Md Affan Parwez

CONTACT INFORMATION

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EDUCATION AND ACADEMIC DEGREE

2025 – now Natural sciences area Ecology and Environmental Science field (012) / PhD studies (Vilnius university and Nature Research Centre).
Research theme: „Understanding the mechanism of multi-strain coexistence in freshwater cyanobacteria-phage systems" Scientific Supervisor– dr. Sigitas Šulčius.
Research area: Comparative and functional genomics; cyanophage diversity and adaptation, harmful cyanobacterial bloom ecology,
Virus mediated community structure and function; freshwater microbial community modelling, environmental microbiology.

2023 – 2025 Hungarian University of Agriculture and Life Sciences / Master.
Master thesis: " White grape marc extract with diverse and high polyphenolic content, as a potential beneficial feed additive in animal husbandries".
I did Thesis at National Agricultural Research and Innovation Center (NAIK) Gödöllő, Hungary
Research area: Animal nutrition and feed biotechnology; phytochemical profiling and bioactivity of grape by-products, effects on gut microbiota modulation and antimicrobial resistance; Antioxidant and antimicrobial properties; sustainable animal husbandry and environmental microbiology.

2021 – 2023 Aligarh Muslim University, India / Master.
Master thesis: " Antibiogram studies and the detection of extended spectrum beta-lactamases in bacteria isolated from ready-to-eat street food ".
Thesis did at Department of Agriculture Microbiology, AMU.
Research area: Antimicrobial Resistance

2017 – 2020 Magadh University, India/ Bachelor
I did bachelor in Plant Science.

PROFESSIONAL EXPERIENCE

2025 – until now **PhD students**
Laboratory of Entomology, Nature Research Centre

RESEARCH INTERESTS

Field of research: the mechanisms of multi-strain coexistence in freshwater cyanobacteria–phage systems; eco-evolutionary dynamics of cyanobacteria (*Microcystis aeruginosa*) and their cyanophages; the role of host genetic and phenotypic diversity in shaping virus diversification and community structure; molecular and genomic basis of cyanophage adaptation; patterns of virus–host interactions across spatial and temporal scales; characterization of novel freshwater cyanophages using long-read sequencing; seasonal and geographic variability of cyanophage infection networks; integration of laboratory coevolution experiments with field-based ecological data.

PUBLICATIONS

Umar, M., Razzak, A., Anas, M., Parwez, M. A., & Danish, M. (2025). Plant Defense Mechanisms Against Biotic Stress. In K. A. Abd-Elsalam & H. I. Mohamed (Eds.), Elicitors for Sustainable Crop Production (pp. 1–25). Springer Nature Singapore. https://doi.org/10.1007/978-981-96-6569-3_1

PARTICIPATION IN INTERNATIONAL AND NATIONAL SCIENTIFIC PROGRAMMES AND PROJECTS

2024 – 2025 MSc researcher "Bacterial stress responses and resistance mechanisms" (project supervisor: Dr. Olasz Ferenc György). Project: NeoGiANT H2020 (EU-funded). During my MSc thesis at the Institute of Genetics and Biotechnology, MATE, Hungary. I investigated bacterial stress responses and resistance mechanisms, evaluating the antibacterial activity of white grape marc extract against *E. coli* and *Staphylococcus aureus*, and confirmed through PCR-based screening and sequencing that the extract did not induce resistance genes.

INTERNSHIP AND TRAINING

2024.07.01/ 2024.08.31 Syngenta, Budapest, Hungary.
Breeding trials in key crops including tomato, watermelon, sweet corn, and brassica. • Gained hands-on experience in agricultural research. • Supported various stages of crop development and evaluation under the Biological Operation Team.

PARTICIPATION IN THE STUDY PROCESS

OTHERS

1. Attended ICFO Frontier Research School: Physics for Biology and Medicine from 7th July to 11th of July 2025 at The Institute of Photonic Sciences, Barcelona, Spain.
2. Participated in Pristina International Summer School 2024 on Antimicrobial Resistance: A health and one health issue at Pristina, Kosovo .
3. Attended Webinar on Investigating Microbial ecology in extreme habitats organized by EMBL
4. Attended Online International Summer School by Osaka University, Japan
5. Attended Online Course on Basic Microbiology by World Health Organization(WHO).