

Kathryn E. Spilios, Ph.D.

Director of Instructional Laboratories, Director of the Learning Assistant Program, and Senior Lecturer
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Education

- 2006 Ph.D., Cornell University, Department of Entomology, Ithaca, NY
Dissertation: Aspects of foraging in bees: Apple pollination, native bee populations, and honey bee communication. Advisors: Drs. Nicholas Calderone and Thomas Seeley.
- 2001 B.S. with Honors in Biology, University of Puget Sound, Tacoma, WA
Honors Thesis: Division of nest thermoregulation tasks among bumble bee workers (*Bombus huntii*, Hymenoptera: Apidae).

Academic Appointments

- Sept 2016 – present
Senior Lecturer, Director of Instructional Laboratories, and Director of the Learning Assistant Program, Boston University Biology. Academic and administrative duties as outlined below.
- July 2013 – Sept 2016
Director of Instructional Laboratories and Lecturer (faculty appointment), Boston University Biology. Responsible for teaching 1 course per semester, advising approximately 35 undergraduate biology majors, oversight of TF Mentor program and Learning Assistant Program, plus administrative duties as outlined below.
- July 2008 – June 2013
Director of Instructional Laboratories (staff position with co-terminus lecturer appointment), Boston University Biology. Oversee all lab courses in Biology: coordinate and supervise instructional staff, Teaching Fellows, and Learning Assistants. Coordinate lecture and labs for Introductory Biology sequence. Directly supervise a staff of seven to ensure proper operation of all Biology teaching labs; manage budgets for teaching laboratories. Responsible for managing the Student-to-Student tutoring program. Teach one course per academic year.
- 2006 – 2008 Post-Doctoral Lecture Assistant for Introductory Biology, Cornell University. Managed lecture course of 600 undergraduate biology majors: maintain course website using Dreamweaver, prepare quizzes using FileMaker Pro, maintain grade databases, give several guest lectures, write exams.

Professional Appointments

- 2019 – present Chair, Boston University Laboratory Safety Committee: responsible for guiding a committee dedicated to establishing and maintaining guidance to comply with regulatory requirements and guidelines, playing a vital role in the cultivation of a safe working and learning environment in all teaching and research laboratories across Boston University.
- 2017 – present Chair, National Learning Assistant Alliance Leadership Council: strategic guidance and leadership to faculty across the country and work as part of a team to realize programmatic goals.

Teaching Experience

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| CH903, Innovation in STEM Instruction (team-taught) | Fall 2019 |
| BI107, Principles of Biology I | Fall semesters 2010 through 2019 |
| BI108, Principles of Biology II | Spring semesters 2014 through 2020 |
| MB/BI697, Pedagogy Seminar for 1 st Year Graduate Students | 2008 through 2019 |
| BB522, Techniques in Cell Culture (team-taught) | Spring 2009 through 2016 |
| Co-Author of Active Learning module in MOOC: Introduction to Evidence-Based Undergraduate STEM Teaching | Fall 2015 |
| Seminar in Introductory Entomology | Fall 2009, 2012 |
| SED SC 595: Teaching Lab Sciences, seminar for Undergraduate Assistants | Spring 2010, Fall 2010, Spring 2011 |
| Graduate Teaching Assistant | Cornell University, 2001-2006 |

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Local and National Service

- 2018 – 2019 Appointment, Promotion and Tenure Committee, Department of Biology, member
- 2018 – 2019 Search Committee Chair: Biology Department
- 2017 – present Member, Classroom Renovation Committee, Boston University
- 2016 – present Member, Premedical and Pre dental Advisory Board
- 2015 – 2016 Advisory Board for the Eleventh Edition of *Life: The Science of Biology*, Sinauer Associates
- 2015 – present Director, Boston University Learning Assistant Program
- 2015 – present Technical Editor for *ABLE Proceedings*
- 2014 – 2016 Member, Enterprise Risk Management Team, Boston University
- 2014 – 2018 Member, Boston University Laboratory Safety Committee, Boston University
- 2013 – present Biology Program Assessment Committee Chair, Boston University
- 2013 – 2016 Member, BU CIRTl steering committee (Center for the Integration of Research, Teaching, and Learning)
- 2013 – 2017 Northeast Regional Leader and Steering Committee Leader for the Learning Assistant Alliance
- 2013 – present Faculty Advisor for the Student Beekeeping Club, Boston University
- 2012 – present Member of Biology Curriculum Committee, Boston University
- 2014 – 2016 Teaching and Learning Technologies Governance Committee, Boston University
- 2014 – 2016 Member, CIRTl IT Operations Group
- 2013 – 2016 Faculty Advisor to the Science Survival Club, Boston University
- 2010 – present National Science Teachers Association, National Association of Biology Teachers, and Association for Biology Laboratory Education

Publications

- Barrasso, AP and **Spilios KE**. (2019). A Mixed Methods Analysis of the Learning Assistant Program as an Instructional Tool for Teaching Undergraduate Students Critical 21st Century Skills. In preparation.
- Thompson, M, Barrasso, AP, **Spilios, KE**, Garik, P. (2019). Impact of the Learning Assistant Model on undergraduates' approaches, experiences, and outcomes in six large enrollment STEM courses. In preparation.
- Barrasso, AP and **Spilios KE**. (2019). A Scoping Review of Literature Assessing the Impact of the Learning Assistant Model, submitted, *Journal of Research in Science Teaching*.
- Spilios, KE** and Kieswetter CM, eds (2020). *Principles of Biology II*. Hayden-McNeil. Plymouth, MI.
- Spilios, KE** and Kieswetter CM, eds (2019). *Principles of Biology I*. Hayden-McNeil. Plymouth, MI.
- Williams LM, LE Fuess, JJ Brennan, KM Mansfield, E Salas-Rodriguez, J Welsh, J Awtry, S Banic, C Chacko, A Chezian, D Dowers, F Estrada, Y-H Hsieh, J Kang, W Li, Z Malchiodi, J Malinowski, S Matuszak, T McTigue IV, D Mueller, B Nguyen, M Nguyen, P Nguyen, S Nguyen, N Njoku, K Patel, W Pellegrini, T Pliakas, D Qadir, E Ryan, A Schiffer, A Thiel, SA Yunes, **KE Spilios**, JH Pinzón C, LD Mydlarz, TD Gilmore (2018). A conserved Toll-like receptor-to-NF- κ B signaling pathway in the endangered coral *Orbicella faveolata*. *Developmental & Comparative Immunology* 79: 128-136
- Spilios, K**, M Knight, EM Jariwala, A Moser, T Hunt, A Knaub, A Duffy, P Garik, and N. Gross. (2013). The Boston University Experience of Beginning a Learning Assistant Program in Science Courses. National Science Teachers Association (NSTA) National Conference: San Antonio.
- Knight, MT, P Garik, A Moser, N Hammond, EM Jariwala, **K Spilios**, A Seliga, A Duffy, D Dill, and BB Goldberg (2013). Investigating the effect of peer teachers on learning environments in large STEM courses, National Association of Research on Science Teaching (NARST): Rio Grande, Puerto Rico.
- Spilios, KE**, N Rycroft and A Seliga. 2013. A Bridge to Knowledge: A Practical Workshop for Teaching Fellows. Pages 383-389 in *Tested Studies for Laboratory Teaching*, Volume 34 (K. McMahon, Editor). Proceedings of the 34th Conference of the Association for Biology Laboratory Education (ABLE), 499 pages.
- Gardner, KE**, TD Seeley, and NW Calderone. (2008). Do Honey Bees Have Two Discrete Dances to Advertise Food Sources? *Animal Behaviour*, 75: 1291-1300.
- Gardner, KE** (2007). A scientific note on the directional accuracy of the waggle dance over the course of a day. *Apidologie*, 38: 312-313.
- Gardner, KE**, TD Seeley, and NW Calderone (2007). Hypotheses on the adaptiveness or non-adaptiveness of the directional imprecision in the waggle dance (Hymenoptera: Apidae: *Apis mellifera*). *Entomologia Generalis*, 29: 285-298.
- Gardner, KE**, RL Foster, and S O'Donnell. (2007) Experimental analysis of worker division of labour in bumblebee nest thermoregulation (*Bombus huntii*, Hymenoptera: Apidae). *Behavioral Ecology and Sociobiology*, 61: 783-792.
- Gardner, KE** (2006) Aspects of Foraging in Bees: Apple Pollination, Native Bee Populations, and Honey Bee Communication. Ph.D. Thesis, Cornell University.
- Gardner, KE** and JS Ascher (2006). Notes of the native bee pollinators in New York apple orchards. *Journal of the New York Entomological Society*, 114: 86-91.

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Research Mentoring

- 2020 On Campus Advisor, Savannah Bitzas, Undergraduate Research for Credit: Reinduction of Fetal Hemoglobin in Sickle Cell Disease and Respiratory Conditions
- 2020 On Campus Advisor, Paula Giraldo, Undergraduate Research for Credit: Photo-triggered targeting on drug-loaded nanoparticles to vascular malformations
- 2019 Faculty mentor for Alyssa Haynes and Ryan Lawrence (undergraduates): A mixed-methods analysis of the learning assistant experience at Boston university and its effects on life after graduation
- 2019 Advisor, Cameron Hill (undergraduate), Kilachand Capstone Project: Bottom-Up Pedagogy Transfer from Undergraduate Learning Assistants to Faculty
- 2018 Dr. Anthony Barrasso, Postdoctoral Associate and Lecturer, research focus: student outcomes in the LA Program
- 2018 On Campus Advisor, Anthony Ma, Undergraduate Honors Thesis Research: Effects of Mammalian Target of Rapamycin Complex 1 (mTORC1) on adipose triglyceride lipase (ATGL) and uncoupling protein 1 (UCP1) in transgenic mice
- 2017 On Campus Advisor, Abhishek Gowda, Undergraduate Research for Credit: Effects of the Human Milk Oligosaccharides on *C. difficile* infected colonic epithelial cells; Test the Effects of Key Antibodies found in Ostrich Eggs on *C. difficile* Infected Mice
- 2017 PhD Committee Member, Elizabeth McCarthy: Contribution of the Accessory Olfactory System to the Expression of Proceptive and Receptive Courtship Behaviors in Female Mice
- 2016 Advisor, Kristy Zukswert, Kilachand Honors Thesis: STEM Undergraduate Learning Experiences in BU Biology Lab Courses
- 2015 On Campus Advisor, Matthew McIntyre, Biology Honors Thesis: An Assessment of Novel Pharmaceuticals and Animals Models for Severe Burn-Associated Pain
- 2014 Advisor, Matthew McIntyre, Undergraduate Research Opportunities Program: Improving Learning Outcomes through Active-Learning in Introductory Biology
- 2012 PhD Committee Member, Caroline Polgar: The Effects of Climate Change on the Phenology of Plants and Insects of MA

Honors, Awards, and Grants

- 2019 Teaching Excellence in STEM Faculty Fellow, BU Center for Teaching & Learning
- 2019 Lecturer Professional Development Grant through Boston University Center for Teaching and Learning (\$1,650)
- 2019 NSF IUOE. Wilson N, Templer P, and Spilios K: Design-Based implementation Research for STEM Curricular Development at the Research University, \$299,959, not funded
- 2017 NSF IUOE 1726625 (senior key personnel): Preparing Future Faculty to Improve STEM Education: Broadening the National Impact of the CIRT Network, Aug 4, 2017-Aug 31, 2020
- 2017 BU Center for Teaching and Learning: Learning Technologies Development Grant, Co, E., Spilios, K., Beffert, U. Using ExamSoft to Improve Student Metacognition and Program Learning Outcomes in Biology. Total award: \$67,000
- 2017 BU Assessment Practice and Innovation Mini Grant: Using ExamSoft to Improve Student Metacognition and Program Learning Outcomes in Biology, \$2,500
- 2016 Boston University, College of Arts and Sciences award for Distinction in First Year Undergraduate Education
- 2015 NSF IUOE 1525354 (Co-PI): Collaborative Research: Scaling Undergraduate STEM Transformation and Institutional Networks for Engaged Dissemination (Collaborative grant with University of Colorado Boulder), Sept 17, 2015-Aug 31, 2020
- 2015 Interdisciplinary Course Development Grants from BU Provost, \$67,000 (two awards)
- 2013 NSF IUOE 1231286 (senior personnel): The CIRT Network: 25 Research Universities Preparing a National Faculty to Advance STEM Undergraduate Learning (subcontract to University of Wisconsin), Aug 20, 2013-July 31, 2018
- 2013 Grants for Undergraduate Teaching and Scholarship (GUTS), Boston University, \$1,400
- 2010 Redesigning the Undergraduate Learning Experience (RULE) pre-proposal grant, Boston University, \$5,500
- 2006 Palmer Fellowship, Cornell University Entomology Department, \$5,000
- 2005 Article in Cornell University Newspaper: 'Bee lady' Kathryn Gardner studies bumblebees to answer question, 'What does it take to be a queen?' <http://www.news.cornell.edu/stories/May05/bee.lady.to.html>
- 2004 NSF funded Cornell Science Inquiry Partnership Fellowship, \$30,000
- 2004 Rawlins Endowment Grant, Cornell University Entomology Department, \$750
- 2003 Rawlins Endowment Grant, Cornell University Entomology Department, \$1,500
- 2003 Sigma Xi, Cornell chapter research grant, \$600
- 2003 Rawlins Endowment grant, Cornell University Entomology Department, \$1,800
- 2002 Andrew W. Mellon Student Research Grant, Cornell University, \$1,300
- 2001 Olmstead Fellowship from Cornell University, Entomology, awarded to top 2 entering graduate students
- 2001 "Outstanding TA Award" University of Puget Sound Biology Department
- 2001 Gordon D. Alcorn Award for "outstanding commitment to biology department and the community as a whole" University of Puget Sound Biology Department.
- 2001 Honors in Biology, University of Puget Sound Biology Department, awarded to top 10% in department

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Workshops, Presentations, and Invited Lectures

- 2019 Enhancing Student Outcomes in Large Lecture Courses. Poster presentation Experimental Biology Conference, with E. Co
- 2019 Using Data to Improve Teaching Practices and Student Outcomes. Invited Speaker for ExamSoft Assessment Conference, leadership track, with E. Co.
- 2019 Foundational Teaching Skills Bootcamp for Postdocs, Boston University
- 2018 Evidence Based Introduction to Teaching. Week-long workshop for postdocs, University of Colorado at Boulder
- 2018 Continuing the LA Program. Workshop at University of Southern Maine
- 2018 Building Foundational Teaching Skills Postdoc Bootcamp, Boston University
- 2018 4th Annual Assessment Symposium, Boston University. Getting Started with Program Assessment
- 2017 Introduction to Active Learning, Laspau through Harvard university. A three-hour workshop for visiting students, faculty, and Deans from Peru
- 2017 The Learning Assistant Model as a Catalyst for Institutional Change and Instructional Improvement at Boston University. International Learning Assistant Conference, University of Colorado at Boulder
- 2017 The LA Program Model, University of Southern Maine. Two-day workshop to introduce the LA Program to USM
- 2017 Program Assessment using ExamSoft – A means to provide the Department, Instructors, and Students with Formative Feedback. Teaching with Technology, Boston University
- 2015 Group Testing to Enhance Collaborative Learning, Association for Biology Laboratory Education Conference
- 2014 Improving Learning Outcomes through Active-Learning in Introductory Biology (poster, NSTA, 3rd place in the Society for College Science Teachers Undergraduate Poster Session)
- 2013 Tracking the Explosive Growth of the Learning Assistant Program and its Transformative Impact on STEM Education at BU, Boston University Instructional Innovation Conference, Friday, March 8, 2013
- 2012 Learning Assistants and Undergraduate Assistants: Comparing two peer teaching models. Poster presented at the Learning Assistant Conference, CU Boulder, Boulder, CO. October 28-20, 2012
- 2012 Improving Educational Outcomes Through Learning Assistants in Biology, Chemistry, and Physics, Boston University Instructional Innovation Conference, March 2, 2012.
- 2012 Guest Lecture: BI224, Seminar in Behavioral Biology, Boston University
- 2011 Guest Lecture: Creating Effective Resumes and CVs, BU Undergraduate Research Opportunities Program
- 2010 Invited Guest Lecture: Ecology and Biology of Beneficial Insects, Sterling International, Inc.
- 2007 Guest Lecture: Animal Communication, Cornell University Biology 101
- 2007 Guest Lecture: Pollination Biology, Cornell University Entomology 201
- 2006 Guest Lecture: Animal Communication, Cornell University Biology 101
- 2006 Do Honey Bees Have One or Two Terms in their Language? (poster, International Union for the Study of Social Insects Congress, Washington, DC)
- 2006 The Dance Language of the Honey Bee (Dissertation Defense Seminar, Cornell University)
- 2005 The Round and Waggle Dances: One Dance or Two? (poster, Entomological Society of America Annual Meeting, Ft. Lauderdale, FL)
- 2004 Feeding Behavior and Caste Determination in the Bumble Bee *Bombus impatiens* (Hymenoptera: Apidae) (poster, Animal Behavior Society meeting, Oaxaca, Mexico).
- 2003 Guest Lecture: Pollination Biology, Cornell University Entomology 325
- 2003 Guest Lecture: Insect Sociality, Cornell University Entomology 260
- 2003 The Influence of Worker Population on Queen Rearing in the Bumble Bee, *Bombus impatiens* (poster, Entomological Society of America Annual Meeting, Salt Lake City, UT).

Collaborators

Eleanor Close (Texas State University), Elizabeth Co (Boston University), Mary Emenike (Rutgers University), Christy Gomez (Front Range Community College), Sarah Hokanson (Boston University), Enrique M. Jariwala (Boston University), Laurie Langdon (University of Colorado, Boulder), Jayson Nissen (Chico State University), Mel Sabella (Chicago State University), Valerie Otero (University of Colorado, Boulder), Pamela Templer (Boston University), Benjamin Van Dusen (Chico State University), Devon Quick (Oregon State University), Nicholas Wilson (Northeastern)