

Lauren Fessler

Graduate Research Assistant

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Education

M.S. in Plant Pathology University of Florida

Aug 2023 - Anticipated Aug 2025

B.S. in Biological and Plant Sciences Cornell University

Aug 2013 - May 2017
GPA: 3.3

Research Experience

Technician/Graduate University of Florida - Southwest Florida Research and Education Center

Research Assistant for Dr. Citrus Pathology

Ozgur Batuman

2023 – Present

- Conducted field and lab experiments exploring techniques to control citrus diseases including Huanglongbing (citrus greening, HLB) and citrus canker

**Research Associate/
Extension Assistant for** University of Tennessee
Dr. Amy Fulcher
Department of Plant Sciences

2018 – 2023

- Conducted research on increasing irrigation efficiency in nursery crops and the use of laser-guided spray technology in nursery and orchard crops
- Helped to plan, prepare, execute, and maintain experiments
- Assisted in grant writing and preparing scientific publications
- Supervised undergraduate interns

**Laboratory Technician for
Dr. Michael Milgroom**

2017 – 2018

Cornell University
Plant Pathology and Plant Microbe Biology

- Conducted research on factors influencing the evolution of aflatoxin production in *Aspergillus flavus*
- Performed daily lab responsibilities including execution of experiments, waste management, and data collection
- Analyzed data and developed protocols for future experiments

**Research Intern for
Dr. Chris Smart**

2016

Cornell Cooperative Extension

- Conducted multiple research trials on cherry tomatoes grown in high tunnels and evaluated the influence of disease resistance and pruning methods on yield and labor costs
- Collected data for ongoing Integrated Pest Management and nutrient testing trials with the goal of improving pest and nutrient management practices
- Assisted in planning and running a community outreach event that connected members of the community with local growers

**Undergraduate Research
Assistant for Dr. Rebecca
Nelson**

2014 – 2016

Cornell University
Department of Plant Pathology and Plant Microbe Biology

- Assisted Dr. Alice Churchill in determining the population structure of culturable microbes in the microbiome of the above ground tissues of maize

Publications

Fessler, L., Piestch, G., Wright, W., Zhu, H., Sun, X., & Fulcher, A. (2023). Characterizing spray deposition from variable- and constant-rate spray technologies: Implications for future optimization to target trunk and foliar pests. *Acta Horticulturae*, 1360(34), 267-289.

Fessler, L., Lockwood, D., Wright, W., Piestch, G., Sun, X., Yeary, W., Zhu, H., & Fulcher, A. (2023). Intelligent spray technology controls pests in nursery and orchard systems with reduced pesticide application rates. *Acta Horticulturae*, 1360(20), 151-176.

Fessler, L. & Fulcher, A. (2023). Irrigation calculations III: Capture factor. *UTIA Extension Publication*, D 208.

Fessler, L. & Fulcher, A. (2023). Irrigation calculations II: Leaching fraction. *UTIA Extension Publication*, D 200.

Fessler, L. & Fulcher, A. (2023). Irrigation calculations I: Distribution uniformity, application rate and run time of container grown crops. *UTIA Extension Publication*, D 196.

Fessler, L., Wright, W., Piestch, G., Schneider, L., Zhu, H., Fust, C., & Fulcher, A. (2022). Characterizing spray deposition for control of trunk pests from an experimental airblast sprayer with 5-port nozzle bodies. *Acta Horticulturae*, pending.

Cypher, Q, Wright, W. C., Sun, X., Fessler, L., & Fulcher, A. (2022). Automated leaching fraction-based irrigation system reduces leaching, conserves water, and supports crop growth in a commercial nursery. *Applied Engineering in Agriculture*, 38(5), 807-816.

Cypher, Q., Fulcher, A., Wright, W. C., Sun, X., & Fessler, L. (2021). Leachate and irrigation sensor development and performance in container nursery production. *Applied Engineering in Agriculture*, 37(1), 65-75.

Fessler, L., Fulcher, A., Schneider, L., Wright, W. C., & Zhu, H. (2021). Reducing the nursery pesticide footprint with laser-guided, variable-rate spray application technology. *HortScience*, 56(12), 1572-1584.

Nackley, L. L., Warneke, B., Fessler, L., Pscheidt, J. W., Lockwood, D., Wright, W. C., Sun, X., & Fulcher, A. (2021). Variable-rate spray technology optimizes pesticide application by adjusting for seasonal shifts in deciduous perennial crops. *HortTechnology*, 31(4), 479-489.

Fessler, L., Fulcher, A., Lockwood, D., Wright, W., & Zhu, H. (2020). Advancing sustainability in tree crop pest management: Refining spray application rate with a laser-guided variable-rate sprayer in apple orchards. *HortScience*, 55(9), 1522-1530.

Fulcher, A., Fessler, L., & Stackhouse, T. (2020). A green industry guide to plant patents and other intellectual property rights. *UTIA Extension Publication*, PB 1882.

Drott, M. T., Fessler, L. M., & Milgroom, M. G. (2019). Population subdivision and the frequency of aflatoxigenic isolates in *Aspergillus flavus* in the United States. *Phytopathology*, 109(5), 878-886.

Presentations

“Intelligent spray technology controls pests in nursery and orchard systems with reduced pesticide application rates” | 2022

International Horticultural Congress, poster presentation

“Assessing Tipping Bucket-Based Irrigation and Leachate Sensor Performance” | 2019

American Society of Horticultural Sciences Annual Conference, poster presentation

“A Dynamic Laser-Guided Sprayer Reduces Pesticide Use in Large Pot-in-Pot Production” | 2019

American Society of Horticultural Sciences Annual Conference, poster presentation

“Characterizing Spray Penetration of a Novel Sprayer into *Malus Domestica* ‘Golden Delicious’ Apple Trees at a Commercial Orchard” | 2019

American Society of Horticultural Sciences Annual Conference, poster presentation

Activities and Leadership

Alpha Zeta Fraternity (Agricultural, Professional Fraternity)

Cornell Chapter: Recruitment Chair 2014; President 2015, 2016

National Board: Alumni Representative 2017-2019; Chronicler 2019-2021; Vice President 2021-2023

Emerald Force Volleyball Club

U17 Girls’ Head Coach Winter 2022

U18 Boys’ Head Coach Winter 2023

Pi Alpha Xi (Horticulture Honor Society)

Cornell Chapter Co-President Fall 2016, Spring 2017