

Sarah P. Lawson, Ph.D.

Curriculum Vitae September 2017

Department of Biological Sciences, University of New Hampshire

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EDUCATION

2014	Ph.D. Biological Sciences	Vanderbilt University
2008	B.Sc., Biology, <i>Magna Cum Laude</i>	University of New Mexico

POSITIONS

2014-current	NSF Postdoctoral Fellow, University of New Hampshire, Advisor: S. Rehan
2009–2014	Doctoral Student, Vanderbilt University, Advisor: P. Abbot
2007–2008	Research Technician, University of New Mexico, Advisor: L. Larkin
2007–2008	Research Technician, Valles Caldera National Preserve, Advisor: R. Parmenter

GRANTS

2016	Entomological Society of America Student Transition/Early Professionals Travel Grant (\$1500)
2015	National Science Foundation Postdoctoral Research Fellowship in Biology (\$207,000)
2015	USDA Agriculture and Food Research Initiative Postdoctoral Fellowship (\$150,000- declined)
2014	Travel grant, International Union for the Study of Social Insects (\$1000)
2013	Carl Storm Underrepresented Minority Fellowship, Gordon Research Conference (\$1500)
2012	Travel grant, International Union for the Study of Social Insects- North America meeting (\$500)

AWARDS

2014	George C. Eickwort Student Research Award, International Union for the Study of Social Insects
2012	Hickory Stick Award for teaching excellence, Vanderbilt University
2012	Outstanding Oral Presentation, International Union for the Study of Social Insects meeting
2011	National Science Foundation Graduate Research Fellowship Honorable Mention
2010	President's Prize runner-up, Entomological Society of America
2008	Alliance for Minority Participation in Research Scholarship, University of New Mexico
2008	Undergraduate Diversity Program Scholarship, Evolution conference
2004-2008	Presidential Scholarship, University of New Mexico

PEER-REVIEWED PUBLICATIONS

-undergraduate researchers underlined

1. **Lawson SP**, Cook CN, Brent CS, Rehan SM (*in prep*) Biogenic amines regulates nesting cycle in the subsocial carpenter bee.
2. **Lawson SP**, Lombard SS, Shell WA, Rehan SM (*in prep*) The ecological underpinnings of social plasticity in small carpenter bees across a latitudinal gradient.
3. **Lawson SP**, Helmreich SL, Rehan SM (2017) Effects of nutritional deprivation on development and behavior in the subsocial bee *Ceratina calcarata* (Hymenoptera: Xylocopinae). *J. Experimental Biology* In press.
4. **Lawson SP**, Sigle L, Lind A, Legan A, Mezzanotte JN, Honegger HW, Abbot P (2017) An alternative pathway to eusociality: exploring the molecular and functional basis of fortress defense. *Evolution* 71(8):1986-1998.
5. **Lawson SP**, Ciaccio KN, Rehan SM (2016) Maternal manipulation of pollen provisions affects worker production in a small carpenter bee. *Behavioral Ecology Sociobiology* 70(11):1891-1900.

6. Rehan SM, Glastad K, **Lawson SP**, Hunt B (2016) The genome and methylome of a subsocial small carpenter bee, *Ceratina calcarata*. *Genome Biology and Evolution* 8(5):1401-1410.
7. Miller DG, **Lawson SP**, Estby H, Rinker D, Abbot P (2015) The origin and genetic differentiation of the socially parasitic aphid *Tamalia inquilinus*. *Molecular Ecology* 24:5751-5766.
8. **Lawson SP**, Legan A, Graham C, Abbot P (2014) Comparative phenotyping across a social transition in aphids. *Animal Behaviour* 96:117-125.
9. **Lawson SP**, Christian N, Abbot P (2014) Comparative analysis of the biodiversity of fungal endophytes in insect-induced galls and surrounding foliar tissue. *Fungal Diversity* 66(1):89-97.
10. Chavarria Pizarro* L., McCreery* H, **Lawson* SP**, Winston* M, O'Donnell S (2012) Sodium-specific foraging by leafcutter ant workers (*Atta cephalotes*, Hymenoptera: Formicidae). *Ecological Entomology* 37:435-438. *all contributed equally

INVITED TALKS

- 2017 Seacoast Science Center BioBlitz, Title: Surveying Native Bee Diversity, Rye, NH
- 2015 Symposium on caste evolution in social organisms, Title: The molecular basis of an effective defense in aphid soldiers, Entomological Society of America, Minneapolis, MN
- 2015 Department of Biological Sciences, Title: A comparative approach to understanding the evolution of social behavior using *Pemphigus* aphids as a model system, University of New Hampshire

CONFERENCE ACTIVITY

Symposia Organized

- 2017 Integrative and comparative approaches to understanding the evolution of social behavior, Entomological Society of America, Denver, CO
- 2014 Defense mechanisms of social insects, International Union for the Study of Social Insects International Congress, Cairns, Australia
- 2013 Ecological and evolutionary origins of sociality: connecting commonalities of social behavior across diverse insect taxa, Entomological Society of America, Austin, TX

Papers Presented

- 2017 **Lawson SP**, Helmreich S, Rehan S. Effects of nutritional deprivation on development and behavior in the subsocial bee *Ceratina calcarata*. Animal Behavior Society Conference, Toronto, CA.
- 2016 **Lawson SP**, Rehan S. A bee on the brink of eusociality: how maternal manipulation leads to the formation of social hierarchies in the subsocial bee, *Ceratina calcarata* (Hymenoptera: Apidae). International Congress of Entomology, Orlando, FL.
- 2015 **Lawson SP**, Abbot P. The molecular basis of an effective defense in aphid soldiers. Entomological Society of America, Minneapolis, MN.
- 2014 **Lawson SP**, Abbot P. A comparative approach to understanding the evolution of social behavior. International Union for the Study of Social Insects International Congress, Cairns, Australia.
Lawson SP, Legan A, Abbot P. Fortress defense in social aphids. International Union for the Study of Social Insects International Congress, Cairns, Australia. Poster.
- 2013 **Lawson SP**, Abbot P. The causes and consequences of the transition to sociality in aphids Entomological Society of America. Austin, TX.
Lawson SP, Abbot P. Social immunity and housekeeping behaviors in social aphids. Entomological Society of America, Austin, TX. Poster.
Lawson SP, Tooker JF, Abbot P. Aphid soldiers sequester phytochemicals to deter natural predators. Gordon Research Conference on Plant-Herbivore Interactions, Ventura Beach, CA. Poster.

- 2012 **Lawson SP**, Legan A, Abbot P. Do aphid soldiers elicit an immune response in victims? Annual Meeting of the Entomological Society of America, Knoxville, TN.
Lawson SP, Legan A, Abbot P. The basis of an effective defense in social aphids. North American Section of the International Union for the Study of Social Insects Meeting, Greensboro, NC.
- 2011 **Lawson SP**, Tooker JF, Abbot P. Do aphid soldiers sequester secondary plant compounds to combat natural enemies? Vanderbilt University Retreat, Nashville, TN.
Lawson SP, Christian N, Abbot P. Social immunity and the cost of conflict in a eusocial community. Association of Southeastern Biologists Annual Meeting, Huntsville, AL.
- 2010 **Lawson SP**, Abbot P. Social immunity and the cost of conflict in a eusocial community. Entomological Society of America, San Diego, CA.
Lawson SP, Abbot P. The effects of conflict on a eusocial community. Vanderbilt University Retreat, Nashville, TN. Poster.
- 2008 **Guilinger SP**, Larkin L. Let it Bee: Phylogeny of *Bioareolina*, *Plastandrea*, *Scapteropsis* and *Trachandrena* subgenera of *Andrena* (Hymenoptera: Andrenidae) based on five molecular loci. Evolution Conference. Minneapolis, MN. Poster

TEACHING EXPERIENCE

- 2017 Instructor, Honors Animal Behavior, University of New Hampshire
- 2015 Guest lecturer, Introduction to Biology, University of New Hampshire
- 2014 Certificate in College Teaching, Peabody College of Education, Vanderbilt University
- 2012 Instructor, Molecular biology pre-college course, Vanderbilt University
- 2011-2013 Instructor, Field ecology, Vanderbilt Summer Academy
- 2011 Guest lecturer, Comparative Social Evolution, Vanderbilt University
- 2011-2014 Teaching assistant, Advanced Introduction to Biology lab, Vanderbilt University
- 2009-2010 Teaching assistant, Introduction to Biology lab, Vanderbilt University

MENTORSHIP

Undergraduates

- Kiley Kennedy (2017-current) undergraduate at University of New Hampshire
- Salena Helmreich (2015-2017) graduate of Wheaton College
- Sean Lombard (2015-2017) graduate of University of New Hampshire
- Alona Brosh (2015) laboratory technician at Normandeu Associates, Inc.
- Kayleigh Kane (2015) graduate of University of New Hampshire
- Catherine Mitchell (2013-2014) graduate of Vanderbilt University
- Emily Neil (2013-2014) researcher at Max Planck Institute for Evolutionary Anthropology
- Perry Blecher (2013) graduate of Vanderbilt University
- Caroline Graham (2013) graduate of Grinnell College
- Andrew Legan (2012) graduate student at Cornell University
- Heather Etsby (2011-2013) medical student at U. Minnesota Medical School
- Hayden Hill (2011-2012) medical student at Tulane University
- Natalie Christian (2010-2012) graduate student at Indiana University
- Robin Frede (2009) Fishery analyst at New England Fishery Management Council

High school students

- Navu Gill (2012) undergraduate at Vanderbilt University

PROFESSIONAL SERVICE

- 2017 Manuscript reviewer for *Apidologie*, *Insectes Sociaux* and *Molecular Ecology*
- 2016 Manuscript reviewer for *Journal of Insect Science* and *Ecological Entomology*
- 2011-2012 Graduate Student Association President, Vanderbilt University

2009-2011 Graduate Student Association Speaker Chair, Vanderbilt University

COMMUNITY OUTREACH

2017 Social Buzz Facilitator, Science outreach fair, Animal Behavior Conference, Toronto, CA
Organizer, 3rd annual New Hampshire Bee BioBlitz, Ossipee, NH

2016 Presenter, Women in Science and Technology forum for high school students, Manchester, NH
Presenter, 4H Somersworth Middle School Entomology group, Durham, NH
Organizer, 2nd annual New Hampshire Bee BioBlitz, Hancock, NH
Presenter, Annual Northern New England Regional Junior Science and Humanities Symposium, Durham, NH

2015-2017 Instructor, STEAM Middle School Academy, Course: What does a scientist do, Dover, NH

2015 Volunteer, Pollinator Day, Durham, NH
Organizer, 1st annual New Hampshire Bee BioBlitz, Jackson, NH

2014 Presenter, Preston Taylor Ministries Summer Program, Nashville, TN
Presenter, Urban League Science, Nashville, TN

2013 Presenter, Brain Blast, Nashville, TN

2011-2013 Presenter, Tennessee Women in Science, Technology, Engineering, Research, Nashville, TN

2011-2014 Instructor, McMurray Middle School science lessons, Nashville, TN

2009-2013 Instructor, Vanderbilt Students Volunteer for Science, Nashville, TN

PROFESSIONAL DEVELOPMENT

2017 Environmental Genomics Course, Instructors: John Colbourne, Joe Shaw, and Ben King. Mount Desert Island Biological Laboratory, Bar Harbor, ME,

2017 New England Future Faculty Workshop, Northeastern University, Boston, MA

2012 Organization for Tropical Studies Course: Behavior, Ecology and Diversity of Neotropical Social Insects. Instructors: Sean O'Donnell and Floria Mora-Kepfer. La Selva and Las Cruces field stations, Costa Rica.

PROFESSIONAL MEMBERSHIP

2012-present International Union for the Study of Social Insects - North American Section

2009-present Association for Women in Science
Entomological Society of America

2008-present National Society of Collegiate Scholars
Phi Beta Kappa