

RAE OLSSON, PH.D.

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EDUCATION

- PhD** Washington State University, Entomology May 2020
Dissertation title: “Pollinator Communities Across Agricultural Gradients”
Committee: Dr. David Crowder, Dr. Walter Sheppard, Dr. William Pan
- B.A., B.Sc.** The Evergreen State College June 2014
B.Sc. Agricultural Sciences
B.A. Community Food System Development

HONORS AND AWARDS

- USDA Technical Assistance for Specialty Crops (Co-P.I. \$1.1m)** 2021
Grant supporting a three-year research project studying honey bee colony health and support to develop tools for beekeepers to monitor and support colony placement decisions for improved bee health and economic value
- USDA Predoctoral Fellowship (P.I. \$95,000)** 2017
Fellowship to study the pollinator communities in canola of eastern Washington and northern Idaho
- Western SARE Graduate Grant (P.I. \$24,870)** 2015
Grant to study non-bee pollinator communities across a gradient of urbanization in western Washington diversified farming systems
- Honorable Mention, NSF Graduate Research Fellowship Program** 2015, 2016
- Travel Award, Entomological Society of America (\$300)** multiple
- Donald Hastings Entomology Scholarship (\$600)** 2015
- Travel Award, Entomological Society of America (\$300)** multiple

PUBLICATIONS

Journal Publications

Bloom, Elias H., Elisabeth C. Oeller, **Rachel L. Olsson**, Matthew R. Brousil, Robert N. Schaeffer, Saumik Basu, Zhen Fu, and David W. Crowder. 2022. “Documenting Pollinators, Floral Hosts, and Plant–Pollinator Interactions in U.S. Pacific Northwest Agroecosystems.” *Ecology* 103(3): e3606. <https://doi.org/10.1002/ecy.3606>

Rae Olsson, Shared Traits: Entomologists and LGBTQ+ Folks, *American Entomologist*, Volume 67, Issue 4, Winter 2021, pg 68 <https://doi.org/10.1093/ae/tmab069> (published January 2022)

Olsson et al 2021. “Interactions between plants and pollinators across urban and rural farming landscapes.” *Food Webs*, (27) 1-12.
<https://doi.org/10.1016/j.fooweb.2021.e00194>

Olsson et al 2020. “Pollinators in Canola in the Pacific Northwest.” WSU Extension, PNW Series, published online at <https://pubs.extension.wsu.edu/pollinators-in-canola-in-the-inland-pacific-northwest>.

Olivia Smith, Abigail Cohen, John P. Reganold, Matthew S. Jones, Ropert J. Orpet, Joseph M. Taylor, Jessa H. Thurman, Kevin A. Cornell, **Rachel L. Olsson**, Yang Ge, Christina M. Kennedy, David W. Crowder. 2020. “Landscape context affects the sustainability of organic farming systems”. *PNAS* 117 (6) 2870-2878

Bloom, E.H., **Olsson, R.L.**, Wine, E., Schaeffer, R., Crowder, D.W., “An Introduction to Cavity Nesting Bees in the Puget Sound Region,” WSU Extension, Home Garden Series, 2018, FS293E

Bloom, E.H., **Olsson, R.L.**, Crowder, D.W. “A Citizen Science Guide to Wild Bees and Floral Visitors in Western Washington,” WSU Extension, Home Garden Series, 2017, EM110E

Reports

Bjerke et al 2019. *US Canola Association: Best Management Practices (BMPs) for Pollinator Protection in Canola Fields*

RESEARCH EXPERIENCE

Post-Doctoral Research Associate, Washington State University, Pullman WA, 2020 – present

Advisor: Dr. Brandon Hopkins

- To date, mentored eight graduate students, one undergraduate student
- Primary or coauthor on several funded grants, including \$1.1m grant from USDA TASC program

PhD, Washington State University, Pullman WA, 2015-2020

Advisor: Dr. David Crowder

- Won over \$100,000 in grants to support this research, presented approximately two dozen talks, webinars, and workshops over the course of degree

Washington State University, Puyallup WA, 2014-2015

Research Technician, Crowder Lab

- Collected data to support Elias Bloom’s dissertation research
- Assisted in teaching pollinator citizen science presentations

The Evergreen State College, Olympia WA

2013-2014

WSU Extension Intern, Thurston County Extension

- “Guide to Agriculture in Thurston County” Summary and bulletin for anyone interested in pursuing agriculture in Thurston County, WA. Included brief summary of county, city, and non-incorporated areas for full county
- “Populations of ground beetles in organic versus GMHT corn fields in the Pacific Northwest” A brief observational survey comparing ground beetle populations on two types of farming systems in rural Thurston County. Fulfilled writing requirement of independent research and writing component of B.Sc.

PROFESSIONAL TRAINING

- **Introduction to QGIS- Center for Wildlife Studies, 2022**
 - 4 week training in the use of QGIS for mapping and spatial data analysis
- **Creating an Inclusive Classroom- WSU, 2022**
- **Negotiating Conflict to a Happy Resolution- WSU, 2022**
 - Two-day workshop covering conflict negotiation
- **LGBTQ+ Inclusivity- 2022**
- **WSU Diversity, Equity, Inclusion, and Justice Summit- 2022**
 - Participated in two workshops: Mutual Aid, Mindfulness as an anti-racist practice
- **Intentional Inclusivity, WSU- 2022**
- **Community Equity Certificate, WSU Student Affairs- 2021**
 - Completed 32 hours of internal training related to diversity, equity, and inclusion. Final course date: July 15, 2021
- **Mental Health First Aid, 2019**
 - Washington State University, Pullman, October 29-31, 2019
 - Description: 8 hour training to support people experiencing crisis
- **Data Carpentry- 2018**
 - Washington State University, Pullman, October 25, 2018.
 - Description: Full day workshop on data management, database structure, and best practices
- **BOMBUSS- 2017**
 - Utah State University, Logan, August 20-24, 2017
 - Description: Intensive lecture series including methods research and development using bumble bees
- **WSU Extension Internship, Thurston County Extension, 2013-2014**
 - “Guide to Agriculture in Thurston County”
 - Primary organizer for a producer-consumer workshop that included around fifty farmers, small- and large-scale purchasers, and community non-profit organizations
 - Assisted in planning the 2014 Cascadia Small Grains Conference

TEACHING EXPERIENCE

WSU CEREO Data Workshop March 2021
Teaching Assistant, R workshops

Washington State University, Pullman WA Fall 2016, 2017
Teaching Assistant, Stats 511

- Stats 511, a graduate course averaging 40 students per semester, covering the following topics: experimental design, scientific writing, basic and intermediate statistical tests, using the R programming language
- Developed lab walkthroughs, tutorials for R
- Assisted in grading homework, exams for Dr. Crowder

Washington State University, Pullman WA Spring 2016
Teaching Assistant, Entomology 102

- Entomology 102, an undergraduate course averaging 80 students per semester, covering the following topics: medical and veterinary entomology, understanding the scientific method, basic scientific literacy
- Wrote lectures, assignments, and quizzes for labs
- Assisted in grading exams and assignments for lecture portion for Dr. Owen

Washington State University, Pullman WA Fall 2016
Teaching Assistant, AFS 101

- AFS 101, an undergraduate course averaging 80 students per semester, covering the following topics: global food systems, agricultural social science, basic science literacy, human nutrition
- Developed assignments, in-class activities, and quizzes

Graduate Students Mentored

- Samantha Dilday, Ph.D. student, expected graduation 2025
- Riley Reed, Ph.D. student, expected graduation 2025
- Mario Luppino, Ph.D. student, expected graduation 2024
- Kiersten Ritchie, Ph.D. student, expected graduation 2024
- Em Rendleman M.Sc., graduated 2022
- Anna Webb M.Sc., graduated 2021
- Connor Auth M.Sc., graduated 2021
- Stephen Onayemi M.Sc, graduated 2021

Undergraduate Students Mentored

- Riley Reed, graduated 2021
- Wyatt Mattingly, expected graduation Spring 2022
- Lucy Eggleston, graduated Spring 2019
- Konnor Flemming, graduated Spring 2017

Other teaching experience

- Assisted Elias Bloom in delivering citizen science workshops throughout 2015-2017
- Athletics tutor for WSU athletics department

The Evergreen State College, Olympia WA

Fall 2013- Spring 2014

Lab Instructor, Ecological Agriculture

- Prepared lectures, lab assignments, and insect identification instruction over the course of the quarter

PRESENTATIONS

Olsson, 2022. Pollinator protection in rangeland settings. Presented as part of the Rangeland Management section of the WA State Pesticide Applicator Continuing Education Course

Olsson, 2022. Protecting pollinators in your home garden. Part of Care of Creation Series at St James Episcopal Church, Pullman, WA.

Hopkins, Kulhanek, **Olsson, 2021.** Pollinator Health in the PWN. Co-organized symposium for Pacific Branch annual meeting of the Entomological Society of America.

Olsson, R.L., Crowder, D.W., “When it rains, it pours (nectar!).” Pacific Branch Entomological Society of America, Mar. 31- Apr 3, 2019. Submitted as part of graduate student competition

Olsson, R.L., Crowder, D.W., “The canola-pollinator relationships of eastern Washington and northern Idaho,” Entomological Society of America, Nov. 11-14, 2018. Vancouver, BC, Canada. Submitted as part of graduate student competition

Olsson, R.L., Crowder, D.W., “Environmental stresses and their effect on pollen and nectar quality,” Entomological Society of America, Nov. 5-8, 2017. Denver, CO. Submitted as part of graduate student competition

Olsson, R.L., Crowder, D.W., “Is city life affecting your diet? A study of bumble bee lipid content across urbanized landscapes,” Pacific Branch meeting of Entomological Society of America, Apr. 2-5, 2017. Portland, OR. Submitted as part of graduate student competition

Olsson, R.L., Crowder, D.W., Bloom, E.H., “Landscape Use and Bee Health,” International Congress on Entomology. Sept. 25-30, 2016. Orlando, FL. Submitted as part of graduate student competition

Olsson, R.L., Crowder, D.W., “What’s your favorite food? Floral preferences of honey bees and bumble bees in western Washington,” Entomological Society of America, Nov. 15 – 18, 2015. Minneapolis, MO. Submitted as part of graduate student competition

Invited Lectures

Puget Sound Beekeepers Monthly Meeting, May 2021
Enhancing wild pollinator habitat, Practice of Organic Farming, The Evergreen State College, August 2020

Wild Pollinators, Honey Bee Biology at Washington State University, Dec. 2020

“The Canola-Pollinator Relationship,” Research summary as part of University of Idaho’s *Cultivating the Harvest* Conference. March 2019.

“The Canola-Pollinator Relationship,” Research summary as part of WOCS Canola grower meetings. Jan 2018

“Research on Wild Pollinators,” University of Idaho Pollinator Seminar Series. Sept. 2015

“Characterizing pollinator health in the Pacific Northwest” WSU Entomology Colloquium series. Apr. 2015

Workshops and Webinars

- National Pollinator Week, series of workshops in mid-June. 2015-2018
- Pollinator Field Days, multiple 2015-2017
- [Providing habitat for wild bees on organic farms](#) Presented by eOrganic, 2016
- [Wild bee monitoring, education and outreach in organic farming systems webinar](#) Presented by eOrganic, 2016

PROFESSIONAL AFFILIATIONS

SACNAS, 2022- present
oSTEM, Out in STEM, 2020-present
Entomology Graduate Student Association, 2015- 2020
Entomological Society of America, 2014-Present
Northwest Scientific Association, 2014-Present

PROFESSIONAL SERVICE

- **Entomology department representative- CAHNRS DEI committee**
Washington State University. Sept. 2021- present
- **Author- University of California Integrated Pest Management**
Bee protection in IPM- 2021-present
- **Chair- Diversity, Equity, and Inclusion Committee**
Washington State University, department of Entomology. August 2020- present

- **Postdoc Representative- Chair's Advisory Committee**
Advises Entomology department chair on decisions, works in interest of departmental postdoctoral scholars. May 2020- present
- **Technical Working Committee- US Canola Association**
Assisted in writing Best Management Practices (BMPs) for Pollinator Protection in Canola Fields. Published March 2019.
- **Student Affairs Committee**
Entomological Society of America, 2018- present
- **Website and Social Media Coordinator**
Northwest Scientific Association, 2015-2018

COMMUNITY SERVICE

- **Pullman Good Food Co-Op**
 - Board of Directors, April 2021-October 2021
- **The Trevor Project**
 - Volunteer, 2018- 2021
- **Northwest Scientific Association**
 - Website committee member, 2015-2017
- **The Journal of Young Investigators**
 - Director of Communications, 2013-2015

LANGUAGES

English: Native Language

Spanish: Novice listener, novice speaker, novice writer, intermediate reader

French: Novice listener, intermediate reader, intermediate writer, novice speaker

American Sign Language: Novice signer