

Phylodynamics Workshops

Phylodynamics Workshops

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

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Peak into Phylodynamics: Select From Our Workshops!

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1. Workshop in Introduction to Phylodynamics

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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: Fundamentals of Phylodynamics

Hands-on workshop on the basics of phylodynamics.

Protocols for understanding the integration of phylogenetics with population dynamics to study the evolution of pathogens and organisms.

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

Networking and refreshments.

10:30 AM - 12:00 PM: Session 2: Molecular Evolution and Transmission Dynamics

Practical session on molecular evolution.

Protocols for analyzing the molecular evolution of pathogens and their transmission patterns using phylodynamic models.

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

Catered lunch and networking opportunity.

1:00 PM - 2:30 PM: Session 3: Phylogenetic Tree Construction

Hands-on training on building phylogenetic trees.

Protocols for generating phylogenetic trees from sequence data using popular tools like BEAST, MrBayes, and RAxML.

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

Time for a stretch and informal discussions.

2:45 PM - 4:15 PM: Session 4: Introduction to Coalescent Theory in Phylodynamics

Practical session on coalescent theory.

Protocols for applying coalescent theory to infer demographic history and population size changes over time using genetic data.

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 Bayesian Inference in Phylodynamics

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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: Bayesian Phylogenetics and Model Selection

Hands-on workshop on Bayesian inference.
Protocols for implementing Bayesian methods in phylodynamics using MCMC and other algorithms for estimating evolutionary parameters.

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

Networking and refreshments.

10:30 AM - 12:00 PM: Session 2: Bayesian Skyline Plots for Population Dynamics

Practical session on Bayesian skyline plots.
Protocols for constructing Bayesian skyline plots to visualize population size changes over time in a phylodynamic framework.

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

Catered lunch and networking opportunity.

1:00 PM - 2:30 PM: Session 3: Divergence Time Estimation Using Bayesian Methods

Hands-on training on divergence time estimation.
Protocols for estimating the timing of evolutionary divergence events using Bayesian phylogenetic approaches.

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

Time for a stretch and informal discussions.

2:45 PM - 4:15 PM: Session 4: Prior and Posterior Distributions in Bayesian Phylodynamics

Practical session on priors and posteriors.
Protocols for choosing appropriate priors, computing posterior distributions, and interpreting the results in Bayesian phylodynamic models.

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 Viral Phylodynamics and Epidemiology

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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: Phylodynamics of Viral Pathogens

Hands-on workshop on viral phylodynamics.
Protocols for analyzing the evolution and spread of viral pathogens, including

influenza, HIV, and SARS-CoV-2, using phylodynamic approaches.

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

Networking and refreshments.

10:30 AM - 12:00 PM: Session 2: Phylodynamics and Epidemiological Data Integration

Practical session on data integration.

Protocols for integrating epidemiological data (e.g., incidence rates, geographic data) with phylogenetic information to model disease spread.

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

Catered lunch and networking opportunity.

1:00 PM - 2:30 PM: Session 3: Estimating Reproductive Numbers Using Phylodynamics

Hands-on training on reproductive number estimation.

Protocols for using phylodynamic models to estimate key epidemiological parameters like the basic reproductive number (R_0).

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

Time for a stretch and informal discussions.

2:45 PM - 4:15 PM: Session 4: Real-Time Phylodynamics for Outbreak Surveillance

Practical session on real-time analysis.

Protocols for implementing real-time phylodynamic methods for outbreak tracking and forecasting in rapidly evolving viral epidemics.

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

4. Workshop in Spatial Phylodynamics and Migration Patterns

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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: Spatial Phylogenetics and Migration Models

Hands-on workshop on spatial phylodynamics.

Protocols for analyzing spatial migration patterns and estimating the geographic spread of organisms or pathogens.

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

Networking and refreshments.

10:30 AM - 12:00 PM: Session 2: Phylogeography and Discrete Trait Analysis

Practical session on phylogeography.

Protocols for reconstructing the geographic history of populations and performing discrete trait analysis in phylodynamic studies.

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

Catered lunch and networking opportunity.

1:00 PM - 2:30 PM: Session 3: Continuous Phylogeography and Spatial Diffusion

Hands-on training on continuous phylogeography.

Protocols for modeling spatial diffusion and continuous geographic spread of pathogens across landscapes.

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

Time for a stretch and informal discussions.

2:45 PM - 4:15 PM: Session 4: Migration and Phylodynamics in Human Populations

Practical session on human migration.

Protocols for studying the impact of migration and mobility on the genetic diversity and structure of human populations using phylodynamic tools.

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

5. Workshop in Host-Pathogen Co-Evolution in Phylodynamics

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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: Co-Evolutionary Models in Phylodynamics

Hands-on workshop on host-pathogen co-evolution.

Protocols for modeling the co-evolution of hosts and pathogens using phylodynamic approaches and genetic data.

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

Networking and refreshments.

10:30 AM - 12:00 PM: Session 2: Modeling Pathogen Adaptation to Host Immune Responses

Practical session on immune adaptation.

Protocols for studying how pathogens adapt to host immune responses over time and the evolutionary arms race between host and pathogen.

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

Catered lunch and networking opportunity.

1:00 PM - 2:30 PM: Session 3: Cross-Species Transmission and Spillover Events

Hands-on training on cross-species transmission.

Protocols for modeling pathogen spillover events from one host species to another using phylodynamic techniques.

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

Time for a stretch and informal discussions.

2:45 PM - 4:15 PM: Session 4: Evolution of Virulence in Host-Pathogen Systems

Practical session on virulence evolution.

Protocols for investigating the evolutionary dynamics of virulence and its impact on host-pathogen interactions.

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

6. Workshop in Phylodynamics of Antibiotic Resistance

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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: Tracking the Evolution of Antibiotic Resistance

Hands-on workshop on antibiotic resistance.

Protocols for tracking the evolution of antibiotic resistance genes in microbial populations using phylodynamic models.

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

Networking and refreshments.

10:30 AM - 12:00 PM: Session 2: Phylogenetics of Resistance Gene Transfer

Practical session on horizontal gene transfer.

Protocols for studying the spread of antibiotic resistance genes via horizontal gene transfer in bacteria using phylogenetic techniques.

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

Catered lunch and networking opportunity.

1:00 PM - 2:30 PM: Session 3: Phylodynamic Models for Predicting Resistance Spread

Hands-on training on predicting resistance spread.

Protocols for modeling the future spread of antibiotic resistance using phylodynamic approaches and epidemiological data.

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

Time for a stretch and informal discussions.

2:45 PM - 4:15 PM: Session 4: Evolutionary Dynamics of Multi-Drug Resistance

Practical session on multi-drug resistance.

Protocols for studying the evolutionary dynamics of multi-drug resistant pathogens and their spread in clinical settings.

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

7. Workshop in Phylodynamics of Emerging Infectious Diseases

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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: Phylodynamic Analysis of Emerging Pathogens

Hands-on workshop on emerging pathogens.

Protocols for studying the evolutionary dynamics of newly emerging infectious diseases using phylodynamic models.

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

Networking and refreshments.

10:30 AM - 12:00 PM: Session 2: Zoonotic Spillover Events and Phylodynamics

Practical session on zoonotic diseases.

Protocols for modeling zoonotic spillover events and tracking the early transmission dynamics of emerging zoonotic pathogens.

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

Catered lunch and networking opportunity.

1:00 PM - 2:30 PM: Session 3: Genetic Diversity and Evolution of Emerging Viruses

Hands-on training on viral diversity.

Protocols for analyzing the genetic diversity of emerging viruses and studying their evolutionary potential using phylodynamics.

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

Time for a stretch and informal discussions.

2:45 PM - 4:15 PM: Session 4: Forecasting Future Outbreaks Using

Phylodynamics

Practical session on outbreak forecasting.

Protocols for using phylodynamic models to predict the likelihood and timing of future outbreaks of emerging infectious diseases.

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

8. Workshop in Phylodynamics of Human Evolution and Migration

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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: Phylodynamics of Human Population History

Hands-on workshop on human evolution.
Protocols for reconstructing the evolutionary history of human populations using phylodynamic methods and genetic data.

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

Networking and refreshments.

10:30 AM - 12:00 PM: Session 2: Modeling Human Migration and Genetic Structure

Practical session on human migration.
Protocols for modeling historical and contemporary human migration patterns and their impact on genetic diversity.

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

Catered lunch and networking opportunity.

1:00 PM - 2:30 PM: Session 3: Phylogeographic Studies of Ancient Human Populations

Hands-on training on ancient DNA.
Protocols for integrating ancient DNA data with phylogeographic models to study the migration and evolution of early human populations.

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

Time for a stretch and informal discussions.

2:45 PM - 4:15 PM: Session 4: Inferring Population Bottlenecks and Expansions

Practical session on population dynamics.
Protocols for detecting historical population bottlenecks and expansions in human populations using genetic data and phylodynamic models.

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

9. Workshop in Phylodynamics in Conservation Biology

+

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: Phylodynamics for Conservation Genetics

Hands-on workshop on conservation genetics.

Protocols for using phylodynamics to study the genetic diversity and evolutionary potential of endangered species.

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

Networking and refreshments.

10:30 AM - 12:00 PM: Session 2: Inferring Population Decline and Recovery in Conservation

Practical session on population dynamics.
Protocols for modeling population decline and recovery in endangered species using genetic data and phylodynamic tools.

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

Catered lunch and networking opportunity.

1:00 PM - 2:30 PM: Session 3: Phylogenetics of Species Divergence and Hybridization

Hands-on training on species divergence.
Protocols for studying the phylogenetics of species divergence, hybridization, and adaptive evolution in conservation contexts.

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

Time for a stretch and informal discussions.

2:45 PM - 4:15 PM: Session 4: Genetic Connectivity and Landscape Phylodynamics

Practical session on landscape genetics.
Protocols for integrating genetic connectivity with landscape phylodynamics to inform conservation strategies for fragmented populations.

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

10. Workshop in Emerging Tools and Techniques in Phylodynamics

+

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: New Computational Tools for Phylodynamics

Hands-on workshop on new tools in phylodynamics.

Protocols for using the latest computational tools and software for phylodynamic analysis, including advancements in high-performance computing.

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

Networking and refreshments.

10:30 AM - 12:00 PM: Session 2: Machine Learning and AI in Phylodynamics

Practical session on machine learning integration.
Protocols for applying machine learning and artificial intelligence to enhance phylodynamic models and predictions.

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

Catered lunch and networking opportunity.

1:00 PM - 2:30 PM: Session 3: Phylodynamic Models for Metagenomics

Hands-on training on phylodynamics for metagenomic data.
Protocols for integrating metagenomic data into phylodynamic studies to explore community evolution and dynamics.

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

Time for a stretch and informal discussions.

2:45 PM - 4:15 PM: Session 4: High-Resolution Phylodynamics for Microbial Communities

Practical session on microbial phylodynamics.
Protocols for applying phylodynamic models to study the evolution and interactions of microbial communities in high resolution.

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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Phylodynamics 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.