
Shannon Bryn Olsson, Ph.D.

Postdoctoral Scholar
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EDUCATION

Cornell University, Ithaca, NY
Ph.D. in Neurobiology and Behavior 2005
Area of Concentration: Chemical Ecology
Advisors: Drs. Wendell L. Roelofs and Thomas Eisner

Nazareth College, Rochester, NY
B.S. in Chemistry 1999
Magna Cum Laude
NYS Provisional Teaching Certificate in Science for Grades 5-12

FELLOWSHIPS AND AWARDS

- US Fulbright Scholar (US Department of State Bureau of Educational and Cultural Affairs) 1999-2000
 - NSF Graduate Fellowship Honorable Mention 2002
 - Cornell Science Inquiry Partnership Fellowship (NSF GK-12 Program) 2003-2004
 - Paul J. Chapman Award in Entomology 2002-2003
 - Council on Undergraduate Research Posters on Capitol Hill in Washington, D.C. 1999
 - Nazareth College Presidential Scholarship 1999
 - American Institute of Chemists Award (Nazareth College) 1999
 - Elks National Foundation Most Valuable Student Award 1995-1999
 - NYS Masonic Lodge Scholarship 1998
 - Nazareth College Vice President's Award 1999
 - Chemical Rubber Co. Freshman Chem. Award (Nazareth College) 1996
 - National Merit Letter of Commendation (Heuvelton Central School) 1994
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RESEARCH EXPERIENCE

Cornell University, Ithaca, NY
Ph. D. Candidate 2000 – 2005

- Purchased and arranged equipment and developed protocols for single sensillum electrophysiology analyses
- Designed and implemented gas chromatography coupled with electroantennographic detection studies
- Isolated and identified various volatile components using solid-phase microextraction and adsorbent sampling procedures as well as chromatography and mass spectrometry analyses
- Designed and implemented various wind/flight tunnel behavioral assays

Lund University, Lund, Sweden

1999-2000

Fulbright Scholar

- Served as Research Assistant in the Pheromone Group of the Department of Chemical Ecology and Ecotoxicology, resulting in two publications
- Used single sensillum electrophysiology to analyze olfactory receptor neuron physiology in an African scarab, *Pachnoda marginata*
- Performed volatile extractions and gas chromatography-mass spectrometry analyses to elucidate various plant chemicals
- Determined the attractiveness of volatiles using behavioral assays

Clarkson University, Potsdam, NY

1998-1999

Research Trainee

- Performed research on chemical mechanical polishing for computer chip manufacturing resulting in a patent revision (1998)
- Performed research on various chemical synthesis studies and coating methods (1999)
- Research in 1998 was among 60 projects selected for the 1999 Council on Undergraduate Research Posters on the Hill in Washington, D.C. and one of 10 selected for a special poster session

TEACHING EXPERIENCE

Cornell University, Ithaca, NY

Cornell University Graduate Teaching Development Workshop Volunteer

2003-2005

- Created and facilitated workshops designed to inform teaching assistants about various educational techniques
- Lead workshops in Teaching 101, Advanced Lesson Planning, and Listening Skills for TAs

Cornell Science Inquiry Partnerships Fellow

2003-2004

- Guided middle and high school students from several area schools in scientific research and inquiry learning
- Developed curriculum materials for national distribution to be posted on the CSIP website (<http://csip.cornell.edu>)
- Supervised and advised 53 General Biology and Advanced Placement high school students in the research, design and implementation of a project on human olfaction resulting in publication in a peer-reviewed journal
- Participated in a 1-credit seminar (ED 694/NR 694) focusing on issues related to science education

Introductory Biology Teaching Assistant

2001-2002

- Served as instructor for Fall and Spring semester Introductory Biology labs for two 3 hour lab courses of approximately 16 students each
- Prepared and taught laboratory lectures
- Supervised students during laboratory exercises and experiments
- Created and administered all in-class quizzes and preliminary exams given during the course
- Held weekly office hours and periodic review sessions

Nazareth College, Rochester, NY

Student Teaching

1998-1999

- Served as instructor for Life Science in a suburban Rochester Middle School
- Served as instructor for Regents and Non-Regents Chemistry in a suburban Rochester High School
- Prepared and executed daily lesson plans and unit plans
- Created and administered tests, quizzes and homework assignments

Laboratory Assistant for Sci 132 Nutrition Laboratory

1996-1998

- Assisted students and answered questions during laboratory experiments
- Prepared supplies and setup laboratory equipment
- Maintained course equipment and supplies

INSTRUMENTAL AND TECHNICAL SKILLS

Chemical Analysis

- GC and GC-MS identification
- IR, UV, and NMR spectroscopy
- SPME and other adsorption and extraction techniques
- chemical synthesis

Neurophysiology

- GC-EAD and GC-Single Sensillum recording
- Extracellular and Intracellular recording

Behavior

- Flight/wind tunnel behavioral assays
 - Y-tube and choice assays
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PUBLICATIONS

- **Olsson, SB**; Linn, Jr. CE; Roelofs, WL (2006). Correlating peripheral chemoreception and behavior among hybrid crosses of the *Rhagoletis* species complex. In preparation.
- **Olsson, SB**; Linn, Jr. CE; Roelofs, WL (2006). Abnormal olfactory receptor neuron responses to host volatiles in F₁ hybrid *Rhagoletis* populations. In preparation.
- **Olsson, SB**; Linn, Jr. CE; Roelofs, WL (2005). *The chemosensory basis for behavioral divergence involved in sympatric host shifts: I. Characterizing olfactory receptor neuron classes responding to key host volatiles.* Journal of Comparative Physiology A. DOI 10.1007/s00359-005-0069-2.
- **Olsson, SB**; Linn, Jr. CE; Roelofs, WL (2005). *The chemosensory basis for behavioral divergence involved in sympatric host shifts: II. Olfactory receptor neuron sensitivity and temporal firing pattern to individual key host volatiles* Journal of Comparative Physiology A. DOI 10.1007/s00359-005-0066-5.
- **Olsson, SB**; Barnard, J; Turri, L (2005). *Olfaction and identification of unrelated individuals: Examination of the mysteries of human odor recognition.* Journal of Chemical Ecology, In press.
- Larsson, MC; Stensmyr, MC; **Bice, SB** (MAIDEN NAME); Hansson, BS (2003). *Attractiveness of fruit and flower odorants detected by olfactory receptor neurons in the fruit chafer Pachnoda marginata.* Journal of Chemical Ecology, 29(5): 1253-1268.
- Stensmyr, MC; Larsson, MC; **Bice, S** (MAIDEN NAME); Hansson, BS (2001). *Detection of fruit- and flower-emitted volatiles by olfactory receptor neurons in the polyphagous fruit chafer Pachnoda marginata (Coleoptera: Cetoniinae).* Journal of Comparative Physiology A, 187(7): 509-519.

RESEARCH SUPPORT

- NSF Grant # 0343771, received graduate stipend for three years through grant funds, assisted in writing grant **2004-2006**
- Mike Villani Graduate Research Fund in Entomology **2004**
- W. Arthur and Alma D. Rawlins Graduate Student Endowment, travel funds **2004**

PRESENTATIONS

- Pennsylvania State University, University Park, PA, November 2005, Invited Speaker.
- NYS Agricultural Experiment Station, Cornell University, Geneva, NY, October 2005, Invited Speaker.
- Yale University, New Haven, CT, Carlson Lab, September 2005, Invited Speaker.
- Georgia Institute of Technology, Atlanta, Georgia, March 2005, Invited Speaker.
- Joint Meeting of the International Society of Chemical Ecology & Phytochemical Society of North America Meeting in Ottawa, Canada, July 2004, Poster Presentation.
- Cornell Institute for Biology Teachers "Return to Campus" Meeting, April 2004, Invited Speaker.
- Association for Chemoreception Sciences Meeting in Sarasota, FL, April 2003 and 2004, Poster Presentations, 2005, Slide Presentation.
- NAS Sackler Colloquium "Chemical Communication in a Post Genomic World" in Irvine, CA, January 2003 Poster Presentation.
- German-American Fulbright Commission 46th Annual Berlin Seminar in Berlin, Germany, March 2000, Invited Speaker.

PROFESSIONAL SOCIETIES AND ORGANIZATIONS

- American Chemical Society Member
- Association for Chemoreception Sciences Member
- International Society of Chemical Ecology Member
- Entomological Society of America Member
- Phi Eta Sigma National Honor Society
- Pi Delta Phi French Honor Society

OTHER ORGANIZATIONS AND SERVICE

- Habitat for Humanity Volunteer
 - Expanding Your Horizons Conference Volunteer for Young Women in Science, Math and Engineering
 - Cornell University Chorus
 - Ithaca Soccer
 - Nazareth College French Theater
 - Nazareth College Science Tutor
 - Nazareth College Science Club Officer
 - Nazareth College Campus Ministry Member
 - Nazareth College Vice President's Council Member
 - Girl Scout Camp Counselor
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