

# ERIC R. SCOTT

Medford, MA 02155 • Eric.Scott@Tufts.edu • www.ericrscott.com

## EDUCATION

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**Tufts University** • Medford, MA

**PhD student in the Department of Biology**

Expected Graduation: 2020

**University of Illinois at Urbana-Champaign** • Urbana, IL

**MS in the Program in Ecology, Evolution, and Conservation Biology**

May 2010

GPA: 4.0

**Whitman College** • Walla Walla, WA

**Bachelor of Arts in Biology**

May 2006

GPA: 3.37

## SKILLS

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**Programming:** Advanced R user with experience in data wrangling (tidyverse), data visualization (ggplot2), modeling/statistics, and package development. Some experience with Python (simulation modeling, numpy)

**Lab and Field Techniques:** HPLC method development, Folin-Ciocalteu assay for total phenolics, DPPH antioxidant assay, stir bar sorptive extraction (SBSE), direct contact sorptive extraction (DCSE), soil sampling, familiarity with major plant families, plant collection.

**Statistics:** generalized linear models, generalized linear mixed models, multivariate statistics, metabolomics

**Other:** Trained in sensory analysis using Profile Attribute Analysis.

## RESEARCH EXPERIENCE

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**NSF grant coordinator** • Tufts University • Medford, MA

Jan. 2017 – present

- Schedule and implement conference calls
- Coordinate in-person meetings
- Record, archive, and distribute meeting minutes

**Graduate Researcher** • Tufts University • Medford, MA

Sep. 2014 – present

- Conducted collaborative, interdisciplinary research on the effects of climate change and insect herbivory on tea metabolite profiles
- Designed and carried out field and greenhouse experiments
- Traveled to China to design experiments in collaboration with researchers at the Tea Research Institute in Hangzhou
- Developed and validated a novel method for sampling plant volatiles in the field (DCSE)
- Mentored undergraduate assistants in computational, lab, and field experiments.

**Research Associate** • Colorado Natural Heritage Program

Nov. – Dec. 2010

- Identified pressed plant collections to species using a dichotomous key and herbarium reference specimens.
- Entered data into Microsoft Access Database.
- Worked with minimal supervision.

**Wetland Research Associate** • Colorado Natural Heritage Program

Fort Collins, CO

July – Aug. 2010

- Worked with a team to survey randomly sampled wetlands to determine aspects of wetland health.
- Identified and collected vegetation in vegetation sampling plots according to defined protocols.
- Described soils and used soils to determine wetland hydrology.
- Classified and described various hydrologic, ecological, and physiochemical aspects of wetlands.
- Made important decisions in the field without contact with superiors.

**Graduate Researcher** • UIUC • Urbana, IL

Aug. 2007 – May 2010

- Successfully completed a research project from the planning stages, through data collection, problem solving and presentation of results.
- Mastered the ability to take a large, complex project and break it into manageable tasks
- Collected a variety of data in the field including long-term, repeated morphological

- measurements of plants, soil moisture and other soil data, and observations of herbivory.
- Mastered various lab techniques to collect data on plant chemical characteristics such as digestibility, nutrient content, and defense chemical content.
- Analyzed data using the statistical package R.
- Supervised undergraduate research assistants involved in the project.

**Undergraduate Research Intern** • Bucknell University • Lewisburg, PA Jun. – Aug. 2005

- Collaborated with post-doctoral student to design a pilot study investigating host-race formation in a gall midge
- Collected galls in the field and reared larvae from them.
- Conducted mating and host-choice experiments
- Maintained host plants in greenhouse

## **TEACHING EXPERIENCE**

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**Graduate Teaching Assistant BIO 0132 (Biostatistics)** • Tufts University Sep. – Dec. 2017

- Created curriculum to teach R for biostatistics in a required recitation section (course materials [available online](#)).
- Acted as an instructor with minimal supervision for recitation section.
- Converted all homework assignments from Word documents to R Notebooks.

**Graduate Teaching Assistant BIO 0132 (Biostatistics)** • Tufts University Sep. – Dec. 2016

- Lead optional recitation in learning SPSS
- Quantitatively and qualitatively assessed student performance collaboratively with other TAs
- Facilitated discussion in lecture during active learning exercises

**Graduate Teaching Assistant BIO 0014 (Organisms and Populations)** • Tufts University Dec. – May. 2015

- Mentored and managed undergraduate teaching assistants.
- Actively participated in course redesign
- Guided students through designing their own experiments
- Guided students through case-study based learning through discussion and quantitative reasoning

**Graduate Teaching Assistant BIO 0013 (Cells and Organisms)** • Tufts University Sep. – Dec. 2014

- Mentored and managed undergraduate teaching assistants.

**Adjunct Biology Faculty (Introductory Biology)** • Front Range Community College • Fort Collins, CO

Jan. 2011– May 2014

- Planned engaging lectures and in-class activities
- Taught students from a wide variety of backgrounds and with a wide variety of life goals
- Engaged in revising and creating laboratory exercises used by all introductory biology sections
- Actively participated in professional development by attending workshops, meeting individually with an instructional coach, and maintaining an active dialogue with supervisors.
- Created and consistently revised materials to assess student learning fairly and accurately.

**Teaching Assistant IB105 (Environmental Biology)** • UIUC • Urbana, IL Jan. – May 2010

- Exposed students from a wide range of backgrounds to important environmental issues.
- Encouraged students to speak their minds in discussion and through active learning.
- Challenged students to think critically about evaluating scientific arguments.
- Addressed important misconceptions about environmental science and biology.

**Teaching Assistant IB150 (Organismal and Evolutionary Bio)** • UIUC • Urbana, IL Aug. 2007 – Dec. 2009

- Communicated introductory level biology concepts to students through active learning.
- Fairly assessed student work.
- Worked with diverse populations in Merit sections.
- Promoted critical thinking skills by applying the Socratic method and using guiding questions for Merit sections.
- Received a Teaching Excellence Award from the School of Integrated Biology in March of 2009.

**Youth Programs Assistant** • Lindsay Wildlife Museum • Walnut Creek, CA

Jun. – Aug. 2003

- Researched issues relating to water pollution and integrated pest management (IPM)

- Created presentations on water pollution and IPM to be presented by youth volunteers
- Organized existing presentations into an easily expandable database
- Mentored and supervised youth volunteers
- Served as a knowledgeable resource for youth volunteers and museum visitors

**Lab Assistant** • Whitman College • Walla Walla, WA

Sep. – Dec. 2002

- Prepared materials and equipment for general chemistry lab class
- Addressed student needs during lab as required
- Carefully created inventory of lab equipment held in stock room

**Teacher** • Mad Science • Walnut Creek, CA

Jun. – Aug. 2002

- Presented science-based educational programs for schools, birthday parties, and community centers
- Demonstrated scientific concepts using hands-on activities
- Adjusted curriculum to be appropriate for groups of children between the ages of 3 and 12

**Interpretive Guide** • Lindsay Wildlife Museum • Walnut Creek, CA

1997 – 2002

- Communicated issues regarding wildlife and the environment to audiences of all ages
- Demonstrated topics such as water pollution and composting through hands-on activities
- Created games and activities to engage the public in environmental issues
- Worked closely with other docents, wildlife hospital volunteers and employees, and wildlife handlers

### **PROFESSIONAL DEVELOPMENT**

- Best Practices for Productive Writing. Tufts University. Spring 2018
- Practical Science Workshop. Dr. Dany Adams. Fall 2014
- Working with Student-Veterans: Strategies and Guidance for Creating Veteran-Supportive Classrooms. Fall 2013
- How to get students to “eat the textbook.” Workshop on teaching students to get the most out of their reading. Fall 2012.
- Over 5 hours logged with Front Range Community College instructional coach, Barbara Patterson.

### **AWARDS AND HONORS**

First place in Tufts Graduate Research Symposium 5 minute talk category. Feb, 2017

Second place in Tufts Graduate Research Symposium 15 minute talk category. Feb, 2016

Tufts Institute for the Environment Fellowship, 2016–2017

Teaching Excellence. School of Integrative Biology. March 2009.

PEEC Research Grant. March 2008, 2009

Francis M. and Harlie M. Clark Research Support Grant. March 2008, 2009

Cynthia Lechner Biology Award. May 2006.

First place in Entomological Society of America, Pacific Branch M.S. Graduate Student Poster Competition. March 5–8, 2006.

Superior Poster Presenter at the Sigma Xi Annual Meeting and Student Research Conference in Seattle, WA from Nov 3–6, 2005.

### **PUBLICATIONS**

Kfoury N, Morimoto J, Kern A, Robbat A Jr, Scott ER, Orians CM, Ahmed S, Griffin T, Cash SB, Stepp JR, Xue D, Long C (2018). Elevational impacts on nutritional and sensory metabolites in tea. *Food Chemistry*, *in review*.

Scott ER, Orians CM (2018) Differential changes in tea quality as influenced by insect herbivory. *in* Stress physiology of tea in the face of climate change. ed. Wenyan Han. Springer Nature, *in press*.

Kfoury N, Scott ER, Orians CM, Robbat A Jr (2017) Direct Contact Sorptive Extraction: A Robust Method for Sampling Plant Volatiles in the Field. 65:8501–8509. doi: 10.1021/acs.jafc.7b02847

Scott, Eric R. 2010. Interactions between habitat and ungulate herbivory limit the spread of *Ipomopsis aggregata* (Polmoniaceae). Masters thesis for the Program in Ecology, Evolution and Conservation Biology. University of Illinois at Urbana-Champaign.

Dorchin, Netta; Eric R. Scott; Carolyn E. Clarkin; Michael P. Luongo; Steve Jordan; and Warren G. Abrahamson. 2009. Behavioral, ecological, and genetic evidence confirm the occurrence of host races in goldenrod gall-midges. *Journal of Evolutionary Biology* 22: 729–738.

Dorchin, Netta; Carolyn E. Clarkin; Eric R. Scott; Michael P. Luongo; and Warren G. Abrahamson. 2007. Taxonomy, life history, and population sex ratios of North American *Dasineura* (Diptera: Cecidomyiidae) on goldenrods (Asteraceae). *Annals of the Entomological Society of America* 100(4): 539–548.

Dorchin, Netta; Eric R. Scott; and Warren G. Abrahamson. 2006. First record of *Macrolabis* (Diptera: Cecidomyiidae) in America: a new inquiline species from *Dasineura folliculi* galls on goldenrods. *Annals of the Entomological Society of America* 99(4): 656–661.

Scott, Eric. 2006. Behavioral evidence for host-race formation in the gall-midge *Dasineura folliculi* (Felt). Honors biology thesis. Whitman College, Walla Walla, WA.

## SOFTWARE

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### webchem

2017

Eduard Szöcs et al. (2015). webchem: zenodo release. Zenodo. 10.5281/zenodo.33823

- Contributor to webchem, an R package for interacting with a suite of web APIs for extracting chemical information.
- Wrote a function to scrape flavor percept data from [flavor.net](http://flavor.net) using CAS identifier numbers as an input
- Fixed bugs in other functions

## OUTREACH

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Scott, Eric 2018. Oolong: more than mid-oxidized. Tea Geek Blog <http://www.teageek.net/blog/2018/03/oolong-mid-oxidized/> published March 8, 2018.

Panelist at STEM career panel for Bunker Hill Community College. April 27, 2017

Climate change and the quality of tea. Presentation given at Taste of Science Boston. April 26, 2017.

Scott, Eric 2017. The science and nomenclature of tea processing. Part 2: microbial ripening. Tea Geek Blog <http://www.teageek.net/blog/2017/02/science-nomenclature-tea-processing-part-2-microbial-ripening/> published Feb 27, 2017

Scott, Eric 2017. The science and nomenclature of tea processing. Part 1: enzymatic browning. Tea Geek Blog <http://www.teageek.net/blog/2017/02/tea-terminology-part-1/> published Feb 9, 2017

Scott, Eric R 2016. Oriental Beauty and Other Bug-Bitten Teas: Fact or Fiction? World of Tea. <https://www.worldoftea.org/oriental-beauty-bug-bitten-teas/> published Aug 2, 2016.

## PRESENTATIONS

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Scott, Eric. Combined effects of drought and herbivory on tea metabolites. Department seminar, Tufts University March 2, 2018.

Scott, Eric; Nicole Kfoury; Colin Orians; Albert Robbat Jr. Generating and analyzing metabolomic data from tea plant volatiles. Poster presented at Data Intensive Studies Center (DISC) Symposium at Tufts University on Nov 8, 2017.

Scott, Eric, Nicole Kfoury, Colin Orians, Albert Robbat. A novel, high-throughput method for sampling volatiles in the field. Talk presented at Entomological Society of America Eastern Branch meeting in Newport, RI on Mar 19, 2017.

- Scott, Eric. Can Insect Damage Improve Tea Quality In a Changing Climate? First place winning 5 minute talk presented at Tufts Graduate Student Symposium, Feb 24, 2017
- Scott, Eric, Nicole Kfoury, Colin Orians, Albert Robbat. High throughput sampling of herbivore induced plant volatiles in the field. Poster presented at Gordon Research Conference: Plant-Herbivore Interactions in Ventura, CA on Feb 15, 2017.
- Scott, Eric and Nicole Kfoury. A New Method For Sampling Plant Volatiles in the Field. Second place winning 15 min talk presented at Tufts Graduate Student Symposium, Feb 18, 2016.
- Scott, Eric, Nicole Kfoury, Colin Orians, Albert Robbat. Sampling Plant Volatiles in the Field: An Alternative to Dynamic Headspace Sampling. Poster presented at Gordon Research Conference: Plant Volatiles in Ventura, CA on Feb 1, 2016.
- Scott, Eric and Nicole Kfoury. Sampling Plant Volatiles in the Field: An Alternative to Dynamic Headspace Sampling. Talk presented at Gordon Research Seminar: Plant Volatiles in Ventura, CA on Jan 30, 2016.
- Scott, Eric, 2015. An Alternative Method for Sampling Plant Volatiles. Biology Department Seminar presented at Tufts University on Nov 6, 2015.
- Scott, Eric, 2009. Using RSS feeds to stay up-to-date in ecology/Using Papers to organize your literature. GEEB workshop presented at UIUC in Champaign, IL on Feb 11, 2009.
- Scott, Eric. 2006. How gall makers enslave plants to build homes. Presentation given at Whitman College Undergraduate Conference in Walla Walla, WA on Apr. 4, 2006
- Scott, Eric. 2006. Behavioral evidence for host race formation in a gall midge. Poster presented at the Pacific Branch Entomological Society of America 90th Annual Meeting in Kehei, HI from March 6-8, 2006
- Scott, Eric. 2005. Behavioral evidence for host race formation in a gall midge. Poster presented at the Sigma Xi Annual Meeting and Student Research Conference in Seattle, WA from Nov 3-6, 2005

## **SERVICE**

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### **Manuscript Reviewer**

Journal of Chemical Ecology (1).

### **BUGS (Biology Union of Graduate Students)**

#### **President**

- Provided active leadership at meetings.
- Encouraged continued interaction between members between meetings
- Prepared a budget and submitted funding requests

**Medford, MA**  
Sep. 2015 – May 2016

#### **Social committee**

- Planned and organized social events for biology graduate students.

Jan. 2015 – May 2015

### **GRADUATE STUDENTS IN ECOLOGY AND EVOLUTIONARY BIOLOGY (GEEB)**

#### **Outreach and policy committee**

- Act as liaison to other ecology and conservation related clubs on campus.
- Keep club members informed of ecology related events on campus.
- Solicit advice to other ecology related clubs.

Champaign, IL  
Aug. 2009 – May 2010

#### **PEEC symposium food committee chair**

- Assist in organizing the PEEC symposium.
- Plan and provide breakfast and mid-morning snack for attendees of the symposium
- Communicate with PEEC treasurer on matters of budget.

Aug. 2008 – Jan. 2009