

Krupa Parmar

Position: PhD Student
Project: A01
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Research Interests

- Environmental microbiology
- Viruses-Bacteria interactions
- Genomics and bioinformatics

Current Project

PhD thesis, working title: "Phages as vectors and indicators of biological information: consequences for microbial communities and functions"

The terrestrial subsurface acts as a natural bioreactor for transformation of major biogeochemical reactions. Microbial communities inhabiting here are significantly diverse containing the genes for recycling of nutrients. These bacteria are controlled by infecting viruses resulting into host mortality, diversity, nutrient cycling and evolution. Despite important roles played by viruses, studies determining subsurface virome and its significance are scarce. It has been hypothesized surface events cause viruses to transfer vertically or horizontally along the transect. Cross-infection studies using viral tagging and sequencing elucidate changes in community structure. The influence of chemical inducers will also be monitored on lysogenic phages. Hence, this study will address knowledge gap of role of virus in sustaining subsurface environment and its impact on microbial communities.

Curriculum Vitae

02/2018 – now **Helmholtz Center for Environmental Research- UFZ, Leipzig, Germany**
Doctoral Researcher
Project: Phages as vectors and indicators of biological information: consequences for microbial communities and functions

07/2016 – 03/2017 **MACS- Agharkar Research Institute, Bioenergy Group, Pune, India**
Senior Research Fellow

- Project:* Isolation and characterization of sulfate-reducing bacteria (SRB) lysing bacteriophages for inhibition of petroleum reservoir souring & SRB induced corrosion
- 01/2015 – 06/2016 **CSIR-National Environmental Engineering Research Institute,
Environmental Genomics and Biotechnology Division, Nagpur, India**
- Project Assistant-II
- Project 1:* Microbial diversity of human gut
- Project 2:* Isolation and characterization of bacteriophages as potential bio-control agent against enteric pathogenic bacteria
- 01/2014 – 05/2014 **National Center for Microbial Resources, Pune, India**
- Project trainee (Master's Thesis)
- Project:* Diversity analysis of root-nodulating bacteria isolated from cultivated Fenugreek (*Trigonella foenum-graecum*) varieties

Publications

- Parmar, K.M.,** Dafale, N.A., Tikariha, H., and Purohit, H.J. (2018). Genomic characterization of key bacteriophages to formulate the potential biocontrol agent to combat enteric pathogenic bacteria. *Archives of microbiology*, 1-12.
- Parmar, K.M.,** Pal, R.R., Tikariha, H., Dafale, N.A., and Purohit, H.J. (2018). An insight into phage diversity at environmental habitats using comparative metagenomics approach. *Current microbiology*, 75(2), 132-141.
- Parmar, K.M.,** Gaikwad, S.L., Dhakephalkar, P.K., Kothari, R. and Singh, R.P. (2017). Intriguing interaction of bacteriophage-host association: An understanding in the era of omics. *Frontiers in Microbiology*, 8, p.559.
- Parmar, K.M.,** Hathi, Z.J., and Dafale, N.A. (2017). Control of multidrug-resistant gene flow in the environment through bacteriophage intervention. *Applied Biochemistry and Biotechnology*, 1-23.

Conference contributions

- Parmar, K.,** Narr, A., Wick, L., Kallies, R., and Chatzinotas, A. (2018) Elucidating the impact of land use types and surface events on terrestrial viral communities by a modified fingerprinting approach. ISME17. (Poster)
- Parmar, K.M.,** Pal, R.R., Dafale, N.A., and Purohit, H.J. (2015) An insight into phage diversity at environmental habitats using comparative metagenomics approach. 56th Annual Conference of Association of Microbiologists of India: "Emerging Discoveries in Microbiology". (Poster)