Leland Carl Graber

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EDUCATION

Cornell University, Ithaca, NY
- PhD student in Entomology
- Advisor: Dr. Corrie Moreau
- PhD - expected May 2025

University of Minnesota-Twin Cities, Minneapolis, MN
- Major: Plant Biology
- Minor: Entomology
- B.S. - May 2017

RESEARCH AND PROFESSIONAL INTERESTS

Insect systematics, phylogenetic/phylogenomics, evolutionary biology, insect-microbe associations, social insects, microbiomes

PUBLICATIONS

9. Landis et al

8. Suissa, J., De La Cerda, G.Y., **Graber, L.C.**, Jelley, C., Wickell, D., Phillips, H.R., Grinage, A.D., Moreau, C.S., Specht, C.D., Doyle, J., Landis, J.B. Data driven guidelines for phylogenomic analyses using SNP data. *Applications in Plant Sciences*. https://doi.org/10.1002/aps3.11611

7. Reese, C.M., **Graber, L.C**, Ramalho, M.O., Moreau, C.S. (2024) The diversity of Wolbachia across the turtle ants (Formicidae: *Cephalotes* spp.) *Biology, 13(2), 121;* https://doi.org/10.3390/biology13020121

6. Webb, J.L., **Graber, L.C.**, Ramalho, M.O., Moreau, C.S. (2023) Investigating the diversity of *Wolbachia* across the spiny ants *(Polyrhachis). Diversity, 15(3), 348; https://doi.org/10.3390/d15030348*

5. Graber L.C., Ramalho, M.O., Powell, S., Moreau, C.S. (2023) Identifying the role of elevation, geography, and species identity in structuring turtle ant (Cephalotes Latreille, 1802) bacterial communities in the Brazillian Cerrado. *Microb Ecol 86, 1240–1253;* https://doi.org/10.1007/s00248-022-02128-z

4. Faiman, R., Dao, A., Sanogo, Z.L., Diallo, M., Samake, D., Yossi, O., Veru, L.R., **Graber, L.C**., Conte, A.R., Kouam, C. and Krajacich, B.J. (2022) Isotopic evidence that aestivation allows malaria mosquitoes to persist through the dry season in the Sahel. *Nat Ecol Evol 6, 1687–1699.* https://doi.org/10.1038/s41559-022-01886-w

3. Faiman, R., Krajacich, B.J., **Graber, L**., Dao, A., Yaro, A.S., Yossi, O., Sanogo, Z.L., Diallo, M., Samaké, D., Sylla, D. and Coulibaly, M. (2021). A novel fluorescence and DNA combination for versatile, long-term marking of mosquitoes. *Methods in ecology and evolution, 12(6), pp.1008-1016.*

2. Krajacich, B. J., Sullvian, M, Faiman, R., Veru, L., **Graber, L**., Lehmann, T. (2020). Induction of long-lived potential aestivation states in laboratory An. gambiae mosquitoes. *Parasites Vectors* **13**, 412 (2020). https://doi.org/10.1186/s13071-020-04276-y

1. **Graber, L. C.,** & Fallon, A. M. (2019). Tetracycline reduces feeding and reproduction of the parthenogenetic springtail, Folsomia candida. *Symbiosis* **77,** 257–264 (2019). https://doi.org/10.1007/s13199-018-00593-0

SUBMITTED

1. Rivera, M., Smith, C.R., Hanisch, P., **Graber, L.,** Moreau, C., Suarez, A. Mandibular function and performance across worker size variation in harvester ants (Formicidae: *Pogonomyrmex*). Submitted to *The American Naturalist*

TEACHING EXPERIENCE

INSTRUCTOR OF RECORD

Cornell University. Model-Based Phylogenetics and Hypothesis Testing (ENTOM 4140). Instructor of Record.
Cornell University. The Biology of Domestication, Biology Freshman Seminar (BIOG 1250). Fall 2022.

TEACHING ASSSISTANT OR GUEST LECTURER

Cornell University. Insect Biology (ENTOM 2120). 2023.
Cornell University. Biology of the Sonoran Desert (ENTOM 2500). Co-instructor with Dr. Patrick O'Grady. Spring 2023.
West Chester University. Guest lecturer for Topics and Research Methods in Cellular, Microbial, and Molecular Biology (BIO 520). 2022.
Cornell University. Guest lecturer for Writing in the Majors (BIOEE 1780), invited by Lillian Senn. 2021.
Cornell University. Insect Biology (ENTOM 2120). 2020.

PRESENTATIONS

ORAL PRESENTATIONS

Graber, L. “Do harvester ants with big heads eat more seeds?” Evolution meeting, Albuquerque, NM. 2023.

Graber, L. “Phylogenomics with UCEs: A Practical Guide.” Department of Entomology, Cornell University, Ithaca, NY. 2022.

Graber, L., Johnson, R.A., Moreau, C.S. “Do harvester ants with bigger heads eat more seeds?” EvoGroup seminar series, Cornell University, Ithaca, NY. 2022.

Graber, L. “Identifying the role of elevation, geography, and species identity in turtle ant *(Cephalotes)* microbiomes”. Jugatae Entomology Symposium, Cornell University, Ithaca, NY. 2021.

Graber, L. “Inclusive Teaching of LGBTQIA+ Students”. Race, Sex, and Gender Equity in Biology Curriculum, Project Biodiversify Cornell Affiliates, Ithaca, NY. . 2020

Graber, L.C., Krajacich, B.J., Faiman, R., Lehman, T. “A New Mosquito Mark-Release Recapture Method: Fluorescence and DNA Mark”. Jugatae Entomology Symposium, Cornell University, Ithaca, NY. 2020.

POSTER PRESENTATIONS

Graber, L.C, Hagler, J., Lehmann, T. “Evaluation of protein marking for spatial and temporal tracking of mosquitoes” Entomology Society of America Annual Meeting 2018, Vancouver, BC, Canada. 2018.

Graber, L.C, Hagler, J., Lehmann, T. “Testing protein tags for mass marking and tracking of mosquitoes under field conditions.” Postbac Poster Day, National Institutes of Health**,** Bethesda, MD. 2018.

Graber, L., Dalenberg, H., Spivak, M. “Exploring factors in honey bee choice of antimicrobial plant resins” Undergraduate Research Symposium, University of Minnesota, Minneapolis, MN, 2017.

Graber, L., Nedveck, D., Tiffin, P. “Investigating rhizobial populations associated with two divergent legume populations”. Undergraduate Research Symposium, University of Minnesota, Minneapolis, MN, 2014.

INVITED TALKS

Graber, L., Roth, K. “Inclusive and accurate teaching of sex and gender in biology.” Invited by GRASSHOPR program. 2023.

Invited panel participant: **Graber, L**. “DEI: How to make your science inclusive.” ComSciCom-NY Virtual Conference. 2022.

Graber, L., Scheldorf, A., Johnson, A. “Inclusive teaching of LGBTQ students in molecular biology and genetics.” Invited by the Cornell Department of Molecular Biology and Genetics. 2022.

Foster, D., Young, N., **Graber, L. “**Science, Sex, and Gender: An Exploration of Diversity and Allyship.” Invited by Bayer Crop Sciences. 2021.

Graber, L. “Myrmecology, microbes, and mosquitoes: my journey to grad school”. Part of “Science on the Rig” seminar series at University of Findlay. 2021.

GRANTS, FELLOWSHIPS, SCHOLARSHIPS, AND HONORS

GRANTS

- Griswold Endowment, Cornell University. 2021. ($2254)
- Undergraduate Research Opportunities Program, University of Minnesota. 2016. For project "Exploring factors in honey bee choice of antimicrobial plant resins" ($1800)
- Undergraduate Research Opportunities Program, University of Minnesota. 2016. For project "Investigating rhizobial populations associated with two divergent legume populations" ($1800)

FELLOWSHIPS

- Graduate Research Fellowship, National Science Foundation. 2021. ($138,000)
- Clinton Dewitt Smith Fellowship, Cornell University. 2021. ($2,550)
- Recruitment Fellowship, Cornell University. 2019 ($33,241)

SCHOLARSHIPS

- Robert C. Hodson Memorial Scholarship for Entomology Undergraduate Students, University of Minnesota. 2016. ($500)
- Annual College of Biological Sciences Giving Scholarship, University of Minnesota. 2016. ($1500)
- Eloise Newcomb Pittman Scholarship for Women in Plant Biology, University of Minnesota. 2015. ($1000)

HONORS

- One of 23 LGBTQ scientists chosen for inclusion in the “New Science” exhibit at the California Academy of Sciences, 2021. Available online at: https://www.calacademy.org/new-science
- Featured in: Celebrating Transgender Day of Visibility 2023: an interview with Leland Graber and Ezra Kottler. Commun Biol 6, 343 (2023). https://doi.org/10.1038/s42003-023-04721-5

RESEARCH EXPERIENCE

2019-present: PhD Student, Department of Entomology, Cornell University, Ithaca, NY

2018-2019: Post-Baccalaureate Research Fellowship, NIH/NIAID/LMVR, Rockville, MD

• Mentor: Dr. Tovi Lehmann

• Developing tagging methods to determine migration and aestivation behaviors of Sahelian *Anopheles*

2017: Pest Elimination Research and Development Internship, Ecolab, Eagan, MN

• Mentor: Dr. Joelle Olson

• Developing and testing standard operating protocols for evaluating effectiveness of residual mosquito adulticides

2014-2017: Undergraduate Research, University of Minnesota, Minneapolis, MN

• Faculty Mentor: Dr. Ann Fallon, Department of Entomology

• Investigating effects of antibiotic exposure on *Wolbachia* in the collembola *Folsomia candida*

2016-2017: Directed Research, University of Minnesota, Minneapolis, MN

• Faculty Mentor: Dr. Marla Spivak, Department of Entomology

• Exploring honey bee preference of antimicrobial plant resins based on exposure to resin volatiles

2015: Summer Research Assistantship, University of Minnesota, Gatlinburg, TN

• Faculty Mentor: Dr. David Moeller, Department of Plant Biology

• Investigating ecology and range limits of the endemic plant *Phacelia* in the Appalachian Mountains

2013-2015: Undergraduate Research, University of Minnesota, Minneapolis, MN

• Faculty Mentor: Dr. Peter Tiffin, Department of Plant Biology

MENTORING EXPERIENCE

WORK AND VOLUNTEER EXPERIENCE

2014-2016 Interpretive Guide/Animal Care Technician/Summer Camp Teacher, Bell Museum of Natural History, Minneapolis, MN, November

2014-2017 Cartoonist, The Minnesota Daily, Minneapolis, MN,

2018-2019 Insect Ambassador, Smithsonian National Museum of Natural History, Washington, DC,

CLUBS & ORGANIZATIONS

2020-present: Vice President, Project Biodiversify Cornell Affiliates, Cornell University, Ithaca, NY.

2019-2021: Board members, QGrads (oSTEM), Cornell University, Ithaca, NY.

2014-2017: Vice President, Biological Sciences Research Club, University of Minnesota,

Minneapolis, MN.
2015-2017*:* Frenatae, University of Minnesota Department of Entomology, Minneapolis MN
2016-2017*: Phony* comedy magazine, Minneapolis, MN