

DR. SAMANTHA A. WILLDEN

Cornell AgriTech, Department of Entomology

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EDUCATION

2017 – 2022 **Cornell University, Ph.D. (Entomology)**

Advisor: Dr. Gregory M. Loeb

Dissertation: Ecology and management of pests on low tunnel strawberry.

2014 – 2017 **Utah State University, M.S. (Ecology)**

Advisor: Dr. Edward W. Evans

Dissertation: Seasonal development of the biological control agent of Dalmatian toadflax, *Mecinus janthiniformis* (Curculionidae: Coleoptera), in Utah: Phenology, overwintering success, and mortality.

2009 – 2014 **Utah State University, B.S. (Biology)**

RESEARCH EXPERIENCE

2022 – **Postdoctoral researcher, Purdue University**

Advisor: Dr. Laura Ingwell

Responsibilities: Led research projects as part of a collaborative SCRI-group to optimize pest management under high tunnels to support growers of small diversified farms in urban growing systems.

2013 – 2014 **Field technician, Utah State University**

Supervisor: Dr. Edward W. Evans

Responsibilities: Assisted and led data collection of field projects evaluating biocontrol efficacy of classical biocontrol agents against invasive weeds in Utah.

Spring 2013 **Undergraduate Research Assistant, Utah State University**

Adviser: Dr. Frank Messina

Responsibilities: Led an undergraduate research project evaluating physiological tradeoffs associated with host shifts by herbivorous insects.

PEER-REVIEWED PUBLICATIONS

1. Rosser, E.C., **Willden, S.A.** and Loeb, G.M. 2022. Effects of SmartWater (a traceable UV marking system) on the dispersal, behavior and biocontrol efficacy of *Phytoseiulus persimilis*. *Experimental and Applied Acarology: Accepted for publication.*

2. **Willden, S.A.**, Uguine, T., and Loeb, G.M. 2022. The effect of UVB-blocking plastics on *Beauveria bassiana* and a conventional product against *Lygus lineolaris* on low tunnel strawberry. Pest Management Science. *In production*: <https://doi.org/10.1002/ps.7046>
3. **Willden, S.A.**, Pritts, M.P. and Loeb, G.M. 2022. Twospotted spider mite preference and performance on day-neutral strawberry in New York and role of structural characteristics in plant susceptibility. Journal of the American Pomological Society. 76(2): 66 – 80.
4. **Willden, S.A.**, Pritts, M.P., and Loeb, G.M. 2022. The effect of plastic low tunnels on natural enemies and pollinators in strawberry. Crop Protection 151: 105820. <https://doi.org/10.1016/j.cropro.2021.105820>
5. **Willden, S.A.**, Cox, K.D., Pritts, M.P., and Loeb, G.M. 2021. A comparison of weed, pathogen and insect pests between low tunnel and open-field grown strawberries in New York. Crop Protection. 139: 105388. <https://doi.org/10.1016/j.cropro.2020.105388>
6. **Willden, S.A.** and Evans, E.W. 2019. Summer development and survivorship of the weed biocontrol agent, *Mecinus janthiniformis* (Coleoptera: Curculionidae), within stems of its host, Dalmatian toadflax (Lamiales: Plantaginaceae), in Utah. Environmental Entomology. 48(3) 533-539 <https://doi.org/10.1093/ee/nvz042>
7. **Willden, S.A.** and Evans, E. W. 2017. Phenology of the Dalmatian toadflax biological control agent *Mecinus janthiniformis* (Coleoptera: Curculionidae) in Utah. Environmental Entomology. 47(1): 1-7. <https://doi.org/10.1093/ee/nvx174>
8. Anderson, J.M., **Willden, S.A.**, Wright, D.L. and Evans, E.W. 2015. Long term outcomes of population suppression of leafy spurge by insects in the mountain foothills of Northern Utah. The American Midland Naturalist. 174 (1): 1-13. <https://doi.org/10.1674/0003-0031-174.1.1>

AWARDS AND FELLOWSHIPS (\$50,405 RECEIVED TOTAL)

- 2021 **Mike Villani Graduate Student Fellowship (\$1,000)**
Competitive fellowship administered by Cornell AgriTech, Department of Entomology
- 2021 **1st Place Outstanding Student Presentation. Acarological Soc. of America (\$400)**
- 2021 **Cornell Center for Teaching Innovation Fellow (\$2,000)**
Competitive teaching fellowship for graduate students to organize workshops and programming for the Center for Teaching Innovation to support educators.
- 2020 **Cornell Entomology Rawlins Endowment (\$1,150)**
Departmental fellowship to support travel to entomology conferences.
- 2020 **Mike Villani Graduate Student Fellowship (\$1,000)**
Competitive fellowship administered by Cornell AgriTech, Department of Entomology
- 2020 **Paul J. Chapman Graduate Student Fellowship (\$40,000)**
Merit-based Cornell Entomology fellowship to support one year of graduate study
- 2019 **Cornell University Conference Travel Grant (\$1,405)**
University fellowship to support travel to entomology conferences.
- 2018 **1st Place Grad. Paper Competition. Entom. Soc. of America Meeting (\$250)**

- 2017 **Nominated for USU Student Association President's Award Scholarship**
- 2016 **2nd Place Graduate Paper Competition. XXV Intl. Congress of Entomology (\$100)**
- 2016 **3rd Place Graduate Poster Competition. West. Soc. of Weed Sci. Meeting (\$100)**
- 2016 **USU Ecology Center travel awards (\$1,000)**
Departmental fellowship that supports travel to conferences.
- 2016 **USU Office of Research and Graduate Studies travel awards (\$500)**
University fellowship that supports travel to conferences.
- 2013 **Sedley and Pearl Stanford Memorial Scholarship (\$500)**
Merit-based competitive Utah State University fellowship to support study in the Department of Biology
- 2011 **USU Alumni Scholarship (\$1,000)**
Needs-based competitive fellowship at Utah State University to support study by children of USU alumni at Utah State University

GRANTS (\$120,778 RECEIVED TOTAL)

- 2021 **USDA-NIFA Predoctoral Fellowship (not funded)**
Project: Exploring how rearing practices affect dispersal and biocontrol efficacy of predatory mites against spider mites on strawberry.
Lead PI with Co-PI Dr. Gregory M. Loeb
- 2019 – 2022 **USDA-NIFA Multistate Hatch Research Fund (\$105,000)**
Project: Impact of plastic low tunnels on the severity and management of strawberry pests in New York.
Co-PI with Lead PI Dr. Gregory M. Loeb
- 2018 – 2020 **Northeastern SARE Graduate Student Research Grant (\$14,988)**
Project: Low tunnel strawberries: survey of pest incidence and recommendations for biological control of two-spotted spider mite.
Lead PI with Co-PI Dr. Gregory M. Loeb
- 2017 **Andrew W. Mellon Student Research Grant (\$790)**
Project: Low tunnel strawberries: pest incidence and recommendations for biological of two-spotted spider mite
Lead PI with Co-PI Dr. Gregory M. Loeb

EXTENSION PUBLICATIONS AND VIDEOS

1. **Willden, S.A.** and Loeb, G. 2021. *Publication*. Updates: Applying *Beauveria bassiana* under UV-selective tunnels for control of *Lygus lineolaris*. New York State Berry Growers Association Newsletter.

2. **Willden, S.A.**, Ugine, T., and Loeb, G. 2021. *Publication*. Using UV blocking films to improve pesticide and biocontrol sprays against *L. lineolaris* on low tunnel strawberry. *Fruit Quarterly*. 29 (3): 28-31.
3. **Willden, S.A. and Loeb, G.** 2021. *Publication*. Applying *Beauveria bassiana* under UV-selective tunnels for control of *Lygus lineolaris*. *New York State Berry Growers Association Winter 2021 Newsletter article*.
4. **Willden, S.A.** 2020. *Informational online video*. Impact of UV selective plastics on crop management. (<https://youtu.be/5ZO2HfB2pc>). Produced in collaboration with TunnelBerries, a SCRI-funded research group.
5. **Willden, S.A.** and Loeb, G. 2020. *Publication*. Describing pest communities present on low tunnel vs. open field grown strawberry in New York. *Fruit Quarterly*. 28 (2): 15-18..
6. **Willden, S.A.** and Loeb, G. 2020. *Publication*. Two-spotted spider mite (*Tetranychus urticae*) preference for day-neutral strawberry cultivars. *New York State Berry Growers Association Spring 2020 Newsletter article*.
7. **Willden, S.A.** and Loeb, G. 2020. *Publication*. Biology and management of strawberry pests under low tunnels. *New York State Berry Growers Association 2020 Newsletter article*.
8. Orde, K. and **Willden, S.A.** 2019. *Instructional online video*. Low tunnel structures, installation and management. Co-produced in collaboration with TunnelBerries, a SCRI-funded research group. (<https://www.youtube.com/watch?v=Pi2K68Ke3e8&t%29=>).
9. **Willden, S.A.** 2019. *Informational online video*. Benefits of growing strawberries under low tunnels. Produced in collaboration with TunnelBerries, a SCRI-funded research group. (<https://youtu.be/jUxhpsH84ic>).
10. **Willden, S.A.** 2018. *Instructional online video*. Monitoring for two-spotted spider mite (*Tetranychus urticae*) on low tunnel strawberry. Funded by the Cornell Extension Outreach Assistantship. (<https://youtu.be/T0cNiSIeM8a0>)
11. **Willden, S.A., Hesler, S. and Loeb, G.** 2019. *Publication*. Management of mites and other pests of strawberries grown under low tunnels. *York State Berry Growers Association 2019 newsletter article*.

TEACHING EXPERIENCE

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| 2021 – 2022 | <p>Co-organized University-Wide Teaching Conference and Teaching Institutes, Cornell University, Center for Teaching Innovation</p> <p>These workshops were organized to assist graduate student TAs and early-career instructors on inclusive, engaging and effective teaching.</p> |
| Spring 2021 | <p>Co-Instructor. ENTOM 4940: Racial Justice Book Discussion Seminar</p> <p>Organized a course to discuss how racial identity impacts student experience and opportunities in academia and to initiate programs that improve DEI within departments at Cornell.</p> |
| Fall 2018 | <p>Teaching Assistant. ENTOM 3350: Naturalist Outreach Practicum, Cornell</p> <p>Supported the primary instructor in organizing course materials and organized meeting times between students and elementary educators in Tompkins County.</p> |

- Fall 2017 **Teaching Assistant. ENTOM 4440: Integrated Pest Management, Cornell**
 Gave several lectures and led weekly lab sessions associated with the lecture portion of the course. Graded assignments and term papers.
- 2015 – 2016 **Teaching Assistant. BIOL 3220: Field Ecology, Utah State**
 Assisted the primary instructor in organizing course materials and field outings. Graded assignments and facilitated learning sessions with students.
- 2015 – 2017 **Teaching Assistant. BIOL 4500: Applied Entomology, Utah State**
 Developed materials and led labs on insect ID. Also graded lab quizzes and exams, and facilitated learning sessions with students.
- 2015 – 2017 **Teaching Assistant. BIOL 1640: General Biology Laboratory, Utah State**
 Led labs associated with the associated general biology lecture. Graded lab quizzes and exams, and facilitated learning sessions with students.

INVITED TALKS AND PRESENTATIONS

1. **Willden, S.A.** 2022. *Podcast interview*. “Strawberry Chat” by Wenjing Guan and Miranda Purcell, Purdue University Extension.
2. **Willden, S.A.** Ugine, T., and G. Loeb. 2022. Using UV-selective plastics to improve efficacy of biopesticides on low tunnel strawberry. Empire State Fruit & Vegetable Expo.
3. **Willden, S.A.** and G. Loeb. 2021. The effect of rearing host plant on dispersal behavior of predatory mites. Current Advances in Acarology Symposium. Acarological Society of America Annual Meeting.
4. **Willden, S.A.** and G. Loeb. 2021. What we’ve learned about SWD and other pests in low tunnel strawberry systems. Empire State Fruit & Vegetable Expo.
5. **Willden, S.A.** and G. Loeb. 2021. Comparing dispersal patterns of predatory mites reared on alternative hosts. USDA-ARS Seminar Series, Temperate Tree Fruit & Vegetable Research Unit, Wapato, WA.
6. **Willden, S.A.** and G. Loeb. 2020. Dispersal of predatory mites reared on alternative hosts: a case study on low tunnel strawberry. Mite-y women in Acarology: Current Research from a Historical Perspective symposium. Entomological Society of America Virtual Annual Meeting.
7. **Willden, S.A.** and G. Loeb. 2020. The use of photoselective plastics for IPM on low tunnel strawberry. 2020 Northeast Integrated Pest Management Research Update Conference.
8. **Willden, S.A.** and G. Loeb. 2019. Biological control of arthropod pests on protected culture strawberry in New York. Early career professionals advocating for biological control symposium. Entomological Society of America National Meeting. St. Louis, MO.
9. **Willden, S.A.** and G. Loeb. 2019. Pests on low tunnel strawberry: What to expect and options for biological control. Northeast Integrated Pest Management Research Update Conference.

CONTRIBUTED PRESENTATIONS

1. **Willden, S.A.,** Ugine, T. and G. Loeb. 2021. *Infographic presentation*. Manipulating UV landscapes to improve biocontrol by entomopathogens. Entomological Society of America Annual Meeting. Denver, CO.

2. **Willden, S.A.** and G. Loeb. 2021. Comparing dispersal patterns of predatory mites reared on alternative hosts. Cornell AgriTech Annual Symposium. Geneva, New York.
3. **Willden, S.A.** and G. Loeb. 2020. Biological control of low tunnel strawberry pests. 9th Annual Cornell Entomology Symposium.
4. **Willden, S.A.** and G. Loeb. 2019. A biological survey of common strawberry pests on low tunnel versus open-field systems in New York. Cornell AgriTech Annual Symposium. Geneva, New York.
5. **Willden, S.A.** and G. Loeb. 2018. Efficacy of two predatory mites in controlling two-spotted spider mite on strawberry grown under low tunnels in New York. Entomological Society of America National Meeting. Vancouver, BC.
6. **Willden, S.A.** 2018. Developing instructional YouTube videos for cooperative extension: prospects, benefits, and challenges. Cornell AgriTech Annual Symposium. Geneva, New York.
7. **Willden, S.A.** and G. Loeb. 2018. Biological control of two-spotted spider mite (*Tetranychus urticae*) on low tunnel grown strawberry. Entomology Society of America, Eastern Branch Meeting. Annapolis, MD.
8. **Willden, S.A.** and G. Loeb. Efficacy of two predatory mites (*Neoseiulus fallacis* and *Phytoseiulus persimilis*) in controlling two-spotted spider mite (*Tetranychus urticae*) on strawberry grown under low tunnels in New York. Great Lakes Fruit Workers Meeting. Ithaca, NY.
9. **Willden, S.A.** and E.W. Evans. 2016. Phenology of the Biological Control Agent of Dalmatian Toadflax, *Mecinus janthiniformis* (Curculionidae: Coleoptera), in Utah. International Congress of Entomology XXV. Orlando, FL.
10. **Willden, S.A.** and E.W. Evans. 2016. Phenology of the Biological Control Agent of Dalmatian Toadflax, *Mecinus janthiniformis* (Curculionidae: Coleoptera), in Utah. Western Society of Weed Science Annual Meeting. Albuquerque, New Mexico.
11. **Willden, S.A.**, K. Saunders, and Messina, F. 2014. *Poster presentation*. Are diets of herbivorous insects constrained by genetic trade-offs across hosts?: A reversion experiment. Utah State Biology Undergraduate Symposium. Logan, Utah.

MENTORSHIP EXPERIENCE

- 2022 – Curr. **Savanna Ploessl**. Past research technician in the Ingwell lab and currently assisting in data analysis and manuscript preparation for her independent study.
Project: A biological survey of beneficial invertebrates and biological control services in urban gardens of the midwestern U.S.
- 2020 – 2022 **Yaroslav Grynshyn**. Currently employed in the Loeb lab as a research technician and worked with me on several projects. Reviewed Yaroslav's personal statements and CV for graduate school applications for the Fall 2022 cycle.
Project: Behavioral control of spotted-wing drosophila using attractive traps and lures.
- 2020 – 2022 **Emma Rosser**. Research technician in the Loeb lab and led an independent research project that I supervised. Currently employed with the Great Pond Foundation as a lead field technician.

- Project: Effects of SmartWater (a traceable UV marking system) on dispersal, behavior and biocontrol efficacy of *Phytoseiulus persimilis* (*manuscript in review*).
- 2018 **Alexis Ashe.** Cornell AgriTech Summer Scholar. Currently employed as a lab technician for Allele Diagnostics in Spokane, WA.
Project: Effects of strawberry cultivar on two-spotted spider mite oviposition and biocontrol efficacy by predatory mites *Neoseiulus fallacis* and *Phytoseiulus persimilis*. (*Presented at the AgriTech Summer Scholars Poster Symposium*)
- 2016 **Leander Rockwell.** Participant in the Native American Summer Mentorship Program. We worked together on several field projects in Dr. Evans' lab at Utah State University. Project: Experience in Native American Stem Mentorship Program.
https://digitalcommons.usu.edu/biology_posters/54/

COMMITTEE SERVICE AND LEADERSHIP

- 2021 **Co-organizer of student symposium at the 10th International IPM Meeting, Denver, CO.**
“Students in IPM: current research, techniques and challenges across borders and disciplines”
- 2021 **Co-organizer of symposium at the Entomological Society of America Meeting, Denver, CO**
“Current Advances in Acarology” for the Acarological Society of America.
- 2020 **Co-organized the Cornell AgriTech 5th Annual Symposium**
- 2020 **Jugatae (Graduate Entomology Club at Cornell) Co-President 2nd term**
- 2019 **Jugatae (Graduate Entomology Club at Cornell) President 1st term**
- 2018 **Students at the Geneva Agricultural Experiment Station (SAGES) club secretary**
- 2018 **Cornell Entomology Graduate Student Club (Jugatae) club secretary**
- 2016 **USU Entomology Club President**
- 2016 **USU Ecology Center Seminar Series Committee Member**
- 2015 **Tooele High School Weed Monitoring and Management Workshop, Tooele, UT.**
Coordinated and instructed this workshop for high school FFA students.

MANUSCRIPT REVIEW SERVICE

Invasive Plant Science and Management (1 review)

Pedobiologia (1 review)

COMMUNITY OUTREACH

- 2019 **Presented a hands-on lecture (“It’s a bug eat bug world”) at ScienceUncorked, Geneva, NY**
Part of a graduate student organized lecture series offered to the public at a local wine bar.

- 2019 **Organized and volunteered at a entomology display** table for “Fun on the Farm”
- 2017 **Volunteered at “Insectapalooza”** Ithaca, NY
Cornell Entomology’s open house
- 2019 **“Early College Awareness”** volunteer, Geneva NY
Organized displays and activities.
- 2018 **“Kids Science Day at the Big Red Barn”** volunteer, Ithaca, NY
Organized an entomology booth
- 2017 **Afterschool program educator** for South Seneca Elementary, Interlaken, NY
Gave an interactive lecture on entomology to 4-5th graders.
- 2017 **“Ecology Days”** volunteer **Dryden Elementary, NY**
Gave interactive talks to 5th graders on beneficial insects
- 2017 **“Migration Celebration”** volunteer Cornell Lab of Ornithology
Led the collection of bioacoustics for insects
- 2017 Gave requested talk on monarch butterflies to pre-k students. Beverly Martin Elementary, NY
- 2017 **“Empire Farm Days”** volunteer
Organized and presented an entomology display for participants
- 2017 **“Kids in Action”** volunteer at Antelope Island State Park, UT
Invited by Jolene Rose, the state wildlife biologist to organized a weed biocontrol workshop
- 2016 **“Fear no Weevil”** organizer
Organized this outreach event to fundraise for the USU entomology club.
- 2016 **Invited talk to Mountain Crest High FFA students**
Gave a guest lecture on entomology and agriculture and careers in science.
- 2015 **“Science Unwrapped”** volunteer
Organized and presented an entomology booth to participants
- 2014 **“USU Insect Tours”** volunteer
Led tours through USU’s insect museum and live zoo

COMMITMENT TO PROMOTING DIVERSITY, EQUITY AND INCLUSION IN STEM

- 2021 **Organized a workshop “Applying for academic jobs, from the applicant and search committee perspective”**
The goal of this workshop was make the application process more transparent and accessible to future professionals from underrepresented backgrounds.
- 2021 **Completed the Teaching & Learning in the Diverse Classroom Online Course**
- 2021 **Co-wrote the Cornell Entomology “[Field Safety Guidelines](#)”**
This policy is meant to provide recommendations on how to support the safety of workers, and especially those from underrepresented backgrounds in the field.
- 2020 **Co-established a [hardship fund](#)** to support Cornell Entomology Departmental members experiencing financial hardship through fundraising.
- 2020 **Co-established the Cornell Entomology’s “Racial Justice Book Club”** that became an officially listed seminar.
- 2019 **Nominated as a co-chair of Cornell’s Diversity Preview Weekend**
<http://www.inclusivecornell.org/>
Presented a talk on graduate student life and entomology research.

- 2018 **“Expanding Your Horizons” volunteer**
Organized an entomology booth to introduce entomology careers to girls in 7-9th grade
- 2016 **“Native American Stem Mentorship Program” volunteer**
<https://www.usu.edu/today/?id=55892>
Mentored several students participating in field research at USU.

PROFESSIONAL DEVELOPMENT

- 2021 Completed ALS 6015: Teaching in Higher Education Course
- 2020 Completed Mentoring Skills Certificate Program facilitated by Dr. Colleen McLinn
- 2019 Completed LEAD 5100: Leadership Development for Graduate Students
- 2018 WIM 7101: Writing in the Majors Course

PRESS

- 2019 Cornell CALS Featured Student for March 2019: <https://cals.cornell.edu/news/studentprofile-samantha-willden/>
- 2017 Assisted in the development of arthropod bioacoustics teaching software. Mentioned: <http://news.cornell.edu/stories/2017/10/insectapalooza-swarms-campus-oct-28>

CURRENT SOCIETY MEMBERSHIPS

SACNAS	2020-Current
The Acarological Society of America	2019-Current
Entomological Society of America	2016-Current
The Ecological Society of America	2019-Current