



## Bacteriophage Genomics Workshops

# Bacteriophage Genomics Workshops

NTHRYS BIOTECH LABS provides a diverse array of workshops in the realm of Bacteriophage Genomics. Explore our comprehensive offerings below

[Bacteriophage Genomics Workshops Application Process](#)

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## Transform Your Understanding: Engage in Our Bacteriophage Genomics Workshops!

1. [Workshop in Introduction to Bacteriophage GenomicsPDF](#)
2. [Workshop in Advanced Techniques in Bacteriophage GenomicsPDF](#)
3. [Workshop in Emerging Trends in Bacteriophage GenomicsPDF](#)

### 1. Workshop in Introduction to Bacteriophage Genomics

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**Date:** Pre Selected Date

**Fee:** Rs 6000/-

**Duration:** One Day

**Mode:** Offline and Virtual

**Location for Offline:** NBL Cherlapalli IDA Branch

**Facilitator(s):** NTHRYS TEAM

### **8:00 AM - 8:30 AM: Registration and Welcome Coffee**

Participants arrive, register, and network over coffee.

### **8:30 AM - 8:45 AM: Opening Remarks**

Welcome by the host.

Brief overview of today's focus.

### **8:45 AM - 10:15 AM: Session 1: Basics of Bacteriophage Biology**

Overview of bacteriophages and their role in microbiology.

Introduction to bacteriophage life cycles and types.

### **10:15 AM - 10:30 AM: Coffee / Tea / Snacks Break**

Networking and refreshments.

### **10:30 AM - 12:00 PM: Session 2: Isolation and Characterization of Bacteriophages**

Hands-on training on isolating bacteriophages from various sources (Practical: We perform on either Sewage or Soil, Candidates can procure sources from list mentioned below).

#### **Various Sources of Bacteriophages**

1. **Sewage and Waste water:** Sewage plants and wastewater systems are rich in bacteria and are a common source of bacteriophages.
2. **Soil:** Soil, especially agricultural or rhizospheric soil, contains a high concentration of bacteria and bacteriophages.
3. **Aquatic Environments:** Oceans, rivers, lakes, and ponds contain abundant bacteriophages, particularly in areas rich in microbial activity.
4. **Marine Sediments:** Sediments in ocean floors or coastal areas are known to harbor a high concentration of bacteriophages.
5. **Animal Gut Microbiome:** The gastrointestinal tracts of animals (including humans) are rich in bacteriophages, particularly in the intestines.
6. **Fermented Foods:** Fermented products such as yogurt, kimchi, and sauerkraut can contain bacteriophages due to the presence of bacteria involved in fermentation.
7. **Human and Animal Wounds:** Wounds or abscesses can be sources of bacteriophages as bacteria proliferate in these areas, attracting their viral predators.
8. **Manure and Compost:** These decomposing organic materials, often full of bacterial communities, are rich in bacteriophages.
9. **Hot Springs:** Thermophilic environments such as hot springs also contain

bacteriophages that infect heat-loving bacteria.

10. **Plant Surfaces (Phyllosphere):** Leaves, stems, and roots of plants can harbor bacteriophages due to the presence of surface bacteria.
11. **Freshwater Biofilms:** Biofilms formed in freshwater systems (on rocks, plants, or pipes) are good sources of bacteriophages.
12. **Raw Milk:** Unpasteurized or raw milk from cows, goats, and sheep can contain bacteriophages associated with lactic acid bacteria.
13. **Hospital Environments:** Surfaces in hospital settings, including medical equipment and patient rooms, may harbor bacteriophages due to the presence of antibiotic-resistant bacteria.

Practical session on characterizing bacteriophages using microscopy (Practical) and plaque assays (Practical).

### **12:00 PM - 1:00 PM: Lunch Break**

Catered lunch and networking opportunity.

### **1:00 PM - 2:30 PM: Session 3: Bacteriophage Genomics Techniques**

Overview of genomic techniques for studying bacteriophages.

Practical exercises on DNA extraction (Practical), PCR (Practical), and sequencing (Theory) of bacteriophage genomes.

### **2:30 PM - 2:45 PM: Short Break**

Time for a stretch and informal discussions.

### **2:45 PM - 4:15 PM: Session 4: Case Studies in Bacteriophage Genomics**

Discussion on real-world case studies involving bacteriophage genomics.

Analysis of bacteriophage applications in medicine, agriculture, and biotechnology.

### **4:15 PM - 4:30 PM: Coffee / Tea / Snacks Break**

Last networking opportunity with snacks.

### **4:30 PM - 5:30 PM: Closing Session: Implementing Changes and Technology Adoption**

Group discussions on implementing new techniques learned today.

Dialogue on overcoming challenges in adopting new technologies in similar sectors.

Feedback session and closing remarks.

**Certificate Issue**

## **5:30 PM: Workshop Concludes**

## **2. Workshop in Advanced Techniques in Bacteriophage Genomics**

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**Date:** Pre Selected Date

**Fee:** Rs 6000/-

**Duration:** One Day

**Mode:** Offline and Virtual

**Location for Offline:** NBL Cherlapalli IDA Branch

**Facilitator(s):** NTHRYS TEAM

### **8:00 AM - 8:30 AM: Registration and Welcome Coffee**

Participants arrive, register, and network over coffee.

### **8:30 AM - 8:45 AM: Opening Remarks**

Welcome by the host.

Brief overview of today's focus.

### **8:45 AM - 10:15 AM: Session 1: Comparative Genomics of Bacteriophages**

Introduction to comparative genomics and its applications.

Practical demonstration of comparing bacteriophage genomes using bioinformatics tools (Practical using Softwares and tools).

### **10:15 AM - 10:30 AM: Coffee / Tea / Snacks Break**

Networking and refreshments.

### **10:30 AM - 12:00 PM: Session 2: Functional Genomics and Proteomics**

Overview of functional genomics and proteomics in bacteriophage research.

Hands-on workshop on annotating genes and analyzing protein profiles (Practical using Softwares and tools).

**12:00 PM - 1:00 PM: Lunch Break**

Catered lunch and networking opportunity.

**1:00 PM - 2:30 PM: Session 3: Bacteriophage-Host Interactions**

Introduction to the interactions between bacteriophages and their hosts.  
Practical session on studying bacteriophage infection mechanisms and host responses.(Practical)

**2:30 PM - 2:45 PM: Short Break**

Time for a stretch and informal discussions.

**2:45 PM - 4:15 PM: Session 4: Therapeutic Applications of Bacteriophages**

Discussion on the use of bacteriophages in therapy.  
Case studies on the development and application of bacteriophage-based treatments.(Theoretical Discussion)

**4:15 PM - 4:30 PM: Coffee / Tea / Snacks Break**

Last networking opportunity with snacks.

**4:30 PM - 5:30 PM: Closing Session: Implementing Changes and Technology Adoption**

Group discussions on implementing new techniques learned today.  
Dialogue on overcoming challenges in adopting new technologies in similar sectors.  
Feedback session and closing remarks.

Certificate Issue

**5:30 PM: Workshop Concludes**

### **3. Workshop in Emerging Trends in Bacteriophage Genomics**

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**Date:** Pre Selected Date

**Fee:** Rs 6000/-

**Duration:** One Day

**Mode:** Offline and Virtual

**Location for Offline:** NBL Cherlapalli IDA Branch

**Facilitator(s):** NTHRYS TEAM

### **8:00 AM - 8:30 AM: Registration and Welcome Coffee**

Participants arrive, register, and network over coffee.

### **8:30 AM - 8:45 AM: Opening Remarks**

Welcome by the host.

Brief overview of today's focus.

### **8:45 AM - 10:15 AM: Session 1: Metagenomics of Bacteriophages**

Introduction to metagenomics and its relevance to bacteriophages.

Practical session on analyzing metagenomic data to discover new bacteriophages.

(Practical using Metagenomics Softwares and tools)

### **10:15 AM - 10:30 AM: Coffee / Tea / Snacks Break**

Networking and refreshments.

### **10:30 AM - 12:00 PM: Session 2: Synthetic Biology and Bacteriophages**

Overview of synthetic biology applications in bacteriophage research.

Hands-on workshop on designing and constructing synthetic bacteriophages.

(Multiple Practicals)

### **12:00 PM - 1:00 PM: Lunch Break**

Catered lunch and networking opportunity.

### **1:00 PM - 2:30 PM: Session 3: Bacteriophage Engineering**

Discussion on engineering bacteriophages for specific applications.

Practical exercises on modifying bacteriophage genomes for enhanced functionality.

(Multiple Practicals)

**2:30 PM - 2:45 PM: Short Break**

Time for a stretch and informal discussions.

**2:45 PM - 4:15 PM: Session 4: Future Directions in Bacteriophage Genomics**

Exploration of future trends and innovations in bacteriophage genomics.

Case studies on the impact of advanced research on bacteriophage applications.

(Theoretical Discussion)

**4:15 PM - 4:30 PM: Coffee / Tea / Snacks Break**

Last networking opportunity with snacks.

**4:30 PM - 5:30 PM: Closing Session: Implementing Changes and Technology Adoption**

Group discussions on implementing new techniques learned today.

Dialogue on overcoming challenges in adopting new technologies in similar sectors.

Feedback session and closing remarks.

Certificate Issue

**5:30 PM: Workshop Concludes**

Note: NTHRYS Management reserves the right to modify the workshop module at any time without prior notice. Registered or enrolled candidates will receive the module that is current on the day of enrollment.

**NTHRYS Workshops Department**

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**Bacteriophage Genomics Workshops Application Process**

1. Select a workshop from the list.

2. Contact via whatsapp on the number present above to request fee details and dates suitable for joining. Alternatively, you can send an email to workshops ( a t ) nthrys [ d 0 t ] com.
3. Our Workshop department will contact you promptly to provide further assistance.