

Programme



**9<sup>th</sup>**  
**INDIA**  
**BIODIVERSITY**  
**MEET 2026**

International Conference

2 - 4 February, 2026

Indian Statistical Institute, Kolkata

# IBM 2026: Detailed Conference Programme

Day 1: Monday, 02<sup>nd</sup> February, 2026

## Inaugural Function (Venue: Platinum Jubilee Auditorium)

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	Welcome address	<b>Dr. Suparna Mandal Biswas</b> Head, Agricultural and Ecological Research Unit, ISI
	Inaugural address	<b>Prof. Ayanendranath Basu</b> Officiating Director, India Statistical Institute
10:30 – 11:45	Vote of Thanks	<b>Dr. Shyamolina Ghosh</b> AERU, ISI, Kolkata, Joint Secretary, IBM 2026
	Keynote address 11:00-11:45	<b>Dr. Souvik Sen</b> Zoological Survey of India, Kolkata, India
11:45 – 12:00	<b>Tea break</b>	
		<b>Prof. Partha Pratim Majumder</b> Emeritus Professor, Indian Statistical Institute, Kolkata
12:00 – 12:45	Plenary talk	Distinguished Professor of John C. Martin Centre for Liver Research & Innovations <b>Talk title:</b> Celebrating Human Diversity in India: A Legacy of Prasanta Chandra Mahalanobis

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## Ratan Lal Brahmachary Memorial Session (Venue: Platinum Jubilee Auditorium)

**Chair: Prof. Anindya Sinha**

12:45 – 12:50	Welcome address:	<b>Secretary, RLB Memorial Foundation</b>
12:50 – 13:00	Video presentation on the life of Prof. Ratan Lal Brahmachary	
	Invited Speaker:	<b>Prof. Mousumi Podder Sarkar</b>
13:00 – 13:30	Presidency University	
	<b>Talk title:</b>	Evolution of ‘Tiger Science’ from Khairi to Jeenat: the paradigm shift in pheromone research of big cats in India.

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**Lunch Break: 13:30 – 14:30**

**14:30 – 15:00 Wildlife Photography Exhibition** (Venue: to be announced)

**Students' Paper Contest (Category – Biology)** (Venue: Platinum Jubilee Auditorium)

**Chair: Dr. Swati Nandi Chakraborty**

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15:00 – 15:12 **Debaleena Samanta**

Promoter Methylation and Mutated CD36, ITGB3 and ADORA1 Enhance Ligand Affinity to Validate Drug-Target Response in Gene-Disease Association Network

15:12 – 15:24 **Jesmire Murshed**

Molecular Approach To Resolve Taxonomic Inconsistencies With Indian Fireflies of the genus *Abscondita* (Lampyridae: Luciolinae)

15:24 – 15:36 **Madhurima Dutta**

In vitro and in silico evaluation of a squalene analog from leaves of *Cocos nucifera*, L. as an antioxidant and anti-senescence bioactive compound

15:36 – 15:48 **Pritom Das**

Gall Induced Modulation of Volatile Organic Compounds in Mango Leaves and its Behavioral Impact on Resident Insect Population

15:48 – 16:00 **Rojina Khatun**

Comparative Evaluation of the Effects of Aspartame and Saccharine on the Physiological and Metabolic Responses of *Lactobacillus shirota*

16:00 – 16:12 **Saikat Karuri**

miRNA synergism impaired metabolic programming of oral cancer cells by selectively enhancing target gene specificity

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**Tea Break: 16:12 – 16:30**

**Students' Paper Contest (Category – Mathematics)** (Venue: Platinum Jubilee Auditorium)

**Chair: Prof. Priti Kumar Roy**

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16:30 – 16:42 **Arpita Biswas**

Role of predation on plant pollinator mutualistic dynamics

16:42 – 16:54 **Md. Kausar Sk.**

Anticipating critical transitions in fear-mediated mutualistic ecosystems: effects of stochasticity and early warning signals

16:54 – 17:06 **Rana Pal**

Climate, Livelihoods, and Psychological Stress in a Biodiversity Hotspot Indian Sundarban: A Mathematical Epidemiological Perspective

17:06 – 17:18 **Ritesh Kumar Bera**

How do stochastic traits influence strategy selection? An evolutionary game approach

17:18 – 17:30 **Santana Mondal**

Adaptive evolution of aposematism of a prey species subject to Shepherd's recruitment function

17:30 – 17:42 **Subir Dey**

Dynamics of a nonlocal diffusive SIR epidemic model with nonlocal infection

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-- End of Day 1 --

Day 2: Tuesday, 3<sup>rd</sup> February, 2026

**Parallel session 1: PS1 – M |** (Venue: CSSC VC Room, 4<sup>th</sup> Floor, S.N. Bose Bhavan)

**Chair: Prof. Joydev Chattopadhyay**

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- 10:00 – 10:30 Invited Speaker: **Dr. Ramesh Arumugam**  
VIT-AP University, Amaravati  
**Talk Title:** Rate-dependent ecosystem dynamics: Tracking unstable states and anticipating catastrophic transitions in changing environments
- 10:30 – 10:42 **Gauri Agrawal**  
A Dynamical Study to Combat Atmospheric Pollutants Using Aerial Water Spray and Sustain Industrialization
- 10: 42 – 10:54 **Cherie Gautam**  
Modelling the Role of Ocean-Based Carbon Capture Technologies in Climate Change Mitigation: Effects of Time Delays
- 10:54 – 11:06 **Dr. Jaya Maji**  
Emergence of Multiple Limit Cycles in Cooperative-Competitive Predator-Prey Systems
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**Tea Break: 11:06 – 11:20**

**Parallel session 2: PS2 – M |** (Venue: : CSSC VC Room, 4<sup>th</sup> Floor, S.N. Bose Bhavan)

**Chair: Prof. Sabyasachi Bhattacharya**

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- 11:20 – 11:50 Invited Speaker: **Prof. Amit Chakraborty**  
Sikkim University  
**Talk Title:** Biocomplexity: linking genes to ecosystem
- 11:50 – 12:02 **Sudipto Muhuri**  
Of Maxwell and other demons: Conceptualizing a microengine powered by molecular motor protein
- 12:02 – 12:14 **Purnendu Sardar**  
Modeling Density-Dependent Mortality of CD4+ T Cells and Macrophage Reservoir on the Dynamics of HIV Infection with Real Patient Data Analysis
- 12:14 – 12:26 **Dr. Piu Samui**  
Modeling Hepatocyte Apoptosis in Chronic HCV Infection with Impulsive Drug Control
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**Tea Break: 12:26 – 12:36**

**Parallel session 3: PS3 – M |** (Venue: : CSSC VC Room, 4<sup>th</sup> Floor, S.N. Bose Bhavan)

**Chair: Prof. Samaresh Pal**

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- 12:36 – 13:06 Invited Speaker: **Dr. Jitraj Saha**  
NIT Tiruchirapally  
**Talk Title:** The simultaneous effect of chemotaxis and alarm-taxis on the global existence and stability of a predator-prey system
- 13:06 – 13:18 **Sayan Mandal**  
Predator-prey interactions: How prey refuge, additional food and seasonality shape ecological stability?
- 13:18 – 13:30 **S. Gnanasekaran**  
Global existence and stability in a class of chemotaxis systems with lethal interactions, nonlinear diffusion and production
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**Lunch Break: 13:30 – 14:30**

**Parallel session 4: PS4 – M |** (Venue: : CSSC VC Room, 4<sup>th</sup> Floor, S.N. Bose Bhavan)

**Chair: Prof. Tapan Kumar Kar**

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- 14:30 – 15:00 Invited Speaker: **Prof. Arvind kumar Misra**  
Banaras Hindu University  
**Talk Title:** Mathematical modeling and analysis of atmospheric carbon dioxide and its control strategies
- 15:00 – 15:12 **Dr. Mounika Panjala**  
Quantitative and Geospatial Approaches to Climate-Resilient Agro-Ecosystems
- 15:12 – 15:24 **Suchandra Chakrabarti**  
Modelling Plant-Herbivore Systems: Evaluating The Efficacy Of Trap Crops In Pest Management
- 15:24 – 15:36 **Prinsi Shukla**  
Modeling the impact of Detritus Based Irrigation on Agricultural Crop Production
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**Tea Break: 15:36 – 15:48**

**Parallel session 5: PS5 – M |** (Venue: : CSSC VC Room, 4<sup>th</sup> Floor, S.N. Bose Bhavan)

**Chair: Dr. Shyamolina Ghosh**

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- 15:48 – 16:00 **Anoop Kumar Mishra**  
Modeling the Impact of Media Coverage and Healthcare Facilities on the Dynamics of Infectious Diseases
- 16:00 – 16:12 **Kuldeep Kumar Tripathi**  
A Mathematical Study of The Effects of Psychological Fear, Media-induced Awareness, and Sanitation Efforts on Bacterial Disease Dynamics
- 16:12 – 16:24 **Parvez Akhtar**  
DYNAMICS OF TOXIN-PRODUCING Microcystis aeruginosa Aggregation and Its Impact on Filter-Feeding Fish in Aquatic Ecosystems
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**Tea Break: 16:24 – 16:40**

**Parallel session 6: PS6 – M |** (Venue: : CSSC VC Room, 4<sup>th</sup> Floor, S.N. Bose Bhavan)

**Chair: Prof. Amit Chakraborty**

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16:40 – 17:10 Invited Speaker: **Prof. Maia Martcheva (online)**

University of Florida

**Talk Title:** Optimal control of Immuno-epidemiological model of HIV and Opioid Epidemics

17:10 – 17:22 **Nirapada Santra**

Asymmetric Roles of Men and Women in HPV Transmission: Insights from a Sex-Structured Model

17:22 – 17:34 **Suvendu Roy**

Mathematical Modeling for Effective Intervention Strategies on Transmission Dynamics of hMPV Virus

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**Cultural Programme: 18:00 – 19:30 | Venue: Platinum Jubilee Auditorium**

**Conference Gala Dinner: 19:30 – 21:00**

-- End of Day 2 --

Day 3: Wednesday, 4<sup>th</sup> February, 2026

**Parallel session 7: PS7 – M |** (Venue: : CSSC VC Room, 4<sup>th</sup> Floor, S.N. Bose Bhavan)

**Chair: Prof. Priti Kumar Roy**

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- 10:00 – 10:30 Invited Speaker: **Prof. O.D. Makinde**  
Stellenbosch University, South Africa  
**Talk title:** Modelling the Impact of Chemotherapy on Optimal Malaria Management in the Presence of Infected Immigrants
- 10:30 – 10:42 **Kalyan Kumar Pal**  
Impact of Awareness Programs on the Prevention of Diabetes and the Control of Viral infections
- 10:42 – 10:54 **Mithun Hait**  
When Resources Are Limited: Single or Combined Isolation and Distancing Strategies for Epidemic Control
- 10:54 – 11:06 **Adrita Ghosh**  
Epidemiology-Guided Mechanistic Learning for Tuberculosis Forecasting Using Indian Surveillance Data
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**Tea Break: 11:06 – 11:20**

**Parallel session 8: PS8 – M |** (Venue: : CSSC VC Room, 4<sup>th</sup> Floor, S.N. Bose Bhavan)

**Chair: Prof. Samiran Ghosh**

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- 11:20 – 11:50 Invited Speaker: **Prof. Ziyad AlSharawi (Online)**  
American University of Sharjah  
**Talk title:** Strong Local Asymptotic Stability
- 11:50 – 12:02 **Nirmalya Mondal**  
Dynamical Analysis of a Predator Prey Model Under the Influence of Fear and Specific Mortality (Maximal Mortality and Initial mortality).
- 12:02 – 12:14 **Soumitra Pal**  
Modeling the effect of temperature rise and human activities on wildlife population
- 12:14 – 12:26 **Souvick Karmakar**  
Qualitative Dynamics of A Predator-Prey Model Under Environmental Toxicity And Strong Allee Effect
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**Tea Break: 12:26 – 12:36**

**Parallel session 9: PS9 – M |** (Venue: : CSSC VC Room, 4<sup>th</sup> Floor, S.N. Bose Bhavan)

**Chair: Prof. Swarup Poria**

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- 12:36 – 13:06 Invited Speaker: **Dr. Amiya Ranjan Bhowmick**  
Institute of Chemical Technology, Mumbai  
**Talk title:** Identifying Ecological Drivers of Decline in the Abundance of Chitala Populations Through Bayesian Analysis of an Intraguild Predation System

- 13:06 – 13:18 **Nilkanta Mukherjee**  
A Systematic Transition from Growth Curve Models to Probability Distributions with Applications in Population Dynamics
- 13:18 – 13:30 **Prabir Sen**  
Study Of Dynamical Behaviors of An Eco-Epidemic Model With Allee Effect And Alternative Prey

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**Lunch Break: 13:30 – 14:30**

**Parallel session 10: PS10 – M |** (Venue: : CSSC VC Room, 4<sup>th</sup> Floor, S.N. Bose Bhavan)

**Chair: Prof. Arvind Kumar Misra**

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- 14:30 – 15:00 Invited Speaker: **Prof. Ibrahim M. Elmojtaba (Online)**  
Sultan Qaboos University  
**Talk title:**  $R_0$  Revisited: Limitations and Failures of the Basic Reproduction Number in Real-World Epidemiology
- 15:00 – 15:12 **Protyusha Dutta**  
Influence Of Social Behavior And Governmental Action on The Dynamics of an SIRIS Epidemic Model
- 15:12 – 15:24 **Riya Kundu**  
Stability and Bifurcation Analysis of an Eco-epidemic Model with Predation-driven weak Allee Effect
- 15:24 – 15:36 **Shimli Dutta**  
Modeling Multi-Host Nipah Virus Transmission Across Bat, Pig, And Human Populations
- 15:36 – 15:48 **Suparna Dash**  
Influence of Optimal Foraging and Harvesting on Intraguild Predation Dynamics

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**Valedictory Session and Prize Distribution: 16:00 – 17:30 | Venue: Platinum Jubilee Auditorium**

**-- End of IBM 2026 --**