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EDUCATION

PhD	2008	Washington State University, Pullman, WA	Entomology
MS	2004	New Mexico State University, Las Cruces, NM	Entomology, Plant Pathology and Weed Science
BS	2001	New Mexico State University, Las Cruces, NM	Entomology, Plant Pathology and Weed Science

POSITIONS

2023-present	Professor and Department Head Entomology Plant Pathology & Weed Science New Mexico State University
2022-2023	Professor/Extension Entomology Specialist Department of Biology, Utah State University
2020-2021	Sabbatical
2016-2022	Associate Professor/Extension Entomology Specialist Department of Biology, Utah State University
2010-2016	Assistant Professor/Extension Entomology Specialist Department of Biology, Utah State University
2008-2010	Postdoctoral Research Associate Department of Entomology, Texas A&M University

PUBLICATIONS

*Undergraduate**; *Graduate student*; *Postdoc*

Peer-reviewed

- Wickwar, D. and **R.A. Ramirez**. 2023. Predatory arthropods and cues associated with predator presence elicit strong non-consumptive effects on bluegrass billbugs. *Entomologia Experimentalis et Applicata* 171:691-703
- Anderson, A.R., **R.A. Ramirez**, J.E. Creech, T.L. Pitts-Singer. 2023. *Melittobia acasta* (Hymenoptera: Eulophidae) female longevity and life stage dependent parasitism using commercially managed *Megachile rotundata* (Hymenoptera: Megachilidae) as hosts. *Journal of Insect Science* 23: 1-8

- Anderson, A.R., **R.A. Ramirez**, J.E. Creech, T.L. Pitts-Singer. 2023. Life cycle of *Melittobia acasta* using *Megachile rotundata* as a host. *Annals of the Entomological Society of America* <https://doi.org/10.1093/aesa/saad011>
- Gill, G., H. Bui, R. Clark, and **R.A. Ramirez**. 2022. Spider mite resistant maize lines, B75 and B96, maintain resistance under water-stress. *Journal of Pest Science* <https://doi.org/10.1007/s10340-022-01584-3>
- Christman, M.E., C. Barnes, T. Lindsay, J. Koch, L. Spears, J. Strange, and **R.A. Ramirez**. 2022. Captive rearing success and critical thermal maxima of *Bombus griseocollis*: A candidate for commercialization? *Journal of Insect Science* 22: 1-8
- Lawton, D., A.S. Huseeth, G.G. Kennedy, +40 authors (including **R.A. Ramirez**), and M. Zuefle. 2022. Pest population dynamics are related to a continental overwintering gradient. *PNAS* 119: e2203230119
- Christman, M.E., L.R. Spears, J.P. Strange, W.D. Pearse, E.K. Burchfield, and **R.A. Ramirez**. 2022. Land cover and climate drive shifts in *Bombus* assemblage composition. *Agriculture, Ecosystems & Environment* 339: 108113
- Ji, M., H. Bui, **R.A. Ramirez**, and R. Clark. 2022. Concerted cis and trans effects underpin heightened defense gene expression in multi-herbivore resistant maize lines. *The Plant Journal* 111: 508-528
- Kopit, A., E. Klinger, D. Cox-Foster, **R.A. Ramirez**, and T. Pitts-Singer. 2022. Effects of provision type and pesticide exposure on the larval development of *Osmia lignaria*. *Environmental Entomology* nvab119
- Rodriguez-Soto, M.M., L.S. Enders, **R.A. Ramirez**, X. Xiong, and D.S. Richmond. 2021. Characterizing billbug (*Sphenophorus* spp.) seasonal biology using DNA barcodes and a simple morphometric analysis. *Insects* 12:930
- Rim, K., J. Crawford, S.J. Price, D.R. Viands, and **R.A. Ramirez**. 2021. Seeking alfalfa resistance to a rhizophagous pest, the clover root curculio (*Sitona hispidulus* F.). *Insects* 12: 906
- Fu, Z., M.S. Crossley, B. Epstein, C. Bates, D.W. Crowder, A.A. Elling, P.A. Hohenlohe, R. Jabbour, **R.A. Ramirez**, and W.E. Snyder. 2021. Using fine-scale relatedness to infer natural enemy movement. *Biological Control* 160: 104662
- Bui, H., R. Greenhalgh, G.S. Gill, M. Ji, A.H. Kurlovs, C. Ronnow, S. Lee, **R.A. Ramirez**, and R.M. Clark. 2021. Maize inbred line B96 is the source of large-effect loci for resistance to generalist but not specialist spider mites. *Frontiers in Plant Science* 12: 693088
- Ruckert, A., J.R. Golec, C.L. Barnes, and **R.A. Ramirez**. 2021. Banks grass mite (Acari:Tetranychidae) suppression may add to the benefit of drought-tolerant corn hybrids exposed to water stress. *Journal of Economic Entomology* 114: 187-196
- Gill, G.S., H. Bui, R.M. Clark, and **R.A. Ramirez**. 2020. Varying responses to combined water-stress and herbivory in maize for spider mite species that differ in host specialization. *Environmental and Experimental Botany* 177:104131
- Price, S.J., J.A. Gale, and **R.A. Ramirez**. 2020. Insecticide efficacy against alfalfa weevil, 2018 and 2019. *Arthropod Management Tests* 45: tsaa094
- Judd, H.J., C. Huntzinger, **R.A. Ramirez**, and J.P. Strange. 2020. A 3D printed pollen trap for bumble bee (*Bombus*) hive entrances. *Journal of Visualized Experiments* e61500
- Jordan, S., **R.A. Ramirez**, and L. Gordillo. 2019. Modeling the spread of alfalfa stem nematodes. *European Journal of Plant Pathology* 154: 649-657
- Dupuy, M.M. and **R.A. Ramirez**. 2019. Consumptive and non-consumptive effects of predatory arthropods on billbug (Coleoptera: Dryophthoridae) pests in turfgrass. *Biological Control* 129: 136-147
- Bui, H., R. Greenhalgh, A. Ruckert, G. Gill, S. Lee, **R.A. Ramirez**, and R.M. Clark. 2018. Generalist and specialist mite herbivores induce similar defense responses in maize and barley but differ in susceptibility to benzoxazinoids. *Frontiers in Plant Science* 9:1222

- Ruckert, A., N. Allen, and **R.A. Ramirez**. 2018. Combinations of water-stress and neonicotinoids can lead to secondary outbreaks of Banks grass mite (*Oligonychus pratensis*). *PLOS ONE* 13: e0191536
- Dupuy, M., Powell, J. A., and **R.A. Ramirez**. 2017. Developing a degree-day model to predict billbug (Coleoptera: Curculionidae) seasonal activity in Intermountain West turfgrass. *Journal of Economic Entomology* 110: 2180-2189
- Jordan, S., C. Nischwitz, **R.A. Ramirez**, and L. Gordillo. 2017. Managing the spread of alfalfa stem nematodes (*Ditylenchus dipsaci*): the relationship between crop rotation periods and pest re-emergence. *Natural Resource Modeling* 30: 1-9 e12083
- Spears, L., C. Looney, H. Ikerd, J.B. Koch, T. Griswold, J.P. Strange, and **R.A. Ramirez**. 2016. Pheromone lure and trap color affects bycatch in agricultural landscapes of Utah. *Environmental Entomology* 45:1009-1016
- Ramirez, R.A.** and M.D. Eubanks. 2016. Herbivore density mediates indirect effects of induced plant resistance and apparent competition. *Ecosphere* 7: e01218
- Davis, R., **R.A. Ramirez**, J.L. Anderson, and S. Bernhardt. 2015. Distribution and habitat of *Ixodes pacificus* (Acari: Ixodidae) and prevalence of *Borrelia burgdorferi* in Utah. *Journal of Medical Entomology* 52:1361-1367
- Spears, L. and **R.A. Ramirez**. 2015. Learning to love leftovers: using by-catch to expand our knowledge in entomology. *American Entomologist* 61:168-173
- Van Dyke, A., **R.A. Ramirez**, and B.A. McGraw. 2015. First report of invasive crane fly, *Tipula oleracea*, in Utah. *Crop Forage Turfgrass Management* 1:1-3
- Ramirez, R.A.** and L. Spears. 2014. Stem nematode counteracts plant resistance of aphids in alfalfa, *Medicago sativa*. *Journal of Chemical Ecology* 40:1099-1109
- Kulmatiski, A., K.H. Beard, A. Anderson-Smith, M. Mazzacavallo, N. Nolan, **R.A. Ramirez**, J. Stevens, and S. Doucette-Riis. 2014. Most soil trophic guilds increase plant growth: a meta-analytical review. *Oikos* 123:1409-1419
- Beddes, T., R. Anderson, and **R.A. Ramirez**. 2013. Calcined clay improves germination of arid plant species. *Journal of Environmental Horticulture* 31:89-93
- Ramirez, R.A.**, D.W. Crowder, G.B. Snyder, M.R. Strand and W.E. Snyder. 2010. Antipredator behavior of Colorado potato beetle larvae differs by instar and attacking predator. *Biological Control* 53:230-237
- Ramirez, R.A.** and W.E. Snyder. 2009. Scared Sick? Predator-pathogen facilitation enhances the exploitation of a shared resource. *Ecology* 90:2832-2839
- Henderson, D.R., E. Riga, **R.A. Ramirez**, J. Wilson, and W.E. Snyder. 2009. Mustard biofumigation disrupts biological control by *Steinernema* spp. nematodes in the soil. *Biological Control* 48:316-322
- Ramirez, R.A.**, D.R. Henderson, E. Riga, L.A. Lacey, and W.E. Snyder. 2009. Harmful effects of mustard bio-fumigants on entomopathogenic nematodes. *Biological Control* 48: 147-154
- Ramirez, R.A.**, D.C. Thompson, and M.D. Remmenga. 2006. The influence of low humidity, *Pseudacteon* flies, and competition by *Solenopsis xyloni* on *Solenopsis invicta*. *Environmental Entomology* 35:1037-1048
- Ramirez, R.A.** and D.C. Thompson. 2006. Queen weights of polygyne *Solenopsis invicta* and *S. xyloni* suggest reduced competitive ability. *Southwestern Entomologist* 31:49-54
- Nurse, R.E., A. DiTommaso, and **R.A. Ramirez**. 2004. Planting date effects on the germinability and seedling vigor of *Abutilon theophrasti* seeds. *PhytoProtection* 85:161-168

Non-refereed

- Rethwisch, M.D., F. Peairs, J. Pierce, A. Mostafa, S. Price, **R. Ramirez**, S. Rondon, S. Schell, J. Vardiman, D.B. Walsh, K. Wanner, and E. Wenninger. 2019. Insecticide Resistance in alfalfa weevil and related implications in other alfalfa insect pests. Proceedings of the 2019 Western Alfalfa & Forages Symposium, Reno, NV, Nov. 19-21, 2019. UC Cooperative Extension, Plant Sciences Department, University of California, Davis, CA
- Price, S.J., R. Long, E.J. Wenninger, and **R.A. Ramirez**. 2019. Clover root curculio biology and control. Proceedings of the 2019 Western Alfalfa & Forages Symposium, Reno, NV, Nov. 19-21, 2019. UC Cooperative Extension, Plant Sciences Department, University of California, Davis, CA
- Pieper, M., Creech, J. E., Hines, S. L., Cardon, G., and **R.A. Ramirez**. 2016. *Silage Corn Hybrid Response to Row Spacing and Plant Density in the Intermountain West*. Madison, WI: Proceeding of the American Society of Agronomy.
- Ramirez, R.A.** and M. Dupuy. 2015. Tracking billbugs to improve IPM in Intermountain West turfgrass. Proceedings of the 8th International Integrated Pest Management Symposium, MAR 23-26. Salt Lake City, UT. Pg. 112
- Jordan, S., C. Nischwitz, **R.A. Ramirez**, and L. Gordillo. 2015. Managing the spread of alfalfa stem nematodes (*Ditylenchus dipsaci*): the relationship between crop rotation periods and pest re-emergence. Proceedings of the Annual Meeting for the Society for Mathematical Biology. JUN 30-JUL 3. Atlanta, GA. Pg. 326
- Henderson, D.R., **R.A. Ramirez**, E. Riga, and W.E. Snyder. 2006. Direct and indirect effects of mustard amendments on two entomopathogenic nematode genera, *Steinernema* and *Heterorhabditis*. Journal of Nematology 38:274
- Jacobson, A., D.C. Thompson, **R.A. Ramirez**, and L. Murray. 2004. Morphological variability complicates identification of the fire ants, *Solenopsis xyloni* and *S. invicta*. Proceedings of the 52nd Annual Meeting of the Southwest Branch of the Entomological Society of America Abstracts, 1:13-14
- Ramirez, R.A.**, D.C. Thompson, and M.D. Remmenga. 2003. Influence of low humidity, phorid flies, and competition by *Solenopsis xyloni* on *Solenopsis invicta*. Proceedings of the Imported Fire Ant Conference, Palm Springs, CA. Poster, p.131
- Nurse, R.E., **R.A. Ramirez**, and A. DiTommaso. 2002. Influence of photoperiod and corn crop on velvetleaf (*Abutilon theophrasti*) seed germination and seedling vigor. Weed Science Society of America Abstracts, 42:18

EXTENSION PUBLICATIONS

Peer-Reviewed Journals

- Spears, L.R., M.E. Christman, J.B. Koch, C. Looney, and **R.A. Ramirez**. 2021. A review of bee captures in pest monitoring traps and future directions for research and collaboration. *Journal of Integrated Pest Management* 12: 49
- Rim, K., S.J. Price, E.J. Wenninger, R. Long, and **R.A. Ramirez**. 2019. Biology and management of clover root curculio (Coleoptera: Curculionidae). *Journal of Integrated Pest Management* 10: 23
- Dupuy, M. and **R.A. Ramirez**. 2016. Biology and management of billbugs (Coleoptera: Curculionidae) in turfgrass. *Journal of Integrated Pest Management* 7:6; 1-10

Fact Sheets

Vardiman, J., S. Schell, K. Wanner, E. Rodbell, **R.A. Ramirez**, and J. Bradshaw. 2022. Management of insecticide resistance in alfalfa weevil for the Intermountain West: Montana, Utah, and Wyoming. University of Wyoming Extension Publication. MP-154

Mull, A., L.R. Spears, M. Murray, and **R.A. Ramirez**. 2022. Integrated pest and pollinator management. USU Extension Publication. ENT-238-22

Yost, M. et al. including **R.A. Ramirez**. 2022. 25 Rules of thumb for field crops. USU Extension Publication. Fact Sheet

Zesiger, C., E. Cohen, H. Jarvis, L. Spears, and **R.A. Ramirez**. 2021. Beginner's guide to common native bees. USU Extension Publication. ENT-232-21

Rim, K., J. Clarine*, S. Price, and **R.A. Ramirez**. 2020. Alfalfa weevil (*Hypera postica* G.). USU Extension Publication. ENT-215-20PR

Yost, M., G. Cardon, N. Allen, B. Sorensen, K. Egbert, E. Creech, C. Ransom, **R.A. Ramirez**. 2020. Chemigation Guide. USU Extension Publication. AG/Chemigation/2020-01PR

Yost, M., B. Sorensen, E. Creech, N. Allen, R. Larsen, **R.A. Ramirez**, C. Ransom, C. Reid, J. Gale, and B. Kitchen. 2019. Defense against drought. USU Extension Publication. AG/Farmland/2019-02PR

Rim, K., S. Price, and **R.A. Ramirez**. 2018. Clover root curculio. USU Extension Publication. ENT-199-18PR

Spears, L., C. Cannon, D.G. Alston, R. Davis, C. Stanley-Stahr, and **R.A. Ramirez**. 2017. Spotted wing drosophila. USU Extension Publication. ENT-145-17

Davis, R.S., S.A. Bernhardt, and **R.A. Ramirez**. 2017. Ticks and tickborne diseases of Utah. USU Extension Publication. ENT-189-17

Patterson, R. and **R.A. Ramirez**. 2017. Beneficial true bugs: Minute pirate bugs. USU Extension Publication. ENT-186-17PR

Patterson, R. and **R.A. Ramirez**. 2016. Aphid natural enemies and biological control. USU Extension Publication. ENT-180-16PR

Ruckert, A., **R.A. Ramirez**, and C. Israelsen. 2015. Spider mites in corn. USU Extension Publication. ENT-177-15PR

Ramirez, R.A. and K. Kopp. 2015. Common crane fly. USU Extension Publication. ENT-176-15PR

Spears, L., R. Davis, and **R.A. Ramirez**. 2015. Invasive insect look-alikes: mistaken insect identity. USU Extension Publication. ENT-175-15PR

Spears, L., R. Davis, and **R.A. Ramirez**. 2014. Emerald ash borer. USU Extension Publication. ENT-171-14PR

Kopp, K., R. Davis, and **R.A. Ramirez**. 2013. Chinch bugs. USU Extension Publication. ENT-169-13PR

Peña, N.* and **R.A. Ramirez** (authors: Roe, A.H. and E.W. Hodgson). 2013. La Araña Hobo. USU Extension Publication. ENT-86-08-S

Peña, N.* and **R.A. Ramirez** (authors: Davis, R.S., D. Alston, and C. Vorel). 2013. Spotted Wing Drosophila. USU Extension Publication. ENT-140-10-S

Peña, N.* and **R.A. Ramirez** (authors: Alston, D.G. and J.V. Barnhill). 2013. Squash Bug. USU Extension Publication. ENT-120-08-S

Peña, N.* and **R.A. Ramirez** (authors: Hodgson, E.W. and A.H. Roe). 2013. Avispas "Chaqueta Amarilla," Avispones y Avispas de Papel. USU Extension Publication. ENT-19-07-S

Patterson, R. and **R.A. Ramirez**. 2012. Beneficial mites: predatory mites. USU Extension Publication. ENT-164-12PR

Davis, R. and **R.A. Ramirez**. 2012. Spiders. USU Extension Publication. ENT-163-12PR

Ramirez, R.A. and R. Patterson. 2011. Beneficial true bugs: damsel bugs. USU Extension Publication. ENT-146-11PR

Ramirez, R.A. and R. Patterson. 2011. Beneficial true bugs: big-eyed bugs. USU Extension Publication. ENT-159-11PR

- Peña, N.* and **R.A. Ramirez** (authors: Hodgson, E.W. and A.H. Roe). 2011. Termitas Subterráneas. USU Extension Publication. ENT-08-08-S
- Peña, N.* and **R.A. Ramirez** (author: Davis, R.S.). 2011. Chinchas de cama (bed bugs): para profesionales en el control de pests. USU Extension Publication. ENT-134-09-S
- Young, F.*, N. Peña*, and **R.A. Ramirez** (author: Ramirez, R.A.). 2011. Hemiptera beneficiosas: damsel bugs. USU Extension Publication. ENT-146-11PR-S

Video Fact Sheets

- Ramirez, R.A.** 2020. Does water stress cause pest outbreaks? Video Fact Sheets. USU Extension Publication.
- Ramirez, R.A.** 2020. Which pests to watch for in hemp. Video Fact Sheets. USU Extension Publication.
- Ramirez, R.A.** 2016. Billbug monitoring using pitfall traps. Video Fact Sheets. USU Extension Publication.
- Ramirez, R.A.** 2012. Billbug identification and detection. Video Fact Sheets. USU Extension Publication.
- Ramirez, R.A.** 2011. Alfalfa sweep sampling. Video Fact Sheets. USU Extension Publication.

Newsletters

- Odemba, M., and **R.A. Ramirez**. 2022. The complicated relationship of weeds, arthropods, and crops. Utah Plant Pest Diagnostic Laboratory and USU Extension Publication. Vol. 16: Winter
- Sepesy, R., S. Bernhardt, and **R.A. Ramirez**. 2022. Battling the resistance (of pesticides)- A growing issue in alfalfa? Utah Plant Pest Diagnostic Laboratory and USU Extension Publication. Vol. 16: Winter
- Christman, M., L. Spears, and **R.A. Ramirez**. 2021. Where the wild bees are: identifying land-use and climate variables impacting bumble bees in Utah. Utah Plant Pest Diagnostic Laboratory and USU Extension Publication. Vol. 15: Fall
- Wickwar, D. and **R.A. Ramirez**. 2021. Managing for drought and summer insect outbreak in turf. Utah Plant Pest Diagnostic Laboratory and USU Extension Publication. Vol. 15: Fall
- Ramirez, R.A.** 2019. The weevil and spider mite season that wasn't. From the Field, Utah State University Extension Crops Newsletter. Winter
- Ramirez, R.A.** 2019. The season of pest busts and booms. Utah Pests News, a quarterly Utah Plant Pest Diagnostic Laboratory and USU Extension Publication. Vol. 13: Fall
- Rim, K., and **R.A. Ramirez**. 2019. "Sick" approaches to pest management. Utah Pests News. Vol. 13: Summer
- Ramirez, R.A.** 2019. Guarding against pests using host plant resistance. Utah Pests News. Vol. 13: Spring
- Ramirez, R.A.** 2019. Incorporating insect fear in integrated pest management. Utah Pests News. Vol. 13: Winter
- Christman, M., L. Spears, and **R.A. Ramirez**. 2018. A new tool for identifying exotic bees. Utah Pests News. Vol. 12: Fall
- Ramirez, R.A.** 2018. Turf billbug management- timing it right. Utah Pests News. Vol. 12: Summer
- Ramirez, R.A.** 2018. Spider mites like it hot with neonics. Utah Pests News. Vol. 12: Spring
- Ramirez, R.A.** 2018. Disturbing the peace of beneficials. Utah Pests News. Vol. 12: Winter
- Ramirez, R.A.** 2017. Predicting billbug management in Intermountain West turf. Utah Pests News. Vol. 11: Summer

- Ramirez, R.A.** 2017. New Russian nesting dolls affecting grain on the horizon. Utah Pests News. Vol. 11: Spring
- Ramirez, R.A.** 2016. Genes, drought, and pest management. Utah Pests News. Vol. 10: Fall
- Ramirez, R.A.** 2016. Lygus, a disrupter of alfalfa seed production. Utah Pests News. Vol. 10: Summer
- Ramirez, R.A.** 2016. Thrips and aphids in alfalfa, one is a major concern. Utah Pests News. Vol. 10: Spring
- Ramirez, R.A.** 2016. An alfalfa weevil from the underground. Utah Pests News. Vol. 10: Winter
- Ramirez, R.A.** 2015. Neonicotinoids: from innovation to bad word. Utah Pests News. Vol. 9: Fall
- Ramirez, R.A.** 2015. Aphids aplenty in alfalfa. Utah Pests News. Vol. 9: Summer
- Ramirez, R.A.** 2015. New and increasing pests in turf and alfalfa. Utah Pests News. Vol. 9: Winter
- Ramirez, R.A.** 2014. Kill bill(bug): activity in turf and a new insecticide option. Utah Pests News. Vol. 8: Fall
- Ramirez, R.A.** 2014. The curious case of parasitoids. Utah Pests News. Vol. 8: Summer
- Ramirez, R.A.** 2014. Be proactive about agronomic crop pests. Utah Pests News. Vol. 8: Spring
- Ramirez, R.A.** 2014. The usual suspects for turf insects and research results in 2013. Utah Pests News. Vol. 8: Winter
- Ramirez, R.A.** 2013. Plants and karate? Using self-defense in IPM. Utah Pests News. Vol. 7: Fall
- Ramirez, R.A.** 2013. Nematodes we want in the yard and garden. Utah Pests News. Vol. 7: Summer
- Ramirez, R.A.** 2013. Fear no weevil: spring monitoring in turf. Utah Pests News. Vol. 7: Spring
- Ramirez, R.A.** 2013. Alfalfa insects- A year in review. Utah Pests News. Vol. 7: Winter
- Ramirez, R.A.** 2012. Breakout season for mites. Utah Pests News. Vol. 6: Fall
- Ramirez, R.A.** 2012. Indoxacarb helps growers escape weevils in alfalfa but... Utah Pests News. Vol. 6: Summer
- Ramirez, R.A.** 2012. Look out for blister beetles and clover root curculio in alfalfa. Utah Pests News. Vol. 6: Spring
- Ramirez, R.A.** and E. Stephens. 2012. Monitoring alfalfa weevil can save money. Utah Pests News. Vol. 6: Winter
- Ramirez, R.A.** 2011. Active beetles in turfgrasses. Utah Pests News. Vol. 5: Fall
- Ramirez, R.A.** 2011. Preserve predatory insects. Utah Pests News. Vol. 5: Summer
- Ramirez, R.A.** 2011. Spring into alfalfa weevil monitoring. Utah Pests News. Vol. 5: Spring
- Ramirez, R.A.** 2011. How winter weather affects insect activity. Utah Pests News. Vol. 5: Winter
- Ramirez, R.A.** 2010. Mosquitoes and West Nile Virus in Utah. Utah Pests News. Vol. 4: Fall

Advisory

- Ramirez, R.A.** 2017. Turf IPM. USU Turf Advisory, Utah Plant Pest Diagnostic Lab and USU Extension Publication. Spring issue
- Ramirez, R.A.** 2015. Spring billbug monitoring in turf. USU Turf Advisory. Spring issue
- Ramirez, R.A.** 2014. Billbug activity in turf and a new insecticide option. USU Turf Advisory. Fall issue
- Ramirez, R.A.** 2013. Spring monitoring in turf. USU Turf Advisory. Spring issue
- Ramirez, R.A.** 2012. Billbug Update: detection and curative control. USU Turf Advisory. Summer issue
- Ramirez, R.A.** 2012. Preventative treatments for turfgrass insects. USU Turf Advisory. Spring issue
- Ramirez, R.A.** 2011. Billbugs (multiple species). USU Turf Advisory. Spring issue

Book/Manual Chapters/Guides

- Burrows, S., C. Ritner, M. Christman, L.R. Spears, A. Smith-Pardo, S. Price, **R.A. Ramirez**, T. Griswold, and A.J. Redford. 2020. Exotic Bee ID – Edition 2. USDA APHIS Identification Technology Program (ITP) and Utah State University. Fort Collins, CO. <http://idtools.org/id/bees/exotic>. (Includes 76 Fact Sheets, two guides (one for 76 Megachilidae genera and another to nine species of Apis); and more than 600 taxonomically useful, diagnostic images)
- Spears, L., A. Mull, A. Fabiszak, M. Murray, R. Davis, D. Alston, and **R.A. Ramirez**. 2020. Invasive pests of landscape trees in Utah. USU Extension publication
- Spears, L., D. Alston, E. Brennan, C. Cannon, J. Caputo, R. Davis, L. Herbertson, C. Keyes, D. Malesky, D. McAvoy, A.M. Mull, **R.A. Ramirez**, T.M. Rodman, and K. Watson. 2019. First Detector Guide to Invasive Insects: Biology, identification, and monitoring. USU Extension Publication
- Burrows, S., C. Ritner, M. Christman, L.R. Spears, A. Smith-Pardo, S. Price, **R.A. Ramirez**, T. Griswold, and A.J. Redford. 2018. Exotic Bee ID – Edition 1. USDA APHIS Identification Technology Program (ITP) and Utah State University. Fort Collins, CO. <http://idtools.org/id/bees/exotic>.
- Davis, R., B. Hunter, K. Johnson, C. Nischwitz, **R.A. Ramirez**, and K. Wagner. 2017. Common Turfgrass Pests of Utah. USU Extension Publication
- Davis, R., B. Hunter, K. Johnson, C. Nischwitz, **R.A. Ramirez**, and K. Wagner. 2017. Common Ornamental Pests of Utah. USU Extension Publication
- Spears, L., R. Davis, D. Alston, **R.A. Ramirez**. 2016. First Detector Guide to Invasive Insects. USU Extension Publication
- Spears, L. and **R.A. Ramirez**. 2014. Invasive Insect Field Guide for Utah. USU Extension Publication
- Stephens, E. and **R.A. Ramirez**. 2014. Guide to Beneficial and Pest Insects in Alfalfa. USU Extension Publication, AG/InsectsForage&Fields/2014-01PR
- Ramirez, R.A.** 2013. Biological control of pests, *In* A Guide to Common Organic Gardening Questions, ed. K. Wagner and S. Olsen. USU Extension Publication

Trade Publications and Re-Published Articles

- Ramirez, R.A.** 2020. Drought-tolerant corn comes with a bonus-mite resistance. Entomology Today, Dec 8. By Andrew Portfield
- Ramirez, R.A.** 2020. A grassroots campaign: Keep common spring pests from feasting on clients' lawns. Irrigation & Green Industry Magazine, Feb 24. By M. Williams-Villano
- Ramirez, R.A.** 2019. Incorporating insect fear in integrated pest management. Northeastern IPM Center, IPM Insights. June edition <https://www.northeastipm.org/about-us/publications/june-2019/>
- Ramirez, R.A.** and M. Dupuy. 2016. Cutting Edge: Improving a predictive model for billbug management. Golf Course Management (GCM) Magazine (<http://www.gcsaa.org/gcm>). July pg. 85
- Ramirez, R.A.** 2016. Managing with and against alfalfa stem nematode. Hay and Forage Grower, <http://hayandforage.com/article-619-managing-with-and-against-alfalfa-stem-nematode.html>
- Tony Carlile. 2015. Agronomy Report: Early summer infestations, regular scouting is key to combat insects. Intermountain Farmers Association Cooperator. 81 (2):8-10
- Ramirez, R.A.** 2015. Monitor carefully to control west's pests. Turf Magazine-West (turfmagazine.com). 28 (4): 53-56

- Rankin, M. 2014. Alfalfa pests ramp up: stay watchful of infestations, entomologists warn. Hay and Forage Grower, <http://hayandforage.com/alfalfa/alfalfa-pests-ramp>
- Ramirez, R.A.** 2013. Alfalfa insects – a year in review. Ag Highlights. USU Extension Uintah and Daggett Counties. Winter edition
- Ramirez, R.A.** 2011. Active beetles in turfgrasses. The Golf Course Trades (thegolfcoursetrades.blogspot.com). October edition

Radio/newspaper

- Ramirez, R.A.** 2019. Stink bug swarms spotted in Smithfield. Herald Journal, Aug 7. By Steve Kent
- Ramirez, R.A.** 2019. Reports say Mormon crickets are on the rise, but it's hard to say if it's actually a worrisome trend. Utah Public Radio, July 22. By A. Rohde
- Ramirez, R.A.** 2013. Turf insect management (10 min). KSL Greenhouse Show. June 15.

Online Modules

- Clark, R.M., H. Bui, and **R.A. Ramirez**. 2019. Insect herbivores and plants. Learn Genetics: University of Utah <https://learn.genetics.utah.edu/content/herbivores/>
- Ramirez, R.A.** and **M. Dupuy**. 2018. Degree-day model for billbug in turf. USU TRAPS. USU Extension. Retrieved from <https://climate.usu.edu/traps/>
- Ramirez, R.A.** 2015. Insecticide application strategies to manage pesticide resistance (50 min session). CropLife Foundation: Western States Pesticide Applicators Recertification Online Training Module
- Gunnell, J., J. Goodspeed, B. Hunter. (Contributing author) **R.A. Ramirez**. 2015. The Gardener's Almanac, USU Extension (Version 2) [Mobile application software]. Retrieved from <http://usubotanicalcenter.org/htm/gardeners-almanac>

Web/Social Media

- Murray, M., R. Davis, L. Spears, D. Alston, **R. Ramirez**, and C. Nischwitz. 2020. Utah Pests: Website <https://utahpests.usu.edu/> conversion to USU new template
- Yost, M., et al. **R.A. Ramirez**. 2019. USU Extension Crops: Website, [Twitter](#), Instagram, Facebook <https://extension.usu.edu/crops/index>
- Ramirez, R.A.** 2019. Aggie Impact [Commercial](#): Protecting Utah's Crops. Utah State University

GRANTS

Research

External Awards

2022-2025 \$855,164 USDA-NIFA Alfalfa Seed and Alfalfa Forage System Program (**PI**)

		Co-PI: Mostafa (Arizona), Larsen (USU Economics), Bernhardt (USU Biology) <i>The compatibility and contribution of natural enemies in western US alfalfa management</i>
2021-2022	\$67,089	USDA-APHIS (Co-PI) PI: Spears (USU CAPS Program), Looney, Gilligan, Ramirez <i>Bee bycatch in different moth trap technologies and impacts on pollinator populations and services</i>
2020-2021	\$82,865	USDA-APHIS (Co-PI)
2019-2020	\$69,996	PI: Spears (USU CAPS Program), Ramirez <i>Impact of bycatch on pollinator populations and services</i>
2019-2023	\$462,151	USDA-NIFA Agricultural Foundational Research Initiative (PI) Co-PI: Yost, Young, Creech, Allen (USU Plant, Soils, Climate) <i>Integrating arthropod and weed management in a water-stressed agro-ecosystem</i>
2019-2021	\$225,394	USDA-NIFA Alfalfa Forage Research Program (Co-PI) PI: Hageman (USU Chemistry), Jabbour (Wyoming), Ramirez, Bernhardt, Pitts-Singer <i>The AIM toolkit: Linking insecticide fate modeling with alfalfa pest and beneficial insect toxicity endpoints</i>
2018-2021	\$294,200	USDA-NIFA Alfalfa Forage Research Program (Co-PI) PI: Wanner (Montana State), Ramirez, Schell, Vardiman, Meccag <i>Protecting alfalfa yield from weevil damage in the Intermountain West</i>
2018-2020	\$57,933	USDA-ARS-Specific Cooperative Agreement (PI) Co-PI: Pitts-Singer (USDA-ARS) <i>Study of life cycles of Melittobia and Pteromalus using managed Megachile rotundata as hosts</i>
2017-2021	\$325,000	USDA-NIFA Crop Protection Pest Management Program (Co-PI) PI: Xiong (Missouri), Richmond (Purdue), Ramirez, Barrett, Enders <i>Developing sustainable management tactics for billbug species</i>
2017-2020	\$250,000	USDA-NIFA-Alfalfa and Forage Research Program (Co-PI) PI: Syed (Kentucky), Ramirez, Brunet (Wisconsin), Schoville <i>Developing an attractant for Lygus hesperus derived from host plant volatile compounds</i>
2016-2019	\$250,000	USDA-NIFA-Alfalfa and Forage Research Program (Co-PI) PI: Mostafa (Arizona), Ramirez, Natwick (UC-Davis)

Overhauling alfalfa weevil management in irrigated southwest desert alfalfa

2016-2019	\$250,000	USDA-NIFA-Alfalfa and Forage Research Program (PI) Co-PI: Godfrey, Long (UC-Davis), Barbour, Wenninger (Idaho) <i>Increasing preventive and curative options for clover root curculio management in western alfalfa</i>
2015-2019	\$1,069,975	NSF-Plant Genome Research Program (Co-PI) PI: Clark (Univ. of Utah) <i>Genomics of resistance in cereals to mite herbivores associated with plant drought stress</i>
2015-2018	\$206,000	USDA-NIFA-Alfalfa and Forage Research Program (Co-PI) PI: Mostafa (Arizona) <i>Reestablishing IPM recommendations for aphids in alfalfa hay in the low desert</i>
2015-2016	\$29,981	Western IPM Center Grant Program (Co-PI) PI: Spears (USU CAPS program), Alston, Ramirez <i>Wildland fruit as winter refugia for SWD in the Intermountain West</i>
2014-2017	\$136,373	USDA-ARS-Specific Cooperative Agreement (PI) Co-PI: Strange (USDA-ARS) <i>The interaction of pesticides with pollinator health and behavior in fruit production systems in the United States</i>
2014-2017	\$19,958	UDAF-Specialty Crop Block Grant Program (Co-PI) PI: Spears (USU CAPS program), Alston, Ramirez <i>Understanding the role of alternative host plants used by two invasive insects, spotted wing drosophila and brown marmorated stink bug, in Utah</i>
2012-2015	\$125,697	USDA-NIFA-WRIPM (PI) Co-PI: Johnson, Kopp (USU), Bechinski (Idaho) <i>Insect-attacking nematodes and water conservation practices as alternatives to insecticides for billbug control in Intermountain West turfgrass</i>
2012-2015	\$496,126	USDA-NIFA-AFRI (Co-PI) PI: Eubanks (Texas A&M), Szczepaniec, Ramirez, Kerns, Bynum, Tamborindeguy <i>The causes and consequence of secondary pest outbreaks: direct effects of pesticides on plant defenses against herbivores</i>
2011-2013	\$13,095	USDA-WSARE Graduate Student Grants E. Stephens; Ramirez-advisor <i>The contribution of predator phenology and diversity to secondary pest suppression in alfalfa</i>

2011-2014	\$15,787	UDAF-Specialty Crop Block Grant Program (PI) <i>Combining insect attacking nematodes and resistant varieties to improve billbug management in turfgrass</i>
2011	\$3000	Utah Department of Health (Co-PI) PI: Bernhardt (USU Biology) <i>Blacklegged tick survey</i>
Internal Awards		
2022-2024	\$53,480	Utah Agricultural Experiment Station (Co-PI) PI: Schaeffer (USU Biology) <i>Semiochemical discovery for improved management of a belowground forage pest</i>
2022-2024	\$20,000	Utah Agricultural Experiment Station (Co-PI) PI: Murray (USU Biology) Documenting pest activity and cultivar susceptibility of industrial hemp in Utah
2021-2026	\$28,000	Utah Agricultural Experiment Station (PI) <i>Arthropod management in Utah field crops</i>
2019-2022	\$75,000	Utah Agricultural Experiment Station: Utah Water Initiative (PI) Co-PI: Yost, Creech, Allen (USU Plant, Soil, Climate) <i>Re-evaluating spider mite management within water-efficient crop technologies (+\$75K match)</i>
2015-2020	\$28,000	Utah Agricultural Experiment Station (PI) <i>Integrated pest management for soil pests in forage</i>
2014-2015	\$9,988	USU Extension Grants Program (Co-PI) PI: Spears (USU CAPS program), Alston, Ramirez <i>Overwintering and survival potential of spotted wing drosophila in northern Utah</i>
2014-2015	\$10,000	USU Extension Grants Program (PI) <i>Using mustard green manure to improve stem nematode and clover root curculio management in alfalfa</i>
2013-2015	\$20,000	Utah Agricultural Experiment Station (PI) <i>Interactions between drought and neonicotinoid insecticides on spider mite outbreaks in corn</i>
2011-2013	\$20,000	Utah Agricultural Experiment Station (PI) <i>Interactions between plant-parasitic nematodes and pest insects and the consequences for crop yield</i>
2010-2015	\$42,500	Utah Agricultural Experiment Station (PI) <i>Plant defenses in alfalfa: the effect of disease resistant varieties on aboveground herbivores</i>

Extension
External Awards

2011-2022	\$841,024	Utah Department of Agriculture and Food (PI) USDA-APHIS-PPQ (CAPS) <i>Cooperative Agricultural Pests Survey (CAPS) Core Project</i> <i>(\$69.2K-114K annual renewal)</i>
2011-2020	\$550,000	Utah Department of Agriculture and Food (Co-PI) PI: Alston (USU Biology), Nischwitz, Ramirez <i>Utah Plant Pest Diagnostic Lab (UPPDL) (\$50K annual renewal)</i>
2020-2022	\$89,992	USDA-Farm Bill (Co-PI)
2018-2020	\$155,268	PI: Spears (USU CAPS program), Ramirez, Griswold (USDA-ARS), Smith-Pardo
2017-2018	\$147,447	
2016-2017	\$145,200	<i>Guide to introduced and potentially invasive bees in the U.S. (1st-4th editions)</i>
2016-2017	\$33,278	USDA-APHIS-PPQ Farm Bill (Co-PI) PI: Spears (USU CAPS program), Davis, Ramirez <i>Developing a first detector network for Utah</i>
2020-2021	\$49,995	USDA-APHIS-PPQ Farm Bill (Co-PI)
2019-2020	\$49,995	PI: Spears (USU CAPS program), Gunnell, Wagner, Davis,
2018-2019	\$49,995	Alston, Ramirez
2017-2018	\$49,995	<i>Invasive species outreach</i>
2016-2017	\$21,243	
2015-2016	\$21,243	
2014-2015	\$7,159	
2017-2022	\$142,615	Utah Department of Agriculture and Food (PI) USDA-APHIS-PPQ (CAPS) <i>Field crops survey (\$28.1K-30.1K annual renewal)</i>
2012-2016	\$79,902	Utah Department of Agriculture and Food (PI) USDA-APHIS-PPQ (CAPS) <i>Alfalfa and corn commodity survey (\$15.5K-16.7K annual renewal)</i>
2014-2015	\$10,750	Utah Department of Agriculture and Food (Co-PI) USDA-APHIS-PPQ (Farm Bill) PI: Spears (USU CAPS program) <i>Solanaceous crop survey</i>
2014-2015	\$48,000	CropLife Foundation: Pesticide Safety Education Program (Co-PI) Improvement and Modernization Initiative PI: Beard (USU Ag Engineering) <i>Western States Proposal to Develop Online Training Modules for Pesticide Applicators Recertification</i>

2014 \$10,019 Utah Department of Agriculture and Food (Co-PI)
 USDA-APHIS-PPQ (CAPS)
 PI: Spears (USU CAPS program)
Imported fire ant survey

2015 \$11,420 Utah Department of Agriculture and Food (Co-PI)
 2014 \$12,621 USDA-APHIS-PPQ (CAPS)
 PI: Spears (USU CAPS program)
Small grains commodity survey

Internal Awards

2021-2022 \$30,000 USU Extension Grants Program (Co-PI)
 PI: Spears (USU CAPS program), Ramirez, Gunnell, Zesiger,
 Hansen, Bravo
*Understanding the scope of bee bycatch in pest monitoring traps
 and developing outreach materials to support native bee
 populations*

2020-2021 \$29,981 USU Extension Grants Program (Co-PI)
 PI: Murray (USU UPPDL), Ramirez, Nischwitz
Industrial hemp pest survey and cultivar susceptibility

2020-2021 \$13,307 USU Extension Grants Program (Co-PI)
 PI: Joshua Dallin (USU Box Elder Co. Extension), Hatfield, Pace,
 Thacker, Ramirez
Reducing negative effects of black grass bug on Utah rangelands

2018-2019 \$10,000 USU Extension Grants Program (Co-PI)
 PI: Creech (USU Plant Soils Climate), Yost, Ransom, Ramirez,
 Cardon, Allen, Larsen
 Developing a website for the USU Extension Agronomy program

2017-2018 \$30,000 USU Extension Grants Program (Co-PI)
 PI: Spears (USU CAPS program), Davis, Gunnell, Wagner,
 Alston, Ramirez
*Expanding the invasive detection and prevention outreach
 program in Utah*

2016-2017 \$10,000 USU Extension Grants Program (Co-PI)
 PI: Davis (USU UPPDL), Hunter, Nischwitz, Ramirez, Wagner
*Promoting IPM by developing and disseminating pocket
 identification guides to Utah's common turf and ornamental pests*

2015 \$4,000 USU Extension Internship Program **(PI)**
Entomology Intern

2013-2015 \$10,000 USU Extension Internship Program **(PI)**
Integrated Pest Management Intern

2013-2014 \$10,000 USU Extension Grants Program **(PI)**

Benefits and consequences of alternative floral resources for improving alfalfa leafcutting bees

2013-2014	\$10,000	USU Extension Grants Program (Co-PI) PI: Spears (USU CAPS program) <i>A survey of insect by-catch in alfalfa and corn fields in Utah</i>
2012-2014	\$12,000	USU Extension Grants Program (PI) Co-PI: Israelson (USU Cache Co.), Ramirez, Greenhaugh <i>Survey for clover root curculio in Utah alfalfa</i>
2011-2013	\$20,000	USU Extension Grants Program (Co-PI) PI: Davis (USU UPPDL), Ramirez, Bernhardt <i>Survey and detection of the western blacklegged tick and the Lyme-causing bacterium in Northern Utah</i>
2011-2013	\$20,000	USU Extension Grants Program (PI) Co-PI: Israelson (USU Extension Cache Co.) <i>Impact of alfalfa weevil insecticides on beneficial insect populations</i>
2011-2013	\$12,000	USU Extension Grants Program (Co-PI) PI: Nelson (USU Extension Beaver Co.) <i>Improving sweep net sampling and alfalfa weevil monitoring</i>
2012-2013	\$5,000	USU Extension Internship Program (PI) <i>Biocontrol Intern</i>
2011-2012	\$5000	USU Extension Internship Program (PI) <i>Spanish Extension Outreach</i>
2010-2011	\$10,000	USU Extension New Specialist Grant (PI) <i>Pests and natural enemies of turfgrass in Utah</i>
Service		
2017	\$49,500	USU SACNAS Travel Award and Bus Tour Sponsorship (Co-PI) PI: Savitzky (USU Biology) <i>Lobbied USU President and STEM colleges for national conference sponsorship</i>
2013-2016	\$15,000	USU Diversity Council Grant (Co-PI) PI: Savitzky (USU Biology) <i>Support for a local chapter of SACNAS</i>

RESEARCH ACTIVITIES

Invited Presentations

Ramirez, R.A. 2023. Multi-state connections to develop forage IPM in the West. Symposium: Developing IPM programs in the Pacific Northwest: Cross-Border Collaborations and

- Success. Annual Meeting of the Pacific Branch Entomological Society of America, APR 3-5. Seattle, WA
- Christman, M., L. Spears, J.P. Strange, and **R.A. Ramirez**. 2022. Ethical use of insect bycatch. Symposium, Insect welfare in farmed, wild, and research contexts. Joint Annual meeting of the Entomological Society of America, NOV 13. Vancouver, BC
- Ramirez, R.A.** 2022. Factoring abiotic stress into integrated pest management. University of Georgia, Entomology Department Seminar Series, SEPT 26, Athens, GA
- Ramirez, R.A.** 2022. Turf entomology in Utah. National Turf Entomology Conference: University of Arizona, APR 25-27, Phoenix, AZ
- Ramirez, R.A.** 2022. Seeking resistance to a belowground alfalfa pest, the clover root curculio. Annual Meeting of the Pacific Branch Entomological Society of America, APR 10-13. Santa Rosa, CA
- Ramirez, R.A.** 2021. Resisting spider mite in a water-stressed cropping system. Symposium, Current Advances in Acarology. Annual meeting of the Entomological Society of America, OCT 31-NOV 3. Virtual
- Barnes, C. and **R.A. Ramirez**. 2021. Water-efficient crop technologies as a tool in spider mite management in corn. Symposium, IPM Models: A Holistic Approach to Both Traditional and Modern Tools. Annual meeting of the Entomological Society of America, OCT 31-NOV 3. Virtual
- Ramirez, R.A.** 2021. A dual threat of water-stress and herbivory: managing spider mites in corn. Symposium, Plant responses to insect herbivory: Molecular mechanisms and ecological interactions. North Central Branch Meeting of the Entomological Society of America, JUN 23, Virtual
- Ramirez, R.A.** 2020. Factoring abiotic stress into plant-arthropod interactions. Ohio State University, Entomology Department Seminar Series, OCT 8, Virtual
- Ramirez, R.A.** 2020. A dual threat of water-stress and herbivory, what's a plant to do? Symposium, Plant responses to insect herbivory: Molecular mechanisms and ecological interactions. Joint North Central & Southwest Branch Meeting of the Entomological Society of America, MAR 15-18, Oklahoma City, OK (canceled COVID)
- Ramirez, R.A.** 2020. From research to practice, implementing insect monitoring tools in urban and ag systems. Symposium, Barriers to IPM implementation/how research gets applied on farms. Pacific Branch Meeting of the Entomological Society of America, APR 19-22, Spokane, WA (canceled COVID)
- Ramirez, R.A.** 2019. Turf entomology in Utah. National Turf Entomology Conference: Purdue University, OCT 14, West Lafayette, IN
- Ramirez, R.A.** 2019. Factoring abiotic stress into plant-arthropod interactions and pest management. Michigan State University, Entomology Department Seminar Series, SEPT 30, Lansing, MI
- Ramirez, R.A.** 2019. USU SACNAS and my path as a Latino in STEM. Michigan State University, Office of Diversity, Equity, and Inclusion's First Tuesday's Seminar Series, OCT 1, Lansing, MI
- Ramirez, R.A.** 2018. Factoring abiotic stress into plant-arthropod interactions and pest management. Pennsylvania State University, Entomology Department Seminar Series, SEPT 13, State College, PA
- Ramirez, R.A.** 2017. Introduction to SACNAS travel award sponsorship and my path as a Latino in STEM. SACNAS National Conference, OCT 19-21, Salt Lake City, UT
- Ramirez, R.A.** 2017. Fitting predator and pest phenology in alfalfa management. Symposium, Advancements and challenges in alfalfa and forage pest management: a historical perspective. 101st Annual Meeting of the Pacific Branch Entomological Society of America, APR 3-6. Portland, OR

- Ramirez, R.A.** 2017. Careers in extension and academia at USU. Symposium, Features from Academia. 101st Annual Meeting of the Pacific Branch Entomological Society of America, APR 3-6. Portland, OR
- Ramirez, R.A.** and A. Ruckert. 2016. Drought-stress exacerbates the interactions between spider mites and neonicotinoid-treated corn. Symposium, Insect-plant interactions in a changing climate. XXV International Congress of Entomology, SEP 25-30. Orlando, FL
- Ramirez, R.A.** 2016. Diversity improves productivity: Ways to encourage complementarity in science. Symposium, Celebrating a mixed-plate in the pacific branch: Fostering diversity in science. 100th Annual Meeting of the Pacific Branch Entomological Society of America. APR 3-6. Honolulu, HI
- Ramirez, R.A.** 2015. Kill billbug: improving a predictive model to time management in the Intermountain West. Symposium, Turfgrass Insect Management: New and Emerging Issues. ASA-CSSA-SSSA Tri-society International Conference, NOV 15-18. Minneapolis, MN
- Ramirez, R.A.** 2015. Drought-stress exacerbates the interactions between spider mites and neonicotinoid-treated corn. Symposium, Are we stressed enough yet? Interdisciplinary partnerships to evaluate the consequences of plant abiotic and biotic stresses. 63rd Annual Meeting of the Entomological Society of America, NOV 15-18. Minneapolis, MN
- Ramirez, R.A.** 2015. Counteracting plant resistance: interactions between nematodes and aphids. Symposium, Arthropod interactions with plants and pathogens. 99th Annual Meeting of the Pacific Branch Entomological Society of America. APR 12-15. Coeur d'Alene, ID
- Ramirez, R.A.** 2014. From insect ecology to IPM, a Latino melding research and extension. Symposium, Common challenges and learning opportunities for Latin American and U.S. entomologists: 2nd Latin American/Hispanic Symposium. 62nd Annual Meeting of the Entomological Society of America, NOV 15-19. Portland, OR
- Ramirez, R.A.** 2014. Billbug biology in the Intermountain West. Syngenta Conference. MAY 14-16. Annapolis, MD
- Ramirez, R.A.** 2013. The contribution of predator ontogeny toward pest suppression. Symposium, Biological control, application, innovation, and exploration. 97th Annual Meeting of the Pacific Branch Entomological Society of America. APR 7-10. Lake Tahoe, NV
- Ramirez, R.A.** 2013. Times they are a'changin: The role of phenology in predator and plant defense interactions for pest suppression. University of Idaho and Washington State University, Entomology Bi-University Guest Seminar Series (BUGSS). MAR 20-22. Moscow, ID
- Ramirez, R.A.** 2012. Aphid suppression: more to it than predator diversity and plant defense. University of California-Riverside, Entomology Seminar Series. NOV 26. Riverside, CA
- Ramirez, R.A.**, M.D. Eubanks, and A. Szczepaniec. 2010. Plant defenses and predators: Aphid interactions with economically important cotton herbivores. S1034 Symposium, Integration of predators into biological control programs. 84th Annual Meeting of the Southeastern Branch Entomological Society of America. MAR 6-10. Atlanta, GA
- Ramirez, R.A.** and W.E. Snyder. 2010. Scared sick? Predator-pathogen facilitation strengthens Colorado potato beetle control. Symposium, S1034 Symposium, Integration of predators into biological control programs. 84th Annual Meeting of the Southeastern Branch Entomological Society of America. MAR 6-10. Atlanta, GA
- Ramirez, R.A.** and W.E. Snyder. 2009. Scared sick? Predator-pathogen facilitation strengthens Colorado potato beetle control. Symposium, The Colorado potato beetle (*Leptinotarsa decemlineata*) past, present, and future: Integrating management and reality. 57th Annual Meeting of the Entomological Society of America. DEC 13-16. Indianapolis, IN

Ramirez, R.A. and W.E. Snyder. 2009. Scared sick? Predator-pathogen facilitation strengthens herbivore suppression. Symposium, Multitrophic interactions: Implications for invertebrate pathogens. 42nd Annual Meeting of the Society for Invertebrate Pathology. AUG 16-20. Park City, UT

Ramirez, R.A. 2009. Interactions between soil management and biological control. Seminar Series, Texas A&M University, Department of Entomology. FEB 5. College Station, TX

Presentations at Professional Meetings

Odemba, M., E. Creech, C. Ransom, M. Yost, and **R.A. Ramirez**. 2023. Weed host interactions with spider mites in Intermountain West corn production. Annual Meeting of the Pacific Branch Entomological Society of America, APR 3-5. Seattle, WA (2nd place talk)

Odemba, M., E. Creech, C. Ransom, M. Yost, and **R.A. Ramirez**. 2022. Why can't we be friends: Weed host interactions with spider mites in Intermountain West corn production. Joint Annual Meeting of the Entomological Society of America, NOV 14. Vancouver, BC

Clark, R.M., M. Ji, H. Bui, and **R.A. Ramirez**. 2022. Multi-herbivore resistance and genetic regulation of defense pathways in maize. 12th Spider Mite/Mite Genome Workshop. OCT. Spain Virtual

Sepesy, R., S.A. Bernhardt, **R.A. Ramirez**, K. Hageman, T. Pitts-Singer. 2022. Evaluating the toxicity of chlorpyrifos and lambda-cyhalothrin in alfalfa weevil, lygus, and alfalfa leafcutting bee. Annual Meeting of the Pacific Branch Entomological Society of America, APR 10-13. Santa Rosa, CA, Virtual

Odemba, M., E. Creech, C. Ransom, M. Yost, and **R.A. Ramirez**. 2021. Drought tolerant corn hybrids competitive ability with redroot pigweed under reduced irrigation. International Tri-Society (ASA-CSSA-SSSA) Annual Meeting, NOV 7-10. Salt Lake City, UT

Christman, M., **R.A. Ramirez**, and L. Spears. 2021. Incidental captures of *Bombus* species in traps: a national survey. Annual meeting of the Entomological Society of America, NOV 1.

Ji, M. H. Bui, A. Quist, **R.A. Ramirez**, and R.M. Clark. 2021. Transcriptional underpinnings of high-level resistance to the generalist spider mite *Tetranychus urticae* in maize. Annual meeting of the American Society of Plant Biologists. JUL 19-23. Virtual poster

Rodriguez-Soto, M., L. Enders, **R.A. Ramirez**, X. Xiong, and D. Richmond. 2020. Tracking billbug (*Sphenophorus* spp.) seasonal biology with DNA barcodes and a simple morphometric analysis to inform management. Annual meeting of the Entomological Society of America. NOV 15-18. Orlando, FL, Virtual

Wickwar, D., and **R.A. Ramirez**. 2020. The influence of cultivar and water limitation on bluegrass billbug (*Sphenophorus parvulus*) behavior in Kentucky bluegrass. Annual meeting of the Entomological Society of America. NOV 15-18. Orlando, FL, Virtual

Christman, M., L. Spears, and **R.A. Ramirez**. 2020. Assessing the impact of bycatch on *Bombus griseocollis* colony growth and development. Annual meeting of the Entomological Society of America. NOV 15-18. Orlando, FL, Virtual

Christman, M., L. Spears, and **R.A. Ramirez**. 2020. Incidental capture of *Bombus* species in traps: A national survey. Annual meeting of the Entomological Society of America. NOV 15-18. Orlando, FL, Virtual (Poster)

Barnes, C. and **R.A. Ramirez**. 2020. Consequences of plant water-stress and drought tolerance on spider mite species that vary in host specificity. Annual meeting of the Entomological Society of America. NOV 15-18. Orlando, FL, Virtual

Barnes, C. and **R.A. Ramirez**. 2020. Spider mite responses to corn drought tolerance and levels of irrigation. Annual meeting of the Ecological Society of America. AUG 3-6. Salt Lake City, UT, Virtual (poster)

- Christman, M., L. Spears, and **R.A. Ramirez**. 2020. Interactive effects of landscape composition and abiotic factors on bumble bees in agroecosystems. Annual meeting of the Ecological Society of America. AUG 3-6. Salt Lake City, UT, Virtual
- Wickwar, D., and **R.A. Ramirez**. 2020. Understanding non-consumptive effects of predators on bluegrass billbug (*Sphenophorus parvulus*) behavior: Implications for suppression in turfgrass. Annual meeting of the Ecological Society of America. AUG 3-6. Salt Lake City, UT, Virtual
- Wickwar, D., and **R.A. Ramirez**. 2020. Understanding non-consumptive effects of predators on bluegrass billbug (*Sphenophorus parvulus*) behavior: Implications for suppression in turfgrass. Annual meeting of the Pacific Branch of the Entomological Society of America. APR 18-22. Spokane, WA (canceled COVID)
- Anderson, A., T. Pitts-Singer, and **R.A. Ramirez**. 2020. Critical developmental temperatures for *Melittobia* using *Megachile rotundata* as a host. Annual meeting of the Pacific Branch of the Entomological Society of America. APR 18-22. Spokane, WA (canceled COVID)
- Ramirez, R.A.**, J. Golec, M. Yost, E. Creech, and N. Allen. 2019. Re-evaluating spider mite management within water-efficient crop technologies. 67th Annual meeting of the Entomological Society of America. Nov 18. St. Louis, MO
- Rim, K., R. Long, and **R.A. Ramirez**. 2019. Testing biological and chemical applications for clover root curculio (*Sitona hispidulus*) suppression in Intermountain West alfalfa. 67th Annual meeting of the Entomological Society of America. Nov 18. St. Louis, MO
- Gill, G., H. Lu, S. Price, H. Bui, R. Clark, and **R.A. Ramirez**. 2019. Generalist spider mites behave on resistant maize while specialists do not. 67th Annual meeting of the Entomological Society of America. Nov 18. St. Louis, MO
- Wickwar, D. and **R.A. Ramirez**. 2019. Understanding non-consumptive effects of predators on bluegrass billbug (*Sphenophorus parvulus*) behavior: Implications for suppression in turfgrass. 67th Annual meeting of the Entomological Society of America. Nov 18. St. Louis, MO ([1st place talk](#))
- Christman, M., L. Spears, and **R.A. Ramirez**. 2019. Exploring the landscape ecology of bumble bees in agroecosystems using bycatch. 67th Annual meeting of the Entomological Society of America. Nov 18. St. Louis, MO
- Rodriguez-Soto, M., L. Enders, L. Mason, **R.A. Ramirez**, X. Xiong, K. Umeda, and D. Richmond. 2019. Characterizing billbug seasonal biology across different regions using DNA barcodes and simple morphometric analysis. 67th Annual meeting of the Entomological Society of America. Nov 18. St. Louis, MO
- Anderson, A., **R.A. Ramirez**, T. Pitts-Singer, and E. Creech. 2019. *Melittobia* longevity in a managed *Megachile rotundata* system. 67th Annual meeting of the Entomological Society of America. Nov 18. St. Louis, MO
- Burrows, S., L. Spears, A. Smith-Pardo, A. Redford, **R.A. Ramirez**, and T. Griswold. 2018. Bees at large: Identifying exotic bees in the United States. 67th Annual meeting of the Entomological Society of America. Nov 18. St. Louis, MO
- Rodriguez-Soto, M., L. Enders, L. Mason, **R.A. Ramirez**, X. Xiong, K. Umeda, and D. Richmond. 2019. Development of a molecular tool for billbug larval identification using DNA barcodes. Annual Meeting of the North Central Branch Entomological Society of America
- Wickwar, D., Dupuy, M.M., and **R.A. Ramirez**. 2018. Understanding the role of conservation biocontrol for billbug suppression in turfgrass. Joint Annual Meeting of the Entomological Society of America, ESC, and ESBC, NOV 11. Vancouver, BC ([2nd place poster](#))
- Gill, G., H. Bui, R. Clark, and **R.A. Ramirez**. 2018. Understanding how water stress affects spider mite resistance in maize. Joint Annual Meeting of the Entomological Society of America, ESC, and ESBC, NOV 11. Vancouver, BC

- Rim, K. and **R.A. Ramirez**. 2018. Evaluation of alfalfa cultivars for potential management of the clover root curculio. Joint Annual Meeting of the Entomological Society of America, ESC, and ESBC, NOV 11. Vancouver, BC
- Christman, M., L. Spears, E. Burchfield, and **R.A. Ramirez**. 2018. Effects of landscape structure and climate variability on beneficial insect diversity in agronomic crops of Utah. Joint Annual Meeting of the Entomological Society of America, ESC, and ESBC, NOV 11. Vancouver, BC
- Anderson, A., **R.A. Ramirez**, and T. Pitts-Singer. 2018. *Melittobia* sp. use and life cycle on *Megachile rotundata*. Joint Annual Meeting of the Entomological Society of America, ESC, and ESBC, NOV 11. Vancouver, BC (poster)
- Burrows, S., L. Spears, A. Smith-Pardo, A. Redford, **R.A. Ramirez**, and T. Griswold. 2018. Bees at large: Identifying exotic bees in the United States. Joint Annual Meeting of the Entomological Society of America, ESC, and ESBC, NOV 11. Vancouver, BC
- Gill, G., H. Bui, R. Clark, and **R.A. Ramirez**. 2018. Effects of water-stress on maize plant defenses against generalist and specialist spider mites. 102nd Annual Meeting of the Pacific Branch Entomological Society of America, JUN 11. Reno, NV
- Rim, K. and **R.A. Ramirez**. 2018. Evaluation of root-pest resistant alfalfa cultivars for potential management of the clover root curculio. 102nd Annual Meeting of the Pacific Branch Entomological Society of America, JUN 11. Reno, NV (2nd place talk)
- Christman, M., **R.A. Ramirez**, L. Spears, and E. Burchfield. 2018. Landscape ecology of beneficial insects in agronomic crops of Utah. 102nd Annual Meeting of the Pacific Branch Entomological Society of America, JUN 11. Reno, NV (poster)
- Burrows, S., L. Spears, and **R.A. Ramirez**. 2017. Bees at large: Identifying invasive bees in the U.S. 65th Annual Meeting of the Entomological Society of America, NOV 6. Denver, CO
- Rim, K., S. Price, and **R.A. Ramirez**. 2017. Detection of potential biocontrol agents and their synchrony with clover root curculio phenology in alfalfa soils. 65th Annual Meeting of the Entomological Society of America, NOV 6. Denver, CO (1st place poster)
- Christman, M., L. Spears, T. Griswold, and **R.A. Ramirez**. 2017. Landscape and seasonal effects on beneficial insects in agricultural crops in Utah. 65th Annual Meeting of the Entomological Society of America, NOV 6. Denver, CO (poster)
- Gill, G., R. Clark, H. Bui, and **R.A. Ramirez**. 2017. Water-stress alters plant defense responses toward generalist and specialist spider mites in maize. 65th Annual Meeting of the Entomological Society of America, NOV 6. Denver, CO
- Ramirez, R.A.** 2017. Overcoming spider mite outbreaks in water-stressed conditions with drought-tolerant corn hybrids. 65th Annual Meeting of the Entomological Society of America, NOV 6. Denver, CO
- Ruckert, A., and **R.A. Ramirez**. 2017. Banks grass mite suppression may be an added benefit to drought-tolerant corn hybrids in drought conditions. 101st Annual Meeting of the Pacific Branch Entomological Society of America, APR 3-6. Portland, OR
- Dupuy, M., J.A. Powell, and **R.A. Ramirez**. 2017. Developing a degree-day model to predict billbug seasonal activity in managed turfgrass. 101st Annual Meeting of the Pacific Branch Entomological Society of America, APR 3-6. Portland, OR
- Gill, G., and **R.A. Ramirez**. 2017. Plant defense responses to generalist and specialist spider mites in maize. 101st Annual Meeting of the Pacific Branch Entomological Society of America, APR 3-6. Portland, OR (2nd place poster)
- Pieper, M., Creech, J. E., Hines, S., Cardon, G., and **R.A. Ramirez**. 2016. Silage corn hybrid response to row spacing and plant density. Western Society of Crop Science Annual Meetings Albuquerque, NM
- Pieper, M., Creech, J. E., Hines, S., Cardon, G., and **R.A. Ramirez**. 2016. Silage corn hybrid response to row spacing and plant density. ASA/CSSA/SSSA International Annual Meetings Phoenix, AZ

- Wulff, J., A. Szczpaniec, **R.A. Ramirez**, C. Tamborindeguy, and M. Eubanks. 2016. Direct effects of insecticides on plants: Soybean transcriptome responses to neonicotinoids and spider mites. XXV International Congress of Entomology, SEP 25-30. Orlando, FL
- Kopit, A., T. Pitts-Singer, and **R.A. Ramirez**. 2016. Mason bees and mud: does nesting material provide an alternative mode of pesticide exposure in *Osmia lignaria*? XXV International Congress of Entomology, SEP 25-30. Orlando, FL
- Judd, H., **R.A. Ramirez**, and J. Strange. 2016. Pollen foraging comparison of *Bombus huntii* and *Apis mellifera*. XXV International Congress of Entomology, SEP 25-30. Orlando, FL
- Bui, H., R. Greenhalgh, A. Ruckert, **R.A. Ramirez**, and R. Clark. 2016. Dynamic yet correlated responses of barley (*Hordeum vulgare* L.) to generalist and specialist spider mite herbivores. Annual Meeting of the American Society of Plant Biologists, JUL 9-13. Austin, TX (*poster*)
- Greenhalgh, R., H. Bui, A. Ruckert, **R.A. Ramirez**, R. Clark. 2016. Shared and species-specific transcriptional responses of barley (*Hordeum vulgare* L.) to generalist and specialist spider mite herbivores. Annual Meeting of the Allied Genetics Conference, JUL 13-17. Orlando, FL (*poster*)
- Freeman, M., K. Buckley, G. Chrislip, M. Klaus, E. LaGasa, C. Looney, M. Murray, **R.A. Ramirez**, L. Ramonda, L. Spears and A. Yoder. 2016. Got moths? Bycatch associated with common targets in CAPS and Farmbill surveys. 100th Annual Meeting of the Pacific Branch Entomological Society of America. APR 3-6. Honolulu, HI (*poster*)
- Spears, L.R., S. Cook, J. Barbour, D.G. Alston, and **R.A. Ramirez**. 2016. Seasonal phenology of spotted wing drosophila in the Intermountain West. 100th Annual Meeting of the Pacific Branch Entomological Society of America. APR 3-6. Honolulu, HI
- Wulff, J., A. Szczpaniec, C. Tamborindeguy, **R.A. Ramirez**, and M. Eubanks. 2015. Neonicotinoids alter the transcriptome of corn exposed to spider mite herbivory. 63rd Annual Meeting of the Entomological Society of America, NOV 15-18. Minneapolis, MN
- Spears, L.R., D.G. Alston, and **R.A. Ramirez**. 2015. Current status of spotted wing drosophila in Utah. 63rd Annual Meeting of the Entomological Society of America, NOV 15-18. Minneapolis, MN
- Ruckert, A. and **R.A. Ramirez**. 2015. Interactions between neonicotinoids and water stress lead to Banks grass mite outbreaks in corn. 63rd Annual Meeting of the Entomological Society of America, NOV 15-18. Minneapolis, MN
- Dupuy, M. and **R.A. Ramirez**. 2015. Tools for IPM: improving a predictive model to manage billbugs in Intermountain West turf. 63rd Annual Meeting of the Entomological Society of America, NOV 15-18. Minneapolis, MN
- Judd, H., **R.A. Ramirez**, and J. Strange. 2015. Effects of *Nosema bombi* and Captan on lab-reared colonies of *Bombus vosnesenskii*. 63rd Annual Meeting of the Entomological Society of America, NOV 15-18. Minneapolis, MN
- Kopit, A., T.L. Pitts-Singer, **R.A. Ramirez**, J.J. Adamczyk, and B. Sampson. 2015. Pesticide exposure risks for blue orchard bees in managed systems. Symposium, The Nascent Mason Bee Industry: Researchers, Entrepreneurs, and Agriculturists Partnering for Pollination Solutions. 63rd Annual Meeting of the Entomological Society of America, NOV 15-18. Minneapolis, MN
- Ruckert, A. and **R.A. Ramirez**. 2015. Interactions between neonicotinoids and water stress lead to Banks grass mite outbreaks in corn. 99th Annual Meeting of the Pacific Branch Entomological Society of America. APR 12-15. Coeur d'Alene, ID (2nd place talk)
- Spears, L.R. and **R.A. Ramirez**. 2015. Learning to love leftovers using bycatch to expand our knowledge in entomology. 99th Annual Meeting of the Pacific Branch Entomological Society of America. APR 12-15. Coeur d'Alene, ID
- Kopit, A., H. Judd, J. Strange, T.L. Pitts-Singer, and **R.A. Ramirez**. 2015. Pollen foraging comparison of *Bombus huntii* and *Apis mellifera*. 99th Annual Meeting of the PB Entomological Society of America. APR 12-15. Coeur d'Alene, ID (1st place poster)

- Ramirez, R.A.** and M. Dupuy. 2015. Tracking billbugs to improve IPM in Intermountain West turfgrass. 8th International Integrated Pest Management Symposium, MAR 23-26. Salt Lake City, UT (*poster*)
- Price, S. and **R.A. Ramirez**. 2014. Evaluation of mustard biofumigation for management of stem nematode (*Ditylenchus dipsaci*) and root curculio (*Sitona hispidula*). 62nd Annual Meeting of the Entomological Society of America, NOV 15-19. Portland, OR (*1st place poster*)
- Ruckert, A. and **R.A. Ramirez**. 2014. Combined effects of drought stress and neonicotinoid seed treatment on Banks grass mite (*Oligonychus pratensis*) in corn. 62nd Annual Meeting of the Entomological Society of America, NOV 15-19. Portland, OR
- Dupuy, M. and **R.A. Ramirez**. 2014. Tracking billbugs (*Sphenophorus* spp.) and generalist predators to advance biocontrol in Intermountain West turfgrass. 62nd Annual Meeting of the Entomological Society of America, NOV 15-19. Portland, OR
- Spears, L.R. and **R.A. Ramirez**. 2014. Learning to love leftovers: expanding our knowledge of insect distribution and diversity using insect by-catch. 62nd Annual Meeting of the Entomological Society of America, NOV 15-19. Portland, OR
- Ramirez, R.A.** and L. Spears. 2014. Stem nematode counteracts plant resistance of aphids in alfalfa. 98th Annual Meeting of the Entomological Society of America, APR 6-9. Tucson, AZ
- Spears, L., **R.A. Ramirez**, and D.G. Alston. 2014. Environmental limitations to spotted wing drosophila outbreaks in the Intermountain West. 98th Annual Meeting of the Entomological Society of America, APR 6-9. Tucson, AZ
- Dupuy, M. and **R.A. Ramirez**. 2014. A survey of billbugs (*Sphenophorus* spp.) in turf to improve management in the Intermountain West. 98th Annual Meeting of the Entomological Society of America, APR 6-9. Tucson, AZ (*poster*)
- Ramirez, R.A.** 2013. Predator life-stage complementarity enhances pest suppression in alfalfa. 61st Annual Meeting of the Entomological Society of America, NOV 9-12. Austin, TX
- Ruckert, A. and **R.A. Ramirez**. 2013. Investigating the combined effect of drought stress and neonicotinoid use on two-spotted spider mite outbreaks in corn. 61st Annual Meeting of the Entomological Society of America, NOV 9-12. Austin, TX
- Dupuy, M. and **R.A. Ramirez**. 2013. A survey of billbugs (*Sphenophorus* spp.) in turf to improve management in the Intermountain West. 61st Annual Meeting of the Entomological Society of America, NOV 9-12. Austin, TX (*1st place poster*)
- Spears, L. and **R.A. Ramirez**. 2013. Insect by-catch from targeted early-detection surveys in alfalfa and corn. 61st Annual Meeting of the Entomological Society of America, NOV 9-12. Austin, TX (*poster*)
- Drury, S.*, R. S. Davis, S. A. Bernhardt, and **R.A. Ramirez**. 2013. Surveying the western black-legged tick and Lyme disease in Utah. 40th Annual Meeting of the Society for the Advancement of Chicanos and Native Americans in Science (SACNAS), OCT 2-6. San Antonio, TX (*poster*)
- Spears, L.R. and **R.A. Ramirez**. 2012. Influence of endophyte enhanced turfgrass on entomopathogenic nematode success. 60th Annual Meeting of the Entomological Society of America, NOV 11-14. Knoxville, TN
- Stephens, E.P. and **R.A. Ramirez**. 2012. The presence of multiple predator life stages enhances pea aphid suppression. 60th Annual Meeting of the Entomological Society of America, NOV 11-14. Knoxville, TN
- Davis, R.S., S. A. Bernhardt, and **R.A. Ramirez**. 2012. Surveying the western black-legged tick and Lyme disease in Utah. 60th Annual Meeting of the Entomological Society of America, NOV 11-14. Knoxville, TN (*poster*)
- Ramirez, R.A.** 2012. Alfalfa stem nematode counteracts aphid resistance in alfalfa. 60th Annual Meeting of the Entomological Society of America, NOV 11-14. Knoxville, TN
- Ramirez, R.A.** 2012. Multiple predator life-stages improve aphid suppression in alfalfa. 96th Annual Meeting of the Pacific Branch Entomological Society of America, MAR 25-28. Portland, OR

- Stephens, E.P. and **R.A. Ramirez**. 2011. The contribution of predator diversity and phenology to aphid suppression in alfalfa. 59th Annual Meeting of the Entomological Society of America, NOV 12-16. Reno, NV
- Ramirez, R.A.** 2011. Aphid responses to pathogen resistant alfalfa and alfalfa stem nematode. 59th Annual Meeting of the Entomological Society of America, NOV 12-16. Reno, NV
- Davis, R.S., S. A. Bernhardt, and **R.A. Ramirez**. 2011. Survey and detection of the western black-legged tick (*Ixodes pacificus*) and the Lyme-causing bacteria (*Borrelia burgdorferi*) in northern Utah. 59th Annual Meeting of the Entomological Society of America, NOV 12-16. Reno, NV (poster)
- McMichael, C.C., **R.A. Ramirez**, S.D. Frank, and M.D. Eubanks. 2011. To lay or not to lay: Aphid induction effects on *Spodoptera exigua* oviposition preference. 96th Annual Meeting of the Ecological Society of America, AUG 7-12. Austin, TX
- Szczepaniec, A., D. Kerns, **R.A Ramirez**, M. Eubanks. 2010. Mites by the millions: neonicotinoid insecticide alters defense of cotton plants and leads to outbreaks of two spotted spider mites. 58th Annual Meeting of the Entomological Society of America, DEC 12-15. San Diego, CA
- Ramirez, R.A.**, S. Frank, and M.D. Eubanks. 2009. Density mediated interactions between aphid-induced plant defenses and apparent competition. 57th Annual Meeting of the Entomological Society of America. DEC 13-16. Indianapolis, IN
- Ramirez, R.A.**, M.D. Eubanks, S. Frank, and C. Zehnder. 2009. Density mediated interactions between herbivore-induced plant defenses and apparent competition. 94th Annual Meeting of the Ecological Society of America. AUG 2-7. Albuquerque, NM
- Ramirez, R.A.**, S. Frank, C. Zehnder, and M.D. Eubanks. 2009. Rethinking herbivory: Interactions of plant defense and generalist predators in cotton. Symposium, Ecosystem factors and IPM: concepts and implications. 57th Annual Meeting of the Southwestern Branch Entomological Society of America. FEB 23-26. Stillwater, OK
- Ramirez, R.A.** and W.E. Snyder. 2008. Cascading effects of predator-pathogen complementarity. Symposium, Natural enemy diversity effects: mechanisms and applications for biocontrol. 92nd Annual Meeting of the Pacific Branch Entomological Society of America. MAR 31-APR 2. Napa, CA
- Ramirez, R.A.** and W.E. Snyder. 2007. Functional complementarity among predators and pathogens strengthens herbivore suppression. 55th Annual Meeting of the Entomological Society of America. DEC 9-12. San Diego, CA
- Ramirez, R.A.** and W.E. Snyder. 2007. One enemy species is company; are predators and pathogens a crowd? 1st place talk. 91st Annual Meeting of the Pacific Branch Entomological Society of America. MAR 25-28. Portland, OR
- Ramirez, R.A.** and W.E. Snyder. 2006. The contribution of predator and pathogen biodiversity to pest suppression. Biocontrol in the Western US-W1185. OCT 10-12. Tucson, AZ
- Ramirez, R.A.** and W.E. Snyder. 2006. The contribution of above- and below-ground predator biodiversity to herbivore suppression. 91st Annual Meeting of the Ecological Society of America. AUG 6-11. Memphis, TN
- Ramirez, R.A.**, E. Riga, and W.E. Snyder. 2005. Entomopathogenic nematode efficacy against Colorado potato beetle under organic and conventional soil fertility. 53rd Annual Meeting of the Entomological Society of America. DEC 15-18. Ft. Lauderdale, FL
- Ramirez, R.A.**, J. Geldmann, E. Riga, and W.E. Snyder. 2005. Antagonistic effects between biological and cultural control tactics. 2nd place talk. 89th Annual Meeting of the Pacific Branch Entomological Society of America. FEB 27-MAR 2. Pacific Grove, CA
- Ramirez, R.A.**, E. Riga, and W.E. Snyder. 2004. Survey of Colorado potato beetle entomopathogens in conventional and organic potato fields (poster). 52nd Annual Meeting of the Entomological Society of America. NOV 14-17. Salt Lake City, UT

- Jacobson, A., D.C. Thompson, **R.A. Ramirez**, and L. Murray. 2004. Morphological variability complicates identification of the fire ants, *Solenopsis xyloni* and *S. invicta* (poster). 52nd Annual Meeting of the Southwestern Branch Entomological Society of America. FEB 23-26. Lubbock, TX
- Ramirez, R.A.**, D.C. Thompson, M.D. Remmenga. 2003. Influence of low humidity, phorid flies, and competition by *Solenopsis xyloni* on *Solenopsis invicta* (poster). 51st Annual Meeting of the Entomological Society of America. OCT 26-30. Cincinnati, OH
- Ramirez, R.A.** and D.C. Thompson. 2003. Influence of phorid flies and low humidity on foraging strategies of *Solenopsis spp.* 3rd place poster. 51st Annual Meeting of the Southwestern Branch Entomological Society of America. FEB 22-27. Oklahoma City, OK. Annual Red Imported Fire Ant Conf. MAR 30-APR 1. Palm Springs, CA
- Ramirez, R.A.** and D.C. Thompson. 2002. Can *Solenopsis invicta* compete against *Solenopsis xyloni* in a semi-arid environment? (poster). 50th Annual Meeting of the Entomological Society of America. NOV 17-20. Ft. Lauderdale, FL
- Nurse, R.E., **R.A. Ramirez**, and A. DiTommaso. 2002. Influence of photoperiod and corn crop on velvetleaf (*Abutilon theophrasti*) seed germination and seedling vigor (poster). Annual Meeting of the Weed Science Society of America. FEB 12. Reno, NV

Scholastic Presentations and Seminars

- Ramirez, R.A.** 2021. Evaluating plant-arthropod interactions to manage pests in the West. Utah State University, Biology Fall Seminar Series. OCT 26. Logan, UT.
- Ramirez, R.A.** 2021. Math-Bio collaborations to manage pests in the West. Utah State University, Applied Math Seminar Series. OCT 25. Logan, UT.
- Ramirez, R.A.** 2018. Factoring abiotic stress into plant-arthropod interactions and pest management. Utah State University, Climate Adaptation Science Colloquium, SEPT 26. Logan, UT
- Ramirez, R.A.** 2012. Aphid suppression: more to it than predator diversity and plant defense. Utah State University, Biology Fall Seminar Series. OCT 2. Logan, UT.
- Longmore, M.*, C. Evans, C. Stanley, and **R.A. Ramirez**. 2011. Comparison of fruit type and lure of *Drosophila spp.* Utah State University Undergraduate Research Symposium. DEC 6. Logan, UT.
- Young, F.* and **R.A. Ramirez**. 2011. Nematodes counteract aphid resistance in alfalfa. Utah State University Undergraduate Research Symposium. DEC 6. Logan, UT.
- Ramirez, R.A.** and M.D. Eubanks. 2009. Plant defenses and predators: How aphids interact with other cotton herbivores. Texas A&M University Entomology Science Conference. NOV 3. College Station, TX
- Ramirez, R.A.** and M.D. Eubanks. 2008. Quantifying the effects of aphid-induced changes in plant chemistry and the attraction of natural enemies by cotton aphids on other pests. Texas A&M University Entomology Science Conference. NOV 7. College Station, TX
- Ramirez, R.A.** and W.E. Snyder. 2007. The contribution of predator and pathogen biodiversity to pest suppression. 2nd place oral presentation. Washington State University Wiley Exposition. FEB 20. Pullman, WA
- Ramirez, R.A.**, E. Riga, and W.E. Snyder. 2005. Survey of Colorado potato beetle entomopathogens in conventional and organic potato fields. 2nd place poster presentation. Washington State University Wiley Exposition. MAR 28. Pullman, WA
- Ramirez, R.A.**, R.E. Nurse, and A. DiTommaso. 2001. Influence of planting date and corn (*Zea mays*) on velvetleaf (*Abutilon theophrasti*) seed germination and seedling vigor. Poster presentation. Leadership Alliance National Symposium. JUL 27-29. Stone Mountain, GA

EXTENSION ACTIVITIES

Invited Extension Presentations

- Ramirez, R.A.** 2021. Drought-tolerant crop technologies and pest management. Utah Water Users Conference. MAY 18. Virtual
- Ramirez, R.A.** 2020. Drought-tolerant crop technologies and pest management. Utah Water Users Conference. MAR 16. St. George, UT. (canceled COVID)
- Ramirez, R.A.** 2019. Lygus management. Idaho Alfalfa Seed Growers Conference. JAN 8. Caldwell, ID
- Ramirez, R.A.** 2018. Communicating science through Extension. USU Climate Adaptation and Ecology Center Seminar Series. SEP 12. Logan, UT
- Ramirez, R.A.** 2017. The contribution of predators and pathogens in alfalfa pest management. Xerces Society: Farming with Beneficial Insects. SEP 28. Kaysville, UT
- Ramirez, R.A.** 2017. Entomology in Utah. National Association of County Agricultural Agents: Meet the Specialists. JUL 10. Salt Lake City, UT.
- Ramirez, R.A.** 2016. Aphid and thrips management in alfalfa. Idaho Hay and Forage Conference. FEB 25. Burley, ID.
- Ramirez, R.A.** 2016. Spider mites in corn. Idaho Hay and Forage Conference. FEB 25. Burley, ID.
- Ramirez, R.A.** 2016. Clover root curculio and stem nematode. Northwest Hay Expo. JAN 19. Kennewick, WA.
- Ramirez, R.A.** 2015. Clover root curculio and alfalfa stem nematode. Western Alfalfa & Forage Symposium. DEC 2. Reno, NV.
- Ramirez, R.A.** 2015. Turf insect IPM. Southwest Turfgrass Conference. NOV 3-5. Ruidoso, NM.
- Ramirez, R.A.** 2015. Emerging and invasive insect pests in trees and shrubs. Southwest Turfgrass Conference. NOV 3-5. Ruidoso, NM.
- Ramirez, R.A.** 2015. Insecticide resistance management. Southwest Turfgrass Conference. NOV 3-5. Ruidoso, NM.

Extension Presentations

- Ramirez, R.A.** 2023. Beneficials and pesticides in management. Salt Lake County Master Gardener Training (2 hrs session). MAR 14. virtual
- Ramirez, R.A.** 2023. Spider mite management in corn. Utah Hay Conference. JAN 24-26. St. George, UT.
- Ramirez, R.A.** 2023. Turf IPM. UNLA Utah Green Conference. JAN 23. Sandy, UT.
- Ramirez, R.A.** 2023. Alfalfa insect management. Beaver, Carbon, Millard, San Juan, Sevier, Wayne County Crop Schools (**six presentations**). JAN 19-20, JAN 31-FEB 2, FEB 8-9. Minersville, Price, Delta, Blanding, and Richfield, UT.
- Ramirez, R.A.** 2022. Pesticide resistance. Cache County Pesticide Recertification. DEC 14. Logan, UT.
- Ramirez, R.A.** 2022. Alfalfa insect management. Beaver, Cache, Juab, Kane, Millard, and Iron County Crop Schools (**six presentations**). JAN 19, 25-27, FEB 8. Minersville, Logan, Nephi, Kanab, Delta, and Cedar City, UT.
- Ramirez, R.A.** 2020. Beneficials and pesticides in management. Salt Lake County Master Gardener Training (**two presentations**, 2 hrs sessions). MAR 3. West Jordan, UT.
- Ramirez, R.A.** 2020. Alfalfa insect management. Weber and Juab County Crop Schools (**two presentations**). JAN 23 and 30. Farr West and Nephi, UT.
- Ramirez, R.A.** 2020. Turf IPM. UNLA Utah Green Conference. JAN 27. Sandy, UT.

Ramirez, R.A. 2020. Insect monitoring and thresholds. Millard, Beaver, Iron County Crop Schools (**three presentations**). JAN 21-23. Delta, Minersville, and Cedar City, UT.

Ramirez, R.A. 2020. Weevil management in alfalfa. Wayne County Crop School. JAN 17. Loa, UT.

Ramirez, R.A. 2020. Insect control and management-weevil, aphid, and mites. Sevier County Crop School. JAN 16. Richfield, UT.

Ramirez, R.A. 2020. Research update on aphids and weevil in Utah. Kane/Garfield County Crop School. JAN 15. Bryce Canyon, UT.

Ramirez, R.A. 2020. Most common turf insect pests. USU Landscape and Turf Maintenance Meeting. JAN 8. Logan, UT.

Ramirez, R.A. 2019. Beneficial insect ID and insecticide resistance. Box Elder Co. Pesticide Safety Training. DEC 19. Tremonton, UT.

Ramirez, R.A. 2019. Managing arthropod pests and beneficials in alfalfa and corn. Cache Co. Pesticide Applicators Training. DEC 3. Logan, UT.

Ramirez, R.A. 2019. Beneficials and pesticides in management. Salt Lake and Cache County Master Gardener Training (**three presentations**, 2 hrs sessions). FEB 12-13. West Jordan and Logan, UT.

Ramirez, R.A. 2019. Spider mites in corn. Cache County Crop School. FEB 12. Logan, UT.

Ramirez, R.A. 2019. Corn root pests. Box Elder County Crop School. JAN 31. Tremonton, UT.

Ramirez, R.A. 2019. Turf IPM. Utah Green Conference. JAN 28. Sandy, UT.

Ramirez, R.A. 2019. Alfalfa insect management. Beaver, Millard, and Wayne County Crop Schools (**three presentations**). JAN 18, 22, 23. Minersville, Delta, and Loa, UT.

Ramirez, R.A. 2019. Spider mites in corn. Sevier County Crop School. JAN 17. Richfield, UT.

Ramirez, R.A. 2018. Beneficials and pesticides in management. Salt Lake County Master Gardener Training (**two presentations**, 2 hrs sessions). FEB 20. West Jordan, UT.

Ramirez, R.A. 2018. Spider mites in corn. Cache County Crop School. FEB 13. Logan, UT.

Ramirez, R.A. 2018. Alfalfa insect management. Beaver, Millard, and Weber County Crop Schools (**three presentations**). JAN 23-25. Minersville, Delta, and Farr West, UT.

Ramirez, R.A. 2018. Spider mites in corn. Sevier County Crop School. JAN 18. Richfield, UT.

Ramirez, R.A. 2017. Turf insects. Utah School IPM Workshop. APR 27. Sandy, UT

Ramirez, R.A. 2017. Lygus in alfalfa. Millard County Crop School. MAR 23. Delta, UT

Ramirez, R.A. 2017. Intro to insects. Cache, Toolele, Davis, Weber County Master Gardener Training (**four**, 2 hrs sessions). MAR 7-8. Logan, Toolele, Kaysville, and Farr West, UT.

Ramirez, R.A. 2017. Beneficials and pests of alfalfa. Box Elder, Rich, Weber County Crop Schools (**three presentations**). FEB 1, 16, 21. Tremonton, Randolph, Farr West, UT.

Ramirez, R.A. 2017. Turf Insect IPM. Utah Pest Control and Lawn Care Association Annual Conference. FEB 1. Ogden, UT.

Ramirez, R.A. 2017. Alfalfa insect management. Beaver County Crop School. JAN 19. Minersville, UT.

Ramirez, R.A. 2017. Blue alfalfa aphid management. Sevier County Crop School. JAN 18. Richfield, UT.

Ramirez, R.A. 2016. Insecticide resistance and application strategies. Pesticide Safety Education Program, Recertification Workshop. NOV 15. Salt Lake City, UT.

Ramirez, R.A. 2016. Intro to insects. Utah, Davis, Weber, and Cache County Master Gardener Training (**three presentations**, 2 hrs sessions). MAR 29-31. Thanksgiving Point, Kaysville, and Farr West, UT.

Ramirez, R.A. 2016. Biological control for organic pest management. USU Organic Training Workshop. MAR 12. Salt Lake City, UT.

Ramirez, R.A. 2016. Intro to insects. Cache County Master Gardener Training. FEB 24. Logan, UT.

Ramirez, R.A. 2016. Beneficials and pests of alfalfa. Rich County Crop School. FEB 24. Randolph, UT.

Ramirez, R.A. 2016. Spider mites in corn. Cache, Box Elder, and Iron County Crop Schools (*three presentations*). JAN 27, FEB 4, and 9. Logan, Tremonton, and Cedar City, UT.

Ramirez, R.A. 2016. Aphid and weevil management in alfalfa. Garfield County Crop School. JAN 26. Panguitch, UT.

Ramirez, R.A. 2016. Turf IPM. Utah Green Conference. JAN 25. Sandy, UT.

Ramirez, R.A. 2016. Blue alfalfa aphid management. Sevier County Crop School. JAN 21. Richfield, UT.

Ramirez, R.A. 2015. Insecticide resistance and application strategies. Pesticide Safety Education Program, Recertification Workshop. Dec 8. Salt Lake City, UT.

Ramirez, R.A. 2015. Turfgrass IPM. Utah Parks and Cemetery Training. SEP 22. Thanksgiving Point, UT.

Ramirez, R.A. 2015. Turf insects: Crane fly, chinch bugs, and billbugs. Intermountain Golf Course Superintendents Training. MAY 21. West Jordan, UT.

Ramirez, R.A. 2015. Intro to insects. Tooele, Weber, Davis, and Cache County Master Gardener Training (*four presentations*, 2 hrs session). FEB 25, MAR 8-9. Tooele, Ogden, Kaysville, and Logan, UT.

Ramirez, R.A. 2015. Insect management in agronomic crops. Rich County Crop School. FEB 25. Randolph, UT.

Ramirez, R.A. 2015. Emergent insects in field crops and their management. Intermountain Farmers Association Workshop. FEB 26. Cedar City, UT.

Ramirez, R.A. 2015. Intro to insects. Landscape Nursery Training. FEB 17. Cedar City, UT.

Ramirez, R.A. 2015. Intro to insects. Iron, Washington, and Kane County Master Gardener Training (*three presentations*, 2 hrs sessions). FEB 17-19. Cedar City, St. George, and Kanab, UT.

Ramirez, R.A. 2015. Emergent insects in field crops and their management. Intermountain Farmers Association Workshop. FEB 12. Logan, UT.

Ramirez, R.A. 2015. Billbug IPM and resistance management. UPCLA Annual Conference. FEB 4. Sandy, UT.

Ramirez, R.A. 2015. Aphid management practices. Box Elder County Crop School. FEB 3. Tremonton, UT.

Ramirez, R.A. 2015. Emergent insect pests in alfalfa. Utah Hay Conference. JAN 29. St. George, UT.

Ramirez, R.A. 2015. Insect management in agronomic crops. Sevier County Crop School. JAN 22. Richfield, UT.

Ramirez, R.A. 2015. Using insect thresholds in agronomic crops. Beaver County Crop School. JAN 21. Minersville, UT.

Ramirez, R.A. 2015. Insecticide resistance management. Turf and Landscape Maintenance Workshop. JAN 14. Logan, UT.

Ramirez, R.A. 2014. Insecticide resistance and application strategies. Pesticide Safety Education Program, Recertification Workshop (three presentations). Nov 4, Dec 9, and 18. Brigham City and Salt Lake City, UT.

Ramirez, R.A. 2014. Colony collapse disorder. ACC Womens Club. APR 21. Logan, UT.

Ramirez, R.A. 2014. Biological control for organic pest management. USU Organic Training Workshop. MAR 29. Salt Lake City, UT.

Ramirez, R.A. 2014. Intro to insects. Tooele and Utah County Master Gardener Training (*three presentations*, 2 hrs sessions). MAR 19-20. Tooele, Thanksgiving Point, Provo, UT.

Ramirez, R.A. 2014. Insect pests common to Cache Valley crops. Cache County Crop School. FEB 28. Logan, UT.

- Ramirez, R.A.** 2014. Intro to insects. Iron, Washington, and Kane County Master Gardener Training (**three presentations**, 2 hrs sessions). FEB 11-13. Cedar City, St. George, and Kanab, UT.
- Ramirez, R.A.** 2014. Sampling alfalfa fields with a sweep net. Box Elder County Crop School. JAN 28. Brigham City, UT.
- Ramirez, R.A.** 2014. Insecticide resistance, emerging pests, and insect management in agronomic crops. Sevier County Crop School. JAN 23. Richfield, UT.
- Ramirez, R.A.** 2014. Common turf pests and IPM. Turf and Landscape Maintenance Workshop. JAN 15. Logan, UT.
- Ramirez, R.A.** 2013. Beneficial insects and insecticide resistance. Private Pesticide Applicator Workshop. DEC 18. Brigham City, UT.
- Ramirez, R.A.** 2013. Insects and management: the good, bad, and ugly. Pesticide Safety Education Program, Recertification Workshop (**three presentations**). NOV 19, DEC 10-11. Spanish Fork and Salt Lake City UT.
- Ramirez, R.A.** 2013. Turf Insects and IPM. State Master Gardener Training. SEP 26. Kaysville, UT.
- Ramirez, R.A.** 2013. Turf Insects and IPM. USU Turf Field Day. SEP 18. Thanksgiving Point, UT.
- Ramirez, R.A.** 2013. Billbugs and pitfall traps. Utah Water Conservation Field Day. SEP 17. Logan, UT.
- Ramirez, R.A.** 2013. Billbugs and pitfall traps. USU Turf Field Day. AUG 13. Audience: 70. Logan, UT.
- Ramirez, R.A.** 2013. Intro to insects. Tooele, Cache, Salt Lake, Weber, Iron, Washington, and Kane County Master Gardener Training (**8 presentations**, 3 hrs sessions). FEB 19-21, MAR 20-28. Tooele, Logan, West Jordan, Salt Lake City, Ogden, Cedar City, St. George, and Kanab UT.
- Ramirez, R.A.** 2013. Turf insects and IPM. UPCLA Annual Conference. FEB 14. Sandy, UT.
- Ramirez, R.A.** and E. Stephens. 2013. Pest management in forage and grain. Cache County Crop School. FEB 13. Logan, UT.
- Ramirez, R.A.** 2013. Insecticide issues in alfalfa. Utah Hay Conference. JAN 31. St. George, UT.
- Ramirez, R.A.** 2013. Insects in turf. UNLA Green Conference. JAN 28. Sandy, UT.
- Ramirez, R.A.** 2013. Insect thresholds and management. Beaver County Crop School. JAN 24. Minersville, UT.
- Ramirez, R.A.** 2013. Pest management in forage and grain. Sevier County Crop School. JAN 23. Richfield, UT.
- Ramirez, R.A.** 2012. Insect ID, monitoring and management: turf. Pesticide Safety Education Program, Recertification Workshop. Dec 11. Salt Lake City, UT.
- Ramirez, R.A.** 2012. Pest management in alfalfa. Garfield County Crop School. NOV 19. Panguitch, UT.
- Ramirez, R.A.** 2012. Turf Insects. Davis County In-Depth Master Gardener Training. NOV 6. Kaysville, UT.
- Ramirez, R.A.** 2012. Insect ID, monitoring and management: turf. Pesticide Safety Education Program, Recertification Workshop. NOV 6. Salt Lake City, UT.
- Ramirez, R.A.** 2012. Turf Insects. Salt Lake County In-Depth Master Gardener Training. NOV 6. Salt Lake City, UT.
- Ramirez, R.A.** 2012. Insect pests of turfgrass and how a hot summer affects them. Utah Parks and Cemetery Training. SEP 26. Thanksgiving Point, UT.
- Ramirez, R.A.** 2012. Insect pests of turfgrass and how a hot summer affects them. Utah Pest and Lawn Care Association Training. SEP 27. Thanksgiving Point, UT.

- Ramirez, R.A.** 2012. Intro to insects: diagnosing damage, prevention, and treatment. Cache, Weber, Davis, and Salt Lake County Master Gardener Training (**five presentations**, 3 hrs sessions). MAR 13-15. Logan, Ogden, Kaysville, Salt Lake City, West Jordan, UT.
- Ramirez, R.A.** 2012. Insect management in alfalfa. Iron County Alfalfa Crop School. MAR 1. Cedar City, UT.
- Ramirez, R.A.** 2012. Intro to insects: diagnosing damage, prevention, and treatment. Iron, Washington, and Kane County Master Gardener Training (**three presentations**, 3 hrs sessions). FEB 14-16. Cedar City, St. George, and Kanab, UT.
- Ramirez, R.A.** 2012. Insect management in alfalfa. Beaver and Sevier County Alfalfa Crop Schools (**two presentations**). FEB 15-16. Minersville and Richfield, UT.
- Ramirez, R.A.** 2012. IPM, Insect ID, and Insecticides: Turf. Utah Pest Control and Lawncare Associate Conference. FEB 2. Sandy, UT.
- Ramirez, R.A.** 2012. Management of cereal leaf beetle. Wheat Crop School. JAN 31. Brigham City, UT.
- Ramirez, R.A.** 2012. Common turf pests. Turf and Landscape Maintenance Workshop. JAN 10. Logan, UT.
- Ramirez, R.A.** 2011. IPM, insect ID, and insecticides: turf. Pesticide Safety Education Program, Recertification Workshop (**two presentations**). DEC 6 and 14. Brigham City and Salt Lake City, UT.
- Ramirez, R.A.** 2011. Pest management in alfalfa. Kane and Garfield County Pesticide Workshop. NOV 17. Panguitch, UT.
- Ramirez, R.A.** 2011. Insects in the environment. Heritage Elementary School. NOV 11. Nibly, UT.
- Ramirez, R.A.** 2011. Insects and insecticides in Utah turfgrasses. Utah Nursery and Lawn Association Training and Roundtable. OCT 19. Utah Department of Agriculture and Food; Salt Lake City, UT.
- Ramirez, R.A.** 2011. Managing pine needle scale and turf insects in Utah. Utah Parks and Cemetery Training. SEP 28. Thanksgiving Point, UT.
- Ramirez, R.A.** 2011. Managing pine needle scale and turf insects in Utah. Utah Pest and Lawn Care Association Training. SEP 29. Thanksgiving Point, UT.
- Ramirez, R.A.** 2011. Turf entomology and research. Intermountain Golf Course Superintendents Association Field Day. JUL 11. Logan, UT.
- Ramirez, R.A.** 2011. Sampling, monitoring, and managing insects in alfalfa. Sanpete County. JUN 10. Ephraim, UT.
- Ramirez, R.A.** 2011. Intro to insects: diagnosing damage, prevention, and treatment. Kane, Washington, and Iron County Master Gardener Training (**three presentations**, 3 hrs sessions). FEB 22-24. Kanab, St. George, and Cedar City, UT.
- Ramirez, R.A.** 2011. Turf insects: ID, lifecycles, and management. Utah Pest Control & Lawncare Association Annual Convention. FEB 2. Sandy, UT.
- Ramirez, R.A.** 2011. Insect ID, lifecycles, and pest management in alfalfa. Millard County Crop School, FEB 1. Delta, UT.
- Ramirez, R.A.** 2011. Pest management in alfalfa: learning from Furadan. Utah Hay Conference (two breakout sessions). JAN 27. St. George, UT.
- Ramirez, R.A.** 2011. Insect ID, lifecycles, and pest management in alfalfa. Box Elder County Crop School, JAN 25. Brigham City, UT.
- Ramirez, R.A.** 2010. Insect identification: know your enemy. Pesticide Safety Education Program, Recertification Workshop (**two presentations**). DEC 7 and 9. Brigham City and Salt Lake City, UT.
- Ramirez, R.A.** and M.D. Eubanks. 2010. Plant defenses and predators: How aphids interact with other cotton herbivores. Beltwide Cotton Conference. JAN 4-7. New Orleans, LA

- Ramirez, R.A.** and M.D. Eubanks. 2009. Interactions between aphid-induced plant defenses and predators can suppress economically important cotton herbivores. Poster presentation. Texas Plant Protection Association Conference. DEC 2-3. Bryan, TX.
- Ramirez, R.A.** 2008. Insect predators and pathogens in biological control. WSU Potato Field Day. JUN 29. Othello, WA.
- Ramirez, R.A.** 2008. Control benefits from generalist insect predators. Washington State University Urban IPM and Pesticide Safety Education. JAN 9 and 11. Wenatchee, WA and Moscow, ID.
- Ramirez, R.A.** 2007. Control benefits from generalist insect predators. Washington State University Urban IPM and Pesticide Safety Education. NOV 14. Pasco, WA.
- Ramirez, R.A.** 2007. Diseases of insects and their use in biological control. WSU Potato Field Day. JUN 29. Othello, WA.
- Ramirez, R.A.** 2006. Conserving beneficial nematodes. Washington State University Potato Field Day. JUN 23. Othello, WA.
- Ramirez, R.A.** 2005. Biocontrol using beneficial nematodes. Washington State University Potato Field Day. JUN 24. Othello, WA.
- Ramirez, R.A.** 2005. Conserving beneficial nematodes. Washington State University Sustainability Forum. OCT 24. Pullman, WA.
- Ramirez, R.A.** and W.E. Snyder. 2005. Conserving predators using soft pesticides. Washington State University Master Gardeners Conference. SEPT 8. Pullman, WA.

Extension In-service Presentations/Demonstration

- Ramirez, R.A.** 2022. Latest in turf insect pests. Utah Plant Pest Diagnostic Lab In-service training. MAR 2. Thanksgiving Point, UT.
- Ramirez, R.A.** 2021. Black grass bug and small grains insect management. USU Blue Creek Dryland Research Field Day. JUL 7.
- Ramirez, R.A.** 2020. Alfalfa and corn research update. USU Crops Virtual Field Day. JUL 28.
- Ramirez, R.A.** 2020. Hemp pests and research update. USU Crops Virtual Field Day. JUL 28.
- Ramirez, R.A.** 2020. Experimental design and statistics for a clear message. Utah Plant Pest Diagnostic Lab In-service training. FEB 25. Logan, UT.
- Ramirez, R.A.** 2020. IPM priorities. USU Extension-Industry Crops Roundtable. JAN 28. Kaysville, UT.
- Ramirez, R.A.** 2019. Insects in Alfalfa. Utah Hay Conference (three breakout sessions), Pre-Conference Workshop. FEB 4. St. George, UT.
- Ramirez, R.A.** 2018. Field and forage crop IPM research. Utah Plant Pest Diagnostic Lab In-service training. FEB 26. Thanksgiving Point, UT.
- Ramirez, R.A.** 2017. Clover root curculio and aphids in alfalfa. Utah Hay Conference (three breakout sessions), Pre-Conference Workshop. JAN 26. St. George, UT.
- Ramirez, R.A.** 2017. Graduate student research in ag and urban systems. Utah Plant Pest Diagnostic Lab In-service training. FEB 28. Logan, UT.
- Ramirez, R.A.** 2016. Update on neonicotinoid controversy. Utah Plant Pest Diagnostic Lab In-service training. MAR 1. Logan, UT.
- Ramirez, R.A.** 2015. Utah agriculture and entomology research. International Integrated Pest Management Conference, Pre-Conference Field Tour. MAR 23. Salt Lake City, UT.
- Ramirez, R.A.** 2015. New turf and field crop insect pests, and new insecticides. Utah Plant Pest Diagnostic Lab In-service training. MAR 3. Thanksgiving Point, UT.
- Ramirez, R.A.** 2015. Alfalfa stem nematodes and clover root curculio. Utah Hay Conference (three breakout sessions), Pre-Conference Workshop. JAN 28. St. George, UT.

- Ramirez, R.A.** 2014. Turf tools for insect management. Intermountain West Golf Course Superintendents Association Workshop. MAY 1. Taylorsville, UT.
- Ramirez, R.A.** 2014. Turf tools for insect management. Utah Plant Pest Diagnostic Lab In-service training. MAR 4. Logan, UT.
- Ramirez, R.A.** 2013. Insecticides and mode of action. Utah Plant Pest Diagnostic Lab In-service training. MAR 5. Logan, UT.
- Ramirez, R.A.** 2012. Alfalfa and turf insects. Utah Plant Pest Diagnostic Lab In-service training. JUN 13. Kaysville, UT.
- Ramirez, R.A.** 2012. Blister beetles in alfalfa. Utah Department of Agriculture and Food In-service training. MAR 21. Salt Lake City, UT.
- Ramirez, R.A.** in collaboration with D. Alston, C. Nischwitz, M. Murray, C. Stanley, R. Davis. 2012. Meet the Specialists. USU Extension Annual Conference. MAR 8. Logan, UT.
- Ramirez, R.A.** 2012. Experimental Design and Statistics. Utah Plant Pest Diagnostic Lab In-service training. MAR 6. Logan, UT.
- Ramirez, R.A.** in collaboration with D. Alston, R. Davis, and M. Murray. 2011. USU Science Unwrapped Seminar Series. Utah Plant Pest Diagnostic Lab Demonstration Booths. NOV 4. Logan, UT.
- Ramirez, R.A.** 2011. Alfalfa insects and sweep sampling. Sanpete County. JUN 10. Ephraim, UT.
- Ramirez, R.A.** in collaboration with D. Alston, R. Davis, M. Murray, and B. Black. 2011. USU Horticulture Conference Call. MAY 5. Logan, UT.
- Ramirez, R.A.** in collaboration with D. Alston, C. Nischwitz, M. Murray, C. Stanley, R. Davis. 2011. Meet the Specialists. USU Extension Annual Conference. MAR 2. Logan, UT.
- Ramirez, R.A.** 2011. Natural enemies: from the common to the obscure. Utah Plant Pest Diagnostic Lab In-service training. FEB 9. Provo, UT.
- Ramirez, R.A.** 2011. Alfalfa insects and nematodes. Utah Hay Conference, Pre-Conference Workshop (three breakout sessions). JAN 27. St. George, UT.

AWARDS AND SYNERGISTIC ACTIVITIES

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|------------|---|
| 2022 | New Mexico State Univ. EPPWS Department Outstanding Alumni |
| 2022 | National Association of County Agricultural Agents
Communication Award-Western Region Publication
M. Yost, et al. and R. Ramirez - 25 Rules of Thumb for Field Crops |
| 2020 | Utah State Univ. College of Science Graduate Mentor Nominee |
| 2019, 2020 | Utah State Univ. Diversity Faculty Award Nominee |
| 2014 | Nominated and Selected for USU Research and Graduate Studies
Washington, DC Funding Agency Visit Program |
| 2014 | Selected for the Society for the Advancement of Chicanos and
Native Americans in Science Leadership Institute |
| 2014 | Utah State Univ. New Extension Specialist Award
Utah State Univ. Extension Specialists Association |

- 2013 National Association of County Agricultural Agents
Communication Award-Western Region Fact Sheet
R. Patterson and **R. Ramirez**- Beneficials: Predatory Mites
- 2013 Utah State Univ. New Extension Specialist (runner-up)
Honorable Mention Award

TEACHING

- 2022 Utah State University, *Biology Pre-Health Professions Orientation* (Biol 1750)
Guest lecture for Dr. Thayne Sweeten
- 2021-2022 Utah State University, *Forage Production and Pasture Management* (PSC 4320)
Guest lecture for Dr. J. McAdams, *Forage IPM*
- 2019 Utah State University, *Applied Entomology* (Biol 4500)
Guest lecture for Dr. T. Evans, *Insecticide resistance causes*
- 2019 Utah State University, *Applied Entomology* (Biol 4500)
Guest lecture for Dr. T. Evans, *Insecticide resistance management*
- 2016-2019 Utah State University, *Forage Production and Pasture Management* (PSC 4320)
Guest lecture for Dr. J. McAdams, *Forage IPM*
- 2012-2019 Utah State University, *Biology Pre-Health Professions Orientation* (Biol 1750)
Guest lecture for Dr. D. Welker, *Extension Specialist Profession*
- 2015-2018 Utah State University, *Applied Entomology* (Biol 4500)
Guest lecture for Dr. T. Evans, *Neonicotinoid Controversy and Research*
- 2016 Utah State University, *Turfgrass* (PSC 3810)
Guest lecture for Dr. P. Johnson, *Turf IPM*
- 2013 Utah State University, *Advanced Agronomy* (PSC 4900)
Guest lecture for Dr. E. Creech, *Entomology*
- 2011 Utah State University, *Undergraduate Research* (Biol 5800)
- 2011 Utah State University, *Undergraduate Internship* (Biol 4250)
- 2010 Utah State University, *Biology Pre-Health Professions Orientation* (Biol 1750)
Guest lecture for Dr. D. DeWald, *Extension Specialist Profession*
- 2010 Texas A&M University, *General Entomology* (Ento 201)
Guest lectures for Dr. M. Eubanks, *Primitively Wingless Insects; Mayflies, Dragonflies, and Damselflies*
- 2009 Texas A&M University, *General Entomology* (Ento 201)
Guest lectures for Dr. M. Eubanks, *Insect Interactions; Insect Design & Structure*
- 2008 Texas A&M University, *General Entomology* (Ento 201)
Guest lectures for Dr. S. Behmer, *Lepidoptera; Hymenoptera*
- 2008 Washington State University, *Agricultural Entomology* (Entom 350)
Teaching Assistant with Dr. A. Felsot
- 2006 Washington State University, *Insects, Science, and World Cultures* (Entom 150)
Guest lectures and lab for Dr. C. Anelli, *Biocontrol; Experimental Design*
- 2003 Teaching Assistantship, New Mexico State University, *Economic Entomology*
(EPWS 303) and lab with Dr. D.C. Thompson
- 2002 Teaching Assistantship, New Mexico State University, *Intro to Pest Management*
(EPWS 100) and lab with Dr. S.C. Bundy

ADVISOR / MENTOR / SUPERVISOR ROLE

Graduate Student Major Advisor Current Position

Mercy Odemba		PhD student
Rose Sepesy		PhD student (co-advisor: Dr. Scott Bernhardt, USUBiology)
Morgan Christman, PhD	2022	Postdoc, Ohio State University, Entomology
Alan Anderson, MS	2022	co-advisor Dr. Theresa Pitts-Singer, USDA-ARS-Bee Lab
Desireè Wickwar, MS	2021	IPM Program Manager, Univ. of Idaho
Andi Kopit, MS	2020	co-advisor: Dr. Theresa Pitts-Singer, USDA-ARS-Bee Lab
Gunbharpur Gill, PhD	2020	IPM Specialist, Iron Ox Inc.
Kaitlin Rim, MS	2020	Field Scientist, Joyn-Bio
Madeleine Dupuy, PhD	2018	Assistant Prof., Biology, Columbia Basin College
Alice Ruckert-Axtell, PhD	2017	Principle Entomologist, IR-4 Program, NC State Univ.
Steven Price, MS	2017	Extension Assist. Prof., USU Extension Carbon Co.
Houston Judd, MS	2017	co-advisor: Dr. James Strange, USDA-ARS-Bee Lab)

Supervisor

Cody Barnes, PhD	2020-2022	Postdoctoral Research Associate
Julian Golec, PhD	2019	Postdoctoral Research Associate
		Current position: Field Research Scientist, Corteva
Lori Spears, PhD	2013-2016	Cooperative Agricultural Pest Survey Coordinator Transfer to Professional Practice status (2016)
Cory Stanley-Stahr, PhD	2010-2012	Cooperative Agricultural Pest Survey Coordinator
Undergraduates: 50+ students to date from several USU departments		

PROFESSIONAL / UNIVERSITY SERVICE

Utah State University LBBB Scholarship Committee (2022)

A program for Native American and Geology undergraduate students. Worked with the associate dean and faculty member in geology to determine how best to distribute the funds and develop student requirements for application and evaluation in accordance to the donor agreement.

Utah State University Latinos in Action Panelist (2018)

The program is a weeklong boot camp for Latino students from Utah high schools to offer a campus experience. Provided my experience in becoming a Latino professor.

Utah State University IME-Becas Reviewer and Panelist (2018)

A program funded by the Mexican consulate to assist students of Mexican origin to further their education. I served as a reviewer and panelists for proposals of first and second generation Mexican university students.

Utah State University Native American Summer Mentorship Program (2015-2018)

Served as a host lab for undergraduate students from the USU Blanding campus to gain experience in entomology research.

Utah State University Latino Discovery Course Speaker (2015)

The program served Latino students from northern Utah high schools to offer a campus experience. Provide my experience in becoming a Latino professor.

Utah State University Society for Advancement of Chicanos and Native Americans in Science (SACNAS) Chapter Faculty Advisor (2013-present)

SACNAS is a national organization focused on supporting and increasing diversity in STEM. In 2013, I was part of a grassroots effort to re-establish a student chapter at USU.

Utah State University SACNAS Exhibitor (2011, 2013, 2017, 2018)
The SACNAS national conference provides recruitment opportunities. I served as a recruiter for USU and the Biology Department.

Utah State University Peer Review @ USU: STEM Panel (2022)
Peer Review Week is an annual community-led global event celebrating the essential role that peer review plays in maintaining research quality. Panelists spoke to an audience of undergraduate, graduate students, and fellow faculty on the importance of peer review in academic scholarship and the various challenges faced by authors, reviewers, and editors during the peer review process.

Utah State University Beekeeping and Entomology Club Faculty Advisor (2011-2016)
Entomological Society of America National Awards and Honors Judge (2021-present)
National Entomological Society of America, PhD Student Poster Judge (2017-2019)
Pacific Branch Entomological Society of America MS Student Talk Judge (2012)
Pacific Branch Entomological Society of America PhD Student Poster Judge (2015)
Pacific Branch Entomological Society of America Professional Awards (2015)
Intermountain West Graduate Student Symposium Presentation Judge (2011-2012)
Pacific Branch Entomological Society of America Presentation Session Moderator (2014)

Committees

Search Committees

2023	Search Committee Co-Chair: USU Biology Department Head
2022	Search Committee Member: USU Professional Practice Assistant Professor position: Arthropod Diagnostician
2021	Cluster Search Committee Member: USU Insect Ecologist and Microbial Ecologist position
2019	Search Committee Chair: USU Plant Physiology position
2018	Search Committee Member: USU Pesticide Safety Education Extension position
2017	Search Committee Member: USU Davis County Extension Horticulture position
2016	Search Committee Chair: USU Professional Practice Assistant Professor position
2015	Search Committee Member: USU Extension Specialist, Latino Programs position
2013	Search Committee Chair: Cooperative Ag Pest Survey Coordinator position

Promotion and Tenure Committees

2022	Ombudsperson USU College of Science (2 yr term)
2022	Tenure Advisory Committee Chair: Dr. F. Mundum (USU Biology)
2020	Tenure Advisory Committee Chair: Dr. M. Borghi (USU Biology)
2019	Promotion Advisory Committee Member: M. Murray (USU Biology)
2018	Tenure Advisory Committee Member: Dr. M. Wierda (USU Extension)
2018	Tenure Advisory Committee Chair: Dr. R. Schaeffer (USU Biology)
2017	Tenure Advisory Committee Member: N. Beckman (USU Biology)
2017	Tenure Advisory Committee Chair: Dr. C. Wille (USU Extension)
2017	Tenure Advisory Committee Member: Dr. W. Pearse (USU Biology)
2017	Promotion Advisory Committee Member: Dr. L. Spears (USU Biology)

Executive Boards

- 2018-2020 Executive Board Member, USU Biology
2017-2019 Executive Board Member, Pacific Branch Entomological Society

University and Department Support Committees

- 2021-present Committee Member, Graduate Programs Committee, USU Biology
2020-2021 Diversity, Equity, and Inclusion Committee Member, USU Biology
2020-2021 Aspire Alliance's IChange Network Leadership Team Member
NSF supported program works towards increasing the diversity of STEM faculty. Engages a growing network of partners to support systemic change in STEM. USU administrators and faculty develop goals/strategies for USU.
2016-2018 USU Biology Long-Term Planning Committee Member
2014 USU Extension Visioning Advisory Committee Member: Extension Structure

Conference Committees

- 2017 Local Conference Planning Committee Member, SACNAS National Conference
2015 Symposium Co-Organizer: Pacific Branch Entomological Society of America
2013-2014 USU Extension Annual Conference Planning Committee Member
2013-2014 Annual Conference Program Committee Co-Chair: Pacific Branch Entomological Society of America
2011-present Utah Hay Conference Program Committee Member

Other

- 2013 Chair, Bushwhackers Association, Utah State University
2012 Chair-elect, Bushwhackers Association, Utah State University
2011-present WERA-11 Western Regional Turfgrass Research

Reviewer

- 2018-2021 USDA-NIFA Grant Panel Manager (3 national programs; 2018-2021)
Worked closely with the USDA program leader and specialist to review proposals, seek out panelists, assign proposals, direct the panel, and prioritize proposals for funding.
2018 USDA-WSARE Grant Panelist
2016, 2017 USDA-NIFA Grant Panelist
2014, 2015 (4 national programs; 2 pre-post doc fellowship programs; 2 AFRI)
2017, 2020 Outside Promotion and Tenure Evaluator for Academic Professional Positions (3)
2014

Journal Reviewer

Annals of Applied Biology, Arthropod-Plant Interactions, BioControl, Biological Control, Crop Protection, Ecological Entomology, Ecology, Entomologia Experimentalis et Applicata, Environmental Entomology, Experimental and Applied Acarology, Journal of Applied Entomology, Journal of Chemical Ecology, Journal of Economic Entomology, Journal of Insect Behavior, Journal of Integrated Pest Management, Nature (communications), Oecologia
USU Extension Fact Sheet Reviewer

2020-2021 Guest Editor, Insects, Special Issue: IPM in the Rhizosphere: Challenges, Discovery and Success