

Prateek Shetty

Postdoctoral scholar, Biological Research Center, Hungary.

+36 702 60 8007

prateekshettys@gmail.com

[Google Scholar](#)

EDUCATION

University of Szeged, Szeged, Hungary

2017 - 2022 Ph.D. in Biology

Michigan State University, Lansing, USA

2013 - 2016 Masters by Research, Plant Biology

Sir M.V.I.T, Bangalore, India

2008 - 2012 Bachelors in Engineering, Biotechnology

RESEARCH EXPERIENCE

Biological Research Center, Hungary

2017 - PRESENT

Advisor: Dr. Gergely Maroti

- Metagenome analysis of the phycosphere.
- Metagenome analysis of small-scale wastewater treatment plants and anaerobic digesters.
- Transcriptome analysis of salt tolerance in *Chlamydomonas reinhardtii*.
- Whole genome assembly and annotation of *Coelastrella* sp. 549, *Parachlorella* MACC38, *Parachlorella* sp.28-87 and *Parachlorella* sp. 211C.
- Bacteriophage genome analysis to combat MDR *Pseudomonas aeruginosa*.

Michigan State University, U.S.A

2013 - 2016

Advisor: Dr. Maren Friesen

- Metagenome analysis of the *Trifolium* nodule microbiome.
- The transcriptome of *Trifolium fucatum* under conspecific and congeneric competition.
- Meta-analysis of beneficial plant-microbe interactions under abiotic and biotic stress.

Sir M.V.I.T, India

2009-2012

Advisor: Dr. N Sathyanarayana

SKILLS

Informatics techniques:

Metagenome assembly and annotation, recovery of MAGs from diverse environments.

Assembly, annotation and variant calling in prokaryotic genomes.

Assembly, annotation of Eukaryotic algal genomes.

16S amplicon taxonomic identification.

Proficient in R for visualization and statistical analysis of metagenome, metatranscriptome and transcriptome analysis.

AWK and bash scripting.

Additional techniques:

Genome and transcriptome extraction, amplification of marker genes for taxonomic identification.

GC analysis using thermal conductivity detector.

Proficient at using confocal and optical microscopes with various dyes.

AWARDS

Straub Young Scientist award:
2021-2022

Qualitas biologia Thesis award:
III place - 2023

INTERNATIONAL PARTICIPATION

Management Committee member for Hungary at EUAlgae.

PUBLICATIONS

1. Wirth, Roland, Zoltan Bagi, **Prateek Shetty**, Mark Szuhaj, Teur Teur Sally Cheung, Kornel L. Kovacs, and Gergely Maróti. "Inter-kingdom microbial interactions revealed by a comparative machine-learning guided multi-omics analysis of industrial-scale biogas plants." *bioRxiv* (2023).
2. Gösi, Péter, Sándor Rátkai, **Prateek Shetty**, Roland Wirth, Gergely Maróti, Ferenc Oszvald, and Judit Knisz. "Prediction of long-term localized corrosion rates in a carbon steel cooling water system is enhanced by metagenome analysis." *Engineering Failure Analysis* 141 (2022).
3. **Shetty, Prateek**, Attila Farkas, Bernadett Pap, Bettina Hupp, Vince Ördög, Tibor Bíró, Torda Varga, and Gergely Maróti. "Comparative and phylogenomic analysis of nuclear and organelle genes in cryptic *Coelastrella vacuolata* MACC-549 microalgae." *Algal Research* 58 (2021).
4. Wirth, Roland, Bernadett Pap, Dénes Dudits, Balázs Kakuk, Zoltán Bagi, **Prateek Shetty**, Kornél L. Kovács, and Gergely Maróti. "Genome-centric investigation of anaerobic digestion using sustainable second and third generation substrates." *Journal of Biotechnology* 339 (2021).
5. Knisz, Judit, **Prateek Shetty**, Roland Wirth, Gergely Maróti, Tamás Karches, Ilona Dalkó, M. Bálint, E. Vadkerti, and T. Bíró. "Genome-level insights into the operation of an on-site biological wastewater treatment unit reveal the importance of storage time." *Science of the Total Environment* 766 (2021)
6. Soós, Vilmos, **Prateek Shetty**, Gergely Maróti, Norbert Incze, Eszter Badics, Péter Bálint, Vince Ördög, and Ervin Balázs. "Biomolecule composition and draft genome of a novel, high-lipid producing Scenedesmaceae microalga." *Algal Research* 54 (2021).
7. Valappil, Sarshad Koderi, **Prateek Shetty**, Zoltán Deim, Gabriella Terhes, Edit Urbán, Sándor Váczi, Roland Patai et al. "Survival Comes at a Cost: A Coevolution of Phage and Its Host Leads to Phage Resistance and Antibiotic Sensitivity of *Pseudomonas aeruginosa* Multidrug Resistant Strains." *Frontiers in microbiology* 12 (2021).
8. Porter, Stephanie S., Roxanne Bantay, Colleen A. Friel, Aaron Garoutte, Kristi Gdanetz, Kathleen Ibarreta, Bethany M. Moore, **Prateek Shetty**, Eleanor Siler, and Maren L. Friesen. "Beneficial microbes ameliorate abiotic and biotic sources of stress on plants." *Functional Ecology* 34, no. 10 (2020).
9. Wirth, Roland, Bernadett Pap, Tamás Böjti, **Prateek Shetty**, Gergely Lakatos, Zoltán Bagi, Kornél L. Kovács, and Gergely Maróti. "*Chlorella vulgaris* and its phycosphere in wastewater: microalgae-bacteria interactions during nutrient removal." *Frontiers in bioengineering and biotechnology* 8 (2020).
10. **Shetty, Prateek**, Iulian Z. Boboescu, Bernadett Pap, Roland Wirth, Kornél L. Kovács, Tibor Bíró, Zoltán Futó, Richard Allen White III, and Gergely Maróti. "Exploitation of algal-bacterial consortia in combined biohydrogen generation and wastewater treatment." *Frontiers in Energy Research* 7 (2019).
11. **Shetty, Prateek**, Margaret Mukami Gitau, and Gergely Maróti. "Salinity stress responses and adaptation mechanisms in eukaryotic green microalgae." *Cells* 8, no. 12 (2019).
12. Bacosa, Hernando P., Deana L. Erdner, Brad E. Rosenheim, **Prateek Shetty**, Kiley W. Seitz, Brett J. Baker, and Zhanfei Liu. "Hydrocarbon degradation and response of seafloor sediment bacterial community in the northern Gulf of Mexico to light Louisiana sweet crude oil." *The ISME journal* 12, no. 10 (2018).
13. Bowsher, Alan W., **Prateek Shetty**, Brian L. Anacker, Andrew Siefert, Sharon Y. Strauss, and Maren L. Friesen. "Transcriptomic responses to conspecific and congeneric competition in co-occurring *Trifolium*." *Journal of Ecology* 105, no. 3 (2017).
14. Vatanparast, Mohammad, **Prateek Shetty**, Ratan Chopra, Jeff J. Doyle, N. Sathyanarayana, and Ashley N. Egan. "Transcriptome sequencing and marker development in winged bean (*Psophocarpus tetragonolobus*; Leguminosae)." *Scientific reports* 6, no. 1 (2016).

CONFERENCE PARTICIPATION

AlgalBBB 2018, Seattle: Poster presentation

Microalgal bioeconomy in Modern Society 2018, Florence: Poster presentation

EUAlgae 2019, Madrid: Oral presentation. “*The role of complex algal-bacterial consortia in combined resource recovery and energy generation*”

AlgaEurope 2019, Paris: Oral presentation. “*Exploitation of Algal-Bacterial Consortia in combined Biohydrogen Generation and Wastewater Treatment*”.

JASM 2022, Michigan: Oral presentation. “*Impact of algal-bacterial cocultivation on algal biomass and biohydrogen production*”

REFERENCES

1) Dr. Gergely Maróti

Principal Investigator,
Institute of Plant Biology,
Biological Research Center, Hungary

Email: marotig@seqomics.hu,
maroti.gergely@brc.hu

2) Dr. Attila Kerest

Senior Research Fellow,
Institute of Plant Biology,
Biological Research Center, Hungary

Email: kereszta@gmail.com,
kereszt.attila@brc.hu

3) Dr. Roland Wirth

Research Fellow,
Department of Biotechnology
University of Szeged,
Hungary

Email: kugliwr@gmail.com,
wirth.roland@brc.hu