## Logan Sauers

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# RESEARCH INTERESTS

Host-microbe interactions, microbe-microbe interactions, coevolution, mutualism, bioinformatics, biostatistics, genetic architecture, genomics

# EDUCATION

2019 – August 2023 (expected) Illinois State University, Normal, IL. Ph.D. in Biological Sciences

2016 – 2018 Illinois State University, Normal, IL.

Master of Science in Biology

2012 - 2015 Western Illinois University, Macomb, IL.

Bachelor of Science in Biology, Concentration Zoology

# RESEARCH EXPERIENCE

2016 – Present Graduate Research Assistant, Infectious Disease Ecology Lab

School of Biological Sciences, Illinois State University Adviser: Dr. Ben Sadd

* Ph.D. Dissertation: Investigating the Evolution, Function, and Ecology of Microbial Communities within a Bumble Bee Host
* Master’s Thesis: Mechanisms Determining Specificity of Bumblebee Gut Symbionts.

2015 – 2017 Research Assistant, Insect Ecology Lab

School of Biological Sciences, Illinois State University Supervisor: Dr. Steven Juliano

2015 – 2015 Lab and Field Assistant, Kibbe Life Science Station

Department of Biology, Western Illinois University Supervisor: Dr. Jim Lamer

# PUBLICATIONS

Rittinger, M. A., Bowden, R. M., **Sauers, L. A.**, Paitz, R. T., Poppe, C. J., Thompson, C. F., Sakaluk, S. K. 2022. Sex-specific effects of hatching order on nestling baseline corticosterone in a wild songbird. *Gen. Comp. Endocrin.* 319:113964.

**Sauers, L. A.**, Hawes, K., and Juliano, S. A. 2022. Non-linear relationship between density and demographic traits of *Aedes*. *Sci. Rep.*

**Sauers, L. A.** and Sadd, B. M. 2019. An interaction between host and microbe genotypes determines colonization success of a key bumble bee gut microbiota member. *Evolution*. 73:2333-2342.

## Submitted

Li, J.\*, Zhuang, D.\*, **Sauers, L. A**.\*, Ren, H., Guo, J., Wang, L., Zhuang, M., Guo, Y., Zhang, Z., Wu, J., Yao, J., Yang, H., Wang, C., Lin, Q., Sadd, B. M., Zhang, Z. Divergence and convergence of the gut microbiomes of wild insect pollinators. *Microbiome.* \*Equal first author contributions

**In Preparation**

Li, J.\*, **Sauers, L. A**.\*, Sadd, B. M. Multi-omics reveal gut microbiome and metabolic changes associated with bumble bee queen life history. \*Equal first author contributions

Sierra-Rivera, B., **Sauers, L. A.**, Sadd, B. M. Trypanosome infection disturbs the gut microbiota of bumble bee hosts.

**Sauers, L. A.**, Bassingwaithe, T., Sierra-Rivera, B., Sadd, B. M. Perturbation of the native gut microbiota of bumble bees upon stimulation of innate immunity.

**Sauers, L. A.**, Williams, M., Sierra-Rivera, B., Sadd, B. M. Examining the extent of colonization specificity between bumble bee species and a core gut microbiota member.

# RESEARCH PRESENTATIONS

# “Associations between focal microbe functionality, hosts, and co-occurring microbes in insect pollinator microbiomes”. International Society for Microbial Ecology, Lausanne, Switzerland. 2022

“An interaction between host and microbe genotypes determines colonization success of a key bumble bee gut microbiota member”. Ecology & Evolution of Infectious Disease, Princeton, NJ. 2019

“Genotypes of bacteria and host drive specificity of colonization in a bumble bee and gut symbiont system”. Entomological Society of America Joint Annual Meeting, Vancouver Canada 2018

“Two is company three is a crowd! Density effects on larval mosquitoes”. Illinois Mosquito Control Conference, Springfield IL. 2017

“You’re not getting in dressed like that! Host immune mediation of gut symbiont specificity”.

Illinois Society for Microbiology Annual Meeting, Naperville IL. 2016

“It’s getting crowded In here: Density effects on larval mosquitoes”. Phi Sigma Honor Society Research Symposium, Bloomington-Normal IL. 2016

# HONORS, AWARDS, SCHOLARSHIPS

# Illinois State University GradBird Scholar, Illinois State University Graduate School (2022)

Centennial Pollinator Fellowship, $4,000, The Garden Club of America (2022)

 Summer Research Fellowship, $5,850, Phi Sigma Honors Society (2020)

Graduate Research Excellence Grant - RC Lewontin Early Award, $2,500, Society for the Study of Evolution (2019)

Illinois State University School of Biological Sciences Outstanding Masters Award (2019)

Robert Gray Ecology Scholarship, $1,500, Illinois State University School of Biological Sciences

# TEACHING AND MENTORSHIP

# Graduates

# 2019 – 2022 Bryan Sierra-Rivera

# Undergraduates

# 2022 – Present Teni Shosanya (Honor’s Student)

# 2022 – Present Amelie Mwilambwe

# 2019 – 2021 Toby Bassingwaite

# 2019 – 2020 Michael Williams (Noyce Scholar)

# 2018 – 2020 Earon Grinage

# Course Related Teaching

# 2016 Fundamental Concepts of Biology (BSC 101, 3 sections, 2 hours per section)

# 2016 – 2020 Microbiology and Society (BSC 160, 3 sections, 3 hours per section, head teaching assist and lab coordination)

# 2020 – Present Microbiology (BSC 260, 3 sections, 3 hours per section, head teaching assist and lab coordination)

# SERVICE

# University

August 2020 – Present College of Arts and Sciences College Council

Budget Committee

May 2016 – May 2018 Phi Sigma Honor Society President

# Discipline

Reviewer, 2022, Ecology and Evolution Reviewer, 2021, Scientific Reports Reviewer, 2020, Insects

**Community outreach**

Parklands Foundation: Native bee outreach exhibit. 2022

Children’s Discovery Museum: Educational material on insects. *Insectopia*. 2021 ScoutReach: Educational exhibit on bee conservation and insect evolution. 2019 Parklands Foundation: Native bee outreach exhibit. 2018

OSF Saint Joseph Medical Center Volunteer: 2015 – 2017

Western Illinois University Freshmen Mentorship Program: 2013 – 2014

**REFERENCES**

Dr. Ben M. Sadd

Illinois State University

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Research Advisor

Dr. Steven Juliano

Illinois State University

sajulian@ilstu.edu

Professor and Colleague

Dr. Jan Dahl

Illinois State University

Jdahl1@ilstu.edu

Professor and Instructor of Record for Microbiology

Dr. Scott Sakaluk

Illinois State University

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Professor