

DIANE SILVA PIMENTEL

Senior Lecturer, STEM Education
Director of the Teacher Education Program
Department of Education | Brown University

EDUCATION

Boston College: Chestnut Hill, MA Dec. 2012
Ph.D., Curriculum and Instruction: Science Education
M.S.T., Curriculum & Instruction/Specializing in Biology Dec. 1995

Brown University: Providence, RI
Sc.B., Biology with Honors May 1993

PROFESSIONAL EXPERIENCE

Brown University: Providence, RI 2017 - Present
Associate Professor of Practice/Senior Lecturer- Science Education
Courses Taught
EDUC 0900 – Fieldwork and Seminar in Secondary Education
EDUC 2500 – Foundations of Teaching and Learning
EDUC 2510C, 2520C, 2530C – Educational Theory and Practice – Science Methods
EDUC 2515 – Learning Theory and Special Populations
EDUC 2565 – Fall Practicum and Seminar
EDUC 2575 – Student Teaching and Seminar
EDUC 2900 – Senior Seminar

Director of the Teacher Education Program 2017 – 2023
Led preparations for the Rhode Island Department of Education PREP-RI Review (May 2022)
Received Approval with Distinction

University of New Hampshire: Durham, NH 2014 - 2017
Assistant Professor, STEM Education
Courses Taught
EDUC 703/803: Teaching Elementary School Science
EDUC 791/891: Methods of Teaching Secondary School Science
EDUC 897: Special Topics in Education: Next Generation Science Standards and Best Practices
EDUC 998: STEAM: Integrating STEM with the Music and Arts Curricula

Boston College, Chestnut Hill, MA 2007 – 2011
Graduate Student Research Assistant
Instructor: ED 300: Secondary and Middle School Science Methods

Lincoln High School: Lincoln, RI 2000 – 2014
Science Teacher
Courses taught: A.P. Biology, Biology, Foundations of Physics, Bioethics,
and Environmental Science

REFEREED JOURNAL ARTICLES

Jin, K. & Pimentel, D. S. (2020). Using recorded online meetings to support remote PD program for UAV drones. *Teaching, Technology, and Teacher Education During the COVID-19 Pandemic: Stories from the Field*. Association for the Advancement of Computing in Education (AACE). pp. 695-698.

Pimentel, D. S. (2017). Female undergraduate engineering students' perspectives on laboratory experiences: The complexity of social, role, and self-identities. *Journal of Women and Minorities in Science and Engineering*, 23(4), 303-321

Pimentel, D. S. & McNeill, K. L. (2016). Secondary science students' beliefs about class discussions: A case study comparing and contrasting academic tracks. *International Journal of Science Teaching*, 38(12), 2047-2068.

Pimentel, D. S., & McNeill, K. L. (2013). Conducting talk in science classrooms: Investigating instructional moves and teacher beliefs. *Science Education*, 97, 367-394.

McNeill, K. L., **Pimentel, D. S.**, & Strauss, E. (2013). The impact of high school teachers' beliefs, curricular enactments and experience on learning during an inquiry-based urban ecology curriculum. *International Journal of Science Education*, 35(15), 2608-2644.

Price, J. F., **Pimentel, D. S.**, McNeill, K., Barnett, M., & Strauss, E. (2011). Science in the 21st century: More than just the facts. *The Science Teacher*, 78(7), 36-41.

McNeill, K. L., & **Pimentel, D. S.** (2010). Scientific discourse in the urban classrooms: The role of the teacher in engaging high school students in argumentation. *Science Education*, 94, 203-229.

BOOK CHAPTERS

Reagan, E. M., Coppens, A. D., Couse, L. J., Hambacher, E., Lord, D., McCurdy, K., & **Pimentel, D. S.** (2018). Toward a conceptual framework for designing and implementing the teacher residency for rural education. In M. Reardon & J. Leonard (Eds.), *Innovation and Implementation in Rural Places: School-University-Community Collaboration in Education* (pp. 81-106). Charlotte, NC: Information Age Publishing.

GRANTS

Evaluator. United States Regional GLOBE Science Fairs. \$338,810. National Science Foundation. July 2015 – June 2016. This project established regional science fairs throughout the United States focusing on the use of Global Learning and Observations to Benefit the Environment (GLOBE) data. The conference included online professional development for teachers specifically targeting science practices. Principal Investigator: Jennifer Bourgeault, University of New Hampshire.

Principal Investigator. Integrating Technology and Mathematics Instruction in PreK-2. \$25,000 Community Grant, New Hampshire Charitable Foundation. January 2016 – December 2016. The project will employ online learning and discussion in conjunction with face-to-face peer collaboration and facilitator coaching to explore best practices in development and learning as well as research-based mathematics instruction. The project provided professional development opportunities in geographic areas of the state that are currently underserved. Other Co-Principal Investigator: Brandie Bolduc, Department of Education, UNH.

Co-Principal Investigator. Teacher-Engineer Summer Scholar Academy. \$10,000 Engagement STEM Partnership University of New Hampshire Vice Provost Office. May 2015 – June 2016 This project focuses on creating and supporting partnerships between middle school science teachers and professional engineers to encourage the implementation of more engineering instruction in middle school classes. Other Co-Principal Investigators: Dr. Erin Bell, College of Engineering and Physical Sciences, UNH and Dr. Mihaela Sabin, STEM Discovery Lab Director, UNH-Manchester.

Principal Investigator. Factors Influencing the Pursuit and Persistence of Females in Undergraduate Engineering Degrees. \$550 Gender Research Grant, Department of Education, UNH. June 2015 – September 2015. This research study investigates the factors that seem to influence females' decisions to enter the engineering major and factors that support their persistence.

CONFERENCE PAPERS AND PRESENTATIONS

Pimentel, D. S. (May, 2018). Early childhood and elementary education teacher preparation in mathematics: Unexplainable variation. Paper presented at the annual meeting of the New England Education Research Organization, Portsmouth, NH.

Pimentel, D. S. (March, 2018). Early childhood and elementary education teacher preparation in Science: variations in content and methods. Paper presented at the annual meeting of the National Association for Research in Science Teaching. Atlanta, GA.

- Pimentel, D. S. (April, 2017). Creating successful middle school teacher-professional engineering partnerships to support NGSS. Paper presented at the annual meeting of the National Association for Research in Science Teaching, San Antonio, TX.
- Pimentel, D. S. (April, 2017). Middle school teachers' experiences with engineering projects: Supporting English language learners and at-risk students in STEM. Poster presented at the annual meeting of the National Association for Research in Science Teaching, San Antonio, TX.
- Pimentel, D. S., Partinoudi, V, & Koper, M. (April, 2017). Middle school students' conceptions of engineering: Setting a baseline to measure NGSS impact. Paper presented at the annual meeting of the New England Educational Research Organization, Portsmouth, NH.
- Pimentel, D. S. (April 2016). *Elementary Pre-Service Teachers' Preparedness for Next Generation Science Standards*. Paper presented at the annual meeting of the National Association for Research in Science Teaching, Baltimore, MD.
- Pimentel, D. S. (April 2016). Female Undergraduate Engineering Major Experiences and Perspectives: Going Beyond Getting Them In. Paper presented at the annual meeting of the American Educational Research Association, Washington, DC.
- Pimentel, D. S. (April, 2015). *Secondary science students' framing of class discussions: Perspectives from different tracks*. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.
- Pimentel, D. S. (April, 2013). *Approaches to whole-class discussions in high school science: A Case Study*. Paper presented at the annual meeting of the New England Educational Research Organization, Portsmouth, NH.
- Pimentel, D. S., & McNeill, K. L. (March, 2012). *Secondary science teachers' beliefs about talk during whole-class discussions*. Paper presented at the annual meeting of the National Association for Research in Science Teaching, Indianapolis, IN.
- McNeill, K. L., & Pimentel, D. S. (June, 2010). *The effects of teachers' beliefs and curricular enactments on student learning in high school science*. Poster presented at the International Conference of the Learning Sciences, Chicago, IL.
- Pimentel, D. S., & McNeill, K. L. (March, 2010). *Discourse in science classrooms: The relationship between teacher perceptions and their practice*. Paper presented at the annual meeting of the National Association for Research in Science Teaching, Philadelphia, PA.
- Pimentel D. S., & McNeill, K. L. (May, 2009). *Teacher discourse associated with curriculum designed to solicit student science talk*. Paper presented at the annual meeting of the New England Education Research Organization, Portsmouth, NH.
- McNeill, K. L., & Pimentel, D. S. (April, 2009). *Scientific discourse in three urban classrooms: The role of the teacher in engaging high school students in argumentation*. Paper presented at the annual meeting of the American Educational Research Association, San Diego, CA.
- McNeill, K. L., & Pimentel, D. S. (April, 2008). *High school students' use of evidence in argumentation talk in an urban ecology unit*. Paper presented at the annual meeting of the National Association for Research in Science Teaching, Baltimore, MD.

McEachern, K. P., Pimentel, D. S., Power, C., Pizzo, L., Price, J., & Welch, M. J. (April, 2008). *Policing and producing the field: The role of the literature in research*. Paper presented at the annual meeting of the New England Education Research Organization, Hyannis, MA.

WORKSHOPS

Pimentel, D. S. (Aug. 2018). Culturally Responsive Teaching in STEM. Noyce CREST Fellowship Workshop. Workshop presented at University of New Hampshire, Durham, NH.

Pimentel, D. S. (Apr. 2017). Addressing the 3 dimensions of the NGSS. STEM Docent Workshop. Workshop presented at STEM Discovery Lab, University of New Hampshire, Manchester, NH.

Pimentel, D. S., Bell, E, & Sabin, M. (June 2016 – July 2017). Teacher-Engineer Summer Scholar Academy. Workshop series presented at STEM Discovery Lab, University of New Hampshire, Manchester, NH.

Pimentel, D. S., Bell, E, & Sabin, M. (July 2015 – June 2016). Teacher-Engineer Summer Scholar Academy. Workshop series presented at STEM Discovery Lab, University of New Hampshire, Manchester, NH.

Pimentel, D. S. & Honwad, S. (July 2015). Tech for Teachers: Educators' Summit. Workshop series presented at University of New Hampshire, Durham, MA

Pimentel, D. S. (May 2015). You go girl!: Reflecting on female learning and identity formation. Workshop presented at STEM Educators Summit, University of New Hampshire, Durham, NH.

CURRICULUM DEVELOPMENT

Urban EcoLab: How do we develop healthy and sustainable cities? 2007 –2011
Boston College: Chestnut Hill, MA

- Developed and refined lessons for a high school standards-based urban ecology curriculum, *Urban EcoLab*, that is intended to actively engage underrepresented students in the study of science by having them focus on relevant ecological issues and reflect on their role in improving ecological sustainability. www.urbanecolabcurriculum.com

Project ARISE

Brown University: Providence, RI 2006 – 2007
Member of Development Team

- Developed inquiry-based lessons for biotechnology unit which included the use of PCR and gel electrophoresis to distinguish genetically modified corn products from unmodified corn products.

Lincoln High School: Lincoln, RI 2006 - 2007

- Worked collaboratively with a colleague to establish the scope and sequence for two courses: A.P. Biology and Introductory Biology.
- Assisted with the development of the 9th grade Physics curriculum.

Rhode Island Skills Commission 2005 – 2006
Task Developer

- Developed inquiry-based science assessments that were used by science departments throughout Rhode Island to assess the proficiency of biology students in various concepts (e.g. genetics, evolution, etc).

AWARDS and HONORS

- Jhumaki Basu Scholar Award: NARST Equity and Ethics Committee 2016
- The (Mary) Kim Fries Memorial Award (Lynch School of Education, Boston College) 2013
- Awarded to a Curriculum & Instruction doctoral student who exhibits academic achievement, belief in social justice education, and an enduring commitment to community.
- Research Assistantship: NSF Urban EcoLab Grant (Boston College) 2007 – 2011
- Outstanding Biology Teacher Award (Rhode Island) 2007

CERTIFICATIONS

- Rhode Island Department of Education Exp. July 2028
- Secondary Biological Sciences
 - Secondary General Sciences
- National Board Certification 2006 – 2016
- Science/Adolescence and Young Adulthood (Specialization: Biology)

MEMBERSHIPS

- National Association for Research in Science Teaching, since 2007
- American Educational Research Association, since 2007
- National Science Teacher Association, since 2009
- Rhode Island Science Teacher Association, since 2009

PROFESSIONAL SERVICES

- Review of Journal Articles
- *International Journal of Science Education*
 - *Journal of Research in Science Teaching*
 - *Science Education*
 - *American Educational Research Journal*
 - *International Journal of STEM Education*
- Review of Conference Proposals
- Annual Meeting for the National Association for Research in Science Teaching
 - Annual Meeting for the American Educational Research Association

EDUCATION ENGAGEMENT

- Rhode Island Science Educators Leadership Committee
- Community Advisory Board Member for 360 Academy, Providence Public School District

LANGUAGES

- Oral, reading and written fluency in Portuguese