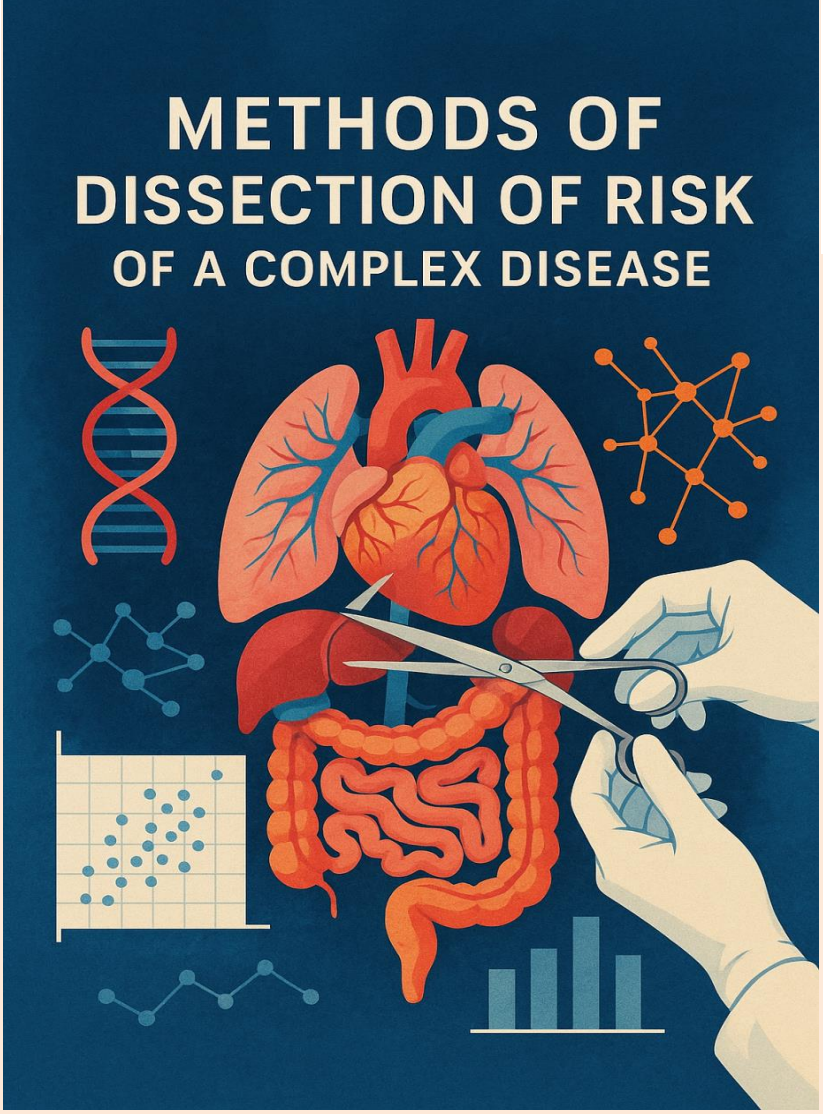

WORKSHOP ON METHODS OF DISSECTION OF RISK OF A COMPLEX DISEASE

DATES:

2nd to 5th July 2025

VENUE:

5th Floor, Medical College Building, NEIGRIHMS, Shillong

ORGANISED BY:

SUN PHARMA SCIENCE FOUNDATION

HOSTED BY:

NORTH EASTERN INDIRA GANDHI REGIONAL INSTITUTE OF HEALTH AND MEDICAL SCIENCES, SHILLONG

INVITATION

Dear Colleagues,

It gives us immense pleasure to welcome you to the picturesque city of Shillong — fondly known as the *"Scotland of the East"* — for the upcoming "**Workshop on Methods of Dissection of Risk of a Complex Disease".**

Set amidst the serene landscapes of Meghalaya, this workshop promises to offer a unique blend of scientific rigor and natural tranquility. Participants can look forward to engaging academic discussions, insightful sessions, and collaborative learning experiences — all in the inspiring backdrop of one of India's most beautiful hill stations.

We look forward to your valuable presence and active participation.

Warm regards

Distinguished Speakers:

1. ***Prof. Partha Majumder, John C. Martin Center for Liver Research & Innovation and Indian Statistical Institute***
2. ***Dr. Ankita Chatterjee, John C. Martin Center for Liver Research & Innovation***
3. ***Prof. Sharmila Sengupta, Saroj Gupta Cancer Centre & Research Institute***
4. ***Prof. Raghunath Chatterjee, Indian Statistical Institute***
5. ***Prof. Narendra Kumar Arora, The INCLEN Trust***

Workshop Overview:

Understanding Complex Disease Etiology Through Genomic and Epidemiological Approaches

This workshop provides a comprehensive exploration into complex diseases—conditions influenced by multiple genetic and environmental factors, making them both challenging and common. Participants will delve into the frameworks for dissecting the etiology of such diseases, utilizing both retrospective and prospective study designs. Emphasis will be placed on the ethical considerations vital to human disease research. Foundational concepts in probability and statistics will be covered, along with methods for estimating key epidemiological parameters. The workshop will examine genetic and environmental risk factors and their interplay, supported by modern genomic technologies such as DNA microarrays, Whole-Exome Sequencing (WES), and Whole-Genome Sequencing (WGS). Attendees will learn techniques for genomic data summarization, quality control, and association testing to identify and estimate the impact of putative risk factors. Finally, the session will include strategies for summarizing association data to inform research and clinical applications.

Who can apply?

- Must be involved in research related to human diseases.
- Can be an industry professional with a PhD degree.
- Can be a faculty member with a PhD from an academic institution.
- Can be a young medical professional affiliated to a medical college.
- Can be a research fellow formally enrolled in a PhD program at an academic institution.
- Must be affiliated with an institution located in a North Eastern (NE) state of India.

Rules and Regulations:

- Registration for the workshop must be done through the **Google Form** provided via the official link.

  https://docs.google.com/forms/d/e/1FAIpQLSfeu6OVf9hg9e7cKOmAdguD_HXwZCU0aDPs4GmUDWnBE-q9VQ/viewform?usp=header

- Selection will be on a **first come, first served** basis.
- Preference will be given to candidates with prior research experience.
- Participants must be affiliated with a medical college or institute and actively involved in research.
    - Exceptions may be made for participants from newly established medical colleges where research exposure is limited, based on the decision of the organizing committee.
- **No travel allowance (TA) or daily allowance (DA)** will be provided.
- **Board and lodging** will be arranged **free of cost** for all outstation participants during the workshop.

Organizing Committee

ROLE	*MEMBERS*
Patrons:	***Prof. (Dr.) Nalin Mehta, Director, NEIGRIHMS, Shillong***
Chairperson:	***Sr. Prof. (Dr.) Vandana Raphael, Dean & Head of Dept. of Pathology, NEIGRIHMS, Shillong***
Organizing Secretary:	***Dr. Shikha Thakur, Additional Professor & I/c Head of Dept. of Dermatology & STD, NEIGRIHMS, Shillong***
Scientific Committee:	***Dr. Shanthosh Priyan S, Assistant Professor, Dept. of Community Medicine, NEIGRIHMS, Shillong***
Reception, Hall Committee & Treasurer:	***Dr. Anita Marak, Associate Professor Dept. of Dermatology & STD, NEIGRIHMS, Shillong***
Food Committee:	***Dr. Manu C. Balakrishnan, Assistant Professor, Dept. of Otorhinolaryngology, NEIGRIHMS, Shillong***
Travel & Accommodation:	***Dr. Pranjal Kalita, Assistant Professor, Dept. of Pathology, NEIGRIHMS, Shillong***

SCHEDULE

Time	Day 1: July 2, 2025	Day 2: July 3, 2025	Day 3:July 4, 2025	Day 4:July 5, 2025
09:00-10:00 A.M.	*Introductory Address:* ***Prof. Narendra Kumar Arora*** Introduction of Participants	Methods of generation of genetic data to dissect a complex disease ***Dr. Ankita Chatterjee***	*Cervical cancer - Why is it important to study host genomics for a disease caused by a virus?* ***Prof. Sharmila Sengupta***	Ethical considerations in studies to dissect a complex disease: ***Prof. Partha Majumder***
10:00-11:30 A.M	*a. What is a complex disease? b. Why are complex diseases common?* ***Prof. Partha Majumder***	*Nature of data generated in whole-exome and whole-genome studies:* ***Dr. Ankita Chatterjee***	*Technical details of DNA microarray, whole-exome and whole-genome sequencing experiments:* ***Dr. Ankita Chatterjee***	*Newer methods to understand complex diseases* : Prof. ***Raghunath Chatterjee and Prof. Sharmila Sengupta***
11:30-12:00 A.M	***Tea/Coffee Break***	***Tea/Coffee Break***	***Tea/Coffee Break***	***Valedictory Session***
12:00-13:00 P.M	*a. Disease Risks: Genetic and Environmental Exposures and outcomes b. Framework for the dissection of aetiology of a complex disease:* ***Prof. Partha Majumder***	*Designing a study to identify genomic associations - genomic microarray, whole-exome and whole-genome sequencing:* ***Prof. Sharmila Sengupta***	*Overview of methods for analyzing whole-exome and whole-genome sequencing data:* ***Prof. Raghunath Chatterjee***	
13:00-14:00 P.M	***Lunch Break***	***Lunch Break***	Lunch Break	
14:00-15:00 P.M	*Examples of some complex diseases, with their cardinal features:* ***Dr. Ankita Chatterjee***	Statistical estimation of parameters and testing statistical hypothesis, with special emphasis on testing genomic associations with diseases: ***Prof. Partha Majumder***	*Software packages for analyzing whole-exome and whole-genome data, with illustrations:* ***Dr. Ankita Chatterjee***	
15:00-16:00 P.M	*Probability distributions and Descriptive statistics:* ***Prof. Partha Majumder***	*Functional analyses of disease associations:* ***Prof. Raghunath Chatterjee***	Beyond genomics - why is epigenomics important in understanding a complex disease? ***Prof. Sharmila Sengupta***	
16:00-16:30 P.M	***Tea/Coffee Break***	***Tea/Coffee Break***	***Tea/Coffee Break***	
16:30-17:00 P.M	***Q&A Session***	***Q&A Session***	***Q&A Session***	