

iBRIC-inStem Annual Review of Research – 2024



DAY-1 10-09-2024, Tuesday – Venue: Ectoderm

7:30 am - 9.00 am Breakfast			
9.00 AM - 9.20 AM Opening Remarks by Prof. Maneesha Inamdar, Director, iBRIC-inStem			
Session-I	Understanding Development (Chair – Vatsala Thirumalai and Bhavana Muralidaran)		
	9:20 am – 9:45 am	Tina Mukherjee	The sensory truth of immunity
	9:45 am – 9:55 am	Student Talk – Ajay Kumar	Metabolic Coordinates of Blood Progenitor Development and Maintenance
	9:55 am – 10:05 am	Student Talk – Sakshi Tiwari	“nlytion”: a role for dopamine in the development of blood cells in Drosophila
	10:05 am – 10:30 am	Maneesha Inamdar	Tracking organellar fine-tuning of development and disease
	10:30 am – 10:40 am	Student Talk – Arghakusum	Investigation of cytoskeletal regulation of EMT in early human development using 3D models
10:40-11.05 Tea break			
	11:05 am – 11:30 am	Diya Binoy Joseph	Patterning of the lower urinary tract
	11:30 am – 11:55 am	Sufyan Ashhad	PreBötzing Complex subthreshold oscillations underlie rapid switches in breathing dynamics
	11:55 am – 12:05 pm	Student Talk – Swagata Adhikary	Mastering Balance: Rad53/Chk2 controls mitochondrial subunit stoichiometry and output to maintain redox homeostasis and cell growth
	12:05 pm – 12:15 pm	Student Talk – Sreesa Sreedharan	Resourceful Survival: glycolytic flux drives mobilization of stored reserves and pho responses to maintain inorganic phosphate pools
	12:15 pm – 12:25 pm	Student talk – Atriya Mazumdar	Understanding polyadenylation mediated mechanism critical for pluripotency and stem cell fate choice
12:30 pm - 2:00 pm Lunch break and Poster Presentation			
Session-II	Molecular Basis of Disease - Part I (Chair- Subba Rao)		
	2:00 pm – 2:25 pm	Anubama Rajan	Age-Related Differences and Unique Tropism of RSV in Human Nasal Organoids
	2:25 pm – 2:50 pm	Bhavana Muralidharan	Mechanisms of chromatinopathies in neurodevelopment
	2:50 pm – 3:15 pm	Srinivasarao Repudi	Models for neurodevelopmental diseases: Basic science to translational medicine
	3:15 pm – 3:40 pm	Sudarshan Gadadhar	TTLs in ciliopathies: A role beyond tubulin
	3:40 pm – 3:50 pm	Student talk – Asha S Channakkar	Role of human brain enriched ECM/Cell adhesion genes in regulating cerebral cortical development
	3:50 pm – 4:00 pm	Student talk – Sevanthi Suresh	Recapitulating bone marrow niche with intrinsically growth factors secreting engineered Mesenchymal Stem Cells for ex vivo culture of human Hematopoietic Stem and Progenitor cells
4.00 pm - 6.00 pm Tea break and Poster presentation			
	5:00 pm – 6:00 pm	Interaction with SAB members and Guest Speakers	
	6:00 pm – 6.45 pm	Students cultural show (Indian Classic)	
7 pm onwards Dinner			

DAY-2**11-09-2024, Wednesday - Venue: Ectoderm**

7:30 am - 9.00 am Breakfast			
Session-III	Molecular Basis of Disease – Part II (Chair – Srimonta Gayen)		
	9:00 am – 9:25 am	Reena Singh	Understanding CardioVascular Development, Disease and Repair using Developmental Genetics and Stem Cell Biology
	9:25 am – 9:50 am	Dhandapany Perundurai	DOSA"- Discovery of a new syndrome by integrating human molecular genetics, stem cells and pre-clinical models
	9:50 am – 10:00 am	Student Talk – Harshil Chittora	Novel Structural and Biochemical Effects of Nexilin Associated Hypertrophic Cardiomyopathy
	10:00 am – 10:10 am	Student Talk – Vinay J Rao	Tuberous Sclerosis Complex 2 - a new risk gene for coronary artery disease in young Indians
	10:10 am – 10:40 am	Expanding the niche: Institutional initiatives and strategies (Maneesha Inamdar)	
10:40 am -11:00 am Tea break			
Session-IV	Molecular Basis of Disease - Part III (Chair- Abhishek Bhattacharya)		
	11:00 am – 11:25 pm	Shankar Srinivas	Characterizing the coordinated emergence of form and function during early development
	11:25 pm – 11:50 pm	Saravanabhavan Thangavel	Gene -edited hematopoietic stem and progenitor cells for gene therapy for Beta-hemoglobinopathies
	11:50 pm – 12:15 pm	Mohan Kumar	Therapeutic Genome Editing for Hematological Disorders
	12:15 pm – 12:25 pm	Student talk – Manojkumar A	DNA-PK inhibition improves the homology-directed gene editing efficiency in hematopoietic stem and progenitor cells
	12:25 pm – 12:35 pm	Student talk – Paulami Dey	Role of RNA binding protein RBM3 in hypothermic adaptation and mitochondrial metabolism
1:00 pm - 2:00 pm Lunch break and Poster Presentation			
Session-V	Chemical Technology to study biological processes (Chair - Subi Jacob George)		
	2.00 pm – 2.25 pm	Tapomoy Bhattacharjee	Cellular behavior in an oxo-mechanical phase space
	2.25 pm – 2.50 pm	Praveen Vemula	Translational journey in developing anti-pesticide technologies to prevent pesticide-induced toxicity and lethality
	2.50 pm – 3.15 pm	Srujan Kumar Marepally	Long-lasting protein replacement therapy with liver-specific mRNA-lipid nanoplex system for Haemophilia B
	3.15 pm – 3.40 pm	Minhaj Sirajuddin	Spotlighting microtubule diversity with live cell sensors
	3.40 pm – 3.50 pm	Student Talk – Prathibha babu Chandraprabha	Editing the HBG promoter in hematopoietic stem and progenitor cells through homology-directed repair for β -hemoglobinopathies treatment
	3.50 pm – 4.00 pm	Student Talk – Nivya Mendon	Characterization of the nuclear action and its organization across cell types

Session - VI	Cellular Plasticity and Regeneration - Part I (Chair – Shankar Srinivas)		
	4.00 pm – 4.25 pm	Vikas Trivedi	Building with stem cells: bridging networks, mechanics and metabolism
	4.25 pm – 4.50 pm	Arvind Ramanathan	Clinical Metabolomics for targeting aging associated muscle loss in an older Indian population
4.50 pm - 6.15 pm Tea break and Poster presentation			
5.05 pm – 6.15 pm Interaction with SAB members and Guest Speakers			
6.30 pm onwards Dinner			

DAY-3 12-09-2024, Thursday - Venue: Ectoderm

7:30 am - 9.00 am Breakfast			
Session-VII	Cellular Plasticity and Regeneration – Part II (Chair – Vikas Trivedi)		
	9:00 am – 9:25 am	Sunil Laxman	Cells as economies: building rules for amino acid exchange
	9:25 am – 9:35 am	Student Talk – Saraswati Chavda	The Fragile X Mental Retardation Protein is required for induction of PKR-dependent stress responses
	9:35 am – 9:45 am	Student talk – Aditya Deshpande	Identification of stem cell niches in the small airways of the lung
	9:45 am – 9:55 am	Student Talk – Porkizhi Arjunan	Base-modified factor VIII mRNA delivery with galactosylated lipid nanoparticles as a protein replacement therapy for haemophilia A
	9:55 am – 10:20 am	Shaon Chakrabarti	Towards spatially resolved circadian time decoding from single-cell gene expression snapshots
	10:20 am – 10:45 am	Dasaradhi Palakodeti	Sneak peek into mechanisms regulating pluripotency and regeneration
	10:55 am – 11:00 am	Vote of Thanks by Head of Research	
11:00 am -11.30 am Tea break			
11:00 am – 12.30 pm SAB meeting			
12:30 pm – 4.00 pm Lunch break and Poster Presentation			