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

RESEARCH EXPERIENCE

Post-Doctoral Research Associate, Washington State University, Pullman WA 2020 – present
Advisor: Dr. Brandon Hopkins

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

PhD , Washington State University, Pullman WA 2015-2020
Advisor: Dr. David Crowder

- Qualifying Exam Passed: Feb 17, 2017
- 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.

TEACHING EXPERIENCE

WSU CEREO Data Workshop March 2021
Teaching Assistant, R workshops

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

- TAed 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

- TAed 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

- TAed 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

- Anna Webb, graduated 2021
- Connor Auth, graduated 2021
- Stephen Onayemi, graduated 2021
- Em Rendleman, expected graduation 2022

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

PUBLICATIONS AND PRESENTATIONS

Journal Publications

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.

Smith et al 2020. "Landscape context affects the sustainability of organic farming systems". PNAS117 (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*

Conference Presentations and Service

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, BS, 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 TRAINING

Community Equity Certificate, WSU Student Affairs
Completed 32 hours of internal training related to diversity, equity, and inclusion
Final course date: July 15, 2021

Mental Health First Aid
Washington State University, Pullman, October 29-31, 2019
Description: 8 hour training to support people experiencing crisis

Data Carpentry
Washington State University, Pullman, October 25, 2018
Description: Full day workshop on data management, database structure, and best practices

BOMBUSS
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

PROFESSIONAL AFFILIATIONS

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

PROFESSIONAL SERVICE

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, 2021-present

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, intermediate reader
French: Novice listener, intermediate reader, intermediate writer, novice speaker
American Sign Language: Novice signer

TECHNICAL SKILLS

Intermediate programming in R, statistical analysis in R, statistical analysis in JMP, proficient in using dichotomous key for identification, grant writing, technical editing, website development/editing in Weebly, Squarespace, WordPress

OTHER

SafeZone member
Blog and podcast writer/host for What's The Buzz podcast
Active skater and coach for Rolling Hills Derby Dames 2018-2020
Active skater and member of Board of Director for Palouse River Rollers 2015-2018