

Mruthyunjay Kubendran Sumathi

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EDUCATION

University of Arizona, Tucson, AZ PhD Candidate in Ecology and Evolutionary Biology	2021 - Present
University of Arizona, Tucson, AZ Minor in Astrobiology	2021 - Present
École Normale Supérieure, Université PSL, Paris, France Interdisciplinary Masters (MS) in Life Science (magna cum laude) Specialization: Ecology and Evolutionary Biology	2019 - 2021
SRM Institute of Science and Technology, Chennai, TN, India Bachelor (B.Tech) in Genetic Engineering (first class with distinction)	2014 – 2018

PUBLICATIONS

Bruneaux, M., Ashrafi, R., Kronholm, I., Laanto, E., Örmälä-Tiznado, A.-M., Galarza, J. A., Zihan, C., Kubendran Sumathi, M., & Ketola, T. (2022). The effect of a temperature-sensitive prophage on the evolution of virulence in an opportunistic pathogen bacterial. *Molecular Ecology*, 31, 5402– 5418.
<https://doi.org/10.1111/mec.16638>

FELLOWSHIPS, GRANTS & AWARDS

2024	University of Arizona Galileo Circle Scholar (\$1000)
2024 – 2025	University of Arizona Carson Fellow (\$5000)
2024	University of Arizona Galileo Circle Scholar (\$1000)
2024	University of Arizona Astrobiology Seed Grant “Measuring the cost of cell maintenance to understand survival and adaptation,” (\$9000)
2022, 2023	GPSC Travel Grant, University of Arizona (\$3500)
2022	Universite Paris-Saclay-CNRS internship (€1775)
2020	ENS-CNRS internship (€3600)
2020	EABISS Graduate Fellowship (€5000)
2019 – 2020	Qlife master Fellowship (€10000)

TEACHING EXPERIENCE

2025	Teaching Assistant, <i>Biology of the Oceans</i> , University of Arizona
2025	Teaching Assistant, <i>Evolution</i> , University of Arizona
2024	Teaching Assistant, <i>Genetics</i> , University of Arizona
2024	Teaching Assistant, <i>Evolution</i> , University of Arizona
2022	Teaching Assistant, <i>Geneics</i> , University of Arizona
2022	Teaching Assistant, <i>Evolution</i> , University of Arizona
2021	Teaching Assistant, <i>Introductory Biology Laboratory</i> , University of Arizona

PROFESSIONAL PRESENTATIONS

- Kubendran Sumathi, M., 2025, What is Astrobiology? Arizona Astrobiology Center (AABC), University of Arizona, Tucson, AZ. *Invited Talk*
- Kubendran Sumathi, M., 2024, Unveiling Thermal Adaptation in Organisms: Insights from an Energy-Centric Perspective in Astrobiology. Astrobiology Graduate Conference (AbGradCon), Cornell University, Ithaca, NY. *Oral Presentation*
- Kubendran Sumathi, M., Guyot, F., Duhamel, S., Ferriere, R., 2024, Exploring High-Temperature Adaptation through the 'Follow the Energy' Approach for Astrobiology. Astrobiology Science Conference (AbSciCon), Providence, RI. *Oral Presentation*
- Kubendran Sumathi, M., Guyot, F., Duhamel, S., Ferriere, R., 2024, Investigating Thermal Adaptation in Organisms: Insights from Astrobiology's Energy-Centric Approach. 4th Annual Arizona Astrobiology Symposium, ASU, Tempe AZ. *Poster Presentation*
- Kubendran Sumathi, M., 2024, Understanding High Temperature Adaptation: Insights from patterns of cellular complexity. University of Arizona Ecology and Evolutionary Biology Dept. Seminar, Tucson AZ. *Oral Presentation*
- Kubendran Sumathi, M., 2023, Microbial Life at thermodynamic limits: Low energy metabolism and adaptation. University of Arizona Ecology and Evolutionary Biology Dept. Seminar, Tucson AZ. *Oral Presentation*
- Kubendran Sumathi, M., 2022, Is there a thermal limit to life adaptation? University of Arizona Ecology and Evolutionary Biology Dept. Seminar, Tucson AZ. *Oral Presentation*
- Kubendran Sumathi, M., Gorlas, A., Guyot, F., Ferriere, R., 2022, Metabolic dependent growth dynamics of *T. kodakarensis*. International Congress on Extremophiles, Loutraki, Greece. *Oral Presentation*

SERVICE & OUTREACH

2025 – present	Astronomy Curriculum Development for high school students
2025 – present	Astrobiology Curriculum Development for Juvenile detention center
2025 – present	Sky School Instructor
2025	Co-Organiser, NASA Astrobiology Graduate Conference
2024 – 2025	Co-Chair, University of Arizona, EEB Graduate Council
2022 – 2024	Resource Personel, Meet MCB program for High School Students
2022 – present	Co-organizer, University of Arizona Astrobiology Journal Club
2021 – present	Participating Scientist, SkypeAScientist Program
2014 – 2017	Instructor, Hands On Genetics Workshop for High School Students
2016	Ambassador, Green (R)evolution Climate Change Awareness Program

SKILLS & TRAININGS

- 2022 Culturing and handling of anaerobe, *T. kodakarensis* at CNRS - Paris-Saclay University
- 2017 Handling and experimenting with mice at Kavins Bioresearch, India
- 2016 Culturing & Handling of Marine Microbes at Apex Bioresearch Institute, India
- 2015 Molecular Diagnosis, Counseling, and Research Training at MDCRC, India

Mathematical Modeling • Working with anaerobic chamber • Population dynamics • Python • Biomolecules Extraction • Laboratory culturing of microbes • Genome sequencing & Polymerase Chain Reaction (PCR) • Recombinant DNA Technology • Protein purification and Electrophoresis • HPLC. • Microscopy (Optical, Fluorescence, Confocal)

Languages: Sourashtra (native), Tamil (fluent), Hindi (fluent), English (fluent)

PROJECTS

Eco-evolutionary drivers of diversity in toxic algal blooms (Research Assistant, University of Arizona, Tucson, USA)

PI: *Dr Regis Ferriere*

Towards a mechanistic eco-evolutionary modeling framework to understand the thermal limit of life. (MS Thesis - École Normale Supérieure, Université PSL, Paris, France)

PI: *Dr Regis Ferriere* Supervisor: *Dr François Guyot*

Identifying potential genes in *S. marcescens* affecting virulence by gene prioritization and allelic replacement mutagenesis. (B.Tech. Thesis - University of Jyväskylä, Jyväskylä, Finland)

PI: *Dr Tarmo Ketola* Supervisor: *Dr Ilkka Kronholm*

Expression Study of GH5 family genes from *C. phytofermentans* in *E. coli* BL21 DE3 and characterizing its cellulolytic ability. (B.Tech. Minor Project, SRMIST, Chennai, TN, India)

PI and Supervisor: *Dr Ramya Mohandass*