

## **Report on the One Day National Seminar on *Simulating Outbreaks: A Journey through Infectious Disease Modelling***

### **Organized by:**

- Department of Physics
- Department of Chemistry

**Institution:** Krishna Chandra College, Hetampur, Birbhum

**Under the Strengthening Component of DBT Star College Scheme**

- Supported by the Department of Biotechnology, Ministry of Science and Technology, Government of India

### **Resource Person**

**Dr. Sandip Mandal, Senior Advisor at Avenir Health, USA/John Snow India Private Ltd, and Adjunct Associate Professor at the Indian Institute of Technology-Bombay.**

### **Introduction:**

The National Seminar titled “*Simulating Outbreaks: A Journey through Infectious Disease Modelling*” was successfully held to bridge the gap between theoretical knowledge and its practical application in tackling infectious disease outbreaks. Jointly organized by the Departments of Physics and Chemistry, this event highlighted interdisciplinary approaches to understanding and combating public health challenges.

### **Aims and Objectives:**

#### **1. Educational Goals:**

- Introduce participants to the foundational concepts of infectious disease modelling.
- Demonstrate the role of physics and computational tools in understanding and controlling disease transmission.
- Explore chemical and biological perspectives in epidemiological studies.

#### **2. Research and Awareness:**

- Promote awareness of recent developments in disease modelling and epidemiology.
- Emphasize the value of interdisciplinary collaborations in addressing societal challenges.

#### **3. Skill Development:**

- Equip participants with practical knowledge of modelling tools and techniques.
- Foster an environment that encourages students and teachers to undertake research-driven projects.

### **Structure of the Seminar:**

#### **• Inaugural Session:**

The seminar began with a welcome address by the Principal of Krishna Chandra College, followed by an introduction to the seminar theme and objectives.

- **Keynote Speaker:**  
**Dr. Sandip Mandal**, Senior Advisor at Avenir Health, USA/John Snow India Private Ltd, and Adjunct Associate Professor at the Indian Institute of Technology-Bombay, delivered the keynote address. Dr. Mandal, an esteemed expert in epidemiological modelling and public health strategy, provided deep insights into the role of infectious disease modelling in predicting and managing outbreaks. His address highlighted real-world applications, particularly his contributions to global health initiatives.
- **Technical Sessions:**  
 Following the keynote speech, the seminar featured several sessions with expert presentations on topics such as:
  - Mathematical and computational foundations of infectious disease modelling.
  - The application of physics in simulating disease spread.
  - Chemical interactions in therapeutic drug development.
  - Case studies of COVID-19, influenza, and other outbreaks.
- **Interactive Workshops:**  
 Hands-on training sessions introduced participants to tools and techniques used for disease modelling, including MATLAB, Python, and specialized software for epidemiological studies.
- **Panel Discussions:**  
 A dynamic panel discussion, led by Dr. Mandal and other experts, focused on the challenges of translating theoretical research into actionable policies. The session emphasized the importance of interdisciplinary collaboration and stakeholder engagement.

### Participants:

- **Teachers:** 18
- **Students:** 113

The seminar witnessed enthusiastic participation from faculty and students, fostering a collaborative learning environment.

### Seminar Outcomes:

1. **Enhanced Knowledge:**
  - Participants developed a strong understanding of infectious disease modelling techniques and tools.
  - Practical insights into real-world applications of interdisciplinary approaches were shared.
2. **Skill Development:**
  - Students gained hands-on experience with modelling tools, enhancing their technical competence.
3. **Networking Opportunities:**
  - The seminar facilitated collaborations between students, faculty, and experts, promoting interdisciplinary research.
4. **Research Inspiration:**
  - Motivated participants to explore research opportunities in physics, chemistry, and epidemiology.
5. **Academic Advancement:**

- The seminar aligned with the DBT Star College Scheme's goals, strengthening the academic and research framework of Krishna Chandra College.

### Conclusion:

The National Seminar on “*Simulating Outbreaks: A Journey through Infectious Disease Modelling*” was a resounding success. Dr. Sandip Mandal's keynote address and active participation provided invaluable insights, making the event a memorable learning experience for all attendees. The organizing committee extends its heartfelt thanks to the Department of Biotechnology, Ministry of Science and Technology, Government of India, for their support through the DBT Star College Scheme. Special appreciation is due to Dr. Sandip Mandal for his inspiring keynote speech and contributions. Gratitude is also extended to the faculty, staff, and students for their enthusiastic participation and dedication to making the event a success.

## Flyer of the National Seminar

**One-Day National Seminar**

**Simulating Outbreaks:  
A Journey through Infectious Disease Modelling**

Honorable Speaker  
**Dr. Sandip Mandal**  
Senior Advisor, Avenir Health (USA) and John Snow India (Delhi);  
Adjunct Associate Professor, IIT Bombay

Venue  
Ram Ranjan Seminar Hall  
Date: 22.12.23  
Time: 11:30 a.m.

Jointly organized by  
The Department of Physics and the Department of Chemistry  
KRISHNA CHANDRA COLLEGE, HETAMPUR

Under the Strengthening Component of DBT- STAR College Scheme  
Department of Biotechnology (DBT),  
Ministry of Science and Technology, Govt. of India

Convenor  
Dr Rini Labar  
Coordinator  
Department of Physics

Joint Convenor  
Dr Shyamal Kumar Jash  
Overall DBT Coordinator  
Associate Professor,  
Dept. of Chemistry

Joint Convenor  
Dr Dipika Saha  
Departmental, DBT Coordinator  
Department of Physics

PATRON  
MR. SUDIPTO GHOSH  
President, Governing Body, Krishna  
Chandra College

VICE-PATRON  
DR. GOUTAM CHATTERJEE Principal,  
Krishna Chandra College

Organizing Committee:

- All Faculty members of the Physics Department
- All Faculty members of the Chemistry Department

Registration Link: <https://forms.gle/oUjSBr3DbtQ55KEU9>

## Geotagged Snapshots of the Seminar

