Elena M. Rhodes

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Profile.

I am a Biological Scientist at the University of Florida looking for a position as an agricultural researcher or a research and development team member. I have broad training in management of insect pests in fruits and vegetables both applied and basic (from an ecological standpoint) and have conducted several efficacy trials. In addition, I have special training in Geographic Information Systems (GIS) and geostatistics. I also have excellent skills in data analysis and research design.

Education and Training

PhD, Entomology 2010

University of Florida, Gainesville, FL Ecology and control of flower thrips in southern highbush blueberries in Florida. Dissertation Advisor: Dr. Oscar Liburd

Master of Science, Entomology 2005

University of Florida, Gainesville, FL Controlling twospotted spider mite (*Tetranychus urticae* Koch) in Florida strawberries with single and combination treatments of *Phytoseiulus persimilis* Athias-Henriot, *Neoseiulus californicus* (McGregor), and Acramite Thesis Advisor: Dr. Oscar Liburd

Bachelor of Arts, Biology 2003

New College of Florida, Sarasota, FL Thesis: The effects of depth, pH, depth of light penetration, and area on backswimmer (Hemiptera: Notonectidae) distribution in seasonal ponds of the Florida scrub Thesis Advisor: Dr. Elzie McCord

Publications

Research

Sarkar, N., E. M. Rhodes J. Spies, C. R. Roubos, B. A. Little, A. A. Sial, P. D. Fanning, R. Isaacs, and O. E. Liburd. 2020. Evaluation of non-target effects of OMRI-listed insecticides for management of *Drosophila suzukii* Matsumura in berry crops. Journal of Applied Entomology 144: 12-25.

Jaffe, B. D., A. Avanesyan, H. K. Bal, Yan Feng, J. Grant, J. M. Grieshop, J. C. Lee, O.

E. Liburd, **E. M. Rhodes**, C. Rodriguez-Saona, A. A. Sial, AiJun Zhang, and C. Guedot. 2018. Multistate comparison of attractants and the impact of fruit development stage on trapping *Drosophila suzukii* (Diptera: Drosophilidae) in raspberry and blueberry. Environmental Entomology 47: 935-945. DOI: 10.1093/ee/nvy052

- Rhodes, E. M., P. B. Avery, and O. E. Liburd. 2018. Efficacy of entomopathogenic fungal products for biological control of spotted wing drosophila (Diptera: Drosophilidae) under laboratory conditions. Florida Entomologist.
- Balusu, R. R., E. M. Rhodes, A. Majumdar, R. D. Cave, O. E. Liburd, and H. Y. Fadamiro. 2017. Biology, ecology, and management of *Microtheca ochroloma* (Coleoptera: Chrysomelidae) in organic crucifer production. J. Integr. Pest Manag. 8: 1-10.
- Liburd, O. E., H. H. Arevalo, and E. M. Rhodes. 2017. Efficacy of reduced-risk insecticides to control flower thrips in early-season blueberries and their effect on *Orius insidiosus*, a natural enemy of flower thrips. Agricultural Sciences 8 (5): 356-370.
- Rhodes, E. M., N. Benda, and O. E. Liburd. 2017. Monitoring and distribution of blueberry gall midge, *Dasineura oxycoccana*, in rabbiteye blueberries in Florida. Acta Horticulturae 1180: 305-312.
- **Rhodes, E. M.**, O. E. Liburd, and S. Grunwald. 2016. Examining the relationship between flower thrips (Thysanoptera: Thripidae) spatial distribution and blueberry (Ericales: Ericaceae) flower density. Florida Entomol. 99: 128-129.
- Balusu, R., E. Rhodes, O. Liburd, and H. Fadamiro. 2015. Management of yellowmargined leaf beetle *Microtheca ochroloma* (Coleoptera: Chrysomelidae) using turnip as a trap crop. J. Econ. Entomol. 108: 2691-2701.
- Rhodes, E. M., N. D. Benda, and O. E. Liburd. 2014. Field Distribution of *Dasineura oxycoccana* (Diptera: Cecidomyiidae) Adults, Larvae, Pupae, and Parasitoids and Evaluation of Monitoring Trap Designs in Florida. J. Econ. Entomol. 107: 310-318.
- Brennan, S. A., O. E. Liburd, J. E. Eger, and E. M. Rhodes. 2013. Species composition, monitoring, and feeding injury of stink bugs (Heteroptera: Pentatomidae) in blackberry. Journal of Economic Entomology. 106:912-923.
- **Rhodes, E. M.**, O. E. Liburd, and G. K. England. 2012. Effects of southern highbush blueberry variety and treatment threshold on flower thrips populations. J. Econ. Entomol. 105: 480-489.

- **Rhodes, E. M.**, O. E. Liburd, and S. Grunwald. 2011. Examining the spatial distribution of flower thrips in southern highbush blueberries utilizing geostatistical methods. Environ. Entomol. 40: 893-903.
- **Rhodes, E. M.** and O. E. Liburd. 2011. Flower thrips (Thysanoptera:Thripidae) dispersal from alternate hosts into southern highbush blueberry (Ericales: Ericaceae) plantings. Florida Entomol. 94: 311-320.
- Liburd, O. E., J. C. White, and E. M. Rhodes. 2007. The residual and direct effects of reduced-risk and conventional miticides on twospotted spider mites *Tetranychus urticae* Koch (Acari: Tetranychidae) and predatory mites (Acari: Phytoseiidae). Florida Entomol. 90: 249-257.
- Rhodes, E. M. and O. E. Liburd. 2006. Evaluation of predatory mites and Acramite for control of twospotted spider mites in strawberries in north central Florida. Journal of Economic Entomology. J. Econ. Entomol. 99: 1291-1298.
- Rhodes, E. M., O. E. Liburd, C. Kelts, S. I. Rondon, and R. R. Francis. 2006. Comparison of single and combination treatments of *Phytoseiulus persimilis*, *Neoseiulus californicus*, and Acramite (bifenazate) for control of twospotted spider mites in strawberries. Exp. Appl. Acarol. 39: 213-225.

Extension

- **Rhodes, E.**, L. Iglesias, J. Spies, and O. E. Liburd. 2018. Beetles vs. blueberries: update on flatheaded borers infesting blueberry plantings in central and north-central Florida. Blueberry News, summer 2018: 36-37.
- Rhodes, E. M. and O. E. Liburd. 2014. Beat blueberry gall midge. Growing Produce. Sept. 25, 2014. <u>http://www.growingproduce.com/fruits/berries/beat-blueberry-gall-midge/</u>.
- Liburd, O. E., E. M. Rhodes, E. Weibelzahl, and S. Brennan. 2014. Flower thrips in blackberries in Florida. ENY-881. Entomology and Nematology Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL.
- Rhodes, E. M. and O. E. Liburd. 2014. Yellowmargined leaf beetle: a pest of cole crops. ENY-872. Entomology and Nematology Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL.
- Arevalo, H. A., A. B. Fraulo, E. M. Rhodes, and O. E. Liburd. 2013. Key to the most common species of thrips found in early-season blueberry fields in Florida and southern Georgia. ENY-836 (IN679). Entomology and Nematology Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL.

- Liburd, O. E., E. M. Sarzynski, N. Benda, E. M. Rhodes, and B. J. Sampson. 2013. Blueberry gall midge: a major insect pest of blueberries in the southeastern United States. ENY-825 (IN458). Entomology and Nematology Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL.
- Liburd, O. E., A. Arevalo, and E. M. Rhodes. 2013. Integrated strategies for controlling flower thrips in southern highbush blueberries. IPM-140. Entomology and Nematology Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL.
- England, G. K., E. M. Rhodes, and O. E. Liburd. 2007. Thrips Monitoring in Florida Blueberries. ENY-839 (IN692), Entomology and Nematology Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL.
- Rhodes, E. M., and O. E. Liburd. November 2005. A predatory mite, *Neoseiulus californicus* (McGregor). *UF/IFAS Featured Creatures*. EENY-359. http://creatures.ifas.ufl.edu/beneficial/Neoseiulus californicus.htm.

Presentations

Research

- Rhodes, E. M., C. A. Chase, X. Zhao, and O. E. Liburd. 2019. The effect of variety and cover crop on twospotted spider mite, *Teranychus* urticae Koch, on two organic strawberry famrs in north-central Florida. Entomological Society of America Annual St. Louis, MO.
- Rhodes, E. M., C. A. Chase, X. Zhao, and O. E. Liburd. 2019. Movement and spatial distribution of spotted wing drosophila, *Drosophila suzukii*, in organic strawberries in Florida. Florida Entomological Society Annual Meeting, Jupiter, FL.
- Rhodes, E. M., C. A. Chase, X. Zhao, and O. E. Liburd. 2019. Spotted wing drosophila spatial distribution and movement on an organic strawberry farm in Florida. Entomological Society of America Southeastern Branch Annual Meeting, Mobile, AL.
- **Rhodes, E. M.**, C. A. Chase, X. Zhao, and O. E. Liburd. 2018. Ecology and management of the twospotted spider mite, *Tetranychus urticae*, in organic strawberries in Florida. Florida Entomological Society Annual Meeting, St. Augustine, FL.
- Rhodes, E. M., C. A. Chase, X. Zhao, and O. E. Liburd. 2018. The effect of cover crop

and variety on twospotted spider mites, *Tetranychus urticae*, and its natural enemies in organic strawberries. Entomological Society of America Southeastern Branch Annual Meeting, Orlando, FL.

- **Rhodes, E. M.,** C. A. Chase, X. Zhao, and O. E. Liburd. 2017. Spotted wing drosophila monitoring and distribution on organic strawberries in Florida. Entomological Society of America Annual Meeting. Denver, CO.
- **Rhodes, E. M.** and O. E. Liburd. 2016. Surveys for spotted wing drosophila, *Drosophila suzukii*, in strawberries and other small fruits in Alachua Co. Florida. XXV International Congress of Entomology. Orlando, FL.
- Rhodes, E. M., N. Benda, and O. E. Liburd. 2016. Monitoring and distribution of blueberry gall midge, *Dasineura oxycoccana* Johnson, in rabbiteye blueberries in Florida. XI International Vaccinium Symposium. Orlando, FL.
- Rhodes, E. M., O. E. Liburd, and C. Chase. 2015. Arthropod pest management on organic strawberries in Florida. Entomological Society of America Annual Meeting. Minneapolis, MN.
- Rhodes, E. M. S. Sharma, H. Alborn, N. Benda, and O. E. Liburd. 2015. A trap and lure for monitoring blueberry gall midge (*Dasineura oxycoccana* Johnson) in Florida blueberries. Florida Entomological Society Annual Meeting. Ft. Myers, FL.
- **Rhodes, E. M.** and O. E. Liburd. 2014. Clear sticky sheets for monitoring blueberry gall midge, *Dasineura oxycoccana* (Johnson), and parasitoid rearing from flower and leaf buds. Entomological Society of America Annual Meeting. Portland, OR.
- **Rhodes, E. M.** and O. E. Liburd. 2014. Blueberry gall midge (Dasineura oxycoccana Johnson) monitoring in rabbiteye blueberries in Florida. Florida Entomological Society Annual Meeting. Jupiter, FL.
- **Rhodes, E. M.** and O. E. Liburd. 2013. Managing yellow margined leaf beetle (*Microtheca ochroloma* Stål) in organic cole crops with trap cropping. Entomological Society of America Annual Meeting, Austin, TX.
- **Rhodes, E. M.** and O. E. Liburd. 2013. Monitoring blueberry gall midge (*Dasineura oxycoccana* Johnson) and mapping the distribution of the midge and its parasitoids in rabbiteye blueberries. Florida Entomological Society Annual Meeting. Naples, FL.
- Rhodes, E. M. and O. E. Liburd. 2012. Evaluation of traps for monitoring blueberry gall midge (*Dasineura oxycoccana* Johnson) and using SADIE analysis to model midge and parasitoid distribution in rabbiteye blueberries. Entomological Society of America Annual Meeting. Knoxville, TN.

- Rhodes, E. M., O. E. Liburd, H. Fadamiro, and R. Balusu. 2012. Trap cropping for management of the yellow margined leaf beetle (*Microtheca ochroloma* Stål) in organic cruciferous crops. Florida Entomological Society Annual Meeting. Jupiter, FL.
- **Rhodes, E. M.,** and R. F. Mizell. 2011. Potential attractants for the redbay ambrosia beetle (*Xyleborus glabratus* Eichhoff). Florida Entomological Society Annual Meeting. Ft. Myers Beach, FL.
- **Rhodes, E. M.**, and O. E. Liburd, 2010a. Modeling the relationship between southern highbush blueberry flower density and flower thrips abundance. Entomological Society of America Annual Meeting. San Diego, CA.
- **Rhodes, E. M.**, and O. E. Liburd, 2010b. The effect of adjacent plant communities on the development of flower thrips populations in southern highbush blueberries in Florida. Florida Entomological Society Annual Meeting. Jupiter, FL.
- **Rhodes, E. M.**, and O. E. Liburd, 2009a. Changes in flower thrips spatial distribution over time on a southern highbush blueberry field in North-central Florida. Entomological Society of America Annual Meeting. Indianapolis, IN.
- **Rhodes, E. M.**, and O. E. Liburd, 2009b. Flower thrips (*Frankliniella* spp.) dispersal into blueberry fields over space and time. Florida Entomological Society Annual Meeting. Ft. Meyers Beach, FL.
- Rhodes, E. M., and O. E. Liburd. 2008a. Examining flower thrips distribution in southern highbush blueberries utilizing geostatistical methods to improve monitoring techniques. Entomological Society of America Annual Meeting. Reno, NV.
- **Rhodes, E. M.**, and O. E. Liburd, 2008b. The effect of southern highbush blueberry variety on thrips numbers and fruit injury in Florida. Florida Entomological Society Annual Meeting. Jupiter, FL.
- **Rhodes, E. M.**, and O. E. Liburd. 2007a. Steps toward determining an economic injury level (EIL) for thrips on southern highbush blueberries in Florida. Entomological Society of America Annual Meeting. San Diego, CA.
- **Rhodes, E. M.**, and O. E. Liburd. 2007b. The effect of treatment threshold and variety on thrips populations in Florida's southern highbush blueberries. Annual Meeting of the Colombian Entomological Society (SOCOLEN), Cartagena, Columbia.
- **Rhodes, E. M.**, and O. E. Liburd. 2007c. The effect of variety, treatment threshold, and insecticides on flower thrips management in Florida's southern highbush blueberries. Florida Entomological Society Annual Meeting. Sarasota, FL.

- Rhodes, E. M., O. E. Liburd, and C. Kelts. 2005. Comparison of single and combination treatments of *P. persimilis*, *N. californicus*, and Acramite for control of twospotted spider mite in Florida strawberries Entomological Society of America Annual Meeting. Ft. Lauderdale, FL.
- Rhodes, E. M., and O. E. Liburd. 2005. Controlling Twospotted Spider Mite (*Tetraenuchus urticae* Koch) in Florida with combination treatments of *Phytoseiulus persimlis, Neoseiulus californicus*, and Acramite. Florida Entomological Society Annual Meeting. Ft. Myers, FL.
- **Rhodes, E. M.**, and O. E. Liburd. 2004a. Control of twospotted spider mites on strawberry in North Florida with predatory mites and Acramite Entomological Society of America Annual Meeting. Salt Lake City, Utah.
- **Rhodes, E. M.**, and O. E. Liburd. 2004b. Evaluation of predatory mites and reduced-risk miticide for control of twospotted spider mites in north-central Florida. Florida Entomological Society Annual Meeting. Ft. Lauderdale, FL.

Extension

- **Rhodes, E. M.** 2016. Basic Entomology for Master Gardeners. Master Gardeners Class 9/7/16. Ocala, FL.
- Rhodes, E. M. 2016. Thrips, mite, and beetle update. Strawberry Pest Management Workshop, Bradford Co. Extension Office, Starke, FL. Feb. 18, 2016.
- Rhodes, E. M. 2015. Developing an IPM strategy. Managing Yellowmargined Leaf Beetle (YMLB), eOrganic webinar. Dec. 9, 2015.
- **Rhodes, E. M.** 2015. Basic Entomology for Master Gardeners. Master Gardeners Class 9/2/15. Ocala, FL.
- Rhodes, E. M. 2015. Insect pest management in organic strawberries in Florida. Grower workshop. March 3, 2015. Frog Song Organics, Hawthorne, FL.
- Rhodes, E. M. 2015. Spotted Wing Drosophila workshop at the Florida Blueberry Growers Association's 2015 Spring Conference. Feb. 17, 2015. Trinkle Center, Plant City, FL.
- **Rhodes, E. M.** 2008. Sprayer calibration, chemical application, and precision agricultural technologies. Extension workshop, South Florida Community College, Avon Park, FL.

Grants and Awards

Liburd, O. E. and E. M. Rhodes. 2013-2014. Monitoring and management of current,

emerging, and invasive arthropod pests of Florida strawberries. Florida Strawberry Growers Association \$22,669.00

- Liburd, O. E. and E. M. Rhodes. 2013-2014. Improving integrated pest management of key pests to increase productivity and sustainable production of Florida blueberries. Specialty Block Grant, Florida Department of Agriculture and Consumer Services \$103,180.00
- Liburd, O. E., E. M. Rhodes, and D. G. Miller.2010-2012. Developing integrated pest management strategies for controlling key pests in Florida blueberries. Specialty Block Grant, Florida Department of Agriculture and Consumer Services \$123,000.00
- Liburd, O. E. and E. M. Rhodes. 2011-2012. Investigating various tactics of intercropping buckwheat with squash to increase natural enemy populations, reduce pest and disease pressure, and increase yield. On-Farm Research Grant, Southern Region Sustainable Agriculture Research and Education (SSARE) Program \$14,978.00
- England, G. K., O. E. Liburd, and E. M. Rhodes. 2006. Action Threshold and Sampling Tools for Thrips Control in Florida Blueberries. University of Florida, Institute of Food and Agricultural Sciences 2005-2006 Integrated Pest Management Grant. \$5000.00

Grinter Fellowship. 2006-2009. \$4000.00 per year (totaling \$12,000).

- University of Florida Alumni Fellowship, Aug. 2007 Aug. 2010. \$18,000 per year + tuition wavier
- **Rhodes, E. M.** 2010. Florida Entomological Society. Travel grant. Annual Meeting. \$180.00
- Rhodes, E. M., and O. E. Liburd, 2009b. Flower thrips (*Frankliniella* spp.) dispersal into blueberry fields over space and time. Florida Entomological Society Annual Meeting. Ft. Meyers Beach, FL. 3rd Place in Ph.D. student paper competition. \$125.00
- **Rhodes, E. M.** 2009. The effect of variety and insecticide application on the species complex of flower thrips in southern highbush blueberries in Florida. Florida Entomological Society. Research grants. \$250.00
- **Rhodes, E. M.** 2009. Florida Entomological Society Travel Grant for travel to the ESA annual meeting. \$200.00
- **Rhodes, E. M.** 2008. Florida Entomological Society Travel Grant for travel to the ESA annual meeting. \$220.00

- Rhodes, E. M. 2007, 2008, and 2009. University of Florida Graduate Student Council Travel Grant. \$250.00
- Rhodes, E. M. 2007. Florida Entomological Society Graduate Student Travel Grant. \$300.00
- **Rhodes, E. M.** 2007. Monitoring and control of Florida flower thrips, *Frankliniella bispinosa* (Morgan,) on southern highbush blueberries in Florida. Florida Entomological Society. Research grants. \$100.00
- **Rhodes, E. M.** 2005 and 2007. Institute of Food and Agricultural Science Travel Grant, \$200.00
- Rhodes, E. M. 2004, 2005, 2007, 2008, 2009. Florida Entomological Society. Travel grant. Annual Meeting. \$100.00
- Rhodes, E. M. 2004 and 2005. Florida Entomological Society. Research grants, Controlling twospotted spider mite (*Tetraenuchus urticae* Koch) in Florida strawberries with single and combination treatments of *Phytoseiulus persimlis* Athias-Henriot, *Neoseiulus californicus* (Mcgregor), and Acramite. \$100.00

Research and Professional Experience

- Nov. 2017-present: **Biological Scientest III** University of Florida, Gainesville, FL.
- Nov. 2011 Nov. 2017: **Postdoctoral Research Associate** Monitoring and management of yellowmargined leaf beetle in organically grown cole crops in Florida University of Florida, Gainesville, FL.
- Nov. 2010 Nov. 2011: Postdoctoral Research Associate Methods for control of the Redbay Ambrosia Beetle, *Xyleborus glabratus* Eichhoff, in the Southeastern United States North Florida Research and Education Center, Quincy, FL.

Aug. 2010 - Nov. 2010: Research Assistant 1

Flower thrips in Florida blackberries University of Florida, Gainesville, FL.

Aug. 2007- Aug. 2010: Graduate Research Fellow Improving methods of monitoring and controlling flower thrips (*Franklinella spp.*) in early season blueberries in Florida University of Florida, Gainesville, FL.

Aug. 2006 - Aug. 2007: Graduate Research Assistant

Improving methods of monitoring and controlling flower thrips (*Franklinella spp.*) in early season blueberries in Florida University of Florida, Gainesville, FL.

Aug. 2005 - Aug. 2006: Research Assistant 1

Timing *Neoseiulus californicus* (McGregor) releases for control of the twospotted spider mite (*Tetranychus urticae* Koch) in Florida Department of Entomology and Nematology University of Florida, Gainesville, FL.

Aug. 2003 - Aug. 2005: Graduate Research Assistant

Controlling twospotted spider mite (*Tetranychus urticae* Koch) in Florida strawberries with single and combination treatments of *Phytoseiulus persimilis* Athias-Henriot, *Neoseiulus californicus* (McGregor), and Acramite Department of Entomology and Nematology University of Florida, Gainesville, FL.

Aug. - Dec. 2002: Internship

The effects of depth, pH, depth of light penetration, and area on backswimmer (Hemiptera: Notonectidae) distribution in seasonal ponds of the Florida scrub Archbold Biological Station Invertebrate Laboratory Lake Placid, FL

Jan. 2002: Internship

Study of Neutrophils Infectious Diseases Laboratory Baylor College of Medicine, Houston, Texas

Jan. 2001: Independent Study Project

Organic Gardening with Emphasis on Organic Pest Control New College of Florida Sarasota FL.

Jan. 2000: Independent Study Project

Ecology of Sarasota Bay New College of Florida Sarasota, FL

Sept. 1998 - May 1999: Internship

The Life Cycle of *Aplysia californica* The University of Miami Experimental Hatchery University of Miami, Miami, FL

Professional Memberships

Entomological Society of America

Florida Entomological Society Gamma Sigma Delta The National Scholars Honor Society

Toastmasters Interantional

Area 70 Governor (July 2009 - June 2010)

Has held office as secretary/treasurer (July 2005 - June 2006), Vice President of Education (July 2006 - June 2007, July 2018 - present), Sgt. at Arms (July 2007 – June 2008, July 2010 – July 2012), President (July 2008 - July 2009), Treasurer (July 2009 - June 2010, Jul 2015 – June 2018) of the Talking Gators (club 817767) Toastmasters club.

Skills

GIS and geostatistics experience including ArcGIS, STISS, SGeMs, GPS Pathfinder, and SADIEShell software

Computer skills with expertise in Microsoft Word, Excel, and Powerpoint and some experience with SAS, photoshop, and many others.

Independent researcher.

Experimental design, data collection, data analysis.

Insect mounting and preserving.

Microscope work.

Digital photography.

Insect collecting including sweep netting, aquatic sampling, and use pf pan, sticky, pitfall, and malaise traps.

Gardening and care of greenhouse plants.