

LORI R. SPEARS, Ph.D.

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EDUCATION

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| 2012 | Ph.D. Ecology, Utah State University, Logan, UT. |
| 2001 | B.S. Anthropology, Weber State University, Ogden, UT. |

PROFESSIONAL APPOINTMENTS

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| 8/2016-present | Professional Practice Assistant Professor & Invasive Species Survey Coordinator, Department of Biology, Utah State University, Logan, UT. |
| 4/2013-7/2016 | Cooperative Agriculture Pest Survey (CAPS) Program Co-Coordinator, Department of Biology, Utah State University, Logan, UT. |

REFEREED PUBLICATIONS

1. Spears LR, C Looney, H Ikerd, JB Koch, T Griswold, JP Strange, and RA Ramirez. 2016. Pheromone lure and trap color affects bycatch in agricultural landscapes of Utah. *Environmental Entomology* 45:1009-1016.
2. Spears LR and RA Ramirez. 2015. Learning to love leftovers: using by-catch to expand our knowledge in entomology. *American Entomologist* 61:168-173.
3. Ramirez RA and LR Spears. 2014. Stem nematode counteracts plant resistance of aphids in alfalfa, *Medicago sativa*. *Journal of Chemical Ecology* 40:1099-1109.
4. Spears LR and JA MacMahon. 2012. An experimental study of spiders in a shrub-steppe ecosystem: the effects of prey availability and shrub architecture. *Journal of Arachnology* 40:218-227.
5. Spears LR and JF Cavitt. 2003. The prevalence and effects of avian pox on body condition and plumage coloration in northern Utah populations of house finches (*Carpodacus mexicanus*). *Utah Birds* 17:25-33.

SELECT EXTENSION PUBLICATIONS

Guides

1. Spears LR, R Davis, DG Alston, and RA Ramirez. 2016. First detector guide to invasive insects: biology, identification, and monitoring. Utah Plant Pest Diagnostic Laboratory and USU Extension.

2. Alston DG, LR Spears, C Nischwitz, and C Burfitt. 2016. Invasive fruit pest guide for Utah: insect and disease identification, monitoring, and management. Utah Plant Pest Diagnostic Laboratory and USU Extension.
3. Spears LR and RA Ramirez. 2014. Invasive insect field guide for Utah. Utah Plant Pest Diagnostic Laboratory and USU Extension.

Fact Sheets

1. Spears LR, R Davis, and RA Ramirez. 2015. Invasive insect look-alikes: mistaken insect identity. Factsheet ENT-175-15-PR. Utah State University Cooperative Extension.
2. Spears LR, R. Davis, and RA Ramirez. 2014. Emerald ash borer [*Agilus planipennis* (Fairmaire)]. Factsheet ENT-171-14-PR. Utah State University Cooperative Extension.

Newsletter Articles

1. Spears LR. 2016. New honey bee pest detected in Utah. Utah Pests News, Utah Plant Pest Diagnostic Laboratory and USU Extension. Vol 10: Summer edition.
2. Spears LR. 2016. Velvet longhorned beetle. Utah Pests News, Utah Plant Pest Diagnostic Laboratory and USU Extension. Vol 10: Spring edition.
3. Spears LR. 2016. New invasive fruit pest detected in Utah. Utah Pests News, Utah Plant Pest Diagnostic Laboratory and USU Extension. Vol 10: Winter edition.
4. Spears LR. 2016. Two new invasive agricultural pests in the United States. Utah Pests News, Utah Plant Pest Diagnostic Laboratory and USU Extension. Vol 10: Winter edition.
5. Spears LR. 2015. Ghosts of holiday pests. Utah Pests News, Utah Plant Pest Diagnostic Laboratory and USU Extension. Vol 9: Fall edition.
6. Spears LR. 2015. New invasive threatens small grains production in Utah. Utah Pests News, Utah Plant Pest Diagnostic Laboratory and USU Extension. Vol 9: Summer edition.
7. Spears LR. 2015. Integrated pest information platform for extension and education (iPIPE): a new early warning system for invasive fruit pests in Utah. Utah Pests News, Utah Plant Pest Diagnostic Laboratory and USU Extension. Vol 9: Summer edition.
8. Spears LR. 2015. Invasive pest alert: brown marmorated stink bug. Utah Pests News, Utah Plant Pest Diagnostic Laboratory and USU Extension. Vol 9: Summer edition.
9. Spears LR. 2015. Volunteers are critical to invasive species work. Utah Pests News, Utah Plant Pest Diagnostic Laboratory and USU Extension. Vol 9: Winter edition.
10. Spears LR. 2014. Update on spotted wing drosophila and brown marmorated stink bug. Utah Pests News, Utah Plant Pest Diagnostic Laboratory and USU Extension. Vol 8: Fall edition.
11. Spears LR. 2014. Keep firewood close to home. Utah Pests News, Utah Plant Pest Diagnostic Laboratory and USU Extension. Vol 8: Summer edition.
12. Spears LR. 2014. Insect leftovers from early detection surveys. Utah Pests News, Utah Plant Pest Diagnostic Laboratory and USU Extension. Vol 8: Spring edition.
13. Spears LR. 2014. Emerald ash borer hits close to home. Utah Pests News, Utah Plant Pest Diagnostic Laboratory and USU Extension. Vol 7: Fall edition.

14. Spears LR. 2013. Prevention is key with invasive pests. Utah Pests News, Utah Plant Pest Diagnostic Laboratory and USU Extension. Vol 7: Summer edition.
15. Spears LR. 2013. Early and ongoing monitoring of invasive pests. Utah Pests News. Utah Plant Pest Diagnostic Laboratory and USU Extension. Vol 7: Spring edition.

FUNDED GRANTS

1. Walgenbach J et al, including LR Spears. 2016-2021. Management of brown marmorated stink bug in U.S. specialty crops. USDA Specialty Crop Research Initiative Program. \$9,164,909 (\$113,813 USU's portion).
2. Alston DG and LR Spears. 2016-2018. A new invasive insect pest of specialty crops in Utah, the brown marmorated stink bug: plant host utilization in diverse urban-agricultural landscapes and promoting biological control. Utah Agricultural Experiment Station Seed Grant Program. \$55,000.
3. Spears LR, C. Nischwitz, and DG Alston. 2017-2019. Utah vegetable pest program. USDA-AFRI-NIFA. \$80,000.
4. Spears LR. 2016-2017. Intern for invasive species outreach and education. Extension Internship Program, Utah State University. \$4,000.
5. Ramirez RA and LR Spears. 2016-2017. Utah plant pest survey and detection project. USDA-APHIS-PPQ (CAPS). \$69,284.
6. Spears LR. 2016-2017. Small grains commodity survey. USDA-APHIS-PPQ (CAPS). \$11,420.
7. Ramirez RA and LR Spears. 2016-2017. Alfalfa and corn commodity survey. USDA-APHIS-PPQ (CAPS). \$16,701.
8. Spears LR, R Davis, and RA Ramirez. 2016-2017. Developing a first detector network for Utah. USDA-APHIS-PPQ (Farm Bill). \$33,278.
9. Spears LR and C Nischwitz. 2016-2017. Orchard commodity survey. USDA-APHIS-PPQ (Farm Bill). \$14,848.
10. Looney C and LR Spears. 2016-2017. Comparing capture rates of hot melt and traditional sticky inserts under field and laboratory conditions. USDA-APHIS-PPQ (Farm Bill). \$35,618.
11. Spears LR, RA Ramirez, and DG Alston. 2015-2017. Understanding the role of alternative host plants used by two invasive insects, spotted wing drosophila and brown marmorated stink bug, in Utah. Utah Department of Agriculture and Food (Specialty Crop Block Grant). \$19,958.
12. Alston, DG, LR Spears, and C Nischwitz. 2015-2017. Invasive fruit pest guide for Utah: insect and disease identification, monitoring, and management. Utah Department of Agriculture and Food (Specialty Crop Block Grant). \$18,355.
13. Spears LR. 2015-2017. Utah tree fruit pest program. USDA-AFRI-NIFA. \$80,000.

14. Spears LR, DG Alston, RA Ramirez, SP Cook, and J. Barbour. 2015-2016. Wildland fruit as winter refugia for spotted wing drosophila in the Intermountain West. Western IPM Center. \$29,981 (\$17,193 USU's portion).
15. Spears LR, R Davis, RA Ramirez, and C Nischwitz. 2015-2016. Invasive species outreach. USDA-APHIS-PPQ (Farm Bill). \$21,243.
16. Spears LR and C. Nischwitz. 2015-2016. Orchard commodity survey. USDA-APHIS-PPQ (Farm Bill). \$22,793.
17. Ramirez RA and LR Spears. 2015-2016. Utah plant pest survey and detection project. USDA-APHIS-PPQ (CAPS). \$69,284.
18. Spears LR. 2015-2016. Small grains commodity survey. USDA-APHIS-PPQ (CAPS). \$11,420.
19. Ramirez RA and LR Spears. 2015-2016. Alfalfa and corn commodity survey. USDA-APHIS-PPQ (CAPS). \$16,701.
20. Spears LR, RA Ramirez, DG Alston, B Hunter, S Olsen. 2014-2015. Overwintering and survival potential of spotted wing drosophila in northern Utah. USU Extension Grant, Utah State University. \$9,988.
21. Ramirez RA and LR Spears. 2014-2015. Utah plant pest survey and detection project. USDA-APHIS-PPQ (CAPS). \$69,284.
22. Spears LR and C Nischwitz. 2014-2015. Orchard commodity survey. USDA-APHIS-PPQ (Farm Bill). \$17,500.
23. Spears LR, R Davis, and RA Ramirez. 2014-2015. Invasive species outreach. USDA-APHIS-PPQ (Farm Bill). \$7,159.
24. Spears LR, C Nischwitz, and RA Ramirez. 2014-2015. Solanaceous crop survey. USDA-APHIS-PPQ (Farm Bill). \$10,750.
25. Spears LR. 2015. Intern for invasive species outreach and education. Extension Internship Program, Utah State University. \$4,000.
26. Spears LR. 2014. Intern for invasive species outreach and education. Extension Internship Program, Utah State University. \$4,000.
27. Spears LR and RA Ramirez. 2014. Small grains commodity survey. USDA-APHIS-PPQ (CAPS). \$12,621.
28. Ramirez RA and LR Spears. 2014. Alfalfa and corn commodity survey. USDA-APHIS-PPQ (CAPS). \$15,500.
29. Spears LR and RA Ramirez. 2014. Imported fire ant survey. USDA-APHIS-PPQ (CAPS). \$10,019.
30. Spears LR and RA Ramirez. 2013-2014. Survey of insect by-catch in alfalfa and corn fields in Utah. USU Extension Grant, Utah State University. \$10,000.
31. Ramirez RA and LR Spears. 2013-2014. Utah plant pest survey and detection project. USDA-APHIS-PPQ (CAPS). \$69,284.
32. Spears LR and C Nischwitz. 2013-2014. Orchard commodity survey. USDA-APHIS-PPQ (Farm Bill). \$35,899.

33. Spears LR and C Nischwitz. 2013. Small grains commodity survey. USDA-APHIS-PPQ (CAPS). \$13,830.
34. Ramirez RA and LR Spears. 2013. Alfalfa and corn commodity survey. USDA-APHIS-PPQ (CAPS). \$14,291.

PENDING GRANT PROPOSALS

1. Spears LR, RA Ramirez, T Griswold, AH Smith-Pardo, and T Walters. 2017-2018. Guide to introduced and potentially invasive bees in the U.S.: identification, biology, and possible impacts. Submitted to USDA-APHIS-PPQ (Farm Bill). \$149,985.
2. Spears LR, J Gunnell, K Wagner, L Millard, R Davis, DG Alston, and RA Ramirez. 2017-2018. Invasive pest outreach. Submitted to USDA-APHIS-PPQ (Farm Bill). \$49,995.
3. Spears LR and C Nischwitz. 2017-2018. Orchard commodity survey. Submitted to USDA-APHIS-PPQ (Farm Bill). \$19,978
4. Looney C and LR Spears. 2017-2018. Comparing capture rates of hot melt and traditional sticky inserts under field and laboratory conditions. Submitted to USDA-APHIS-PPQ (Farm Bill). \$36,946.
5. Ramirez RA and LR Spears. 2017-2018. Utah plant pest survey and detection project. Submitted to USDA-APHIS-PPQ (CAPS). \$69,284.
6. Ramirez RA and LR Spears. 2017-2018. Field crops survey. Submitted to USDA-APHIS-PPQ (CAPS). \$28,121.

UNFUNDED GRANT PROPOSALS

1. Alston DG and LR Spears. 2017-2019. Brown marmorated stink bug in Utah's fruit industry. Submitted to Utah's Specialty Crop Block Grant Program. \$33,799.
2. Spears LR, RA Ramirez, T Griswold, AH Smith-Pardo, and T Walters. 2016-2017. Guide to introduced and potentially invasive bees in the United States. Submitted to USDA-APHIS-PPQ (Farm Bill). \$177,372.
3. Spears LR, DG Alston, RA Ramirez, Z Gompert, L Gordillo, J Koch, D Price, P Follett. 2016-2019. Spotted wing drosophila (*Drosophila suzukii*) population genetic and geographic diversity, and local adaptation for enhanced invasion in the U.S. Submitted to USDA-AFRI. \$499,997.
4. Cook SP, J Barbour, K Humes, LR Spears, RA Ramirez, and DG Alston. 2014. Wildland fruit as winter refugia for spotted wing drosophila in the Intermountain West. Submitted to USDA's Specialty Crop Research Initiative – Research and Extension Planning Project. \$49,096 (\$19,967 USU's portion).
5. Spears LR, RA Ramirez, and DG Alston. 2013. Overwintering and survival potential of spotted wing drosophila, *Drosophila suzukii*, in northern Utah. Submitted to Western Integrated Pest Management Center. \$29,967.

6. Spears LR and RA Ramirez. 2013. Spatial and temporal consequences of predator species and life-stage diversity on pest suppression. Submitted to USDA's AFRI NIFA Fellowships Grant Program. \$149,928.

SELECT RESEARCH AND EXTENSION PRESENTATIONS

1. Spears LR, S Cook, J Barbour, DG Alston, and RA Ramirez. 2016. Seasonal phenology of spotted wing drosophila in the Intermountain West. Entomological Society of America, Oahu, HI.
2. Spears LR. 2016. Invasive insects in the landscape. Annual Turf and Landscape Maintenance Workshop, Logan, UT.
3. Freeman M et al, including LR Spears. 2016. Got moths? Bycatch associated with common targets in CAPS and Farm Bill surveys. Entomological Society of America, Oahu, HI – Poster.
4. Spears LR. 2015. iPIPE: An early warning system for invasive pests in Utah. Entomological Society of America, Minneapolis, MN.
5. Spears LR, DG Alston, and RA Ramirez. 2015. Current status of spotted wing drosophila in Utah. Entomological Society of America, Minneapolis, MN – Poster.
6. Spears LR. 2015. Brown marmorated stink bug: a new threat to Utah agriculture. Utah Cemetery and Parks Workshop. Thanksgiving Point, UT.
7. Spears LR. 2013-2016. Early detection of invasive plant pests. In-service training, Utah State University/Utah Department of Agriculture and Food. Salt Lake City, UT.
8. Spears LR and RA Ramirez. 2015. Learning to love leftovers: using bycatch to expand our knowledge in entomology. Entomological Society of America, Coeur D'Alene, ID.
9. Ramirez RA and LR Spears. 2015. Stem nematode counteracts plant resistance of aphids in alfalfa. Entomological Society of America, Coeur D'Alene, ID.
10. Spears LR. 2015. Updates on brown marmorated stink bug and spotted wing drosophila in Utah. Utah State University Annual Extension Conference, Thanksgiving Point, UT.
11. Spears LR. 2015. Addressing the threat of brown marmorated stink bug in the western U.S. Urban and Small Farms Conference, Midvale, UT.
12. Spears LR. 2015. Updates on brown marmorated stink bug and spotted wing drosophila in Utah. Utah State Horticultural Association, Spanish Fork, UT.
13. Spears LR. 2015. Preparing for emerald ash borer. Annual Turf and Landscape Maintenance Workshop, Logan, UT.
14. Spears LR and RA Ramirez. 2014. Learning to love leftovers: using bycatch to expand our knowledge in entomology. Entomological Society of America, Portland, OR.
15. Spears LR, RA Ramirez, and DG Alston. 2014. Environmental limitations to spotted wing drosophila outbreaks in the Intermountain West. Entomological Society of America, Tucson, AZ.
16. Ramirez RA and LR Spears. 2014. Stem nematode counteracts plant resistance of aphids in alfalfa. Entomological Society of America, Tucson, AZ.

17. Dupuy MM, LR Spears, and RA Ramirez. 2014. A survey of billbugs (*Sphenophorus* spp.) in turf to improve management in the Intermountain West. Entomological Society of America, Tucson, AZ – Poster.
18. Spears LR. 2014. Invasive pests of Utah fruit trees and berries. Utah State University Annual Extension Conference. Logan, UT.
19. Spears LR. 2014. Unwelcome guests of Utah fruit trees. Utah State Horticultural Association. Spanish Fork, UT.
20. Spears LR and RA Ramirez. 2013. Insect by-catch from targeted early-detection surveys. Entomological Society of America, Austin, TX – Poster.
21. Dupuy MM, LR Spears, and RA Ramirez. 2013. A survey of billbugs (*Sphenophorus* spp.) in turf to improve management in the Intermountain West. Entomological Society of America, Austin, TX – Poster.
22. Spears LR and RA Ramirez. 2012. Influence of endophyte-enhanced turfgrass on entomopathogenic nematode success. Entomological Society of America, Knoxville, TN.
23. Ramirez RA and LR Spears. 2012. Insect pests of turfgrass. Utah Pest Control and Lawncare Association, Salt Lake City, UT.

ADDITIONAL OUTREACH AND EDUCATION

- 2013-present Editor of the Utah CAPS website (<http://utahpests.usu.edu/caps/>).
- 2013-2015 Presenter, Utah County Fruit Tour (50 growers).
- 2013 Mountainside Elementary, Mendon, UT. (80 students).
- 2013 4H Summer Camp, Beaver, UT. (200 students).
- 2013 Summer Science Camp / Biology Field Camp, Vernal, UT. (50 students).

TEACHING EXPERIENCE

- 2012 Invited Lecturer, Advanced Ecology, Westminster College, Salt Lake City, UT.
- 2010-2012 Teaching Assistant, Human Physiology, Utah State University, Logan, UT.
- 2004-2009 Teaching Assistant, General Biology, Utah State University, Logan, UT.

PROFESSIONAL MEMBERSHIP

- 2016 Advisory Panel for Integrated Pest Information Platform for Extension and Education.
- 2012-present Entomological Society of America.

2013-present WERA-1021 Committee, Spotted Wing Drosophila Biology, Ecology and Management.

2013-present Utah Fruit Insect Ad Hoc Committee.

2014-present Utah Emerald Ash Borer Pre-Detection Outreach Committee.

2014-2015 Media/Outreach/Operations/Website Committee, 8th International IPM Symposium, Salt Lake City, UT.

PROFESSIONAL SERVICE

Manuscript reviewer for Journal of Economic Entomology, Molecular Ecology, BioControl, Biological Control, Ecological Indicators, Journal of Applied Ecology.

Grant Reviewer for USU Extension Grants Program

Symposium Organizer for Invasive Insects in the Landscape, Entomological Society of America, Tucson, AZ.

Organizer for Microlepidoptera Dissection and Identification Workshops, Utah State University, Logan, UT.

Volunteer judge for student poster competition, Entomological Society of America, Minneapolis, MN.

Volunteer moderator for student presentations, Entomological Society of America, Coeur D'Alene, ID.

Volunteer moderator for student presentations, Undergraduate Research Conference, Weber State University, Ogden, UT.