Sara June Giacomini (Connon)

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(774) 521-4086

Education

North Carolina State University — **December 2017**
Graduate Certificate in Geospatial Information Systems — *Raleigh, NC*

University of Massachusetts — **December 2014**
B. S. in Biology — *Amherst, MA*

Cape Cod Community College — **May 2012**
A. A. in Liberal Arts — *West Barnstable, MA*

Professional Experience

Laboratory Manager — **2015 – 2019**
R.E. Irwin Lab (North Carolina State University) — *Raleigh, NC*

- Designed and performed laboratory and field experiments with a team of technicians.
- Management of daily laboratory tasks and administration, such as managing data, weekly schedules of technicians and ordering supplies needed for various projects.

Notable research:

- Experimentally tested the effects of multiple plant secondary compounds found in pollen and nectar on bee pathogens.
- Conducted toxicity exposure experiments of swainsonine (plant secondary metabolite found in locoweed) on bee health and performance.
- Studied interactions between carnivorous plants (Venus Fly-traps) and their pollinators.

Relevant skills:

- Extensive bumble bee husbandry, including rearing wild and commercial bumble bee colonies, maintain experimental hives, rearing queen-less bumble bee microcolonies.
- Microscopy and pathogen quantification.
- Managing a team of technicians and mentoring undergraduate students.
- Data management, statistical analysis using R software, and synthesis of results into a manuscript.

Laboratory Technician & Project Manager **2013 – 2015**

L.S. Adler Lab (University of Massachusetts) *Amherst, MA*

- Designed and performed laboratory and field experiments with a team of technicians.
- Management of daily laboratory tasks and administration, such as managing data, weekly schedules of technicians and ordering supplies needed for various projects.

Notable research:

- Experimentally tested the effects of a nectar secondary metabolites on pathogen management in bumble bees from both a laboratory and field perspective.
- Experimentally tested the toxicity of dietary Anabasine (a plant secondary metabolite found in nectar) on a bumble bee gut-pathogen.
- Experimentally tested the effect of various floral hedgerows on disease management, pollinator behaviors, and plant pollination.
- Experimentally tested how floral morphology affects the transmission of a gut-parasite (*C. bombi*) to bumble bees (*Bombus impatiens*).
- Experimentally tested the effects of a commonly used fungicide (chlorothalonil) on bee health and disease.

Relevant skills:

- Bumble bee husbandry, including rearing wild and commercial bumble bee colonies, maintaining experimental hives and rearing queen-less bumble bee microcolonies.
- Plant propagation in the field and a greenhouse setting.
- Managing a team of technicians and mentoring undergraduate students.
- Data management, statistical analysis using R software, and synthesis of results into a manuscript.

Research Technician **May 2013 – August 2013**

UMass Cranberry Research Station Extension *East Wareham, MA*

- Surveyed native bee diversity and conopid fly parasitoid presence within wild bumble bees present in Southeastern Massachusetts.
- Contributed to the first catalog of native specialist bees and associated host plants for the Northeast.

Publications & Writing Experience

Youngsteadt, E., Irwin, R. E., Fowler, A., Bertone, M. A., **Giacomini, S. J.**, Kunz, M., ... & Sorenson, C. E. (2018). Venus Flytrap Rarely Traps Its Pollinators. *The American Naturalist*, *191*(4), 000-000.

Palmer-Young, E. C., Hogeboom, A., Kaye, A. J., Donnelly, D., Andicoechea, J., **Connon, S. J.**, ... & Adler, L. S. (2017). Context-dependent medicinal effects of anabasine and infection-dependent toxicity in bumble bees. *PloS one*, *12*(8), e0183729.c

Giacomini, S. J., McArt, S., Adler, L. S., Fungicide effects on the pathogen load of a bumble bee gut parasite. (*Manuscript in progress*) *Presented as a poster at Ecological Society of America annual meeting in 2015

Giacomini, S. J., Cook, D., Giacomini, J. G., Gardner, D., Tarpy, D. R., Irwin, R.E., Dose-dependent effects of locoweed alkaloids on honey and bumble bees: Implications for bee health. (*Manuscript in progress*); *Presented as a poster at Ecological Society of America annual meeting in 2017

Grants and Awards

NC State Sustainability Fund ($4,000) - Design and installation of bee "hotels" (solitary bee nesting habitat) across campus to provide nesting habitat for bees and educate the public about solitary bees.

Cape Cod Garden Club Scholarship ($5,000) - Supporting residents of Cape Cod in biology related fields.

John and Abigail Adams Scholarship - First four years of tuition expenses paid.

Extension and Outreach

Outreach Coordinator **April 2018 – present**

North Carolina Entomological Society

Hosting and organizing volunteers to table events such as Bugfest in Raleigh.
Currently designing a course for members to learn about building their own bee hotel.

Ecology Society of America **August 2017**

Poster Session

Dose-dependent effects of locoweed alkaloids on honey and bumble bees: Implications for bee health
Sara J. Connon, North Carolina State University; Daniel Cook, USDA/ARS; Jonathan J. Giacomini, North Carolina State University; Dale Gardner, USDA/ARS; David R. Tarpy, North Carolina State University; Rebecca E. Irwin, North Carolina State University

NC State Native Bee Outreach **2015 – 2018**

Table events including the popular "Bugfest" to educate children and families on the importance of native bees in North Carolina. See website for more details.

UMass Extension Symposium **March 2015**

Poster Session "Pollinator Health for Agriculture Landscapes"

Ecological Society of America **August 2015**

Poster Session "Fungicide effects on the pathogen load of a bumble bee gut parasite"

Eureka! Program **June 2015**

STEM engagement for teenage girls- helped organize an immersive science workshop dissecting bees and observing their parasite under the microscope.

Outreach Coordinator and Webmaster **January 2014 - August 2015**

Fernald Club (University of Massachusetts)

Outreach and education of entomology for elementary school children in Western Massachusetts.
"Bee Hotels"- building habitats for solitary bees across UMass campus.
http://www.fernaldclub.org

References

Dr. Rebecca E. Irwin (P.I. at NC State)
802-279-1415 reirwin@ncsu.edu

Dr. Lynn Adler (P.I. of the Adler lab and mentor for independent study)
413-362-9158 lsadler@ent.umass.edu

Dr. Kim Skyrme (Post-doc in Adler Lab)
810-588-9873 kimberly.skyrm@gmail.com

Melissa Ha (Lab Manager in Adler Lab)
413-461-6709 mng2@mail.csuchico.edu

Dr. Anne Averill (P.I. at UMass Cranberry Ext)
978-895-3083 averill@eco.umass.edu

Marty Sylvia (Lab Manager at UMass Cranberry Ext)
508-265-6921 martys@umass.edu