

AUSTIN N. FIFE

PLANT PROTECTION ENTOMOLOGIST

RESEARCH STATEMENT

I am passionate about protecting plants, and I do so leveraging my background in biological control, plant-pathogen-arthropod interactions, and chemical ecology.

WORK EXPERIENCE

Research Assistant - University of Florida

18 Jul 2018 - 31 Dec 2021

- Surveyed and mapped mite populations (phenology) in the field in northern Florida and southern Georgia.
- Collaborated with over 10 Principal Investigators from plant pathology and entomology departments from the University of Florida, the University of Georgia, the USDA-ARS and the FDACS. Followed state and USDA permits, complied with state restrictions for movement of mites and viruses
- Trained lab technicians in data entry, methodologies, and standard operating procedures.
- Presented research to various audiences, including scientists, stakeholders and the public at over 11 conferences, and club meetings.
- Taught class at local 4-H club, organized activities and encouraged handling of live insects during the 6th and 7th Tallahassee Science Festivals, led activities at NFREC-Quincy Arts & Garden Festival as well as NFREC Agriculture Adventures and Ecology Field days.
- Analyzed data with statistical methods in R, including principal component analyses (PCA), uniform manifold approximation and projection (UMAP), analysis of variance (ANOVA), Chi-squared tests and Generalized Linear Mixed Modeling (GLMM).

Research Assistant - University of Idaho

15 Apr 2015 - 18 Dec 2018

- Studied host plant selection of the potato psyllid *Bactericera cockerelli*, vector of Zebra Chip Disease in potato.
- Maintained four insect colonies, grew 100+ plants in the greenhouse, including 10 varieties of potato, tomatoes, eggplant, weeds and various species of native plants from seed
- Used statistical methods in R to interpret data, including t-tests, ANOVA, and GLMMs.
- Developed protocols and standard operating procedures (SOPs), to record insect behaviors and fecundity on living plants with a limited budget.
- Assisted in pest monitoring by processing hundreds of sticky traps weekly.
- Wrote and published thesis with Latex.
- Manually sorted and weighed 70+ lb sacks of potatoes with a small team.

Research & Teaching Assistant - BYU - Idaho

13 Apr 2013 - 15 Apr 2015

- Drove an Off-road vehicle to navigate sand dunes and record coordinates of *Cicindela arenicola*, the St. Anthony Dunes Tiger Beetle to study habitat characteristics, range, and dispersal.
- Independently obtained permit from National Park Service and the Bureau of Land Management Craters of the Moon National Monument to collect data on a threatened species of beetle, *Glacivicola bathysciodes*
- Prepared daily labs and mentored students
- Tutored Spanish language conversation labs

SKILLS

Problem Solving • Collaboration • Research • Writing • Project Management
Languages — Spanish, English Programming — R, Latex, RMarkdown
Software — RStudio, Anaconda, Git, Microsoft Office, Adobe Photoshop
Hardware — Raspberry Pi, GC-MS, Phase-Contrast Microscopy, Digital Cameras
Operating Systems — Windows 10, Linux

EDUCATION

PHD: ENTOMOLOGY - UNIVERSITY OF FLORIDA 2 Jun 2018 - Dec 2021
Dissertation: Mite-virus-plant complexes of importance for Florida agriculture: early detection, chemical ecology and biocontrol of *Phyllocoptes fructiphilus* and *Brevipalpus californicus*
Courses: Plant-Pathogen-Insect Interactions, Agricultural Acarology, Insect Classification, Introduction to Acarology, Insect Chemical Ecology, Epidemiology & Data Science, Spatial Ecology of Insects, Introduction to Applied Statistics, Data Storytelling, Ecology of Vector-Borne Disease, Vector Biology Models, Insect Microbiology

MS: ENTOMOLOGY - UNIVERSITY OF IDAHO 18 May 2015 - 14 Dec 2018
Thesis: Investigating behavior of the potato psyllid *Bactericera cockerelli* (Šulc) (Hemiptera: Trioizidae) on three potato genotypes with putative resistance to “*Candidatus Liberibacter solanacearum*”
Courses: Insect-Plant Interactions, Host Plant Resistance, Plant Pathology, Advanced Insect Ecology, Advanced Forest Entomology, Insect Physiology, Potato Science

BS: BIOLOGY, EMPH: ZOOLOGY - BYU - IDAHO 19 Apr 2011 - 10 Apr 2015
Courses: Insect Systematics, General Entomology, Biochemistry & Molecular Biology, An Evolutionary Survey of Plants, General Botany, Biostatistics, Understanding DNA, Evolutionary Science, Genetics and Molecular Biology, Invertebrate/Vertebrate Zoology, General Chemistry I, General Chemistry II, Ecology I, Potato Science
Readings in Hispanic Literature - Advanced Speaker

PUBLICATIONS

Journal of Integrated Pest Management *Accepted on Oct 2021*
'First report of the *Brevipalpus*-transmitted (Trombidiformes: Tenuipalpidae)
Orchid fleck dichorhavirus infecting three ornamental in Florida'
Austin N. Fife, Daniel Carrillo, Gary Knox, Fanny Iriarte, Kishore Dey, Avijit Roy,
Ronald Ochoa, Gary Baughan, Mathews Paret, and Xavier Martini

Florida Entomologist *Sep 2020*
'First Report of *Phyllocoptes fructiphilus* Kefier (Eriophyidae), the vector of
the rose rosette virus, in Florida, USA'
Austin N. Fife, Samuel Bolton, Jessica L. Griesheimer, Mathews Paret, and Xavier Martini

Journal of Insect Science *Mar 2020*
'Potato psyllid *Bactericera cockerelli* (Šulc) (Hemiptera: Triozidae) behavior on
three potato genotypes with putative resistance to "*Candidatus Liberibacter solanacearum*"'
Austin N. Fife, Arash Rashed, Regina Cruzado Gutierrez,
Richard Novy, and Erik J. Wenninger