

**Varsha Tripathi**

**Qualification:** M. Sc (Industrial Microbiology)

**Current position:** PhD scholar (Biological sciences)

**Email id:** varshatripathi123@gmail.com

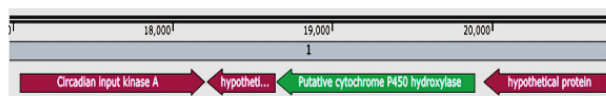
**"Tragedies are never good, but sometimes they bring about change."**

### **Preamble:**

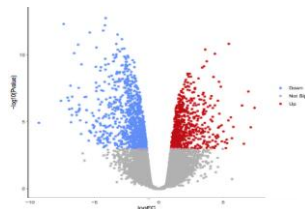
Black, gooey, and greasy oil are spreading over the lands and seas affecting our ecosystem and their persistence is a slow-motion environmental disaster. There are some invisible tiny microbial crews who finds crude oil delicious and their vociferous appetite convert them into  $CO_2$  and  $H_2O$ , solving part of the problem naturally.....!!!!!! We as a research enthusiast trying to solve how microbial infallibility would help to combat crude oil pollution in a sustainable way to make the planet pollution free.

### **Research Interests:**

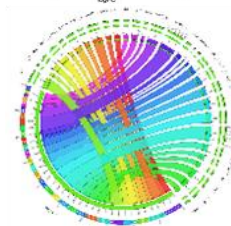
Biodegradation of aliphatic and aromatic hydrocarbons, production of microbial biosurfactant, role of genes and enzymes to degrade pollutants through microbial genomics, functional analysis of differentially expressed genes through transcriptomics.



Analysis of bacterial genome and localization of functional genes involved in degradation



Biodegradation of crude oil components and their validation through phytotoxicity assessment



Different pattern of gene expression in bacteria



### **Deeksha Singh**

**Qualification:** B. Tech (Biotechnology)

CSIR-JRF (2017), DBT JRF (2018), GATE (2018)

**Current position:** CSIR-SRF

**Email id:** deekshasingh31.8@gmail.com

### **Preamble:**

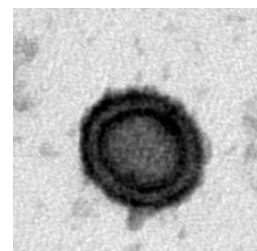
Deeksha is interested in isolating antibiotic resistant bacteria from aquatic environment. By using diverse techniques that cover microbiology, molecular biology, and comparative genomic analysis, she is working on systematic characterization of bacterial strains that exhibit antimicrobial resistance (AMR). To circumvent the development of resistance in bacteria against wide range of antibiotics, she is also working on isolation and molecular characterization of bacteriophages from aquatic environment that exhibit bactericidal action against MDR bacterial strains.

### **Research Interests:**

Assessment of bacterial antibiotic resistance in environmental niches, Genomics and comparative genomics of multi-drug resistant and extensively drug resistant bacteria, Characterization of bacteriophages against pathogenic MDR bacteria.



Antibiotic susceptibility profiling of extensively drug resistant bacteria.



Transmission electron microscopy image of phage infecting bacteria



**Saurabh Singh**

**Qualification:** M.Sc. (Microbiology)

CSIR-JRF (2017,2018,2019), ICAR-ARS 20  
GATE-XL, EY 2018

**Current position:** CSIR- SRF (PhD Fellow)

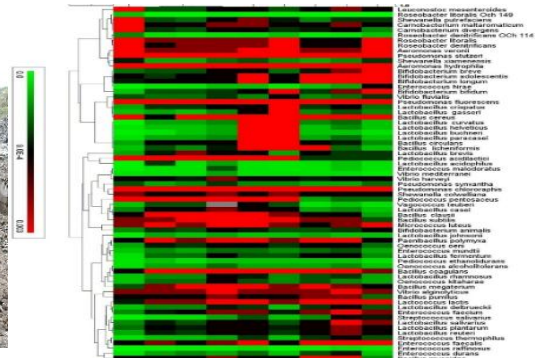
**Email id:** [saurabh.singh5@iitr.res.in](mailto:saurabh.singh5@iitr.res.in),  
[sausin91@gmail.com](mailto:sausin91@gmail.com).

### **Preamble:**

Plastics and their derivatives emerging from waste discharges, manufactured pellets have permeated the different habitat and posing a major threat to life and ecosystems and become a global concern. Plasticizers used to provide stability and flexibility to the plastic. Exposure to plasticizers can leads to neurodysfunction, endocrine disruption, and developmental deformities. The metagenomics analysis of microbial population engaged in the biodegradation of plastic will help to decipher the microbial community structure and biodegradation potentiality.

### **Research Interests:**

My research interests include two aspects first is pure culture technique includes isolation and characterization of bacteria having ability to degrade different kind of pollutant especially plastic and plasticizers. I also look for their genes, enzymes and proteins overexpression study involve in degradation. Comparative metagenomics and whole genome study from plastic / municipal waste dumpsite.



Sample collection from Waste Dump site and metagenomics studies



**Pallavi Srivastava**

**Qualification:** M. Tech (Biotechnology)

**DST-INSPIRE FELLOW 2019**

**Current Position:** DST-Senior Research Fellow

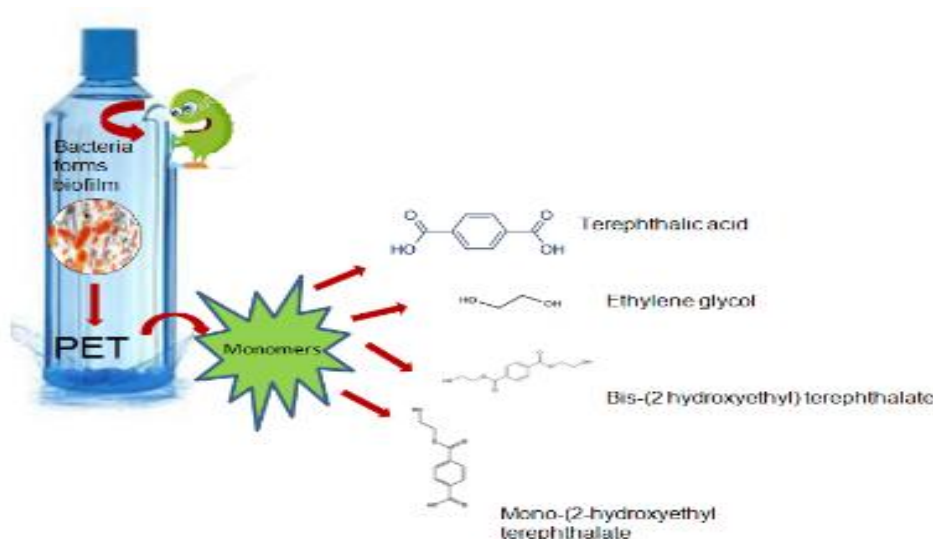
**Email id:** sri30pallavi@gmail.com

### **Preamble:**

Plastic pollution has become '**Global Menace**' in the environment. Plastic pollution threatens human health, endangers aquatic organisms and has negative effects on economy. Exploring and exploiting microorganism for plastic biodegradation is one of the strategies to combat plastic waste. The microbial degradation of plastic is widely accepted choice and is still underway for its intensified efficiency.

### **Research Interests:**

Exploiting bacteria for degradation of polyethylene terephthalate and other priority plastics, Metabolic profiling of plastic degrading bacteria from contaminated sites, Role of genes and enzymes to degrade plastics through genomic analysis.





**Gulfishan Khan**

**Qualification:** M. Sc (Biotechnology)

**Current Position:** Project Associate I

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**Contact No:** +917394028140

### **Preamble:**

Polycyclic aromatic hydrocarbons (PAHs) are a class of chemicals that occur naturally in coal, crude oil, and gasoline. They result from burning coal, oil, gas, wood, garbage, and tobacco. PAHs have moderate to high acute toxicity to aquatic life and humans. Reduction of PAHs occurring in such sewage sludge will help enormously to prevent their further pollution in river waters and other niches of the ecosystem, leading to a safer health.

### **Research interest:**

My research interest includes determining the level and profile of PAHs in sewage sludge from different STPs (from Lucknow, Kanpur and Allahabad) collected pre-monsoon and post-monsoon and to biodegrade them with the microbial consortium.



Bioremediation of polyaromatic hydrocarbons using microbial consortia in contaminated sludge microcosm