

# Bethany Rose Smith

Marine Advisory Program | Virginia Sea Grant  
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## Education

- M.S. William & Mary** May 2008  
Biological Oceanography  
Thesis: Zooplankton Community Structure in a Cyclonic and Mode-Water Eddy in the Sargasso Sea  
Thesis Advisor: Dr. Deborah Steinberg
- Virginia Commonwealth University** 2009 - 2011  
12 graduate credits in K-12 gifted education
- B.S. Rider University** May 2005  
Major: Marine Science      Minor: Environmental Geology

## Professional Positions

- Marine Education Specialist** August 2020 – present  
Marine Advisory Program / Virginia Sea Grant  
Virginia Institute of Marine Science, Gloucester Point, VA  
  
Design and implement education, outreach, and professional development programs and curriculum for graduate students, K-12 educators and students, and public audiences.
- Adjunct Instructor** 2014 – present  
Rappahannock Community College, Glenss, VA  
Course Taught: Oceanography I (GOL 111, GOL 111L)  
  
Designed and taught Introduction to Oceanography course with lab (4 credits) during the spring, summer and fall semesters yearly.
- Educator and Site Lead** August 2009 – August 2020  
Chesapeake Bay Governor's School for Marine and Environmental Science – Warsaw Campus, Warsaw, VA  
Courses Taught: Foundations of Science (10<sup>th</sup> grade), Marine & Environmental Science I (11<sup>th</sup> grade), Marine & Environmental Science II (12<sup>th</sup> grade)  
  
Designed and taught high school, dual enrollment courses in marine and environmental science to academically talented high school students. Responsible for leading multi-day field courses and mentoring of students through a two-year independent research project.
- Fisheries Management Specialist** May 2008 – August 2009  
Virginia Marine Resources Commission, Newport News, VA  
  
Responsible for saltwater commercial fishing database, mandatory reporting compliance, and saltwater commercial fishing licensing.

## Grants

Co-Principle Investigator (pending), *WATER: Women Alumnae Teaching and Expanding their Reach*, Society of 1918, W&M Alumni Initiatives Endowment (\$10,000, 2024-2025).

Project Staff (pending), *Enhancing Ecosystem and Community Resilience, Critical Habitat and Fishery Resources of the Tangier Island Fishing Community Using Natural and Nature-Based Features, Living Shorelines and Oyster Reefs*, National Oceanographic and Atmospheric Administration, NOAA (\$175,154, 2024 – 2026).

Project Staff (pending), *MWEEs for Mathews: Creating pathways to increased environmental literacy through sustainable watershed experiences*, Virginia Department of Conservation and Recreation (\$57,514, 2024 - 2025).

Principle Investigator, *26<sup>th</sup> Blue Crab Bowl*, Virginia Sea Grant (\$2,500, 2024).

Principle Investigator, *26<sup>th</sup> Blue Crab Bowl*, University Corporation for Atmospheric Research (\$4,500, 2024).

Project Staff, *Biotic and abiotic drivers of pathogen transmission in marine system under the influence of climate change*, U.S. National Science Foundation, (\$222,430, 2022 – 2027).

Principle Investigator, *24<sup>th</sup> Blue Crab Bowl*, Consortium for Ocean Leadership (\$9,000, 2021).

Project Staff, Lead Instructor, *Camp Launch: VIMS*, Private Donor (\$765,794, 2021 – 2025).

Project Staff, *Virginia Teachers Innovating and Designing Experiential Science (VA TIDES)*, National Oceanic and Atmospheric Administration (NOAA) Bay Watershed Education and Training (BWET), (\$84,487, 2020 – 2023).

Principle Investigator, *Bay Islands and Sea Level Rise: Investigating Tangier Island*, Friends of the Rappahannock / US Environmental Protection Agency (EPA), (\$1,200, 2019).

## Publications

Dixon, R., Nuss, S., & **Smith, B.** (submitted). Fish Census: Monitoring Finfish Populations in the Chesapeake Bay. *Journal of Virginia Science Education*.

Seeley, M., Nuss, S., & **Smith, B.** (2024). Trawling through the five gyres: A microplastic research study. *Current: The Journal of Marine Education*, 39(1), 43-49. DOI: <https://doi.org/10.5334/cjme.105>.

**Smith, Bethany R.** 2023. VA SEA Winter Lesson Plan Log. The Masthead – Mid-Atlantic Marine Education Association, 43:4.

**Smith, B.** 2024. VA SEA Spring Lesson Plan Log. The Masthead – Mid-Atlantic Marine Education Association, 44:1.

**Smith, B.** 2023. VA SEA Winter Lesson Plan Log. The Masthead – Mid-Atlantic Marine Education Association, 43:4.

**Smith, B.** 2023. VA SEA Fall Lesson Plan Log. The Masthead – Mid-Atlantic Marine Education Association, 43:3.

**Smith, B.** 2023. VA SEA Summer Lesson Plan Log. The Masthead – Mid-Atlantic Marine Education Association, 43:2.

- Smith, B.** 2023. VA SEA Spring Lesson Plan Log. The Masthead – Mid-Atlantic Marine Education Association, 43:1.
- Smith, B.** 2022. VA SEA Winter Lesson Plan Log. The Masthead – Mid-Atlantic Marine Education Association, 42:4.
- Smith, B.** 2022. VA SEA Fall Lesson Plan Log. The Masthead – Mid-Atlantic Marine Education Association, 42:3.
- Smith, B.** 2022. VA SEA Summer Lesson Plan Log. The Masthead – Mid-Atlantic Marine Education Association, 42:2.
- Smith, B.** 2012. Whale of a Tale. The Masthead – Mid-Atlantic Marine Education Association, 32: 10.
- Eden, Bethany R.,** Steinberg, Deborah K., Goldthwait, Sarah A., McGillicuddy Jr., Dennis J. 2009. Zooplankton Community Structure in a Cyclonic and Mode-Water Eddy in the Sargasso Sea. *Deep Sea Research I*, 56: 1757-1776.

## **Presentations**

- Cackowski, C., Nuss, S., Caputo, A., & **Smith, B.** (2023, November). *Bye-Bye, Bycatch and Hello Terrapin Town!* 2023 Mid-Atlantic Marine Educators Association (MAMEA) Annual Conference, Solomons, MD.
- Nuss, S., Thayer, M., Lawrence, L. Cackowski, C., & **Smith, B.,** (2022, July). *Shifting Sands and Drones Tracking Groundwater: Research translated to K-12 classrooms* [Conference presentation]. 2022 National Marine Educators Association Conference, virtual.
- Smith, B.,** Lawrence, L. (2022, November). *Scallops and a Deep Sea Killer: Research translated for K-12 classrooms* [Conference presentation]. 2022 Virginia Association of Science Teachers (VAST) Annual Conference, Williamsburg, VA.
- Nuss, S., Thayer, M., Lawrence, L. Cackowski, C., & **Smith, B.,** (2022, July). *Shifting Sands and Drones Tracking Groundwater: Research translated to K-12 classrooms* [Conference presentation]. 2022 National Marine Educators Association Conference, virtual.
- Rudo, T., Nuss, S., Lawrence, L., & **Smith, B.** (2021, November). *Trawls to Antibiotics: Research translated to K-12 classrooms* [Conference presentation]. 2021 Virginia Association of Science Teachers Professional Development Institute, virtual.
- Lawrence, L., & **Smith, B.,** (2021, July). *Plankton Poop to DNA: Research translated to K-12 classrooms* [Conference presentation]. 2021 National Marine Educators Association Conference, virtual.
- Lawrence, L., Nuss, S., **Smith, B.,** Cackowski, C., & Rudo, T. (2020, November). *Plankton poop to DNA: Graduate level research translated for K-12 classrooms* [Conference presentation]. 2020 Virginia Association of Science Teachers Professional Development Institute, virtual.
- Nuss, S., Lawrence, L., **Smith, B.,** Cackowski, C., & Rudo, T. (2020, November). *Muck to radiocarbon: Graduate level research translated for K-12 classrooms* [Conference presentation]. 2020 Virginia Association of Science Teachers Professional Development Institute, virtual.
- Smith, B.** (October 2020, Invited Panelist). *COVID on the Coast: Education* [Webinar]. Coastal Training Program webinar series, virtual.

Perkins, T., **Smith, B.**, Goff, K. (2019, November). *The Value of an Authentic Audience and Professional Presentation Setting for Student Research Initiatives* [Conference presentation]. 2019 National Consortium of Secondary STEM Schools (NCSST) Annual Conference, Seattle, WA.

**Smith, B.**, Beam, S., Beam, J., Perkins, T. (2018, April). *The Value of an Authentic Audience and Professional Presentation Setting for Student Research Initiatives* [Conference presentation]. 2018 Virginia Association of Supervision and Curriculum Development (VASCD) Annual Conference, Williamsburg, VA.

**Smith, B.** (2013, November). *Nautilus Live: Lessons from an Educator at Sea* [Conference presentation]. 2013 Virginia Association of Science Teachers (VAST) Annual Conference, Norfolk, VA.

## **Instruction & Training (K-12 Teachers, K-12 Students, College & University Students)** **Rappahannock Community College**

GOL 111 – Introduction to Oceanography (online). Sole Instructor. 4 Credit Hours

**Fall Semester:** 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023; **Spring Semester:** 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, **Summer Semester:** 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023

GOL 111L – Introduction to Oceanography Lab (online). Sole Instructor. 0 Credit Hours

**Fall Semester:** 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023; **Spring Semester:** 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, **Summer Semester:** 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023

SCT 111/111L – Introduction to Science & Technology I (in-person; dual enrollment with Chesapeake Bay Governor's School, 4 credit hours) Fall Semester: 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019.

SCT 112/ 112L – Introduction to Science & Technology II (in-person; dual enrollment with Chesapeake Bay Governor's School, 4 credit hours) Spring Semester: 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020.

MAR 101/101L – General Oceanography I (in-person; dual enrollment with Chesapeake Bay Governor's School, 4 credit hours) Fall Semester: 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019.

MAR 102/102L – General Oceanography II (in-person; dual enrollment with Chesapeake Bay Governor's School, 4 credit hours) Spring Semester: 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020.

MAR 201/201L – Marine Ecology I (in-person; dual enrollment with Chesapeake Bay Governor's School, 4 credit hours) Fall Semester: 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019.

MAR 202/202L Marine Ecology II (in-person; dual enrollment with Chesapeake Bay Governor's School, 4 credit hours) Spring Semester: 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020.

### **VIMS Marine Advisory Program Education Programs** (multi-year efforts):

VASEA: Virginia Scientists and Educators Alliance. Full-day workshop series (plus one-on-one mentoring) for marine science graduate students and K-12 teachers to guide the translation of marine science research into K12 lesson plans. Workshops to date: 8/25/20 (virtual), 9/9/20 (virtual), 4/22/21, 9/13/22, 4/20/23, 8/29/23, 9/12/23, 4/18/24.

Virginia Coastal Ecosystems Field Course. Four-day residential (VIMS Eastern Shore Campus) workshop for middle school and high school teachers to enrich teachers' understanding of coastal and estuarine science

content, enhance their skills and confidence in planning and conducting marine science activities, prepare teachers to successfully integrate coastal and estuarine content into their curricula, and introduce teachers to research-based lesson materials as tools for teaching science. Field courses to date: June 20 – 23, 2022; June 26 – 29, 2023.

VATIDES: Virginia Teachers Innovating and Designing Experiential Science. Full-day workshops for pre-service teachers enrolled in education programs at Virginia universities (JMU, VA Wesleyan, VCU, W&M School of Ed). Virtual: Spring 2021 (1 session), In person: Fall 2021 (6 sessions), Spring 2022 (7 sessions), Fall 2022 (2 sessions).

Ocean Literacy Professional Development (lead instructor). One-day workshops for K – 12 teachers focused on ways to integrate coastal and estuarine content into their curricula, and match coastal and ocean content to the Virginia Standards of Learning (SOLs). In person: 5/21/22, 8/3/23, 8/18/23, 3/5/24.

Camp Launch (lead instructor). Two-week marine science exploration for up to 17 tenth-grade students from Virginia. The full day, residential (off-site) camp highlights hands-on research experiences, career exploration, and field experiences for socio-economically, academically talented students. Virtual: July 2021, In person: July 2022, July 2023.

Blue Crab Bowl (regional coordinator). Virginia regional competition of the National Ocean Sciences Bowl (NOSB). A two-day quiz bowl style competition for up to 16 Virginia high school teams focused on ocean science themes and topics. The winner of the Virginia regional competition represents Blue Crab Bowl in the NOSB national finals competition. Virtual: February 2021, February 2022, In person: February 2024.

#### **Chesapeake Bay Governor's School Education Programs (multi-year efforts):**

Shenandoah National Park Field Course (lead instructor). Three-day residential field course for 10<sup>th</sup> grade students focused on watershed studies from the Shenandoah Mountains to the Coastal Plain. Fall 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020.

Virginia Eastern Shore Field Course (lead instructor). Two-day residential field course for 11<sup>th</sup> grade students focused on Chesapeake Bay ecology and geology with field sites in Virginia's tidewater marshes and bay and seaside Eastern Shore. Fall 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020.

North Carolina Outer Banks Field Course (lead instructor). Three-day residential field course for 12<sup>th</sup> grade students focused on coastal biology and geology of the North Carolina Outer Banks. Fall 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020.

SCT 111/111L – Introduction to Science & Technology I (in-person; dual enrollment with Rappahannock Community College, 4 credit hours) Fall Semester: 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019.

SCT 112/ 112L – Introduction to Science & Technology II (in-person; dual enrollment with Rappahannock Community College, 4 credit hours) Spring Semester: 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020.

MAR 101/101L – General Oceanography I (in-person; dual enrollment with Rappahannock Community College, 4 credit hours) Fall Semester: 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019.

MAR 102/102L – General Oceanography II (in-person; dual enrollment with Rappahannock Community College 4 credit hours) Spring Semester: 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020.

MAR 201/201L – Marine Ecology I (in-person; dual enrollment with Rappahannock Community College, 4 credit hours) Fall Semester: 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019.

MAR 202/202L Marine Ecology II (in-person; dual enrollment with Rappahannock Community College, 4 credit hours) Spring Semester: 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020.

## **Student Mentoring**

### *Undergraduate Students*

Anna Mehlhorn, W&M Sustainability Ambassador

2022

### *High School Students*

Through the Chesapeake Bay Governor's School 2-year independent research project program I mentored approximately 40 students per year on the design, implementation, data analysis, writing and presentation of their independent research projects. Spring 2010 – Spring 2020

## **Professional Service**

Mid-Atlantic Marine Education Association: Virginia State Representative

2023 - present

VIMS Professional and Professional Faculty Council Member

2022 - present

Chesapeake Bay Governor's School Warsaw Campus

2017 – 2020

### *Lead Teacher/Campus Administrator*

Ocean Exploration Trust / Nautilus Live

2013 – 2014

### *Science Communications Fellow*

Marine Science Legacy Program of the Urbanna Oyster Festival Foundation

2013 – 2021

### *Co-coordinator*

Jacob's Ladder, An Enrichment Program

2013 – 2017

### *Summer Science Instructor*

## **Professional Memberships**

Virginia Association of Science Teachers (VAST)

2020 - present

Mid-Atlantic Marine Education Association (MAMEA)

2010 - present

National Marine Educators Association (NMEA)

2021 - present

## **Certifications & Training**

Virginia Department of Education, Post-graduate Professional License

2012 - present

### *Endorsements: Earth & Space Science, Gifted Education*

William & Mary Women's Network Exploring Leadership Series

Spring Semester 2024

CITI Program Research Ethics Certification: Area II Disciplines

Fall 2020 - present

NOAA Deep Dive Professional Development: Hydrothermal Vents

2021

NOAA Deep Dive Professional Development: Seafloor Mapping

2021

NOAA Deep Dive Professional Development: Light in the Ocean

2021

NOAA Meaningful Watershed Education Experience (MWEE) 101 Course

2020

NOAA Deep Dive Professional Development: Underwater Robots

2020