

Kathryn E. Spilios, Ph.D.

Director of Academic Planning, Director of Instructional Laboratories,
Director of the Learning Assistant Program, and Master Lecturer
Boston University, Department of Biology
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Academic Appointments

April 2024 – present

Master Lecturer in Biology (BU College of Arts and Sciences) with a secondary appointment in Teaching and Learning (BU Wheelock College of Education and Human Development). Director of Instructional Laboratories in Biology, Director of the BU Learning Assistant Program, and Director of Academic Planning in Biology.

Sept 2021 – April 2024

Master Lecturer in Biology (BU College of Arts and Sciences) with a secondary appointment in Teaching and Learning (BU Wheelock College of Education and Human Development). Director of Instructional Laboratories in Biology and Director of the BU Learning Assistant Program.

July 2020 – Sept 2021

Master Lecturer in Biology, Director of Instructional Laboratories, and Director of the BU Learning Assistant Program.

Sept 2016 – June 2020

Senior Lecturer in Biology, Director of Instructional Laboratories, and Director of the BU Learning Assistant Program.

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 exams using FileMaker Pro, maintain grade databases, give several guest lectures.

Professional Appointments

2015 – present Director, Boston University Learning Assistant Program: Oversee campus-wide LA Program with 300 LAs per year in 54 courses, manage annual operating budget, and implement policies to enable program growth.

2019 – 2021 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 – 2020 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.

Education

2006 Ph.D., Cornell University, Department of Entomology, Ithaca, NY
Dissertation: Aspects of foraging in bees: Apple pollination, native bee populations, and honeybee 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*).

Teaching Experience, Boston University

CAS BI107, Principles of Biology I	Fall semesters 2010 through present
CAS BI108, Principles of Biology II	Spring semesters 2014 through present
CAS CH903, Innovation in STEM Instruction (team-taught)	Fall 2019, 2021, 2023
GRS MB/BI697, Pedagogy Seminar for 1 st Year Graduate Students	2008 through present
CAS BB522, Techniques in Cell Culture (team-taught)	Spring 2009 through 2016

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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	Spring 2010, Fall 2010, Spring 2011

Local and National Service

2025	Member, Search Committee for Biology lecturer
2025	Faculty mentor to biology faculty (Hartmann, Scavo Lord, Francis, and Thompson)
2024	External evaluator for promotion case at UConn
2023 – 2025	Consultant for the BU School of Hospitality focusing on faculty peer evaluation process
2023	Peer Reviewer, Journal of Review of Educational Research
2023 – 2024	Member, Biology Department Academic Program Review Leadership Team
2023 – 2024	Member, Boston University Student Information Systems Renewal
2022 – present	Member of the University Council Committee on Undergraduate Academic Programs & Policies
2022 – present	Member, Steering Committee for the Bachelor of Arts in Science Education, College of Arts and Sciences
2022 – present	Chair, Boston University Department of Biology Merit Review Committee
2022 – 2024	Member of the Boston University Lecturer Professional Development Leave Committee
2022	Member, Search Committee for Boston University Registrar
2021 – present	Member, Boston University Laboratory Safety Committee
2020	External evaluator for promotion case, Oregon State University
2020	Visiting Fellow in Assessment for College Board, AP Bio Review
2020 – 2021	CTL Learn <i>from</i> Anywhere Faculty Coach
2020 – 2021	Member, Remote and Online Working Group, part of BU Covid-19 Recovery Organization
2018 – 2019	Member, Appointment, Promotion and Tenure Committee, Department of Biology
2018 – 2019	Search Committee Chair: Biology Department
2017 – 2020	Member, Classroom Renovation Committee, Boston University
2016 – 2020	Member, Premedical and Predental 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 – 2020	Technical Editor for ABLE Proceedings
2014 – 2016	Member, Enterprise Risk Management Team, Boston University
2014 – 2018	Member, Boston University Laboratory Safety Committee
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 – 2024	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	Member, National Science Teachers Association, National Association of Biology Teachers, and Association for Biology Laboratory Education

Publications

- Spilios KE**, CM Kieswetter, and J Stering eds (2026). *Principles of Biology II*. Hayden-McNeil. Plymouth, MI.
- Spilios KE** and CM Kieswetter, eds (2025). *Principles of Biology I*. Hayden-McNeil. Plymouth, MI.
- Hill CJ, AP Barrasso and **KE Spilios** (2024). The Influence of Learning Assistants on Faculty Use of Student-Centered Instruction. *Journal of College Science Teaching*, 53(2): 154.161.
- Hill CJ, AP Barrasso and **KE Spilios** (2023). A mixed methods analysis of perspectives towards LA-faculty relationships. *Journal of College Science Teaching*. *Journal of College Science Teaching*, 52(3).
- Thompson M, Barrasso AP, Tutwiler MS, Garik P, and **KE Spilios** (2022). Context Matters: Influence of undergraduates' approaches, experiences, and expectations on the LA model in large enrollment science courses. *Educational Innovations and Emerging Technologies*, 2(1), <https://doi.org/10.35745/eiet2022v02.01.0003>.
- Barrasso AP and **KE Spilios** (2021). A Scoping Review of Literature Assessing the Impact of the Learning Assistant Model, *International Journal of STEM Education*, 8(12), <https://doi.org/10.1186/s40594-020-00267-8>.

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- 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, and 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. McMahan, 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.

Research Mentoring

- 2025 Advisor, Sean Bryant, Kilachand Keystone Thesis: Efficiency of Native Plant Agriculture: A Sonoran Desert Case Study
- 2023 Dr. Robin Francis, Postdoctoral Associate Teaching Scholar, research focus: The Impact of Field-Based Experiential Learning
- 2023 MS Student, Benjamin Recchia, Thesis: Zoos and Aquariums as Educational Resources
- 2022 Honor thesis committee member: Kylie Yamauchi (third reader) and Daniela Torres (second reader)
- 2021 On Campus Advisor, Cheyenne Watts, Dua Ashfaq: Undergraduate Research for Credit
- 2020 Advisor, Cameron Hill (undergraduate), Kilachand Keystone Project: Bottom-Up Pedagogy Transfer from Undergraduate Learning Assistants to Faculty
- 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
- 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

- 2024 NSF DUE Award #2344739 (Co-PI), Preparation of Noyce Science Teachers for Greater Boston, \$1,450,000

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- 2024 BU Shipley Center Large Course Transformation Grant, \$435,252
- 2022 Boston University Inclusive Pedagogy Institute, Participant
- 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 IUSE. 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 IUSE 1726625 (senior key personnel): Preparing Future Faculty to Improve STEM Education: Broadening the National Impact of the CIRTLL 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 IUSE 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 IUSE 1231286 (senior personnel): The CIRTLL 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

Workshops, Presentations, and Invited Lectures

- 2025 Invited presentation, BU Inclusive Pedagogy Symposium
- 2024 Learning Assistant Alliance, eSeries Leader, Essential Elements of the LA Program
- 2022 Invited session, Boston University Faculty Forum: "Teaching as Community"
- 2021 Learning Assistant Research Symposium invited talk: "The Impact of the LA Model, A Review and Future Directions"
- 2020 MassBioEd 5th Annual Conference, Life Sciences Workforce. Session facilitator: "Adapting Biotechnology Higher Education for Remote Learning - Stop Gap Measures or Paradigm Shifts"
- 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

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- 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).

Collaborators

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