

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 30 undergraduate biology majors, oversight of TF Mentor 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.

Teaching Experience (Boston University)

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| BI107, Principles of Biology I | Fall 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017 |
| BI108, Principles of Biology II | Spring 2014, 2015, 2016, 2017, 2018 |
| MB/BI697, Pedagogy Seminar for 1 st Year Graduate Students: Prepare new graduate students for teaching undergraduate biology labs | Fall 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015 and Spring 2014, 2015, 2016, 2017, 2018 |
| BB522, Techniques in Cell Culture: Team-taught with Thomas Gilmore. Cover basic cell culture technique, including maintaining live cultures, transfection, immunostaining, and visualization using fluorescence microscopy. | Spring 2009, 2010, 2011, 2012, 2013, 2015, 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 |

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Teaching Experience (Cornell University)

2005 – 2006	Laboratory Instructor, Introductory Biology, Cornell University. Responsible for preparing and leading laboratory activities for 36 undergraduate students. Prepared and graded quizzes and tests, maintained database of grades. Held office hours and review sessions to prepare students for exams. Evaluated existing laboratory procedures and text.
2004 – 2005	Graduate Teaching Fellow, Cornell University, NSF funded Cornell Science Inquiry Partnership, taught biology using scientific inquiry to local middle and high schools. Created partnerships with local middle and high school teachers. Developed inquiry based, hands-on curricula to encourage critical thinking.
2003 – 2004	Participant of Cornell University's Graduate Student School Outreach Program (GSSOP). Developed my own eight week "mini-course" in Entomology and taught to a local sixth grade class. Topics ranged from classification and identification to ecology of insects.
2001 – 2003	Graduate Teaching Assistant, Cornell University: Honey Bee Biology, Insect Behavior, and Beekeeping. Responsible for grading and leading review sessions for approximately 40 students; served as liaison between professor and students. Gave guest lectures on a variety of topics.

Local and National Service

2017 – present	Chair, National Learning Assistant Alliance Leadership Council
2017 – present	Member, Classroom Renovation Committee, Boston University
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 – present	Member, Boston University Laboratory Safety Committee, Boston University
2013 – present	Biology Program Assessment Committee member, Boston University
2013 – 2016	Member, BU CIRTl steering committee (Center for the Integration of Research, Teaching, and Learning)
2013 – present	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
2009 – present	National Association of Biology Teachers
2008 – present	Association for Biology Laboratory Education

Papers and Publications

Spilios, KE, ed. (2018). *Principles of Biology II*. 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, KE, ed. (2017). *Principles of Biology I*. Hayden-McNeil. Plymouth, MI.

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.

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- 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.

Student Committee Membership

- 2017 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, and, 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, Kilichand Honors Thesis: STEM Undergraduate Learning Experiences in Boston University 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 Massachusetts

Honors, Awards, and Grants

- 2017 NSF IUSE (Senior Key Personnel): Preparing Future Faculty to Improve STEM Education: Broadening the National Impact of the CIRTLL Network
- 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
- 2016 Boston University, College of Arts and Sciences award for Distinction in First Year Undergraduate Education
- 2015 NSF DUE 1525354 (Co-PI): Collaborative Research: Scaling Undergraduate STEM Transformation and Institutional Networks for Engaged Dissemination (Collaborative grant with University of Colorado Boulder)
- 2015 Interdisciplinary Course Development Grants from BU Provost, \$67,000 (two awards)
- 2013 NSF (senior personnel): The CIRTLL Network: 25 Research Universities Preparing a National Faculty to Advance STEM Undergraduate Learning (subcontract to University of Wisconsin)
- 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

Presentations and Invited Lectures

- 2017 The Learning Assistant Model as a Catalyst for Institutional Change and Instructional Improvement at Boston University. International Learning Assistant Conference
- 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).