES)

### **Field and Sea Experience**

2010 R/V *Melville*: FLUx and Zinc Experiments Cruise, Eastern Tropical Pacific (35 days)  
2010 Scientific Diving Certification, RSMAS (2010-2011)  
2010 Tropical Field Biology Course (RSMAS) in Braulio Carillo Parque National, Costa Rica  
Recorded changes in flora and fauna backpacking from Volcan Barva to La Selva  
Biological Station (9 days)

### **Invited Talks**

Determining the effect of  $\text{NH}_4^+$  on algal community composition and physiology in nutrient polluted waters. Zhejiang University, Institute of Marine Biology, China: July 2015.

Determining the effects of changes in nitrogen pollution on algae community composition and physiology in West Lake Hangzhou. 8<sup>th</sup> US-China Young Scientist Forum, National Science Foundation: East Asia and Pacific Summer Institutes, Beijing, China: July 2015.

### **Poster**

Nitrogen form impacting phytoplankton across scales in China's West Lake: from nitrogen-metabolism to community composition. 2016 Ocean Sciences Meeting. New Orleans, LA: February 2016.

### **Mentoring**

Washington College student (Nicole Blanco)

Annapolis Area Christian School high school student (Kyrstin Pedrick)  
Zhejiang University undergraduate students (Chenyi Tong, Shijia Wu, and Xiaofei Li)  
Hainan University undergraduate students (Yang Sui and Ying Jia)  
Zhejiang University graduate students (Jingjing Yang and Youmai Li)  
Gallaudet University undergraduate students (Anna McCall and Amberlin Hines)

### **Association Memberships**

American Society of Limnology and Oceanography (ASLO)

### **Activities**

Midshore Riverkeeper Conservancy board member- (2017-present)  
University System of Maryland Student Council- (2016-present)  
Environmental Sustainability Council- (UMCES) (2015-present)  
New Student Liaison- (HPL-UMCES) (2015-present)  
Graduate Student Council CoChair- (UMCES) (2016-2017)  
Graduate Student Organization Representative- (UMCES) (2013-2014)  
Tour Guide- (UMCES) (2013-present)  
Dorchester YMCA dance instructor (2013-present)  
*Rho Rho Rho*- Marine and Atmospheric Science Honor Society, Public Relations and Media  
Chair for Ocean Kids outreach event (2008-2012)  
Delta Phi Epsilon Omega Chapter- Standards board (2009-2012)  
*University of Miami SCUBA club (2008-2012)*