

Margaret W. Thairu

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Education:

- Ph.D.** University of California Riverside: Entomology, 2019
Transferred to UCR to continue work with Dr. Allison Hansen
University of Illinois: Urbana-Champaign: Entomology, Fall 2014-Summer 2017
Advisor: Allison K. Hansen
- M.S.** University of Wisconsin, Madison, WI
Master's of Science in Entomology, 2014
- B.S.** Florida State University, Tallahassee, FL
Bachelor of Sciences: Biological Sciences with Honors, 2010

Professional Experience:

- Dr. Cameron Currie**, University of Wisconsin- Madison, Department of Bacteriology,
Post-doctoral Researcher (Current)
- Dr. Allison K. Hansen Laboratory**, University of California Riverside, Entomology Department
Teaching Assistant/ Graduate Student Research Assistant (Fall 2017-Spring 2019)
- Dr. Allison K. Hansen Laboratory**, University of Illinois at Urbana-Champaign, Entomology
Department
Teaching Assistant/ Graduate Student Research Assistant (Fall 2014-Summer 2017)
- Dr. Johanne Brunet Laboratory**, University of Wisconsin- Madison, Entomology Department
Graduate Student Assistant - Masters (Summer 2011-Spring 2014)
- Dr. Kimberly Hughes Laboratory**, Florida State University, Department of Biological Sciences
Research Assistant (Summer 2010-Spring 2011)

Publications:

- Thairu, M. W.**, Meduri V.R.S., Degnan P.H., and Hansen A.K., **2021** Natural selection shapes maintenance of orthologous sRNAs in divergent host-restricted bacterial genomes. *Molecular Biology and Evolution* <https://doi.org/10.1093/molbev/msab202>
- Francoeur C.*, May D.S.*, **Thairu M.W.**, Hoang D.Q., Panthofer O., Bugni T.S., Pupo M.T., Clardy J., Pinto-Tomas A.A., and Currie C.R. **2021** *Burkholderia* from fungus gardens of fungus-growing ants produce antifungals that inhibit the specialized parasite *Escovopsis*. *Applied and Environmental Microbiology* <https://doi.org/10.1128/AEM.00178-21>
*Co-first authors - Contributed equally
- Ravenscraft A., **Thairu, M.W.**, Hansen A.K, Hunter M.S., **2020**, Continent-scale sampling reveals fine-scale turnover in a beneficial bug symbiont. *Frontiers in Microbiology* [https://doi: 10.3389/fmicb.2020.01276](https://doi.org/10.3389/fmicb.2020.01276)
- Larson, E.R., Graham, B.M., Achury, R., Coon, J.J., Daniels, M.K., Gambrell, D.K., Jonassen, K.L., King, G.D., LaRacunte, N., Perrin-Stowe, T.I., Reed, E.M., Rice, C.J., Ruzi, S.A., **Thairu, M.W.**, Wilson, J.C., Suarez, A.V., **2020**, From eDNA to citizen science: emerging tools for the early detection of invasive species. *Frontiers in Ecology and the Environment* <https://doi.org/10.1002/fee.2162>

Publications (continued):

Thairu, M.W., and Hansen A.K., **2019**, Changes in aphid host-plant diet influences the small RNA expression profiles of its obligate nutritional symbiont, *Buchnera*. *mBio* [https://doi:10.1128/mBio.01733-19](https://doi.org/10.1128/mBio.01733-19)

Thairu, M.W., and Hansen A.K., **2019**, It's a small, small world: Unravelling the role and evolution of small RNAs in organelle and endosymbiont genomes. *FEMS Microbiology Letters* <https://doi.org/10.1093/femsle/fnz049>

Jamison, B.V., **Thairu, M. W.**, Hansen A.K., **2018**, Efficacy of in vivo electroporation on the delivery of molecular agents into aphid (Hemiptera: Aphididae) ovarioles. *Journal of Insect Science*. 18(2): 49, <https://doi.org/10.1093/jisesa/iey041>

Thairu, M. W., Cheng S., and Hansen A.K. **2018**, A sRNA in a reduced mutualistic symbiont genome regulates its own gene expression. *Molecular Ecology* doi.org/10.1111/mec.14424

Thairu, M.W., Skidmore I.H., Bansal R., Nováková E., Hansen T.E., Li-Byarlay H., Wickline S.A., and Hansen A.K. **2017**, Efficacy of RNA interference knockdown using aerosolized short interfering RNAs bound to nanoparticles in three diverse aphid species. *Insect Molecular Biology* [doi:10.1111/imb.12301](https://doi.org/10.1111/imb.12301)

Thairu, M.W.*, Kim, D*., and Hansen A.K. **2016**, Novel Insights into Insect-Microbe Interactions- Role of Epigenomics and Small RNAs. *Front. Plant Sci.* [doi: 10.3389/fpls.2016.01164](https://doi.org/10.3389/fpls.2016.01164)
*Co-first authors - Contributed equally

Brunet J., **Thairu M.W.**, Henss J.M., Link R.I. and Kluever J. **2015**, The effects of flower, floral display and reward sizes on bumble bee foraging behavior when pollen is the reward and plants are dichogamous. *International Journal of Plant Sciences*. [doi_10.1086/683339](https://doi.org/10.1086/683339)

Thairu, M.W., Brunet J. **2015**, The role of pollinators in maintaining variation in flower color in the Rocky Mountain columbine, *Aquilegia coerulea*. *Annals of Botany*, [doi: 10.1093/aob/mcv028](https://doi.org/10.1093/aob/mcv028)

Fraser, B., Janowitz, I., **Thairu, M.**, Travis J., and Hughes K., **2014**, Phenotypic and genomic plasticity of alternative male reproductive tactics in sailfin mollies. *Proceedings of the Royal Society- B*, [doi:10.1098/rspb.2013.2310](https://doi.org/10.1098/rspb.2013.2310)

Presentations/Posters:

Wu, R., **Thairu, M.W.**, Gao, Y., Kyle, E. J., Velickovic, M., Munoz, N., Gotting K., Nicora, C.D., Monroe, M.E., Moore, R.J., Currie C.R., Webb-Robertso, B., and Burnum-Johnson, K.E., **(Spring 2022)** Presentation: Spatiotemporal Mapping of Perturbations in a Naturally Evolved Fungal Garden Microbial Consortium. Presented at U.S. DOE Genomic Science Program within Biological and Environmental Research, Genomic Science Program PI Annual Meeting.

Thairu, M.W., and Currie C.R. **(Spring 2021)** Presentation: Characterizing microbial community dynamics and function using a simplified gut model: A focus on *Burkholderiaceae*. Presented at the Microbes in Health and Disease Seminar Series, University of Wisconsin-Madison.

Thairu, M.W., and Currie C.R. **(Spring 2021)** Presentation: Characterizing Microbial Community Dynamics Within Ant Fungus Gardens. Presented at the Wisconsin Ecology Spring Symposium, University of Wisconsin-Madison.

Presentations/Posters (continued):

Thairu, M.W., and Hansen A.K (Spring 2019) Presentation (*Invited*) Small RNAs in small genomes: Unravelling the role of small RNAs in hemipteran bacterial symbionts, Presented at the Entomological Society of America- Pacific Branch Annual Meeting, San Diego, California

Thairu, M.W., and Hansen A.K (Fall 2018) Presentation (*Invited*): Untangling the regulatory role of insect symbiont small RNAs in response to developmental and environmental changes, Presented at the joint Entomological Society of America, Entomological Society of British Columbia, and Entomological Society of Canada Annual Meeting, Vancouver, Canada

Thairu, M.W., Cheng S., and Hansen A.K. (Fall 2017) Presentation: Life stage specific expression and regulatory function of conserved small RNAs in *Buchnera*, an obligate symbiont of aphids, Presented at the Entomological Society of America Annual Meeting, Denver, Colorado

Thairu, M.W., Cheng S., and Hansen A.K. (Fall 2017) Presentation: Small RNAs regulate gene expression in the reduced-genome of a mutualistic endosymbiont of insects, Presented at the UCR Microbiome Initiative Annual Microbiome Symposium & Data-blitz, Riverside, California

Thairu, M.W., Skidmore I.H., Bansal R., Nováková E., Hansen T.E., Li-Byarlay H., Wickline S.A., and Hansen A.K (Spring 2016) Presentation: (*Invited*) RNAi Using Aerosolized siRNA and Nanoparticles in Aphids Presented at the Entomological Society of America- North Central Branch Meeting, Cleveland, Ohio

Thairu M. W., and Brunet J. (Fall 2013) Presentation: Pollinator preference and their potential role in maintaining floral trait diversity. Presented at the Entomological Society of America Annual Meeting, Austin, Texas

Thairu M. W., and Brunet J. (Fall 2012) Presentation: Pollinator preference and their potential role in maintaining floral trait diversity. Presented at the Entomological Society of America annual meeting, Knoxville Tennessee.

Thairu M. W., Ziobro R., Stewart C., Van Etten M. Brunet J. (Summer 2012) Poster: Pollinator preference and their potential role in maintaining floral trait diversity. Presented at the Entomological Society of America- North Central Branch Meeting, Lincoln Nebraska.

Awards:

Microbes in Health and Disease Fellowship: National Institute Of Allergy And Infectious Diseases of the National Institutes of Health: T32AI055397 (Summer 2020-present)

GAANN (Graduate Assistance in Area of National Need) Fellowship: Spring 2017- Summer 2017

The Francis M. and Harlie M. Clark Summer Fellowship: Summer 2016

The Lebus Fund Award: (\$1000) Summer 2016

North Central Branch- Entomological Society Student Travel Scholarship: (\$250) Spring 2016

Graduate Women in Science Ruth Dickie Scholarship: Summer 2013 (\$2,800)

Honorable Mention- NSF GRFP 2012

Biological Sciences Scholar Award- University of Wisconsin-Madison: Fall 2011

Honors in the Major- Florida State University

Teaching:

University of California Riverside

Teaching Assistant

- Introductory Organismal Biology BIOL005B- Lab Teaching Assistant (Spring 2019)
- Introductory Evolution and Ecology BIOL005C- Lab Teaching Assistant (Spring 2018)
- Introductory Organismal Biology BIOL005B- Lab Teaching Assistant (Winter 2018)

Teaching (continued):

University of Illinois: Urbana-Champaign

Teaching Assistant

- Insect Pathology IB 483 - (Online Course) Teaching Assistant (Spring 2017)
- Evolution of Molecules and Cells IB 270- Lab Teaching Assistant (Fall 2016)
- Anatomy and Physiology IB 202 - Lab Teaching Assistant (Spring 2016)
- Evolution of Molecules and Cells IB 270- Lab Teaching Assistant (Fall 2015)
- Anatomy and Physiology IB 202 - Lab Teaching Assistant (Spring 2015)
- Animal Biology IB 102 - Lab Teaching Assistant (Fall 2014)

University of Wisconsin, Madison

Teaching Assistant

- Introductory Biology 151 – Lab Teaching Assistant (Fall 2012)

Reader/Grader

- Introductory Biology 151 (Spring 2013, Fall 2013, Spring 2014)

Teaching Awards:

- Teachers Ranked as Excellent by their Students:** Fall 2016
- John G and Evelyn Hartman Heiligenstien Outstanding Teaching Assistant:** Spring 2016
- Teachers Ranked as Excellent by their Students:** Spring 2016
- Teachers Ranked as Excellent by their Students:** Fall 2015