

**Meghan E. Marrero, Ed.D.**  
Professor of Secondary Science Education  
Co-Director, Center for STEM Education  
Mercy College  
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## **EDUCATION:**

**Teachers College, Columbia University**, New York, New York  
Ed.D., Science Education

**Queens College, City University of New York**, Flushing, New York  
Professional Certificate, Educational Leadership

**Teachers College, Columbia University**, New York, New York  
M.A., Secondary Science Education

**Cornell University, College of Agriculture and Life Sciences**, Ithaca, New York  
B.S., Biological Sciences

## **EXTERNAL FUNDING:**

*2018-2024* co-PI, NSF Mercy College Master Teacher Fellows, \$1.5 million  
*2017-2019* PI, sub-award collaborative NSF Noyce Track 4: Investigating the Characteristics of Programs that Produce Persistent STEM Teachers with High Quality Instruction (with Florida State University) \$75,000  
*2014-2021* PI, Wipro Greater New York Science Education Fellowship Program \$1.5million  
*2014-2018* PI, NSF Mercy College Intensive STEM Teaching Initiative (MISTI) \$1.45 million  
*2009-2013* co-PI, NASA Endeavor Science Teaching Certificate Project \$2.5 million  
*2010-2011* PI, New York State Workforce Readiness Training \$500,000  
*2007-2009* co-PI, NSF Project SPRINTT \$978,000  
*2006-2009* co-PI, NOAA Signals of Spring – ACES \$600,000  
*2004-2009* co-PI, NASA Project 3D-VIEW \$2.1 million

## **AWARDS:**

*2018* Fulbright Scholar Award to Ireland  
*2014* New York State Marine Education Association Award for Presidential Service  
*2013* James Centorino Award for Excellence in Marine Education

## **PUBLICATIONS** (\*denotes peer reviewed):

\*Marrero, M. E., Payne, D. L., & Breidahl, H. (2019). The Case for Collaboration to Foster Global Ocean Literacy. *Frontiers in Marine Science*, 6, 325.

Gunning, A.M., and Marrero, M.E., (2019). STEM for all: Everyone's responsibility. *Education Update*, March/April 2019, Accessed from:  
<http://www.educationupdate.com/archives/2019/MAR/HTML/edit-stem.html#XNQsSRNKi8U>

Marrero, M.E. (2019). Thank the Ocean. *Science Scope*, 42(5), 1.

Fauville, G., Payne, D., Marrero, M.E., Laintz-Andersson, A., and Crouch, F. (2018). *Exemplary Practices in Marine Science Education*. Berlin, Germany: Springer.

\*Gunning, A. M., Marrero, M.E., and Dashoush, N. (2017). How big is a whale? A Kinesthetic Integrated Science and Mathematics Lesson. *Current: The Journal of Marine Education*. 31(1), 12-19.

\*Marrero, M.E. (2017). Engaging Students in Inquiry Using Authentic Ocean Data. *Open Online Journal for Research and Education*. 7(2). <https://journal.ph-noe.ac.at/index.php/resource/issue/archive>

\*Marrero, M.E., Riccio, J.F., Ben-Jacob, M., Canger, A., and Maliti, C. (2017). A crash course in undergraduate research. *Journal of College Science Teaching*. 46(5), 26-31.

\*Gunning, A. M. & Marrero, M. E. (2017). Examining inservice teachers' mental models on teaching science through online learning. *The Online Journal of New Horizons in Education*.7(1), 103-112.

\*Marrero, M.E. (2016). Science-based Service-learning in Science Teacher Education. *International Journal of Service Learning in Teacher Education*. 4(1), 1-15:  
<https://journals.tdl.org/ijrslte/index.php/IJRSLTE/article/view/50/pdf>

\*Hillman, P., Coddett, A., Gunning, A., Marrero, M. (2016). Vertically Articulated Professional Learning Communities: Building Collaboration and Practice Amongst K-12 Science Teachers. *Open Online Journal for Research and Education* 6(1). <http://journal.ph-noe.ac.at/index.php/resource>

\*Gunning, A.M., Marrero, M.E., and Morrell, Z. (2016). Family Learning Opportunities in Engineering and Science. *Electronic Journal of Science Education* .20(7), 1-25.  
<http://ejse.southwestern.edu/article/view/16170/10739>

\*Marrero, M.E., Gunning, A.M., and Buonamano, C. (2016). A House for Chase the Dog: Second-Grade Students Investigate Material Properties. In Froschauer, L. (Ed.) *Bringing STEM to the Elementary Classroom* (pp. 141-148). Arlington, VA: NSTA Press.

\*Marrero, M. E., Gunning, A. M., & Woodruff, K. (2016). Using Authentic Earth Data in the K-12 Classroom. In M.Urban,& D. Falvo (Eds.) *Improving K-12 STEM Education Outcomes through Technological Integration* (pp. 281-309). Hershey, PA: Information Science Reference.

Marrero, M.E., & Woodruff, K. (2016). Diving Deep: Engaging Students with Authentic Ocean Data.

*In the Trenches: The News Magazine of the National Association of Geoscience Teachers.* 6(2), 1-3.

Marrero, M.E. (2016). A Sense of Place: Connecting students with their local environment. *New York State Conservationist.* 70(6), 8-11.

\*Marrero, M.E., Gunning A.M., and Buonamano, C. (2016). Engineering Encounters: A house for Chase the dog. *Science and Children,* 53(5), 76

Marrero, M.E. (2016). Core Competencies and Strategies for Effective Leadership [Review of the Book: *The Teacher Leader* by D. R. Tomal, C. A. Schilling, & R. Wilhite]. *Global Education Review.* 32, 126-128. <http://ger.mercy.edu/index.php/ger/article/view/275/194>

\*Tazi, Z., Gunning, A.M., and Marrero, M.E. (2015). Engaging Parents as Coteachers. *Educational Leadership.* 72(6).

Marrero, M.E. (2015). Why Master Teachers Do What They Do [Review of the Book: *Those Who Can* by N. Bright]. *Global Education Review.* 22, 120-123. <http://ger.mercy.edu/index.php/ger/article/view/190>

\*Marrero, M.E., Gunning, A.M., and Germain-Williams, T. (Eds) (2014). Perspectives on STEM Education. *Global Education Review.* 1(4), 1-183.

\*Marrero, M. E., and Lam, K. A. (2014). Catching the Wrong Species: Engineering a solution to the problem of bycatch in the tuna fishery. *The Science Teacher.* 81(9), 25-29.

Gunning, A. M., and Marrero, M.E. (2014). Exploring Science with our Youngest Learners. *Westchester Association for the Education of Young Children Newsletter.* September, pp. 16-19.

\*Marrero, M.E., Gunning, A.M., and Tazi, Z. (2014). The Wonderful World of Worms. *Science and Children.* 52(3), 2-7.

\*Englehart, D.S., and Marrero, M.E. (2014). The Ocean Planet: Ocean Literacy with Young Children. *Current: The Journal of Marine Education.* 29(1), 36-41.

\*Marrero, M.E., Schuster, G., and Bickerstaff, A. (2013). Earth System Science in Three Dimensions: Perspectives of Students and Teachers on NASA's Project 3D-VIEW. In Fletcher, K., and Lennex, L. (Eds.), *Cases on 3D Technology Application and Integration in Education* (pp. 253-280). Hershey, PA: IGI Global.

Marrero, M.E. (2013). Hawaii Geology (Media Wrapper to Support Alien Deep Television Program) *National Geographic Education:* [http://education.nationalgeographic.com/education/media/sustainability-bluefin-bait/?ar\\_a=1](http://education.nationalgeographic.com/education/media/sustainability-bluefin-bait/?ar_a=1)

Marrero, M.E. (2013). The Economy of Shipping (Media Wrapper to Support Alien Deep Television Program) *National Geographic Education:* [http://education.nationalgeographic.com/education/media/economy-shipping/?ar\\_a=1](http://education.nationalgeographic.com/education/media/economy-shipping/?ar_a=1)

Marrero, M.E., and Oikonos Ecosystem Knowledge (2013). Winged Ambassadors: Ocean Literacy Through the Eyes of the Albatross Activity Packet. <http://www.downloadwingedambassadors.org/>

\*Marrero, M.E., et al. (2012). Winged Ambassadors: Ocean Literacy through the Eyes of the Albatross. *Current: The Journal of Marine Education*. 28(2), 26-30.

Marrero, M.E, & Schuster, G. (2012). *Marine science: The Dynamic Ocean*. Rye, NY: Pearson.

Marrero, M.E. (2012). Science, Technology, Engineering, and Mathematics . . . in the Ocean. *i-SECT: Your guide to Science, Engineering, Computing and Technology*. 82, 44-45. <http://www.i-studentadvisor.com/2012/isect2/holder.php?C1&highpage=44>

Marrero, M.E. (2012). Sustainable Fishing. *National Geographic Education*: [http://education.nationalgeographic.com/education/encyclopedia/sustainable-fishing/?ar\\_a=1](http://education.nationalgeographic.com/education/encyclopedia/sustainable-fishing/?ar_a=1)

Fisher, R.J., Hirsh, E.T., Jaksha, A.P, Marrero, M.E., Matz., M.S., Richardson, L.J., Treiber, T.G., (2012). *One Ocean: A Guide for Teaching the Ocean in Grades 3-8*. Environmental Literacy Teacher Guide Series. Washington, DC: National Geographic Education. [http://education.nationalgeographic.com/education/media/one-ocean-teacher-guide/?ar\\_a=1](http://education.nationalgeographic.com/education/media/one-ocean-teacher-guide/?ar_a=1)

\*Brander, S. E., Fontana, R.E., Mata, T. M., Gravem, S. A., Hettlinger, A., Bean, J.R., Szoboszlai, A.I., Keiper, C.A., Marrero, M.E. (2011). The Ecotoxicology of Plastic Marine Debris. *The American Biology Teacher*. 73(8), 474-479.

Marrero, M.E., and Thornton, S. (2011). Big Fish: A Brief History of Whaling. *National Geographic Education*: [http://education.nationalgeographic.com/education/news/big-fish-history-whaling/?ar\\_a=1](http://education.nationalgeographic.com/education/news/big-fish-history-whaling/?ar_a=1)

\*Marrero, M. E., & Stevens, N. (2011). Earth's Most Important Producers: Meet the Phytoplankton! *Science Scope*. 34(8), 25-31.

\*Marrero, M. E., Davey, B. T., Davis, H. B., & Schuster, G. S. (2011). Climate Change as an Integrated Context for Learning. *Journal of Activist Science and Technology Education*. 3(1), 93-108.

\*Marrero, M. E., & Moore Mensah, F. (2011). Socioscientific issues and the ocean: A case study of 7<sup>th</sup> grade life science students. *Electronic Journal of Science Education*, 14(1), Available at: <http://ejse.southwestern.edu/article/view/7356>

\*Marrero, M. (2010). Uncovering student interests in the ocean. *Current: The Journal of Marine Education*, 26(3), 2-6.

\*Marrero, M. E, & Schuster, G. (2010). Students making meaningful environmental connections to achieve science literacy: From local schoolyards to half a world away. In J. Hoot & J. Szente. (Eds.) *The earth is our home: Children caring for the environment*. (pp. 93-108). Olney, Maryland: Association for Childhood Education International.

\*Marrero, M.E., Riccio, J. F., Woodruff, K.A., & Schuster, G. S., (2010). Live, online short-courses: A case study of innovative professional development. *The International Review of Research in Open and Distance Learning*, Feb., Available at: <http://www.irrodl.org/index.php/irrodl/article/view/758/1485>

\*Plankis, B. J., & Marrero, M.E. (2010). Recent ocean literacy research in United States public schools: Results and implications. *International Electronic Journal of Environmental Education*. 1 (1). Available at: <http://www.iejeegreen.com/index.php/iejeegreen/article/view/27>

## **SCHOLARLY PRESENTATIONS:**

- \*Gunning, A. M., Nitecki, E., Marrero, M. E., Brandon, L. T., & Baldwin, B. (January, 2020). Cross-disciplinary Faculty PLC to Support STEM Professional Development. Presented at the Association for Science Teacher Education Annual International Conference. San Antonio, TX.
- \* Brandon, L. T., Gunning, A. M., Marrero, M. E., & Servello, A. (January, 2020). Teachers' Professional Learning During Collaborative Development of NGSS-adapted Middle School Science Curriculum. Presented at the Association for Science Teacher Education Annual International Conference. San Antonio, TX.
- \* Gunning, A. M., Marrero, M. E., Nitecki, E., & Brandon, L. T., (January, 2020). Preparing STEM Master Teacher Fellows: Learning How to Plan for Integrative Instruction. Poster presented at the Association for Science Teacher Education Annual International Conference. San Antonio, TX.
- \*Marrero, M.E., and Crawford, K. (2019, July). *Kids Taking Action for the Ocean*. Presentation at the Annual Conference of the National Marine Educators Association. Durham, NH.
- \*Marrero, M.E., Gunning, A.M., and Riccio, J.F. (2019, January). *What Elements Matter When Preparing Teachers for High-need Schools?* Paper presented at the Association for Science Teacher Education Annual International Conference. Savannah, GA.
- \*Gunning, A.M., and Marrero, M.E., (2019, Jan.) *FLORES: Family Learning and Outreach for Research and Education in STEM*. Poster presented at the Annual International Conference of the Association of Science Teacher Educators (ASTE), Savannah, Georgia.
- Marrero, M.E., (2018, Nov.) *Science Communication to Change the World*. Presentation at the Young Marine Biologists meeting of the Marine Biological Association (MBA), London, England.
- \*Marrero, M.E. (2018, Oct.). *Kids Taking Action for the Ocean*. Presentation at the Annual Conference of the European Marine Science Educators Association, Newcastle, United Kingdom.
- \*East, J., Marrero, M.E., Philopoff, J., and Payne, D. (2018, July). *Adventures in Evaluation: A panel with marine education experts*. Panel presentation at the Annual Conference of the National Marine Educators Association, Long Beach, CA.

- \*Marrero, M.E., (2018, March.) *Using Authentic Ocean Data to Meet the NGSS*. Presentation at the Annual Conference of the National Science Teachers Association, Atlanta, GA.
- \*Baek, J., East, J., Marrero, M.E., and Payne, D. (2017, June). *Writing Ocean Literacy Impact Stories, How can programs do it?* Presentation at the Annual Conference of the National Marine Educators Association, Charleston, SC.
- \*Marrero, M.E. (2017, May). *Engaging Students in Inquiry Using Authentic Ocean Data*. Presentation at the International Education Week Conference, Pädagogische Hochschule Niederösterreich, Melk, Austria.
- \*Gunning, A. Hillman, P. Marrero, M. (2017, Apr). *Self-Efficacy for K-12 Teachers of Science*. Presentation at the Annual International Conference of the National Association for Research in Science Teaching, San Antonio, TX.
- \*Hillman, P. Marrero, M. Gunning, A. Homer, K. Garguilo, J. (2017, Mar). *Professional Learning Communities for Supporting NGSS Implementation*. Presentation at the Annual Conference of the National Science Teachers Association, Los Angeles, CA
- \*Marrero, M.E. (2016, Oct.) *Incorporating Authentic Ocean Data into Formal Classroom Instruction: Implications for Student Engagement and Scientific Practice*. Presentation at the Annual Conference of the European Marine Science Education Association, Belfast, Northern Ireland.
- Marrero, M.E., (2016, July). *Supporting Multicultural Pre-service Teachers*. Poster Presentation at the 2016 Robert Noyce Teacher Scholarship Program Summit, Washington, DC.
- \*Marrero, M.E., Greely, T., Payne, D., Fauville, G. (2016, June). *How Do We Assess Ocean Literacy?* Presentation at the Annual Conference of the National Marine Educators Association, Orlando, FL.
- \*Fauville, G., Payne, D., Marrero, M.E., Lantz-Andersson, A., Crouch, F.(2016, June). *Exemplary Practices in Marine Science Education*. Poster presentation at the Annual Conference of the National Marine Educators Association, Orlando, FL.
- \*Gunning, A., Hillman, P., Marrero, M., Eisenkraft, A. (2016, Mar). *Vertically Articulated Professional Learning Communities: Developing Collaboration and Practice in a K-12 Science Teacher Professional Development Program*. Paper Presented at the Annual International Conference of the National Association for Research in Science Teaching, Baltimore, MD.
- \*Marrero, M.E., & Payne, D.L. (2016, Mar). *Drawing for Ocean Literacy: A Baseline Study*. Paper Presented at the Annual International Conference of the National Association for Research in Science Teaching, Baltimore, MD.
- \*Marrero, M.E., & Zackzyk, R.J. (2016, Mar). *Authentic Ocean Data as a Pathway to Meeting the Next Generation Science Standards*. Paper Presented at the Annual International Conference of the National Association for Research in Science Teaching, Baltimore, MD.

\*Marrero, M., Hillman, P., Gunning, A., Jaksha, A. (2016, Jan). *Intensive Professional Development for NGSS Implementation and Science Teacher Leadership: An Overview of an Effective and Sustainable Model*. Presentation at the meeting of the National Conference of the Association for Science Teacher Education, Reno, NV.

\*Gunning, A., Hillman, P., Marrero, M., Jaksha, A. (2016, Jan). *Reflection on Science Teaching Practices in the Context of NGSS After Participation in a Vertically Articulated Professional Learning Community*. Presentation at the meeting of the National Conference of the Association for Science Teacher Education, Reno, NV.

\*Marrero, M.E., Zaczyck, R.J. (2015, Oct). *Using Ocean Data to Meet the Next Generation Science Standards*. Poster presentation at the annual meeting of the Northeast Region of the Association of Science Teacher Educators (NE-ASTE). Dobbs Ferry NY.

\*Hillman, P., Gunning, A.M., Marrero, M.E. (2015). *Vertically articulated professional learning communities: Developing collaboration and practice in a K-12 science teacher professional development program*. Paper presented at the annual meeting of the Northeast Region of the Association of Science Teacher Educators (NE-ASTE), New York, NY.

\*Boubonari, T., Marrero, M., Mogias, A., Markos, A., and Kevrekidis, T. (2015, Oct.). *Validation of the SOLE Instrument*. Presentation at the annual conference of the European Marine Science Education Association (EMSEA). Crete, Greece.

\*Payne, D., and Marrero, M. (2015, Oct.). *Perceptions of Ocean Literacy: Interpreting mental models of the ocean. Presentation at the annual conference of the European Marine Science Education Association (EMSEA). Crete, Greece*

\*Marrero, M.E., Tossey, L. (2015, Jun.) *Get it Out There: How to publish your work in journals, online, and beyond!* Presentation at the annual conference of the National Marine Educators Association (NMEA), Newport, RI.

\*Gunning, A.M., Marrero, M.E., and Tazi, Z. (2015, Apr.). *Family Learning Opportunities and Research in Science and Engineering*. Paper presented at the annual conference of the National Association for Research in Science Teaching (NARST), Chicago, IL.

\*Marrero, M. E., and Payne, D. (2014, Oct.). *Ocean literacy in the United States: current status of educational research and next steps*. Presentation at the annual conference of the European Marine Science Education Association (EMSEA). Gothenburg, Sweden.

\*Jaksha, A., and Marrero, M. (2014, Jul.). *Beyond Ocean Literacy: What experiences matter when learning about the ocean?* Presentation at the annual conference of the National Marine Educators Association (NMEA). Annapolis, MD.

\*Gunning, A.M., Marrero, M.E., and Riccio, J. F. (2014, Apr.). *Developing the Next Generation of Science Teachers: Examining Self-efficacy Development for Teaching Engineering Practices*. Paper

presented at the annual conference of the National Association for Research in Science Teaching (NARST). Pittsburgh, PA.

\*Marrero, M.E. (2014, Apr.). *Service-Learning in Support of Science Teacher Education*. Paper presented at the annual conference of the National Association for Research in Science Teaching (NARST). Pittsburgh, PA.

\*Marrero, M.E. (2013, Jul.). *Service-Learning in Support of Science Teacher Education*. Presentation at the annual conference of the National Marine Educators Association (NMEA). Mobile, AL.

\*Englehart, D., and Marrero, M.E. (2013, Jul.). *The Ocean Planet: Ocean literacy for young children*. Presentation at the annual conference of the National Marine Educators Association (NMEA), Mobile, AL.

Marrero, M.E., and Schuster, G. (2013). *Use Authentic Data to Observe Marine Animal Movements*. Presentation at the annual conference of the National Science Teachers Association (NSTA). San Antonio, TX.

\*Marrero, M.E., Riccio, J.F., Gunning, A.M., Dashoush, N., Mensah, F.M. (2012, Jan.) *STEM Professional Development in an Online Fellowship Program: Impacts of Teacher Beliefs and Practices*. Themed Paper Set presented at the annual meeting of the Association for Science Teacher Education (ASTE), Clearwater, FL.

\*Marrero, M. E. (2012, Apr.). *The Ocean as an Integrating Context for STEM Learning: A Case Study of Teacher Perspectives*. Paper presented at the annual meeting of the American Educational Research Association (AERA), Vancouver, BC.

\*Gillan, A., Payne, D., Marrero, M., Jaksha, A. (2012, Jun.). *Plotting a Course to Optimize Ocean Literacy Pedagogy*. Presentation at the annual conference of the National Marine Educators Association (NMEA), Anchorage, AK.

\*Marrero, M.E., and Graham, L.J. (2012, Jun.). *Service Learning in Louisiana's Wetlands: Implications for Science Teacher Education*. Poster Presentation at the annual conference of the National Marine Educators Association (NMEA), Anchorage, AK.

Marrero, M.E., and Schuster G. (2012, Mar.). *Marine Science: The Dynamic Ocean, A New High School STEM Offering*. Presentation at the annual conference of the National Science Teachers Association (NSTA), Indianapolis, IN.

\*Marrero, M.E., Chizek, L., and Powell, S.C. (2012, Mar.). *Teaching About the Ocean from Thousands of Miles Away*. Presentation at the annual conference of the National Science Teachers Association (NSTA), Indianapolis, IN.

Marrero, M., and Germain-Williams, T. (2012, Mar.). *Engaging Activities for Integrating STEM Subjects*. THIRTEEN Celebration of Teaching and Learning, New York, NY.



Marrero, M., and Schuster, G. (2011, Dec.) *Marine Science: The Dynamic Ocean*. National Science Teachers Association Regional Conference, Seattle, WA.

## **EXPERIENCE:**

**Mercy College**, Dobbs Ferry, NY, *September 2011-present*

*Professor of Secondary Science Education*

*Co-Director, Mercy College Center for STEM Education*

Develop and deliver science education methods, science curriculum and science content courses for elementary through high school pre- and in-service teachers at the graduate level. Lead large grant programs, worth a total of \$3 million to support development of science and math teachers. Co-founder and co-Director of the Mercy College Center for STEM Education, which leads outreach activities for K-12 teachers and students, particularly those from underserved communities, to improve STEM teaching and learning. Conduct research on STEM professional development and ocean literacy of teachers and students. Lead NCATE/CAEP accreditation efforts for science teacher education at the College. Develop and participate in science service projects and field experiences for students. Serve on parent involvement committee for local school districts, as well as Graduate Academic Policy Committee and Learning Environments Committee.

**New York City Department of Education**, New York, NY, *September 2017-present*

*Science Consultant*

Review and edit performance-based science assessments for grades 6-12 from a content and pedagogical perspective. Support Periodic Assessment staff in arranging field tests.

**Staff Development Workshops, Inc.** Lakewood, NJ, *September 2013-present*

*Science Consultant*

Support K-12 teachers in all aspects of science instruction. Provide large and small group professional development on a range of topics, including the Next Generation Science Standards (NGSS), assessment in science, developing higher order thinking skills, and incorporating engineering design into instruction. Coach teachers on implementing STEM pedagogical strategies and adapting curriculum for the NGSS.

**Victory Education Partners**, New York, NY, *August 2009-June 2016*

*STEM Consultant*

Provide a range of services to schools for instructional improvement in STEM. Collaborate with teachers and administrators to create curriculum maps, select learning resources, and develop assessments. Conduct large group teacher professional development sessions focusing on inquiry skills, real-world applications of science content, using authentic data and differentiating instruction for science lessons. Observe teachers and discuss ideas for improving instructional techniques. Teach model lessons.

**Teachers College, Columbia University, New York, NY, January 2008- August 2016**  
*Adjunct Associate Professor of Science Education*

Taught several pedagogy and content-based courses to in-service and pre-service science educators, including *Science Curriculum Improvement, General Oceanography* and *Middle School Living Environment Methods*. Developed syllabi aligned with program, state, and national goals and objectives for teacher induction. Introduced and modeled inquiry-based and constructivist teaching techniques. Discussed ways for improving curriculum in line with reform-based recommendations for achieving scientific literacy and work with students to improve instruction in their own classrooms.

**National Geographic Society, Washington, DC, May 2010 – January 2013**  
*Science Education Consultant/Writer*

Reviewed science professional development publications for science content and pedagogical applications. Provided educational research background to support pedagogical strategies for teaching real-world issues such as pollution and climate change. Wrote case studies and teaching techniques on controversial subjects such as the Endangered Species Act, Cap and Trade, and regulation of whaling by indigenous hunters.

**U.S. Satellite Laboratory, Rye, New York, August 2005-July 2011**  
*Director of Curriculum*

Taught graduate level courses assisting teachers in improving teaching and learning within a STEM framework. Led development of federally sponsored programs for innovative standards-based elementary and secondary STEM curricular materials from conception through production and distribution. Designed and conducted onsite and online professional development for various NASA, NOAA, and NSF-sponsored programs in line with best practices for teacher education, including the NASA Endeavor STEM Teacher Fellowship Program. Taught graduate courses in Methods of STEM Education, Astrobiology, Humans in Space, Life and Marine Science, and Lessons from the Ocean. Designed and wrote inquiry and technology-based curricula and textbooks published by major educational publisher for teachers and students nationwide. Presented programs and evaluation findings at local and national conferences. Supervised staff and lead program evaluation team with external evaluators. Wrote grant proposals to obtain additional funding for new and existing programs.

**Lehman College, City University of New York, Bronx, NY, Spring 2008 – Summer 2011**  
*Adjunct Assistant Professor of Middle and Secondary Education*

Developed and taught *Teaching the Historical Development of Science* online course to graduate students including New York City Teaching Fellows. Infused important scientific literacy ideas such as the history and nature of science into course of study. Advised Master's students in research methods and thesis development, serving as final thesis advisor.

**Bayside High School, Queens, New York, October 2000-June 2005**  
*Science Teacher*

Taught Living Environment, Earth Science, Marine Science, AP Environmental Science, and Anatomy & Physiology classes as well as self-contained Special Education science classes. Initiated a marine science program for the science department and trained new teachers in the program. Wrote, developed, and implemented a hands-on, inquiry-based and standards-based curriculum department-wide. Designed school-wide Student Handbook focusing on study and-test taking skills. Served as cooperating teacher to student teachers from two universities and buddy teacher to new staff.

**NASA GISS, Institute on Climate and Planets, New York, New York, *Summers 2001-2002***  
*Faculty Fellow*

Co-led research team of high school students, college students, graduate students, teachers, and scientists. Researched ocean and climate computer modeling and implications of global climate change. Developed curriculum units based on original scientific research to be distributed by NASA nationwide.

**PROFESSIONAL SERVICE:**

**National Marine Educators Association (NMEA) ([www.marine-ed.org](http://www.marine-ed.org))**

- Past President (2019-2020)
- President (2018-2019)
- Board of Directors (2012-2017)
- Executive Committee (2013-present)
- Chair of *Current* Committee (Peer-reviewed journal of NMEA) (2013-2017), Vice Chair (2020-present) and serve on Editorial Board (2014-present)
- Scholarship Committee (2010-present)
- New York State Chapter Representative (2007-2012)
- Chair (2010-2012) and Vice Chair (2012-2014) of Education Research Committee

**New York State Marine Education Association (NYSMEA) ([www.nysmea.org](http://www.nysmea.org))**

- Board of Directors (2002-present)
- Conference Committee (2006-present)
- President (2009-2014)

**Association of Science Teacher Educators (ASTE) (<http://theaste.org/>)**

- Assessor for conference proposals (2010-2016)
- Editorial Board for journal *Innovations in Science Teacher Education* (2016- present)

**National Association for Research in Science Teaching (NARST) ([www.narst.org](http://www.narst.org))**

- Assessor for conference proposals (2010-present)

**Journal of Environmental Education (<http://www.tandfonline.com/toc/vjee20/current>)**

- Manuscript reviewer (2010-present)