Laila E. Phillips
lphillips@utexas.edu | ORCID ID: **0000-0002-9565-0246** | **lailaep.github.io**

EDUCATION

The University of Texas at Austin (UT-Austin) – Austin, TX *Aug. 2020 – Present*
Ph.D. Candidate, Microbiology. Anticipated graduation Summer 2026
GPA: 4.0.

Smith College – Northampton, MA *Aug. 2011 – May 2015*
B.A. *cum laude*. High Honors in Biological Sciences (Major), Studio Art (Minor)
GPA: 3.87. Honors Project in Biological Sciences (Advisor: Dr. Robert Dorit)

Academic Awards and Achievements:
Awarded a University of Texas at Austin Dissertation Writing Fellowship *Jan 2026*

Awarded a University of Texas at Austin University Graduate Continuing Fellowship *Jan. 2024*

Honorable Mention for National Science Foundation GRFP *April 2022*

Awarded the Smith College Margaret Wemple Brigham Prize for Excellence in Microbiology *May 2015*

RESEARCH EXPERIENCE

Student, SymbNet PhD Summer School on Host-Microbe Symbioses, Instituto Gulbenkian de Ciência, Oeiras, Portugal *July 2023*

- Selected by the strength of my application to attend this intensive 2-week program for PhD students
- Attended lectures and participated in discussions on topics in symbiosis led by international Principal Investigators
- Prepared two presentations and a grant proposal investigating host-microbe coevolution and specificity in insect-*Sodalis* systems as part of a group project

Visiting Researcher, Carnegie Institution Department of Embryology, Baltimore, MD *June 2022*
Advisor: Dr. William Ludington

- Learned methods for rearing *Drosophila melanogaster* and conducting microbiome-focused experiments over a two-week period
- Collected preliminary data on colonization of novel symbiotic bacteria in axenic *D. melanogaster*

Graduate Research Assistant, UT-Austin, Austin, TX *May 2021 – Present*
Advisor: Dr. Nancy Moran

- Currently investigating the molecular bases of colonization and specificity, and characterizing host-microbe interactions using insect-symbiotic gut bacteria and *D. melanogaster*
- Used bioinformatic approaches to identify candidate colonization genes and a homologous recombination approach to successfully knock out candidate genes
- Isolated novel bacteria and characterized their defining biochemical and genomic characteristics (published in the International Journal of Systematic and Evolutionary Microbiology in 2024)
- Genetically engineered newly-isolated symbiotic bacteria and utilized transformed strains in *D. melanogaster* colonization and localization experiments, resulting in a peer-reviewed publication (Elston et al., *ISME Comm* 2023)

Rotation Student, UT-Austin, Austin, TX *Aug. 2020 – May 2021*

- Transformed leafhopper (Cicadellidae) symbionts by conjugation and analyzed protein sequences isolated from leafhoppers in Dr. Jeffrey Barrick's lab
- Studied aphid endosymbionts via fluorescence *in situ* hybridization (FISH) in Dr. Nancy Moran's lab
- Used bioinformatic approaches to detect archaeal phages in metagenomic data in Dr. Brett Baker's lab

Research Coordinator, Div. Gastroenterology, Sinai Hospital, Baltimore, MD *Aug. 2015 – July 2020*
Advisor: Dr. Sudhir Dutta

- Assisted with a long-term clinical study on the safety and efficacy of fecal microbiota transplantation for the treatment of recurrent *Clostridioides difficile* infection in human participants
- Interacted with study participants, including obtaining informed consent and explaining study procedures
- Managed collection, storage, and analysis of participant fecal microbiome samples
- Managed laboratory space, personnel, and prepared Institutional Review Board applications

TEACHING, MENTORSHIP, AND OUTREACH

Teaching Assistant, UT-Austin, Austin, TX *Jan. 2024 – May 2024*
Course: Genomics; Instructor: Dr. Howard Ochman

- Met with instructor weekly to assist with course material preparation
- Held Office Hours weekly to meet with students and review course material
- Assisted with grading

CHIRP Administrator, Students Against Racism in the Natural and Engineering Sciences (SARDINES), UT-Austin, Austin, TX *Sept. 2020 – May 2024*

- Assisted STEM Education and Sociology graduate students with the development and dissemination of Curriculum and Habits for Inclusive Research Practices (CHIRP), an activity-based, seven-module curriculum for laboratory groups; intended to facilitate discussions and address inequities and systemic bias within scientific academic spaces by expanding scientists' capabilities for communication and mentorship

Millhauser Fellow, The Park School of Baltimore, Baltimore, MD *Apr. 2024*

- Invited to speak about my career path and current research to high school students

Teaching Assistant, UT-Austin, Austin, TX *Jan. 2023 – May 2023*
Course: Introductory Biology II; Instructor: Dr. Ruth Buskirk

- Met with instructor weekly to assist with lecture and discussion material preparation
- Led 4 separate hour-long discussion sections independently each week, involving material review, introduction of new concepts, and activities I was expected to design independently
- Held Office Hours weekly to meet with students and review course material

Moran Lab Undergraduate Mentor, UT-Austin, Austin, TX *Sept. 2022 – Present*

- Mentored an undergraduate (Sotelo KL) from September '22-August '23, teaching methods in microbiology, synthetic biology, microscopy, DNA & RNA extraction, PCR, experimentation using *D. melanogaster*; former student then worked as a Laboratory Technician in Moran Lab
- Mentored another undergraduate (Nikaeen N) September '23-January '25, teaching similar methods described above, and her work will figure significantly into a future publication; she later worked as a Laboratory Technician in the Moran Lab and is currently a graduate student at Washington University in St. Louis, MO
- Currently mentoring undergraduates starting January '24 (Hernandez-Granillo C), June '25 (Robinson CB), and September '25 (McIntyre M) teaching similar methods described above

Out in STEM (oSTEM) Mentor, UT-Austin, Austin, TX *Nov. 2021 – Apr. 2022*

- Met biweekly with an LGBTQ+-identifying undergraduate Biology Major to provide support and insight informed by my own experiences as a queer, gender non-conforming scientist

Volunteer, Baltimore UnderGround Science Space (BUGSS), Baltimore, MD *Oct. 2019 – July 2020*
Advisor: Lisa Scheifele

- Identified funding opportunities and assisted with preparation of grant applications for this non-profit public laboratory

PUBLICATIONS AND PRESENTATIONS

Manuscripts in Review:

[1] Silva Cerqueira AE, Holley JC, Hatcher SC, Marcus P, Vidigal P, **Phillips LE**, Moran NA. *Neffella xylocopae* gen. nov., sp. nov., a novel host-specific gut symbiont of *Xylocopa* carpenter bees in the family *Orbaceae*. Submitted to *Int J Syst Evol Microbiol*.

Peer-Reviewed Publications:

[1] Dutta SK, Firnberg E, Verma S, **Phillips LE**, Nair PP. Detection of human Y chromosome and the *SRY* gene in fecal samples of female patients following fecal microbiota transplantation. *Gastro Hep Adv* 2024;4(2):100568.

[2] **Phillips LE,** Sotelo KL, Moran NA. Characterization of gut symbionts from wild-caught *Drosophila* and other Diptera: Description of *Utexia brackfieldae* gen. nov., sp. nov., *Orbus sturtevantii* sp. nov., *Orbus wheelerorum* sp. nov., and *Orbus mooreae* sp. nov. *Int J Syst Evol Microbiol* 2024;74(9):006516.

[3] Elston KM, **Phillips LE,** Leonard SP, Young E, Holley JC, Ahsanullah T, McReynolds B, Moran NA, Barrick JE. The Pathfinder plasmid toolkit for genetically engineering newly isolated bacteria enables the study of *Drosophila*-colonizing Orbaceae. *ISME COMMUN* 2023;3.

[4] Verma S, Dutta SK, Firnberg E, **Phillips LE**, Vinayek R, Nair PP. Identification and engraftment of new bacterial strains by shotgun metagenomic sequence analysis in patients with recurrent *Clostridioides difficile* infection before and after fecal microbiota transplantation and in healthy human subjects. *PLOS ONE* 2021;16(7): e0251590.

[5] Agarwal A, Maheshwari A, Verma S, Arrup D, **Phillips LE**, Vinayek R, Nair PP, Hagan M, Dutta S. Superiority of Higher-Volume Fresh Feces Compared to Lower-Volume Frozen Feces in Fecal Microbiota Transplantation for Recurrent Clostridioides Difficile Colitis. *Dig Dis Sci* 2020;66.

[6] **Phillips LE,** Verma S, Surapaneni BK, Dutta SK. Potential clinical application of an automated fluorescent microbial cell counter in the detection of urinary tract infection. *J Clin Lab Anal*. 2020;34(8):e23334.

[7] Dutta SK, Verma S, Jain V, Surapaneni BK, Vinayek R, **Phillips LE**, Nair PP. Parkinson's disease: The emerging role of gut dysbiosis, antibiotics, probiotics, and fecal microbiota transplantation. *J Neurogastroenterol Motil* 2019;25:363–376.

[8] Alukal J, Dutta SK, Surapaneni BK, Le M, Tabbaa O, **Phillips LE**, Mattar MC. Safety and efficacy of fecal microbiota transplant in 9 critically ill patients with severe and complicated Clostridium difficile infection with impending colectomy. *J Dig Dis* 2019;20(6):301-307.

[9] Anand R, Song Y, Garg S, Girotra M, Sinha A, Sivaraman A, **Phillips LE**, Dutta SK. Effect of aging on the composition of fecal microbiota in donors for FMT and its impact on clinical outcomes. *Dig Dis Sci* 2017;62(4):1002-1008.

Abstracts, Posters, and Presentations:

[1] **Phillips LE** (presenting), Nikaeen N, Hernandez-Granillo C, Moran NA. Investigating host and symbiont genetic determinants of gut colonization using *Drosophila melanogaster* and host-restricted bacteria (family *Orbaceae*). *Poster presented at: Gordon Research Conference & Gordon Research Seminar on Animal-Microbe Symbioses; June 2025; Portland, ME.*

[2] **Phillips LE** (presenting), Nikaeen N, Sotelo KL, Moran NA. Host-restricted gut bacteria (family *Orbaceae*) newly isolated from wild *Drosophila* as a platform for genetic analyses of host-microbe interactions*. Poster presented at: Beneficial Microbes; July 2024; Madison, WI.*

[3] Cerqueira AES (presenting), Holley JC, Hatcher SC, **Phillips LE**, Moran NA. A novel host-specific gut symbiont of *Xylocopa* carpenter bees represents a novel genus of the family *Orbaceae. Poster presented at: Beneficial Microbes; July 2024; Madison, WI.*

[4] **Phillips LE** (presenting), Elston KM, Leonard SP, Sotelo K, Young E, Ahsanulla T, McReynolds B, Barrick JE, Moran NA. Isolating and engineering Drosophila gut symbionts (Orbaceae): A novel experimental system for studying colonization and host-microbe interactions. *Poster presented at the SymbNet PhD Summer School on Host-Microbe Symbioses; 2023; Instituto Gulbenkian de Ciência, Oeiras, Portugal.*

[5] Verma S, Arrup D, Vinayek R, Nair PP, **Phillips LE**, Firnberg E, Dutta SK. Emerging evidence for frequent occurrence of *Clostridioides difficile*-associated diarrhea in untreated symptomatic *Clostridioides difficile* carriers. *Abstract in: American Journal of Gastroenterology 2020;15:S103-S103.*

[6] Verma S (presenting), Firnberg E, **Phillips LE**, Vinayek R, Nair PP, Dutta SK. Critical role for toxin activating Clostridium bacteriophages in pathogenesis of colitis in subgroup of patients with recurrent Clostridium difficile infection. *Poster session presented at: Digestive Disease Week; May 2020; Chicago, IL [virtual].*

[7] Agarwal A (presenting), Verma S, **Phillips LE**, Arrup D, Vinayek R, Nair PP, Hagan M, Dutta SK, Maheshwari A. Superior efficacy of higher volume fresh feces vs. commercially available lower volume frozen feces for intestinal microbiota transplantation of recurrent *C. difficile* colitis. *Poster session presented at: Digestive Disease Week; May 2020; Chicago, IL [virtual].*

[8] **Phillips LE** (presenting), Verma S, Firnberg E, Nair PP, Dutta SK. Marked alterations in the fecal virome in patients with recurrent *Clostridium difficile* infection before and after fecal microbiota transplant. *Research forum oral presentation presented at: Digestive Disease Week; May 2019; San Diego, CA.*

[9] **Phillips LE** (presenting), Verma S, Firnberg E, Dutta SK, Nair PP. 2019. Evidence for cellular engraftment in GI tract in patients with recurrent *Clostridium difficile* infection after fecal microbiota transplant. *Poster session presented at: Digestive Disease Week; May 2019; San Diego, CA.*

[10] **Phillips LE**, Verma S (presenting), Firnberg E, Nair PP, Dutta SK. 2019. Gender differences in fecal bacteriome and virome in healthy human subjects. *Poster session presented at: Digestive Disease Week; May 2019; San Diego, CA.*