



The UNIVERSITY of OKLAHOMA

PhD opportunities in host-microbiome interactions

Caesar Lab | The University of Oklahoma, School of Biological Sciences | Norman, OK

The Caesar Lab investigates how host-associated microbiomes assemble, function, and evolve. Using eusocial bees as a model system, we develop an eco-evolutionary framework to understand the processes shaping host-microbe interactions. We are particularly interested in how host trait evolution, microbial interactions, and host association shape microbiome dynamics and the evolution of microbial symbionts. To investigate these processes, we combine fieldwork, multi-omics, bioinformatics, and microbial assays *in vitro* and *in vivo*.

We are particularly interested in recruiting students excited about:

1. **Computational and quantitative approaches***: Microbiome data analysis | Bioinformatics and comparative genomics | Statistics and ecological modeling | Phylogenomics | Programming (R, Bash, Python).
2. **Experimental approaches***: Microbiology and microbial ecology | Molecular biology | Culturing and characterization of microbial isolates | Experimental design and host-microbe-microbe interaction assays.

*Prior experience is not required; curiosity, quantitative thinking, and enthusiasm for learning are highly valued!

Application deadline: December 1, 2026

PhD position start: Fall 2027

Interested applicants are encouraged to **contact Dr. Lilian Caesar** (caesarl@ou.edu) before applying to discuss research interests and potential projects. **Please include** a brief description of your **research interests**, your **CV**, and contact information for **references**.

Lab highlights

- Access to OU's OSCER high-performance computing resources
- International fieldwork opportunities
- Microbial culture collection from social bees

For more information: www.ou.edu/cas/biological-sciences and www.liliancaesar.com

Note: We will soon advertise a Lab Manager/Research Associate position. If you're interested in helping establish the lab while contributing to research, please reach out.