

# Aiswarya Prasad

Los Angeles, CA (from September) | [aiswarya.prasad1998@gmail.com](mailto:aiswarya.prasad1998@gmail.com) | <https://aiswarya-prasad.github.io/>

PhD in Quantitative Biology, specializing in microbiome ecology and evolution using 'omics approaches. Expertise in large-scale comparative metagenomics, strain-resolved sequencing pipelines, and integrative evolutionary analyses. Skilled in both wet-lab NGS workflows and computational pipelines, with leadership experience in a trainee-led biotech accelerator and life science consulting.

**Core competencies:** microbial ecology, metagenomics, phylogenetics, multivariate analysis (R, Python), lab automation (OT-2), molecular methods (PCR/qPCR, SDS-PAGE, nucleic acid extraction), pipeline development (Snakemake, HPC), data visualization (R, Illustrator), scientific writing, cross-functional collaboration.

## Research Experience

### Senior Researcher (formerly PhD Candidate) / University of Lausanne, Switzerland (2020 – Present)

- Designed and executed large-scale comparative metagenomics studies to understand gut microbiota evolution.
- Developed a full-length 16S rRNA PacBio pipeline (wet-lab to analysis) for strain-level resolution.
- Built Snakemake workflows for genome assembly, SNP profiling, phylogenetics, and functional profiling.
- Initiated a strategic international collaboration, expanding scope and accelerating timeline by 1 year.
- Contributed to curriculum and taught Master's bioinformatics course; student projects led to publications.
- Presented research findings at 4 international conferences and 6 peer-reviewed publications.

### Master's Thesis Researcher / Indian Institute of Science, Bangalore (2019 - 2020)

- Established a Nanopore sequencing pipeline (10% of setup cost) for microbiome analysis in low-resource settings.
- Applied pipeline to study gut microbiome shifts in chronic pancreatitis patients in collaboration with clinicians.

## Selected publications

**Prasad, A.** et al. (2025). Evolution of gut microbiota across honeybee species revealed by comparative metagenomics. *Nature Communications* (*in press*)

Mazel, F., **Prasad, A.** et al. (2024). Host specificity of gut microbiota associated with social bees: patterns and processes. *Microbiology and Molecular Biology Reviews*

Baud, G.L., **Prasad, A.** et al. (2023). Turnover of strain-level diversity modulates functional traits in the honeybee gut microbiome between nurses and foragers. *Genome Biology*, 24(1), 283

## Leadership and Professional Engagement

### Assistant Manager, Activator Operations / Nucleate HQ (2025 - Present)

- Developed operations playbook and Airtable interface aiding tracking of the effectiveness of applicant sourcing channels; created outreach materials (one-pager, FAQs) for applicant engagement.

### Director, Strategy and Experts Lead / Nucleate Switzerland (2024 – Present)

- Assessed biotech startups for accelerator cohort selection; sourced 10+ technical, market, and regulatory experts to advise program participants.

### Consulting Project Manager / The Consulting Society, EPFL (2024 – 2025)

- Led a three-member consulting team for a bacterial diagnostics startup; delivered market and pricing strategy adopted into subsequent investor pitches.

### Scientific Standards Contributor / *Methods in Microbiomics* (2024)

- Contributed [best practice guidelines](#) for comparative metagenomics and variant analysis to promote robust, reproducible workflows.

### Policy & Advocacy / iGEM Delegate, UN Biodiversity Conference (COP14) (2018)

- Represented the youth science community in policy discussions on genetic engineering, access and benefit-sharing, and synthetic biology. Published reflection [here](#).

### Committee & Review Work

- Faculty Hiring Committee – Postdoc/PhD Rep, University of Lausanne (2023)
- Reviewer: Ecological Monographs, Insect Molecular Biology (since 2023)

## Education and awards

### PhD in Quantitative Biology / Aug 2020 – Aug 2025

University of Lausanne, Switzerland

- Mathilde Agassiz *Scholarship* (~ \$70k, 1st-ranked applicant), Faculty of Biology and Medicine *Fellowship*
- *Best Selected Talk*, Microbiome Virtual International Forum.33 (2024)

### BS + MS in Biology / Aug 2015 – July 2020

Indian Institute of Science (IISc), Bangalore

- Awarded KVPY *Fellowship* (top 0.3%, All-India Rank 335)