

# THE FUTURE IS HERE II

Exploring New Frontiers of Ocular Research



## PROGRAM SCHEDULE

Day 1: Thursday, 9<sup>th</sup> January 2025

Timings & Venue	Event & Session details	Speakers/Experts/Panelists
12:00 – 01:00 PM Venue: Art Gallery & Patodia Auditorium, LVPEI	Working Lunch & Registration	
01:00 PM – 01:30 PM Venue: Patodia Auditorium, LVPEI	Welcome Address	
01:30 PM - 06:00 PM	<b>FUNDING, COLLABORATIONS &amp; TRANSLATIONAL ROADMAP</b> Session Moderators: Sayan Basu & Vivek Singh Coordinators: Jilu Jaffet & Sonali Mohapatra	Sayan Basu (LVPEI) Kapil Bharti (NIH) Vivek Singh (LVPEI) Stefan Schrader (University of Oldenburg) Virendra Sangwan (Dr. Shroff's Charity Eye Hospital) Saurabh Srivastava (NIPER)
01:30 PM - 01:45 PM	Kick off and Welcome: Sayan & Vivek	
01:45 PM - 02:05 PM	SPEAKER : <b>Kapil Bharti</b> TITLE : Indo-US Collaborations and Opportunities	
02:05 PM - 02:25 PM	SPEAKER : <b>Stefan Schrader</b> TITLE : Indo-European Grant and Collaboration Opportunities	
02:25 PM - 02:45 PM	SPEAKER : <b>Virendra Sangwan</b> TITLE : Innovation and Collaboration	
02:45 PM - 03:05 PM	SPEAKER : <b>Sujata Mohanty</b> TITLE : Regulation for Clinical Translation in India and government's perspective	
03:05 PM - 03:25 PM	SPEAKER : <b>Geeta Vemuganti</b> TITLE : Importance of global Collaborations in Research	
03:25 PM - 03:40 PM	SPEAKER : <b>DBT REPRESENTATIVES</b> TITLE : DBT's Vision towards the Future of Indian Research	
 <b>PAUSE, TAKE A BREATH ! (03:40 PM – 04:00 PM) / Group photo session</b>		
04:00 PM - 04:10 PM	SPEAKER : <b>Rani Pallavi</b> TITLE: Role of Granting Agencies in Career Development	
04:10 PM - 04:20 PM	SPEAKER : <b>Ponnari Gottipati</b> TITLE : Overview of Research Funding and Collaborative Initiatives at LVPEI	
04:20 PM – 04:30 PM	SPEAKER : <b>Saurabh Srivastava</b> TITLE : NIPER's Role in Shaping the Future of Ocular Pharmacology Research	
04:30 PM – 04:40 PM	SPEAKER : <b>Sayan Basu</b> TITLE : Stem Cell and Biomaterial research in LVPEI	
05:00 PM – 05:20 PM	SPEAKER : <b>Debojyoti Chakraborty and Souvik Maiti</b> TITLE : Advancing Gene Editing Therapies to resource limited settings	
05:20 PM – 05:30 PM	SPEAKER : <b>ICMR Representative</b> TITLE: ICMR's Role in Indian Healthcare Reseach	

NETWORKING/DINNER: 06:30 PM onwards ; VENUE: TBD  
 ONLY FOR DELEGATES, SPEAKERS & FACULTY MEMBERS

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Day 2: Friday, 10<sup>th</sup> January 2025 ( *SESSION - 1* )

Timings & Venue	Event & Session details	Speakers/Experts/Panelists
09:00 AM – 1:00 PM	<b>CELL AND GENE BASED THERAPY: REPAIR, REGAIN AND REGENERATION</b>  Session moderators: Arkasubhra Ghosh, Indumathi Mariappan  Coordinators: Tejaswini Pingali & Gufran Siddiqui	Stefan Schrader (University of Oldenburg) Sonja Mertsch (University of Oldenburg) Kapil Bharti (NEI, USA) Kiran Kumar Bokara (CCMB) Arkasubhra Ghosh (NN) Debojyoti Chakraborty (IGIB) Geeta Vemuganti (UOH) Vivek Singh (LVPEI)
09:00 AM - 09:25 AM	SPEAKER : <b>Sonja Mertsch</b> TITLE :Development of Causative Treatment strategies for Lacrimal Gland Insufficiency by Tissue Engineering and Cell Therapy	
09:25 AM - 09:50 AM	SPEAKER : <b>Kapil Bharti</b> TITLE :Patient-specific iPSC-derived 3D Outer Blood Retinal Barrier For in vitro AMD Modeling and Drug Testing	
09:50 AM - 10:15 AM	SPEAKER : <b>Arkasubhra Ghosh</b> TITLE :Mutation independent approaches for ocular gene therapy	
10:15 AM - 10:40 AM	SPEAKER : <b>Koushik Chakraborty</b> TITLE : Gene editing and cellular programming for treating ocular dystrophies	
10:40 AM - 11:05 AM	SPEAKER : <b>Stefan Schrader</b> TITLE :Corneal repair and regeneration-from keratoprosthesis to bioartificial constructs	
 <b>TIMEOUT ! (11:05 AM – 11:30 AM) / Group photo session</b>		
11:30 AM - 11:40 AM	SPEAKER : <b>Ruchi Sharma</b> TITLE :Human Endogenous Retrovirus K (HER-K) Upregulation Triggers iPSCs-RPE and Mice Model.	
11:40 AM - 11:50 PM	SPEAKER : <b>Trilokyanath Panigrahi</b> TITLE :Novel rationally designed AAV mutants enhanced transgene delivery	
11:50 AM - 12:00 PM	SPEAKER : <b>Vrushali Deshpande</b> TITLE :Characterization of serotype and process dependent, novel PTMs on AAV capsids	
12:00 PM - 12:15 PM	SPEAKER : <b>Rajashri Pal</b> TITLE :Developing the first pluripotent stem cell based therapy for d-AMD in India	
12:15 PM - 12:30 PM	SPEAKER : <b>Raja Narayanan</b> TITLE :iPSC-derived RPE for macular dystrophy; LVPEI Update	



**Strings-e-Santur: A special musical session by Debojyoti Chakraborty**



**BON APPÉTIT (01:00 PM - 02:00 PM) ; VENUE: ART GALLERY, LVPEI**

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Day 2: Friday, 10<sup>th</sup> January 2025 ( **SESSION - 2**)

Timings & Venue	Event & Session details	Speakers/Experts/Panelists
02:00 PM - 07:00 PM	<b>MICROBIOME &amp; BIOMARKERS: Tears/Ocular Surface</b> Session Moderators: Merlies Gijs & Swati Singh Coordinators: Rohini Sonar & Anupama Hela	Swati Singh (LVPEI) Swaminathan Sethu Marlies Gijs (Maastricht University) Vivek Singh (LVPEI) Arunashri (LVPEI) Sachin Shukla (LVPEI)
02:15 PM - 02:35 PM	SPEAKER : <b>Swaminathan Sethu</b> TITLE : Non-invasive tear fluid based-ocular immune monitoring for preventive and personalized ophthalmic care	
02:35 PM - 03:00 PM	SPEAKER : <b>Marlies Gijs</b> TITLE : Tear fluid biomarkers: methodological practices and clinical applications	
03:00 PM - 03:15 PM	SPEAKER : <b>Swati Singh</b> TITLE : Lid Margin Microbiome	
03:15 PM - 03:30 PM	SPEAKER : <b>Arunasri</b> TITLE: Microbiome of the Ocular Surface	
03:30 PM - 03:40 PM	SPEAKER : <b>Anahita Kate</b> TITLE : Ocular Allergy and Diagnostics	
 <b>TIMEOUT ! (03:40 PM - 04:00 PM) / Group photo session</b>		
04:00 PM - 04:15 PM	SPEAKER : <b>Rupjyothi Talukdar</b> TITLE : Gut Microbiome in Pancreatic Diabetes	
04:15 PM - 04:30 PM	SPEAKER : <b>Jerome Ozkan</b> TITLE : The Ocular Microbiome in Dry Eye Disease	
04:30 PM - 04:45 PM	SPEAKER : <b>Sachin Shukla</b> TITLE : EVs: The emerging biomarkers in ocular research	
04:45 PM - 05:00 PM	SPEAKER : <b>Venkata Vamsi Krishna Venuganti</b> TITLE : Microneedle patch for ocular drug delivery: beyond eye drops and intravitreal injections	
05:00 PM - 05:15 PM	SPEAKER : <b>Neelesh Mehra</b> TITLE : Novel Formulation for Ocular disorder.	
05:15 PM - 05:30 PM	SPEAKER : <b>Vivek Singh</b> TITLE : Application of Animal Models in Ocular Research-LVPEI update	
05:30 PM - 06:15 PM	<b>SPRINT TALKS (E-Poster presentation, 2+1 mins)</b>	



GALA DINNER : 06:30 PM onwards; **VENUE: TBD**

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Day 3: Saturday, 11<sup>th</sup> January 2025 ( **SESSION - 1** )

Timings & Venue	Event & Session details	Speakers/Experts/Panelists
09:00 AM - 01:00 PM	<p><b>EXPLORING BIOMATERIALS IN OCULAR DISEASE RESEARCH</b></p> <p>Session Moderators: Vineet Joshi and Biman Mandal</p> <p>Coordinators: Arun Kumar Raut Sahithi Macharla Parul Chaurasia</p>	<p>Biman Mandal (IIT Guwahati) Nirmal Jayabalan (BITS Pilani, Hyderabad) Neetu Singh (IIT Delhi) Anil Kumar P.R (Sree Chitra Tirunal Institute) Kaushik Chatterjee (IISC Bangalore) Aravind Kumar Rengan (IIT Hyderabad) Gauri Balachandran (IIT BHU) Falguni Pati (IIT Hyderabad) Vineet Joshi (LVPEI) Amit Asthana (NIPER)</p>
09:00 AM - 09:25 AM	<p>SPEAKER : <b>Biman Mandal</b></p> <p>TITLE : 3D printed human organs and Tissues: The way forward in healthcare</p>	
09:25 AM - 09:50 AM	<p>SPEAKER : <b>Kaushik Chatterjee</b></p> <p>TITLE : Tissue Bioengineering and 3D Bioprinting in clinical Applications</p>	
09:50 AM - 10:15 AM	<p>SPEAKER : <b>Neetu Singh</b></p> <p>TITLE : New Strategies for Monitoring Cancer Progression and Tumor Margins</p>	
10:15 AM - 10:40 AM	<p>SPEAKER : <b>Anil Kumar P. R</b></p> <p>TITLE : Bioengineered tissue for regenerative medicine and organoid models</p>	
<b>REFRESHMENT BREAK (10:40 AM - 11:00 AM)</b>		
11:00 AM – 11:20 AM	<p>SPEAKER : <b>Nirmal Jayabalan</b></p> <p>TITLE : Empowering Ocular Drugs: A shift towards biomimetic strategies</p>	
11:20 AM – 11: 40 AM	<p>SPEAKER : <b>Aravind Kumar Rengan</b></p> <p>TITLE : Biodegradable nanohybrid systems for theranostics</p>	
11:40 AM – 12:00 PM	<p>SPEAKER : <b>Gowri Balachandran</b></p> <p>TITLE : From Organoids to organ-on-a-chip: Transforming biology in 3D for meaningful pursuits</p>	
12:00 PM – 12:20 PM	<p>SPEAKER : <b>Falguni Pati</b></p> <p>TITLE : 3D Bioprinting of Anisotropic and Adhesive Corneal Grafts using Decellularized Corneal Matrix-based Multi-materials System</p>	
12:20 PM – 12:40 PM	<p>SPEAKER : <b>Charanya Ramachandra</b></p> <p>TITLE : Mimicking native tissue architecture for engineering the endothelium</p>	
12:40 PM - 01:00 PM	<p>SPEAKER : <b>Vineet Joshi</b></p> <p>TITLE : Corneal Bioprinting-Clinicians Perspective</p>	
01:00 PM – 01:30 PM	<b>Brainstorming Session</b>	
	<b>AWARD CEREMONY / VOTE OF THANKS / GROUP PHOTO SESSION</b>	




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## HANDS-ON WORKSHOP IN 3-D BIOPRINTING

Timings & Venue	Event & Session details	Speakers/Experts/Panelists
02:00 PM - 06:00 PM	<b>HANDS-ON WORKSHOP: EXTRUSION BIOPRINTING</b>	
02:00 PM - 03:15 PM	<p><b>Overview of Extrusion Bioprinting Technology and its Applications</b></p> <ul style="list-style-type: none"> <li>• Introduction to 3D modeling, demonstrate how to design basic models</li> </ul>	<p>Vivek Singh (LVPEI) Swati Singh (LVPEI) Vijeta Jaiswal (CELLINK) Parul Chaurasia</p>
	<p><b>Extrusion Bioprinter Setup and Calibration</b></p> <ul style="list-style-type: none"> <li>• Setup of the print head and material feed systems, and how to configure the software for precise printing</li> </ul>	
 <b>REFRESHMENT BREAK (03:15 PM - 03:45 PM)</b>		
03:45 PM - 06:00 PM	<p><b>Bioink Formulation and Flow Characteristics</b></p> <ul style="list-style-type: none"> <li>• Demonstrate extrusion of bioinks to understand flow characteristics and adjust for optimal performance</li> </ul>	<p>Vijetha Jaiswal (CELLINK) Swati Singh (LVPEI) Arun Kumar Raut Sahithi Macharla</p>
	<p><b>Printing Basic Geometric Structures</b></p> <ul style="list-style-type: none"> <li>• Demonstrate the printing of basic geometric shapes</li> <li>• Explain the importance of layer adhesion and initial post-processing techniques such as curing</li> </ul>	
	<p><b>Advanced Printing and Multi-Material Techniques</b></p> <ul style="list-style-type: none"> <li>• Demonstrate printing of complex, multi-material models</li> </ul>	



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Day4: Sunday, 12<sup>th</sup> January 2025

Exploring the Future of Biomaterials and 3D Bioprinting: Hands-On Workshops (Registered members only)

Timings & Venue	Event & Session details	Speakers/Experts/Panelists
09:30 AM - 01:00 PM	<b>HANDS-ON WORKSHOP: DIGITAL LIGHT PROCESSING-BASED BIOPRINTING</b>	
09:30 AM - 01:00 PM	<b>Overview of Digital Light Processing-based Bioprinting Technology and its Applications</b>	Vineet Joshi (LVPEI) Parul Chaurasia Sahithi Macharla
	<b>Printer Setup and Calibration Printing High-Resolution Models</b> • Discuss the impact of light exposure on layer curing and detail accuracy	
	<b>Organoids, 3D and 2D Cultures</b>	Vivek Singh (LVPEI)
	<b>Complex Printing Techniques and Multi-Material Applications</b>	Vijeta Jaiswal (CELLINK) Arun Kumar Raut Sahithi Macharla
	<b>Reflection and Q&amp;A</b> • Review key learnings, collect feedback, and address any remaining questions in a Q&A session	Vivek Singh (LVPEI) Vineet Joshi (LVPEI)
	<b>CERTIFICATE AWARD CEREMONY</b>	
01:00 PM - 01:30 PM	<b>Working Lunch</b>	