

## Contact Information

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Rollins Urban & Structural Entomology Facility  
Department of Entomology  
Texas A&M University  
College Station, TX 77843

## Education

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**PhD in Entomology**, *Texas A&M University*, College Station, Texas, 2014 – Expected 2020

**BS in Entomology**, *University of California*, Riverside, California, 2010 – 2014

## Research Experience

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*Texas A&M University*, Department of Entomology, College Station, TX, 2014 – Expected 2020

Dr. Edward Vargo Lab 2014 – Present

Dissertation: *The relationship between subterranean termites and soilborne pathogens*

- The effects of genetic diversity on termite disease resistance
- Characterization of microbial communities and pathogen pressure in termite colonies
- Colony behavioral responses to diseased individuals

Teaching Assistant, 2015 – 2016

ENTO322 Evolution of Insect Structure, Fall 2016

ENTO403 Urban Entomology, Spring 2016

ENTO305 Insects in Human Society, Spring/Summer/Fall 2015

*University of California*, Department of Entomology, Riverside, CA, 2010 – 2014

Dr. Richard Stouthamer Lab 2013 – 2014

Collection and rearing of *Diaphorina citri* and its parasitoid host, *Tamarixia* sp. for biocontrol program

Dr. Dong-Hwan Choe Lab, 2012 – 2014

Maintenance of bed bug colonies

Investigation of the insecticidal effects of plant oil volatiles on bed bugs

Collection and preparation of bed bug pheromone compounds for GC analysis

Behavioral study on bed bug pheromone attraction

Dr. Christiane Weirauch Lab, 2012 – 2014

ADBC Databasing Project – A thematic collection network designed to combine information of tri-trophic associations between plants, insect herbivores, and their parasitoids.

- Species level data entry and input of locality information for Hemiptera insect collections from the UC Riverside Museum of Entomology

## Publications

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1. **Aguero, Carlos M.**, Pierre-André Eyer, and Edward L. Vargo. Increased genetic diversity from colony merging in termites does not improve survival against a fungal pathogen. 2020. *Scientific Reports* 10: 4212. DOI: <https://doi.org/10.1038/s41598-020-61278-7>
2. **Carlos M. Aguero**, Tawni L. Crippen, and Edward L. Vargo. In prep. Reduced environmental microbial diversity on the cuticle and in the galleries of a subterranean termite compared to surrounding soil.

## Presentations

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1. **Carlos M. Aguero**. 2020. Investigations of subterranean termite immune defenses. *Urban Pest Management Conference and Workshop*, Texas A&M University, College Station, TX.
2. **Carlos M. Aguero**, Pierre-André Eyer, and Edward L. Vargo 2019. Does increased group diversity improve social immunity in the subterranean termite, *Reticulitermes flavipes*? *Entomological Society of America*, St. Louis, MO.
3. **Carlos M. Aguero**, Tawni L. Crippen, and Edward L. Vargo. 2019. Pathogen prevalence outside and within subterranean termite foraging galleries. *Termite Course 2019 Graduate Student Symposium*, University of Florida FLREC, Davie, FL.
4. **Carlos M. Aguero**. 2019. Cleaning house and staying healthy: The termite way. *Urban Pest Management Conference and Workshop*, Texas A&M University, College Station, TX.
5. **Carlos M. Aguero**, Tawni L. Crippen, and Edward L. Vargo. 2018. Characterization of microbial communities outside and within subterranean termite colonies. *ESA, ESC, and ESBC Joint Annual Meeting*, Vancouver, BC, Canada.
6. **Carlos M. Aguero**. 2018. Diseases of *Reticulitermes flavipes*: Investigations into the more effective use of termite pathogens. *Urban Pest Management Conference and Workshop*, Texas A&M University, College Station, TX.
7. **Carlos M. Aguero**, Jason Martin, Mark S. Bulmer, and Edward L. Vargo. 2017. The effects of soilborne pathogens on the colony structure of the eastern subterranean termite, *Reticulitermes flavipes*. *Entomological Society of America*, Denver, CO.

8. **Carlos M. Aguero**, Jason Martin, Mark S. Bulmer, and Edward L. Vargo. 2017. The effects of soilborne pathogens on the colony structure of the eastern subterranean termite, *Reticulitermes flavipes*. *Ecological Integration Symposium*, Texas A&M University, College Station, TX.
9. **Carlos M. Aguero**, Jason Martin, Mark S. Bulmer, and Edward L. Vargo. 2017. The effects of soilborne pathogens on the colony structure of the eastern subterranean termite, *Reticulitermes flavipes*. *Entomological Society of America Southwestern Branch Meeting*, Austin, TX.
10. **Carlos M. Aguero**. 2017. Colony structure and fungal resistance of subterranean termites. *Urban Pest Management Conference and Workshop*, Texas A&M University, College Station, TX.
11. **Carlos M. Aguero**, Tawni L. Crippen, Jason Martin, Mark S. Bulmer, and Edward L. Vargo. 2016. An investigation of the factors influencing the colony structure of the eastern subterranean termite, *Reticulitermes flavipes*. *International Congress of Entomology*, Orlando, FL.
12. **Carlos M. Aguero** and Dong-Hwan Choe. 2016. Insecticidal effects of plant essential oil volatiles on adult bed bug, *Cimex lectularius* L. *Urban Pest Management Conference and Workshop*, Texas A&M University, College Station, TX.

## Posters

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1. **Carlos M. Aguero**, Tawni L. Crippen, and Edward L. Vargo. 2019. Characterization of microbial communities outside and within subterranean termite colonies. *South Texas Evolutionary Genetics and Genomics Conference*, Texas A&M University, College Station, TX.
2. **Carlos M. Aguero** and Edward L. Vargo. 2018. Colony response of the eastern subterranean termite (*Reticulitermes flavipes*) to soilborne pathogens. *Congress of the International Union for the Study of Social Insects 2018*, Guarujá, Brazil.
3. **Carlos M. Aguero** and Dong-Hwan Choe. 2013. Insecticidal Effects of Plant Essential Oil Volatiles on Adult Bed Bug, *Cimex lectularius* L. *Urban Pest Management Conference*, University of California, Riverside, CA.

## Awards

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Department of Entomology, TAMU, Travel award, 2019, \$600

USDA, Travel award to attend the Congress of the International Union for the Study of Social Insects, Guarujá, Brazil, 2018, USDA, \$1,500

Excellence Fellowship, 2014 – 2016, Texas A&M, \$22,800

### Associations and Activities

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Reviewer for Ecology and Evolution

Texas Science & Engineering Fair

*Fair Award Judge 2019*

Pi Chi Omega

*Graduate Student Member 2018-2020*

International Union for the Study of Social Insects

*Member 2014-2020*

Entomology Graduate Student Association, Texas A&M

*Member 2014-2020*

Botany and Entomology Undergraduate Student Association, UC Riverside

*President 2013 – 2014*

*Vice-President 2012 – 2013*

*Member 2010-2014*