

Phillip Shults

Cell Phone: (832)-692-3687

ptshults@tamu.edu**Educational Experience:**

2016-Present PhD in progress, Texas A&M University, Department of Entomology,
College Station, Texas

Dissertation Title: A study of *Culicoides* (*Monoculicoides*) of the world and an investigation of the population structure and evolutionary history within the *Culicoides variipennis* complex.

2012-2015 Master of Science, Texas A&M University, Department of Entomology,
College Station, Texas

Thesis Title: A study of the taxonomy, ecology, and systematics of *Culicoides* species including those associated with deer breeding facilities in southeast Texas.

2007-2011 Bachelor of Science, Texas A&M University, Department of Entomology,
College Station, Texas

Professional Experience:

2012-Present Rollins Urban and Structural Entomology Facility at Texas A&M University
Research Associate

- Design and implement industry sponsored research projects
- Collect and analyze experimental data; report and summarize findings
- Aided in the completion of 127 projects totaling \$1,376,140.00 in funding
- Managed 69 projects totaling \$912,440.00 in funding

Summer 2010, Cypress Creek Pest Control
May-Dec. 2011 **Manager**

- Assess and treat commercial and residential pest problems
- Insect identification and customer support
- Marketing and sales

2009-2011 Texas A&M University Insect Collection
Student Worker

- Collect, sort, and process insects from various projects
- Catalogue insects in the collection into an electronic database
- Completed an Ecolab student project on the Diptera of central Texas

Publications: <https://scholar.google.com/citations?user=3l87JN4AAAAJ&hl=en&oi=sra>

1. **Shults, P.**, Cohnstaedt, L. W., Adelman, Z. N., & Brelsfoard, C. (2021). Next-generation tools to control biting midge populations and reduce pathogen transmission. *Parasites & Vectors*, 14(1), 1-13.
2. **Shults, P.**, A. Ho, E. M. Martin, B. L. McGregor, & E. L. Vargo, 2020. Genetic Diversity of *Culicoides stellifer* in the Southeastern United States Compared with Sequences from Ontario, Canada. *Journal of Medical Entomology*. 57:4, 1324–1327.
3. Covey, H., R. H. Hall, A. Krafur, M. L. Matthews, **P. T. Shults**, & C. L. Brelsfoard, 2020. Cryptic *Wolbachia* Detection and Prevalence in *Culicoides* Midge Populations in the United States. *Journal of Medical Entomology*. 57:4, 1262–1269.
4. Martin, E., E. Chu, **P. Shults**, A. Golnar, D. A. Swanson, J. Benn, D. Kim, P. Schneider, S. Pena, & C. Culver, 2019. *Culicoides* species community composition and infection status with parasites in an urban environment of east central Texas. *Parasites & vectors* 12:39.
5. **Shults, P.** & A. Borkent, 2018. Pupae of the Nearctic species of *Culicoides* Latreille subgenus *Monoculicoides* Khalaf (Diptera: Ceratopogonidae). *Zootaxa* 4504: 451-472.
6. **Shults, P.**, A. Borkent, & R. E. Gold, 2016. The pupa of *Culicoides sonorensis* Wirth and Jones – first detailed description of this stage of the Bluetongue virus vector. *Annals of the Entomological Society of America*. 109:1, 280-318.

Teaching Experience:

- Instructor of Record
 - Texas A&M University Entomology 301 – Biodiversity and Biology of Insects, 3 undergraduate credit hours (Spring 2020)
- Instructor
 - Phillip J. Hammond Termite training course (Bi-annually, 2016-2019)
 - Texas A&M University Correspondence Course in Termite Biology (2016-2019)
- Guest lecturer
 - Entomology 403 - Urban Entomology (2015, 2017, 2019)
 - Pharmacy 841 - Toxicology and Poison Management (2018)
 - Pest Control License Apprentice training (2019)

Grants:

2019 - ARS 58-3020-9-007 - Non-Assistance Cooperative Agreement \$30,000
 2017 - S.W. Williston Diptera Research Grant \$900
 2016 - Safari Club International (Houston Chapter) Research Grant \$3,500

Awards:

2019 - TAMU student travel award..... \$600
 2019 - Graduate and Professional Student Government travel award \$500
 2006 - Eagle Scout Award, Boy Scouts of America

Invited Continuing Education Presentations:

1. **Shults, P.** Pest Fly Identification and the Future of Mosquito Control. TPCA El Paso Workshop, January 27-28, El Paso, TX. **Keynote speaker.**
2. **Shults, P.** Pesticide application safety & Current research for the control of cockroaches. 25th Annual South Texas Workshop, November 15, 2019, Corpus Christi, TX.
3. **Shults, P.** Safety, its good business. Texas A&M University Urban Pest Management Conference. College Station, TX. January 16, 2019.
4. **Shults, P.** Biting flies and an IPM approach to controlling them. Texas A&M University Urban Pest Management Conference. College Station, TX. January 11, 2018.
5. **Shults, P.** Identification and control of roaches. Texas A&M University Urban Pest Management Conference. College Station, TX. January 12, 2017.
6. **Shults, P.** Insects and diseases. Texas A&M University Urban Pest Management Conference. College Station, TX. January 6, 2016.
7. **Shults, P.** Pest flies. Texas A&M University Urban Pest Management Conference. College Station, TX. January 8, 2015.

Invited Symposia Presentations:

1. **Shults, P.** Taxonomic uncertainty in the *C. variipennis* complex part II: population genomic structure of *C. sonorensis* throughout North America. The 49th Annual SOVE Conference, San Juan, Puerto Rico, September 22-26, 2019. **Symposium organizer.**
2. **Shults, P.** Two for one? The drawbacks and benefits of studying disease vectors collected in broad surveys. 67nd Annual Meeting of the Entomological Society of America. St. Louis, MO, November 15-20, 2019.
3. **Shults, P., A. Ho, E. Martin, B. McGregor, E. Vargo.** Presence of Bluetongue Antibodies in East Texas Goats and an Investigation of the *Culicoides* Vector. Southwestern branch meeting of the Entomological Society of America. Tulsa, Ok, April 14-18, 2019.
4. **Shults, P., Vargo, E., Reed, J., Keefer, T., Davis B.** Using Trelona® advance termite bait system and Termidor® Dry Termiticide to protect live trees infested with *Coptotermes formosanus* (Isoptera: Rhinotermitidae). 66nd Annual Meeting of the Entomological Society of America. Vancouver, BC, Canada, November 11-14, 2018.

Research Presentations:

1. **Shults, P., Vargo, E., and Cohnstaedt, L.** Redefining the North American distribution of *Culicoides sonorensis* and *Culicoides variipennis*, vectors of bluetongue and epizootic hemorrhagic disease. 65nd Annual Meeting of the Entomological Society of America. Denver, Colorado, November 5-8, 2017.
2. **Shults, P.** Collecting biting midges across the eastern US. North American Deer Farmers Association annual conference. Dallas, TX. March 22-25, 2017.

3. **Shults, P.**, Borkent, A., Woolley, J., Vargo, E. The Phylogeny of *Culicoides* (Diptera: Ceratopogonidae) (*Monoculicoides* Khalaf). 63rd Annual Meeting of the Entomological Society of America. Minneapolis, Minnesota, November 15-18, 2015.
4. **Shults, P.**, Borkent, A., and Gold, R. E. Understanding the taxonomy of vectors: first description of the pupa of *Culicoides sonorensis* (Diptera: Ceratopogonidae), vector of Bluetongue and Epizootic Hemorrhagic Disease. 63rd Annual Meeting of the Southwest branch of the Entomological Society of America and the annual meeting of the Society of Southwestern Entomologists. Tulsa, OK. February 23-26, 2015.
5. **Shults, P.**, Borkent, A., Gold, R. E. First description of the pupa of *Culicoides sonorensis* (Diptera: Ceratopogonidae), vector of Bluetongue. 62nd Annual Meeting of the Entomological Society of America. Portland, OR. November 16-19, 2014.

Professional Activities:

- Society Memberships
 - Entomological Society of America
 - Society of Vector Ecology
 - TAMU Entomology Graduate Student Organization (President & Vice-President)
 - TAMU Graduate and Professional Student Government (Senator)
- Reviewer - Journal of Medical Entomology (4), Pest Management Sciences (1)
- Noncommercial Certified Application License, Texas Department of Agriculture.
- Outreach
 - Volunteer, Texas FFA Association, Texas A&M Area 3, 7, and 9 Entomology Career Development Event Area Contest. (2015-2019)
 - Volunteer, Cornerstone Academy, teaching elementary children about insects using live and mounted specimens. (2012-2019)

Skills:

- Field and laboratory experience with insects of medical and economic importance: ants, bedbugs, biting midges, cockroaches, fleas, mosquitoes, and termites.
- Genetic analysis: DNA and RNA extraction, sanger and next generation sequencing, network analysis, and population genetic analysis (microsatellite and SNP data).
- Statistics: basic analyses associated with biological data (ANOVA, GLM, etc.)
- Insect collection: experience with common insect collection traps.
- Insect rearing: maintain insect colonies (ants, cockroaches, & termites).

References:

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Urban and Structural Entomology, Texas A&M University
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Royal British Columbia Museum and
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