Kasturi Lele

Email : kasturi.lele@tufts.edu

https://kasturilele.github.io/

Education

- **Tufts University** — **Medford, MA, USA**
  PhD Candidate, Department of Biology — *Sep. 2021 – present*
- **Indian Institute of Science Education and Research (IISER), Pune** — **Pune, India**
  Integrated BS-MS in Biology; CGPA 9.7 — *Aug. 2016 – May 2021*

Projects

- **Investigating the effects of UV radiation and antibiotic resistance evolution in E. coli (2017 – 2020)**: Semester projects. Project guide: Dr. Sutirth Dey, Population Biology Lab, IISER Pune
- **Investigating strategies to recover populations stuck in an extinction vortex (2019)**: Summer internship (supported by DAAD-WISE fellowship). Project guide: Dr. Meike Wittmann, Theoretical Biology Lab, Universität Bielefeld
- **The influence of fluctuating antibiotic exposures and population sizes on the evolution of multi-drug resistance (2020 - 2021)**: Master's thesis. Thesis guide: Dr. Sutirth Dey, Population Biology Lab, IISER Pune
- **Understanding the patterns of microbiome assembly and evolution in sourdough (2021 - present)**:
  PhD thesis. Thesis advisors: Dr. Lawrence Uricchio and Dr. Benjamin Wolfe, Tufts University

Academic Achievements

- **INSPIRE Scholarship for Higher Education** — 2016
  awarded by Department of Science and Technology (DST), Govt. of India
- **Kishore Vaigyanik Protsahan Yojana (KVPY) Fellowship** — 2017-2020
  awarded by DST, Govt. of India
- **DAAD-WISE Fellowship** — 2019
  Research internship funded by the German Academic Exchange Service

Publications

- Selveshwari S., Kasturi Lele and Sutirth Dey. Genomic signatures of UV resistance evolution in Escherichia coli depend on the growth phase during exposure. Journal of Evolutionary Biology 34.6 (2021): 953-967
- Nicolas L. Louw, Kasturi Lele, Ruby Ye, Collin B. Edwards, and Benjamin E. Wolfe. Microbiome Assembly in Fermented Foods. Annual Review of Microbiology 77 (2023): 381-402.
- Kasturi Lele, Benjamin E. Wolfe, and Lawrence H. Uricchio. Pairwise interactions and serial bottlenecks help explain species composition in a multi-species microbial community. (in press, accepted for publication in Ecology)

Poster Presentations

- **Indian Society of Evolutionary Biologists 1: Celebrating Ecology and Evolution in India (October 2019)**:
  Evolution of *Escherichia coli* under exposure to UV during different phases of the bacterial growth cycle. Authors: Kasturi Lele, S Selveshwari, Sutirth Dey.
- **Gordon Research Seminar and Gordon Research Conference in Microbial Population Biology (June 2023)**:
  Understanding the dynamics of microbial community assembly in sourdough. Authors: Kasturi Lele, Benjamin Wolfe, Lawrence Uricchio
- **19th International Symposium on Microbial Ecology (August 2024)**:
  Predicting multi-species community assembly using Lotka-Volterra models in sourdough microbial communities. Authors: Kasturi Lele, Benjamin Wolfe, Lawrence Uricchio
- **Boston University Microbiome Day (July 2025)**:
  Extending pairwise interaction models to evolutionary timescales in microbial communities. Authors: Kasturi Lele, Benjamin Wolfe, Lawrence Uricchio
- **Microbial Communities: Energetics and Dynamics Across Space and Time, NITMB (October 2025)**:
  Pairwise interactions and serial bottlenecks help explain species composition in a multi-species microbial community. Authors: Kasturi Lele, Benjamin Wolfe, Lawrence Uricchio

Skills

- **Programming languages** – R, Python, Bash, SLiM
- **Microbiology** – Basic laboratory techniques to culture, maintain and propagate microbes; Aseptic technique; Extraction and processing DNA for sequencing; Lab safety, MSDS, and handling of biohazard waste
- **Miscellaneous** – Data Processing (for instance, whole genome sequencing data); Statistical Analysis; Design, conduct and interpret scientific research; Communicate findings using models, charts and graphs; Disseminate research through writing manuscripts

Teaching Experience

I was the Graduate Teaching Assistant for various courses in the Biology department at Tufts University. My duties included grading assignments, quizzes, exams and poster presentations, preparing quiz and exam questions, holding office hours or recitation for students, preparing lab materials, and leading demonstration of laboratory experiments for introductory lab courses.

- **BIO 13: Cells and Organisms**: Fall 2021, Fall 2022
- **BIO 14: Cells and Organisms**: Spring 2022
- **BIO 107: Microbiology Lab**: Spring 2023
- **BIO 109: Virology**: Fall 2023, Fall 2025
- **BIO 144: Conservation Biology**: Fall 2024
- **BIO 14: Cells and Organisms (lecture)**: Spring 2025