



शरीरमाद्यं खलु धर्मसाधनम्

HANDS-ON WORKSHOP ON

SINGLE CELL RNA-SEQ

BENCH TO BIOINFORMATICS

From Brain Tissue to Data Insights



**27th – 29th
MAY 2026**



DATES

27th – 29th
May 2026



VENUE

To be Announced
(India)



ORGANIZED BY

Laboratory Medicine and
Neurosurgery



**HANDS-ON
WET LAB TRAINING**

Gain practical experience
in RNA-Seq workflows



**BIOINFORMATICS
WITH R & SEURAT**

Learn data analysis,
visualization & interpretation
using real datasets



**NEUROSCIENCE
APPLICATIONS**

Explore cutting-edge
applications in brain
research & disorders



**EXPERT-LED
SESSIONS**

Learn from leading
researchers &
industry experts



**CERTIFICATE
OF PARTICIPATION**

Receive a certificate
upon successful
completion

ABOUT THE WORKSHOP

This intensive 3-day workshop is designed to provide participants with a comprehensive understanding of single cell RNA sequencing technologies, from experimental workflows to bioinformatics analysis. Through a unique combination of lectures, demonstrations, hands-on wet lab training, and computational sessions, participants will explore neuroscience-focused applications, multi-omics integration, and clinical research translation.

- ✓ Understand modern sequencing technologies & their applications
- ✓ Perform library preparation & quality control
- ✓ Analyze real datasets using R & Seurat
- ✓ Explore neuroimmunology, neurovirology & brain disorders
- ✓ Network with peers, experts & researchers

WORKSHOP STRUCTURE (TRACKS)



**TRACK A OBSERVER TRACK
(Lectures + Demonstrations)**

- Includes access to all theory sessions, video demonstrations, and bioinformatics training (Days 1–3)
- No wet lab participation



**TRACK B HANDS-ON TRACK
(Wet Lab Participation)**

- Includes full access to all lectures (Days 1–3) + wet lab participation (Days 1–2, Track B) + bioinformatics sessions (Day 3)



INVITED FACULTY



EXECUTIVE COMMITTEE



**SCAN TO
REGISTER**

FOR MORE INFORMATION

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event.parmmfoundation.org

STAY CONNECTED





HANDS-ON WORKSHOP ON SINGLE CELL RNA-SEQ BENCH TO BIOINFORMATICS



27TH – 29TH MAY 2026

To be Announced (India)

TENTATIVE AGENDA

WORKSHOP STRUCTURE (TRACKS)

TRACK A



OBSERVER TRACK (Lectures + Demonstrations)

- Includes access to all theory sessions, video demonstrations, and bioinformatics training (Days 1–3)
- No wet lab participation

TRACK B



HANDS-ON TRACK (Wet Lab Participation)

- Includes full access to all lectures (Days 1–3) + wet lab participation (Days 1–2, Track B) + bioinformatics sessions (Day 3)

DAY 1 – FOUNDATIONS & NEURAL APPLICATIONS

TIME	SESSION
08:30 – 09:00	Registration
09:00 – 09:30	Opening Remarks
09:30 – 10:15	Overview of Sequencing Technologies & Research Applications
10:15 – 11:00	Neurovirology & Brain Models
11:00 – 11:15	Tea Break
11:15 – 12:00	RNA Barcoding & Memory
12:00 – 13:00	Clinical Genomics Ecosystem
13:00 – 13:45	Lunch

PARALLEL TRACKS (FROM 13:45 ONWARDS)

TRACK A – OBSERVER TRACK (LECTURES + DEMONSTRATIONS)		TRACK B – HANDS-ON TRACK (WET LAB PARTICIPATION)	
TIME	SESSION	TIME	SESSION
13:45 – 14:45	Brain Tissue to Single Cells Workflow (Video Demo)	13:45 – 14:45	Lab Entry, Safety Briefing & Orientation
14:45 – 15:45	Library Preparation Workflow (Step-by-step walkthrough)	14:45 – 15:15	Brain Tissue to Single Cells Workflow – Live Demo
15:45 – 16:45	Neuro-immunology in Brain Disorders (scRNA perspective)	15:15 – 17:45	Lab Session 1 RNA-Seq Library Preparation <ul style="list-style-type: none"> • RNA Quality Assessment (QC & Quantification) • RNA Enrichment / Selection Strategies • cDNA Synthesis
16:45 – 17:30	Open Q&A and Discussion on Key Checkpoints & Troubleshooting	17:45 – 18:00	Open Q&A and Discussion on Key Checkpoints & Troubleshooting

DAY 2 – DUAL TRACK

TRACK A – OBSERVER TRACK (LECTURES + DEMONSTRATIONS)		TRACK B – HANDS-ON TRACK (WET LAB PARTICIPATION)	
TIME	SESSION	TIME	SESSION
09:00 – 10:00	Isoform Sequencing: Long-read Technologies & Transcript Diversity	09:30 – 10:15	(Lab Session 2) Library Preparation: End Processing
10:00 – 11:00	Host-Pathogen Multi-omics: Integrating Genomics, Transcriptomics & Proteomics	10:15 – 11:00	Adapter Ligation & Indexing Concepts
11:00 – 11:15	Tea Break	11:00 – 11:30	Post-ligation Processing & Clean-up
11:15 – 12:15	Immune-Brain Axis: Neuroinflammation & Cellular Crosstalk	11:30 – 13:00	Library Amplification
12:15 – 13:15	Lunch	13:00 – 14:00	Working Lunch
13:15 – 14:15	CNS Signalling Pathways: Molecular Networks in Brain Disorders	14:00 – 15:30	Library Quality Control (Size & Quantification)
14:15 – 15:15	Single-cell Applications in Neurological Diseases (Case Studies & Design)	15:30 – 16:30	Library Pooling & Normalization
15:15 – 15:30	Tea Break	16:30 – 17:15	Sequencing Workflow Overview & Readiness
15:30 – 16:30	Translating Multi-omics to Clinical Research: Feasibility & Study Planning	17:15 – 18:00	Open Q&A and Discussion
16:30 – 17:30	Open Q&A and Discussion		

DAY 3 – BIOINFORMATICS & DATA ANALYSIS

TIME	SESSION
09:00 – 10:00	Spatial Transcriptomics: Concepts, Platforms & Study Design
10:00 – 11:00	NGS Data Processing Pipeline: From FASTQ to Count Matrix
11:00 – 11:15	Tea Break
11:15 – 12:15	Quality Control & Pre-processing of Single-cell Data
11:15 – 12:15	Quality Control & Pre-processing of Single-cell Data
12:15 – 13:00	Lunch
13:00 – 14:00	Clustering & Denoising using R (Workflow Overview)
14:00 – 15:00	Seurat Basics: Data Integration & Feature Selection
15:00 – 15:15	Tea Break
15:15 – 16:15	UMAP Visualization & Interpretation of Cell Populations
16:15 – 17:00	Open Q&A and Discussion
17:00 – 17:30	Valedictory Session & Certificate Distribution



KEY TAKEAWAYS

- Hands-on experience in RNA-Seq workflows from sample to data
- Learn cutting-edge neuro-science applications
- Practical sessions with real-world datasets
- Bioinformatics training using R & Seurat
- Networking with experts and peers



WHO SHOULD ATTEND?

- Neurosurgeons & Neurologists
- Researchers & PhD Scholars
- Biotechnology & Life Science Students
- Lab Technicians & Professionals
- Academicians & Clinicians



WHY ATTEND?

- Bridge wet lab to bioinformatics
- Gain skills for high-impact research
- Explore multi-omics & clinical translation
- Certificate of participation
- Limited seats for personalized experience