# **Shrinivas Nandi**

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**EDUCATION**

* Rutgers University, Graduate Program in Microbial Biology—New Brunswick, New Jersey, USA

Ph.D. in Microbial Biology 2022 – present

Advisor: Prof. Debashish Bhattacharya

* The Hong Kong University of Science and Technology – Hong Kong, SAR, China

B.Sc. in Environmental Science: 2018 - 2022 | **First Class Honors** |

Advisor: Prof. Alex SJ Wyatt

**GRANTS & AWARDS**

**2024** Rutgers University Microbiome Program Symposium: Best Talk ($1,250)

**2024** Selected Speaker at Rising Star Graduate Conference

**2024** Douglass E Eveleigh Award: Winner ($900)

**2023** Core Facility Utilization Application: Winner ($5,000)

**2023** Climate Action Grant: Winner ($10,000)

**2022** James Macmillan Endowed Fellowship: Winner ($60,000)

**2021** UROP Support Grant: Winner (32,000 HKD)

**PUBLICATIONS**

1. **Nandi S**, Stephens T, Chille E, Goyen S, Bay L and Bhattacharya D. “Metaproteome analysis of short-term thermal stress in three sympatric coral species reveals diverged host responses”. (2025 Under Review, preprint available: <https://doi.org/10.1101/2025.03.25.645042>)
2. **Nandi S**, Stephens T, Walsh K …. Croquer A and Bhattacharya D. “Stony Coral Tissue Loss Disease (SCTLD) destabilizes the coral microbiome” (2025 Under Review, preprint available: <https://doi.org/10.1101/2025.06.19.660612>)
3. Goyen S, Chille E, Stephens T, **Nandi S**, Bay L and Bhattacharya D. “Green fluorescent proteins show divergent patterns among species and strains of Porites from the Great Barrier Reef” (2025 Under Review, preprint available[: https://doi.org/10.21203/rs.3.rs-6761998/v1](https://www.researchsquare.com/article/rs-6761998/v1))
4. Chille E, Stephens T, **Nandi S** …. Bhattacharya D. “Coral Restoration in the Omics Era: Development of Point‐of‐Care Tools for Monitoring Disease, Reproduction, and Thermal Stress”, BioEssays 2025 ([https://doi.org/10.1002/bies.70007](https://onlinelibrary.wiley.com/doi/10.1002/bies.70007))
5. Bhattacharya D, **Nandi S**, Chille E, Arroyo M and Stephens T. “Multi-omics analysis of coral bleaching supports a personal (gen)omics approach to reef conservation” (2025 Under Review)
6. Bhattacharya D, Stephens T, Chille E and **Nandi S** “Biomarkers of Marine Invertebrate Stress” (US Patent: 18/618,557, 2024)
7. Pei Y, Wang S, Skinner C, Perez G, Intan A, **Nandi S** and Wyatt A. “Individual trophic plasticity as a functional trait in mixotrophic corals across an estuarine–oceanic gradient” (2025 Under Review)
8. **Nandi S**, Yung C and Wyatt A “Gene Expression of *Acropora digitifera* host and symbiodinium in response to short-term heat stress” (2022: UG Thesis)
9. **Nandi S**, Pei Y, Skinner C and Wyatt A “Characterizing coral reef function across anthropogenic gradients” (2020-2021: UROP)

**In-preparation**

1. **Nandi S**, Stephens T, Garcia R …. Chundawat S and Bhattacharya D. “Rafts of Change: Microbial and functional dynamics in simulated *Sargassum* degradation”

**TALKS + POSTERS**

1. Nguyen V, **Nandi S** “Genome and transcriptome of the brown seaweed *Sargassum filipendula*” ARESTY Summer Scholar Symposium (2025)**\***
2. Walsh K, **Nandi S** “CYBD and SCTLD: Investigating two coral diseases” Rutgers Microbiome Program Symposium (**2025**)**\***
3. **Nandi S**. “Metaproteome analysis of the coral holobiont demonstrates algal symbiont dampening under thermal stress. 9th Beneficial Microbes Conference (**2024**)
4. **Nandi S**. “Metaproteome analysis of the coral holobiont demonstrates algal symbiont dampening under thermal stress. Rutgers Microbiome Program Symposium (**2024**)**\***
5. **Nandi S**. “Metaproteome analysis of the coral holobiont demonstrates algal symbiont dampening under thermal stress. Rutgers Rising Stars Graduate Student Conference (**2024**)
6. **Nandi S**. “Towards predictive coral phenomics-evaluating the potential of hyperspectral imaging” ACT VI Revive and Restore (**2023**)
7. **Nandi S.** “A metaproteomic model of coral-algal dysbiosis” International Society of Endocytobiology (**2023**)
8. **Nandi S**. “Gene expression of *Acropora digitifera* host and symbiont response to thermal stress” Final Year Thesis presentation (**2022**)

*\* Award winning poster/talk*

**TEACHING and MENTORING**

**1.**     Teaching Assistant—General Microbiology Lab (11:680:390)—2025-Present

**2.**    Graduate student mentor – Timeeka James (Undergraduate)– 2023-2024

**3.**     Graduate student mentor – Vi-an Nguyen (Undergraduate)– 2025—Present

**FORMAL TRAINING & CERTIFICATIONS**

1. **SCUBA Certified** (Since 2014: PADI Advanced Open Water Diver, Nitrox, Deep Diver)
2. **PreDoctoral Leadership Academy:** Rutgers, 2024
3. **RedBird Leadership Community:** HKUST (Bronze and Silver track completed; Gold track unfinished: Covid-19 pandemic)
4. **Science communicator workshops:** Rutgers, HKUST, Virtual Institute of Feedstocks of the Future

**MEDIA COVERAGE & SCIENTIFIC COMMUNICATION**

1. *Sargassum* Biofuel project was featured by [local news](https://www.tapinto.net/towns/new-brunswick/sections/rutgers-university/articles/rutgers-scientists-investigate-ways-to-transform-seaweed-into-energy-food).
2. *Sargassum* biorefinery project featured by [Rutgers News](https://chundawat.rutgers.edu/sargassum-biorefinery-sabre-center-funded-by-schmidt-foundation/).
3. Interviewed for on-going coral disease work in the Dominican Republic (in production)
4. Interviewed by the Daily Targum, [Rutgers student paper](https://www.dailytargum.com/article/collaborative-u-research-repurposes-harmful-seaweed-into-fuel-20240926) about on-going *Sargassum* refinery project
5. Coral tool kit review article [press release](https://sebsnjaesnews.rutgers.edu/2025/08/rutgers-researchers-chart-next-steps-for-developing-lateral-flow-covid-19-type-tests-to-monitor-coral-health/).

**TECHNICAL SKILLS**

**Wet lab techniques**

* Extractions: DNA; RNA; Protein; Polar Metabolites; Lipids; Steroid Hormones
* Quantitative metabolomic experimental design, sampling and analysis
* Primer design, PCR, qPCR, gel extraction imaging and running.
* Culturing: Microeukaryotes, coral, prokaryotes, isolating novel strains
* Multi-omic experimental design, sampling and execution, including transcriptomics, genomics, proteomics and metabolomics.

**Computational Biology Techniques**

* Genomics: Proficient with tools for genome assembly and alignments like SPADES, BOWTIE2, and gene prediction tools like Repeatmodeler, repeat masker and BRAKER.
* Metagenomics: Proficient with metagenomic assembly, binning and gene annotation like METABAT2, MAXBIN, METASPADES, ATLAS and others.
* Phylogenetics: Proficient with most phylogenetic tools for studying gene origin.
* Viromics: Proficient with virome tools like VIBRANT, GENOMAD, vRHYME and DeepVirFinder.
* Transcriptomics: Proficient with essential tools like DESEQ2, WGCNA for expression studies, and also for transcriptome assembly like TRINITY, CD-Hit etc.
* Proteomics: Proficient with proteomic analysis tools like MaxQuant, protii.
* Protein Structure: Familiar with tools for protein structure assessment like ESM2, AlphaFold2, FoldSeek.
* Metabolomics: Familiar with tools for quantitative and untargeted metabolomics like MAVEN.
* General coding: Proficient in Python (preferred), R, bash (linux/command line) and Javascript.