Leslie Alejandra Aviles Lopez

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EDUCATION

PhD. Student **Fall 2020 to present**

Department of Entomology, Purdue University, IN, USA.
Dissertation title: Improving two-spotted spider mite management in high tunnel cucumber production.
Advisor: Laura Ingwell, Ph.D.

M.S. Entomology **Fall 2018 to Summer 2020**

Department of Entomology, Louisiana State University, LA, USA.
Thesis title: Ecology of the roseau cane scale (*Nipponaclerda biwakoensis*, Hemiptera: *Aclerdidae*) in coastal Louisiana.
Advisor: Rodrigo Diaz, PhD.

B.S. Agriculture **Spring 2011 to fall 2014**

Pan-American Agriculture University "El Zamorano", Honduras.
Thesis title: Application of molecular markers in selecting for resistance to common mosaic and common necrotic bean (*Phaseolus vulgaris*) virus.
Advisor: Juan Carlos Rosas, PhD

PUBLICATIONS

Peer-reviewed article

1. **Aviles, Leslie.,** Li, Zhilin., Huval, Forest, Pandey, Manoj. How can scientists better communicate with the public to get them more engaged in Integrated Pest Management (IPM)? *In press*

2. Knight, Ian A., Wilson, Blake E., Gill, Madeline., **Aviles, Leslie.,** Cronin, James T., Nyman, John A., Schneider, Scott A., Diaz, Rodrigo. 2018. Invasion of *Nipponaclerda biwakoensis* (Hemiptera: Aclerdidae) and *Phragmites australis* die-back in Southern Louisiana, USA. Biological Invasions. Vol. 20: 2739-2744.

Extension and Educational Publications

1. **Aviles, Leslie.,** Pruett, K., Diaz, Rodrigo. 2020. Potential management options for the roseau cane scale including biological control and parasitoid wasps. Department of Entomology, LSU AgCenter. *In press*.

2. **Aviles, Leslie.,** Diaz, Rodrigo. 2020. The importance of *Cryptolaemus montrouzieri* (Coleoptera: Coccinellidae) in biological control. Bug Biz, Department of Entomology, LSU AgCenter. *In Press*.

3. **Aviles, Leslie**. 2018. "You're Eating Bugs". The Bayou Buzz magazine, Department of Entomology at Louisiana State University.

RESEARCH EXPERIENCES

Louisiana State University. Louisiana, U.S.

Fall 2019-Summer 2020: Graduate student

Project title: Understanding host plant resistance to the roseau cane scale: Quantification of lipids, phenolics, and silica of Phragmites australis varieties.

Description: Quantified lipids, phenolics, and silica of each variety of roseau cane (Phragmites australis) present in Louisiana. Assessed the scale performance on four roseau cane varieties (Delta, European, Gulf, and Native).

- Measured silica content from plant material using the molybdenum colorimetric procedure.
- Prepared, extracted and analyzed phenolic samples by Folin-Ciocalteau method.
- Developed a protocol for extracting waxes from the surface of roseau cane stems.
- Processed samples on a gas chromatograph mass spectrometer (GC-MS) using two derivatizations.
- Analyzed the outputs of GC-MS data.

Spring 2017- Fall 2018: Graduate student

Project title: Host specificity of roseau cane scale (*Nipponaclerda biwakoensis*), an invasive species associated with roseau cane, *Phragmites australis*, die-off at the lower Mississippi River Delta.

Description: Performed no-choice host specificity tests of roseau cane scale (*Nipponaclerda biwakoensis*) in greenhouse assays. Determined the spill-over risk under outbreak conditions in the Mississippi River Delta to confirm no-choice assays.

- Maintained fourteen species of crops and marshes in greenhouse condition.
- Managed insect pests using contact chemical applications and cultural methods.
- Developed inoculation method for infesting crops and marshes with the roseau cane scale.
- Took SEM images of crawlers of roseau cane scale.
- Edited and added color to SEM image using Adobe Photoshop.
- Monitored the roseau cane scale and its parasitoid in the Mississippi River Delta.
- Evaluated the spill-over risk of roseau cane scale in field populations.

Summer 2017 – Fall 2018: Visiting scholar

Project title: Invasive species management

- Collected, counted and processed samples of roseau cane scale (*Nipponaclerda biwakoensis*).
- Surveyed roseau cane scale to build the distribution map of scale throughout Louisiana.
- Dissected roseau cane scale females and recorded number of eggs per female. **First documentation.**
- Collected crops and marsh grasses across Louisiana to set up host specificity experiments.
- Evaluated Giant Salvinia *(Salvinia molesta*) and common Salvinia (*S. minima*) to monitor the distribution of the Salvinia weevil (*Cyrtobagous salviniae*) in Louisiana.
- Collected and processed crape myrtle bark scale (*Eriococcus lagerstroemia*) samples.
- Monitored air potato (*Dioscorea bulbifera*) and Air potato leaf beetle (*Lilioceris cheni*) distribution and feeding pattern.
- Collected, processed, and identified insect samples associated with monitoring Emerald ash borer (*Agrilus planipennis Fairmaire*) in northern Louisiana.

The National Agricultural and Forestry Technology Center, San Salvador, El Salvador.

Spring 2014: Visiting scholar

Project: Evaluation of *Trichoderma* spp as a potential biological control agent against five fungi of bean (*Phaseolus vulgaris*) crops.

Description: Assessment of the antagonistic activity of two *Trichoderma* species against five pathogenic fungi of bean (*Phaseolus vulgaris*) at the laboratory level.

- Maintained and isolated fungal colonies.
- Identified fungus, bacteria, and nematodes from farmer samples.
- Trained farmers in best management practices for *Phaseolus vulgaris* control.

Pan-American university El Zamorano, Morazán, Honduras.

Spring 2013-fall 2014: undergraduate Student

Thesis project: Application of molecular markers in selecting for resistance to common mosaic and common necrotic bean (*Phaseolus vulgaris*) virus.

Description: Validated the marker-assisted selection (MAS) with molecular markers SCAR in the development of cultivars resistant to *Bean Common Mosaic Virus* (BCMV) and *Bean Common Mosaic Necrosis Virus* (BCMNV) to manage yield losses.

Skills learned on this project:

- Extracted DNA from plant material.
- Prepared samples for PCR and electrophoresis.

PRESENTATION * *indicates an invited presentation*

Oral presentations

2019. *__Aviles, Leslie.,__ Knight, Ian A., Cronin, James T., Stout, Michael., Diaz, Rodrigo. Comparison of *Phragmites australis* varieties defense traits and their role in host plant resistance. LSU Annual meeting roseau cane program. December 2019. Baton Rouge, LA.

2019. **Aviles Leslie.,** Knight, Ian A., Diaz, Rodrigo., Stout, Michael. Understanding host plant resistance to the roseau cane scale on *Phragmites australis* varieties. Entomology Society of America. November 2019. St. Louis, Missouri.

2019. **Aviles Leslie.,** Knight, Ian A., Diaz, Rodrigo., Stout, Michael. Resistance to the roseau cane scale among *Phragmites australis* varieties. LSU Department of Entomology. October 2019. Baton Rouge, LA.

2019. **Aviles, Leslie.,** Knight, Ian A., Wilson, Blake E., Diaz, Rodrigo. Host specificity of roseau cane scale (Hemiptera: Aclerdidae) on economic and environmental important grasses. Southeastern Branch of Entomological Society of America. March 2018. Mobile, Alabama.

2018. *__Aviles, Leslie.,__ Knight, Ian A., Wilson, Blake E., Gill, Madeline., Cronin, James T., Diaz, Rodrigo. Host specificity of roseau cane scale (*Nipponaclerda biwakoensis*, Hemiptera: Aclerdidae) on economic and environmental important grasses. LSU Annual meeting roseau cane program. December 2018. Baton Rouge, LA.

2018. *__Aviles, Leslie.,__ Knight, Ian A., Wilson, Blake E., Gill, Madeline., Cronin, James T., Diaz, Rodrigo Roseau cane die-off. Conferences at Loyola University. November 2018. New Orleans, LA.

2018. **Aviles, Leslie.,** Knight, Ian A., Wilson, Blake E., Gill, Madeline., Cronin, James T., Diaz, Rodrigo. Host specificity of roseau cane scale (*Nipponaclerda biwakoensis*, Hemiptera: Aclerdidae) on economic and environmental important grasses. LSU Department of Entomology. October 2018. Baton Rouge, LA.

Poster presentation

2019. Aviles, Leslie., Knight, Ian A., Wilson, Blake E., Diaz, Rodrigo. Assessing the host range of *Nipponaclerda biwakoensis* (Hemiptera: Aclerdidae), a grass scale associated with *Phragmites* die-offs. North Caroline University. September 2019. Raleigh, North Caroline.

HONORS AND AWARDS

August 2020 Ross Fellowship Award for PhD student with academic excellence. Purdue University, West Lafayette, Indiana.

December 2019 Winner of the outstanding graduate student ZAS 2019 scholarships. Zamorano Agriculture Society- LSU. Baton Rouge, Louisiana.

October 2019 First place in the Graduate Student Symposium of Department of Entomology. Masters Oral Presentation. Baton Rouge, Louisiana.

September 2019 First place in the graduate student poster competition at the 7th Symposium of Zamorano Alumni in the USA.

September 2019 Joseph Freeland Conference Fund for the Annual Entomology Society of America meeting, St. Louis, Missouri.

October 2018 First place at Graduate Student Symposium of Department of Entomology. Masters Oral Presentation. Baton Rouge, Louisiana.

PROFESSIONAL DEVELOPMENTS

2019 Course: Writing for Impact and Influence by the journal of American Institute of Biological Sciences.

Learning new techniques for writing scientist publications by doing assignments.

PROFESSIONAL SERVICES

Purdue University

Spring 2021 – Fall 2021: Vice president of Zamorano Agriculture Society at Purdue.

Fall 2020 – Present: Member of the Graduate curriculum committee, Department of Entomology.

Fall 2020 – Spring 2021: Member of the Diversity and Mentoring Committee, Department of Entomology.

Louisiana State University

Fall 2019: Member of the Department of Entomology Debate Team during the Annual Entomology Society of America meeting. Topic: How can scientists better communicate with the public to get them more engaged in Integrated Pest Management (IPM)?

Fall 2019 – Summer 2020: Secretary of Entomology Club at LSU.

Spring 2019 – Fall 2019: Secretary of Zamorano Agriculture Society at LSU.

Fall 2017 – Summer 2020: Member of the LSU Department of Entomology club.

Summer 2017 – present: Member of Zamorano Agriculture Society.

Zamorano University

Spring 2011 – Fall 2014: Member of the first aid club, assisting the health clinic with ambulance service.

OUTREACH ACTIVITIES

April 14th, 2019: Volunteer at the "AgMagic" outreach event, showcasing agriculture to the public.

March 6th, 2019: Volunteer at the "Garden Show and Arts and Crafts Fair" event.

MASS MEDIA COVERAGE OF RESEARCH

LSU AgCenter researchers conduct plant host study on Roseau cane scale. LSU AgCenter. 09/26/2018. Link:https://www.lsuagcenter.com/profiles/rbogren/articles/page1537976513197?fbclid=IwAR3yjMOAZFPGUje1PtDle9N7qKlgSfZyQ5h68jEkgQVlj9E4qhZWJZ9Z1aA

PROFESSIONAL EXPERIENCES

2016 Production manager. Red fox, Las Mercedes S.A. de C.V. Santa Ana**,** El Salvador.

- Monitored the harvest of ornamental cutting, packing and shipping to the U.S.
- Managed harvesting personnel.
- Trained staff about pesticides, the use of the correct equipment, cleaning, and sanitation of work tools.
- Provided talks about teamwork.

2015 – 2017 Co-founder of an ornamental plant business "Kaktal." San Salvador, El Salvador.

- Supervised production of ornamental plants such as cactus, bonsai, and succulents.
- In charge of the marketing of the brand "Kaktal" on social media.

PROFESSIONAL MEMBERSHIPS

International Organization for Biological Control, Entomological Society of America.

LANGUAGES

English: Full professional proficiency.
Spanish: Native Language.

PROFESSIONAL REFERENCES

Dr. Laura Ingwell, PhD
Assistant Professor
Department of Entomology, Purdue
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Dr. Rodrigo Diaz, PhD
Assistant Professor
Department of Entomology, LSU
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Dr. Michael Stout, PhD
Department Head
Department of Entomology, LSU
MStout@agcenter.lsu.edu

Dr. Ian A. Knight, PhD
Post-doctoral Associate
U.S. Army Engineer Research and Development Center
Ian.A.Knight@erdc.dren.mil