

# Aiswarya Prasad

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PhD in Quantitative Biology, specializing in microbiome ecology and evolution using a combination of bioinformatic and wet-lab approaches. Experienced in applying a strategic approach to problems honed through leadership experience in a biotech accelerator and leading a life science consulting project for a bacterial diagnostics startup.

**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) / Aug 2020 – Sep 2025

University of Lausanne, Switzerland

- Designed and executed a large-scale comparative metagenomics study of honeybee gut microbiota evolution.
- Piloted and established a PacBio long-read sequencing pipeline (end-to-end); adopted in multiple lab projects.
- Built Snakemake workflows for genome assembly, SNP profiling, phylogenetics, and functional profiling.
- Initiated a strategic international collaboration, expanding project scope and accelerating timeline by one year.
- Advocated and implemented reproducible documentation practices through standardized R Markdown templates as a teaching assistant for a graduate-level bioinformatics course.
- Presented and discussed research findings at four international conferences and in peer-reviewed publications.

### Master's Thesis Researcher / May 2019 – May 2020

Indian Institute of Science, Bangalore

- Established a Nanopore sequencing pipeline (10% of setup cost) for microbiome analysis in low-resource settings from sample preparation to sequencing data analysis.
- 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*

Sarton-Lohéac, G., ..., **Prasad, A.**, et al. (2023). Deep Divergence and Genomic Diversification of Gut Symbionts of Neotropical Stingless Bees. *mBio*

## Leadership and Professional Engagement

### Assistant Manager, Activator Operations / Jun 2025 - Present

Nucleate HQ

- 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 / Oct 2024 – Present

Nucleate Switzerland

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

### Consulting Project Manager / May 2024 – Jul 2025

The Consulting Society, EPFL

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

### Scientific Standards Contributor / Dec 2024

Methods in Microbiomics

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

### Policy & Advocacy / Nov 2018

iGEM Delegate, UN Biodiversity Conference (COP14)

- 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)