

Aiswarya Prasad

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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)