

Curriculum Vitae

SARA JANE BENDER

Cooperative Institute for the North Atlantic Region Postdoctoral Scholar
Woods Hole Oceanographic Institution
Marine Chemistry and Geochemistry
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EDUCATION

2013

Ph.D., Biological Oceanography

School of Oceanography, University of Washington

Dissertation Title: Quantifying the response of diatom nitrogen metabolism to environmental changes

Advisor: E. Virginia Armbrust

2009

M.Sc., Biological Oceanography

School of Oceanography, University of Washington

Presentation Title: The coupled effects of light and nitrogen source on the urea cycle in the marine diatom, *Thalassiosira pseudonana*

Advisor: E. Virginia Armbrust

2005

B.A., Biological Sciences- *summa cum laude*

Rutgers College, Rutgers University

Minors in Marine Science and Anthropology

2003

Study abroad program (July – November)

University of Queensland, Brisbane, Australia

PUBLICATIONS

- (1) Durkin, C.A., Bender, S.J., Chan, K.Y.K., Gaessner, K., Grünbaum, D. and E.V. Armbrust. 2013. Silicic acid supplied to coastal diatom communities influences cellular silicification and the potential export of carbon. *Limnology and Oceanography*. 58(5): 1707-26.
- (2) Bender, S.J., Parker, M.S. and E. V. Armbrust. 2012. The coupled effects of light and nitrogen source on the urea cycle and nitrogen metabolism over a diel cycle in the marine diatom *Thalassiosira pseudonana*. *Protist* 163: 232-51.
- (3) Durkin, C.A., Marchetti, A., Bender, S.J., Truong, T., Morales, R., Mock, T. and E.V. Armbrust. 2012. Frustule-related gene transcription and the influence of diatom community composition on silica precipitation in an iron-limited environment. *Limnology and Oceanography* 57(6): 1619-33.
- (4) Bidle, K.D. and S.J. Bender. 2008. Iron starvation and culture age activate metacaspases and programmed cell death in the marine diatom, *Thalassiosira pseudonana*. *Eukaryotic Cell* 7(2): 223-236.

PROFESSIONAL/VOLUNTEER EXPERIENCE

2013

North Atlantic Region Postdoctoral Scholar
Woods Hole Oceanographic Research Institute, Woods Hole, MA
Supervisor: Dr. Mak Saito

2005 – 2006

Research Technician
Institute of Marine and Coastal Sciences, Rutgers University
Supervisor: Dr. Kay D. Bidle

2003

Volunteer Field Technician (May – July)
Rutgers University Marine Field Station
Supervisor: Dr. Kenneth Able

2002

Volunteer Research Technician
Department of Life Sciences, Rutgers University
Supervisor: Dr. Joanna Burger

TEACHING

- 2010 Graduate Teaching Assistant, University of Washington
Introduction to Oceanography Lab (OCN201)

2009 Lead Graduate Teaching Assistant, University of Washington
Introduction to Oceanography (OCN200)

2008 Graduate Teaching Assistant, University of Washington
Introduction to Oceanography (OCN200)

AWARDS/HONORS

2012 Outstanding Student Presentation Award
2012 Ocean Sciences Meeting, Salt Lake City, UT

2011 Selected Participant, C-MORE Summer Course on Marine Microbiology
University of Hawaii

2010 Dean A. McManus Excellence in Teaching Award
School of Oceanography, University of Washington

2010 Selected Cover Story, [Northwest Science & Technology](#) magazine
“Tsunami Science In The Northwest: Researchers Are Working To Understand,
Predict, And Mitigate One Of Nature's Deadliest Hazards”

2005 Henry Rutgers Scholar, Rutgers University

2005 Outstanding Graduating Senior in Marine Sciences Award

2005 Betty Falk Yatvin Memorial Award

2004 NSF REU- Undergraduate Research Fellow
Hawaii Institute of Marine Biology, University of Hawaii

2002 Selected Intern, U.S. Fish and Wildlife Service
Edwin B. Forsythe National Wildlife Refuge, Brigantine, New Jersey

CONFERENCES/WORKSHOPS

(Presenter in bold)

2013 American Association for the Advancement of Sciences Annual Conference
(Boston, MA) 14 – 18 February

- **Bish, P.**, Schindler, A.G., Bender, S.J., Terai, C.R., Snelson, C.D. and Agatsuma, R. The Seattle Forum on Science Ethics & Policy: A student-run organization focusing on the intersection of science and policy. (poster)

- 2013 ASLO Aquatic Sciences Meeting (New Orleans, LA) 17 – 22 February
- **Bender, S.J.**, Durkin, C.A., Durham, B.P., Berthiaume, C., and Armbrust, E.V. Nitrogen transporters in laboratory transcriptomes and field metatranscriptomes reveal species-specific metabolic responses of marine diatoms to nitrogen availability. (oral)
 - **Martin, P.**, Mooy, B.V., Bender, S.J., and Armbrust, E.V. Ocean sections of polyphosphate and membrane lipids show distinct microbial responses to phosphorus stress and resupply. (oral)
- 2012 Gordon Marine Microbes Conference (Il Lucca, Italy) 23 – 29 June
- **Bender, S.J.**, Schruth, D., Durkin, C.A., Morales, R.L., Berthiaume, C. and Armbrust, E.V. Not all diatoms are created equal: A comparison of twenty-seven transcriptomes across three model diatoms. (poster)
- 2012 Ocean Sciences Meeting (Salt Lake City, Utah) 19 – 24 February
- **Bender, S.J.**, Durkin, C.A., Schruth, D. Morales, R.L. and Armbrust, E.V. Identifying shared responses to nitrate starvation among three diatoms using whole-cell transcriptomics (oral)
 - 2011 C-MORE Summer Course Genome Collective. Comparative genomics of Rhodobacteraceae Sp. HIMB11 reveals metabolic specialization in a coastal, marine isolate. (poster)
 - 2011 C-MORE Summer Course Cruise Collective. Scales of variability at Station Aloha. (poster)
 - **Durkin, C.A.**, Bender, S.J., Gaessner, K. and Armbrust, E.V. Uptake limitation of silicic acid in coastal diatoms controls cellular silicification. (poster)
- 2012 American Association for the Advancement of Sciences Annual Conference (Vancouver, BC, Canada) 16 – 20 February
- **Hillenmeyer, E.**, Bender, S.J., McMillan, A. and MacLeod, B. The Seattle Forum on Science Ethics & Policy: A student-run organization focusing on the intersection of science and policy. (poster)
- 2011 Eastern Pacific Ocean Conference (South Lake Tahoe, CA) 11 – 14 October
- **Durkin, C.A.**, Bender, S.J. and Armbrust, E.V. Excessive silicic acid supply leads to increased silicification in coastal diatoms. (oral)
- 2011 American Association for the Advancement of Sciences Annual Conference (Washington, D.C.) 17 – 21 February
- Bender, S.J., Hillenmeyer, E. and **A. McMillan**. The Forum on Science, Ethics and Policy: Adapting a student-run organization to address the needs of a university and the community. (poster)
- 2010 CMOP Research Workshop (Beaverton, OR) 7 – 8 December (participant)

- 2010 Ocean Sciences Meeting (Portland, OR) 22 – 26 February
- **Bender, S.J.**, Parker, M.S. and E.V. Armbrust. The coupled effects of light and nitrogen source on the urea cycle in the marine diatom, *Thalassiosira pseudonana*. (poster)
 - **Durkin, C.A.**, Bender, S.J. Truong, T., Marchetti, A. and E.V. Armbrust. Common cell wall related genes in diatoms and their potential use as biological indicators in changing ocean environments. (oral)
- 2009 ASLO Aquatic Sciences Meeting (Nice, France) 25 – 30 January
- **Bender, S.J.** and E.V. Armbrust. Effects of nitrogen source and the light: dark cycle on growth and gene expression associated with the urea cycle in *Thalassiosira pseudonana*. (oral)
- 2008 Ocean Sciences Meeting (Orlando, FL) 2 – 7 March
- **Bender, S.J.** and E.V. Armbrust. Understanding the connection between differing nitrogen sources and the urea cycle in the diatom, *Thalassiosira pseudonana*. (poster)
- 2008 COSEE-OLC and Washington Sea Grant Communicating Ocean and Marine Sciences workshop (Seattle, WA) 22 November
- **Bender, S.J.** and E.V. Armbrust. Understanding the connection between nitrogen source and cellular metabolism in the diatom, *Thalassiosira pseudonana*. (poster)
- 2006 Biocomplexity-Evolution of Marine Phytoplankton (Rutgers University) 11 – 13 January
- **Bender, S.J.** and K.D. Bidle. A case for autocatalytic cell death as a result of nutrient limitation in the diatom *Thalassiosira pseudonana*. (poster)
- 2005 ASLO Summer Meeting 2005 (Santiago de Compostela, Spain) 19 – 24 June
- **Bender, S.J.** and K.D. Bidle. Mortality in the diatom, *Thalassiosira pseudonana*, in response to differing nutrient stresses. (poster)

PUBLIC PRESENTATIONS

*invited

- 2013 Pacific Science Center, Seattle Science Festival
(Seattle, WA) 10 June
- *Bender, S.J. Exploring the Appetites of Marine Microbes.
- Town Hall Seattle, UW Science Now program
(Seattle, WA) 8 April
- Bender, S.J. Exploring the Appetites of Marine Microbes.

RESEARCH CRUISES

120+ days at sea

- 2012 *Graduate Student*, R/V Thomas G. Thompson, Line P
16 – 23 May, *GeoMICS* program
- 2011 *Graduate Student*, R/V Kilo Moana, Station Aloha
12 – 22 June, *C-MORE Summer Course on Microbial Oceanography*
- 2010 *Graduate Student*, R/V Wecoma, Newport, OR
22 – 27 May / 27 July – 2 August
Coastal Margin, Observation and Prediction (CMOP) program
- 2009 *Graduate Student*, R/V New Horizon, Newport, OR
12 – 26 May / 29 August – 11 September
Coastal Margin, Observation and Prediction (CMOP) program
- 008 *Graduate Student*, Sorcerer II, Puget Sound, WA
Day Cruise, August
- 2007 *Graduate Student*, R/V Western Flyer, Moss Landing, CA
1 – 11 October, *Investigating changes in the microbial community along a nitrogen gradient (MBARI)*
- 2006 *Research Volunteer*, R/V Thomas G. Thompson, Tahiti
13 February – 9 March, *U.S. Repeat Hydrography P-16N Transect*
- 2006 *REU Summer Program Mentor*, USS Sturgeon Bay, Staten Island, New York Harbor, Day Cruise, July
- 2005 *Research Technician*, R/V Oceanus, Bermuda
7 – 26 August, *Eddies program in the Sargasso Sea*
- 2007 – 2010
Graduate Student, R/V Thomas G. Thompson, Puget Sound, WA
November 2007, May 2008, August 2008, November 2009, April 2010

LABORATORY TECHNIQUES

- Cell culturing
- Quantitative PCR
- Next-generation sequencing
- (Meta)transcriptomics
- Bioinformatics

LEADERSHIP

2013

Selected Representative, Core Programs Student Advisory Board
UW Graduate School

2012 – 2013

Campus Liaison, [Emerging Leaders in Science and Society](#)
American Association for the Advancement of Science (AAAS), National Program

2008 – 2013

Leader, [Forum on Sciences Ethics & Policy](#)
University of Washington

2012

Graduate Student Representative, Faculty Search Committee
School of Oceanography, University of Washington

2009 – 2011

Program Co-chair, Girls in Engineering, Math and Science
Seattle chapter

2009 – 2011

Board Member, Association for Women in Science
Seattle chapter

2006 – 2011

President, Rutgers Alumni Club of Seattle
Seattle chapter

MENTORING

UNDERGRADUATE

2010 – 2013

Supervisor, Moira Regan, Oceanography major (Graduated in 2013)

Nov. 22, 2011

Guest Speaker, UW Explore Oceanography course (Ocean100)

2008 – 2010

Supervisor, Franziska Lutz, Oceanography major (Graduated 2010)

- University of Washington Undergraduate Research Symposium participant, 2010 and 2009

*The effects of nitrogen limitation on growth and gene expression in the marine diatoms *Fragilariopsis cylindrus* and *Pseudo-nitzschia multiseriis**

Jan. 5 – 6, 2010

Participant, COSEE-OLC and Washington Sea Grant event 'Addressing Broader Impacts Requirements for Research Proposals'

Sept. 24, 2009

Discussion Leader, UW Oceanography TA Training

Sept. 18, 2008

Discussion Leader, UW Oceanography TA Training

2005, 2006

Summer Program Mentor, REU Undergraduate Summer Research Program
Rutgers University

YOUTH

2009 – 2010, 2012, 2013

Middle School Science Essay Judge, “Biomedical Breakthroughs and My Life” Essay Contest, Northwest Association for Biomedical Research (NWABR)

April 2, 2013/May 6, 2012

Guest Instructor, Girls in Engineering, Math and Science

March 3, 2012

Science Judge, National Ocean Sciences Bowl – Orca Bowl

2006 – 2011

Student Mentor, Girls in Engineering, Math and Science
Association for Women in Science, Seattle, WA

March 29, 2007

Volunteer, Science Night, North City Elementary School

MEMBERSHIPS

- American Association for the Advancement of Sciences (AAAS)
- American Society of Limnology and Oceanography (ASLO)
- Forum on Science Ethics & Policy (FOSEP)
- Association for Women in Science (AWIS)