

**Illinois Eye Symposium on Inflammation and Infection:
New Perspectives and Solutions
September 28 - 29, 2024
University of Illinois Chicago
AGENDA: DAY 1 Saturday, 28th September**

7:30 AM Registration and Breakfast

8:15 AM Welcome and Opening Remarks

08:15 Dr. Deepak Shukla, PhD, UIC

08:20 Dr. R.V. Paul Chan, MD, MSc, MBA, FACS, Head, Department of Ophthalmology and Visual Sciences, UIC

08:30 Dr. Joanna Groden, PhD, Vice Chancellor for Research, UIC

8:40 AM RPB: Funding Early, Often, and Across the Eye.

Dr. Brian Hofland*, PhD, President, Research to Prevent Blindness

8:55 AM Session 1: Ocular Pain & Inflammation

Chair: Dr. Pooja Bhat, MD; Co-Chair: Dr. Elmira Jalilian, PhD

08:55 **The Dry Eye Pathological Spectrum: Autoinflammation to Autoimmunity**

Dr. Sandeep Jain, MD, UIC

09:15 **Sjögren Disease and non-Sjögren Disease Dry Eye Patients Have Similar Transcripts Involved Immune Pathways in the Conjunctiva.**

Dr. Cintia De Paiva*, MD, PhD, Baylor College of Medicine

09:35 **Immune cells: Unseen Guardians of Ocular Health and Resilience**

Dr. Daniel Saban*, PhD, Duke University

09:55 **Looking Through the Surface: Neuroimaging Central Pathways of Ocular Pain**

Dr. Eric Moulton*, OD, PhD, Harvard University

10:15 **Membrane-bound Metalloproteinase Regulation of Corneal Neovascularization**

Dr. Dimitri Azar, MD, MBA, FARVO, UIC

10:25 AM Break (20 minutes)

10:45 AM Session 2: Rare or Emerging Infections of the Eye

Chair: Dr. Jason McAnany, PhD; Co-Chair: Dr. Pankaj Sharma, PhD

10:45 **No Pain, No Gain: How the Anesthetic Propofol Increases Host Susceptibility to Microbial Infection.**

Dr. Nancy Elizabeth Freitag, PhD, UIC

11:05 **Ebola, Emerging Infections and the Eye: Surveillance and Translational Approaches**

Dr. Steven Yeh*, MD, University of Nebraska Ophthalmology

11:25 **Mitochondrial Dynamic and Antiviral Response in RPE Cells During Zika Virus Infection.**

Dr. Ashok Kumar*, PhD, FARVO, Wayne State University

11:45 **Ocular Mpox: Model Systems and Developing Antivirals**

Dr. Vaithilingaraja Arumugaswami*, PhD, UCLA

12:05 **Significance of Niemann-Pick Type C1-Like1 (NPC1L1) in Promoting SARS-Cov-2 Cell Entry**

Dr. Vaibhav Tiwari, PhD, Midwestern University

12:15 PM LUNCH (45 minutes)

01:00 PM Session 3: Herpetic Eye Diseases

Chair: Dr. Tibor Valyi-Nagy, MD, PhD Co-Chair: Dr. Hemant Borase, PhD

01:00 **Why HSV Infects the Eye: Causes and Solutions**

Dr. Deepak Shukla, PhD, UIC

01:20 **HSV-1 Influences Neuroinflammation & Senescence in Brainstem During Latency**

Dr. Clinton Jones*, PhD, Oklahoma State University

01:40 **Role of Macrophages in Inflammation and Eye Disease**

Dr. Homayon Ghiasi*, PhD, Cedars Sinai HCS

02:00 **New Insights into Programmed Cell Death Pathways During Pathogenesis of Experimental Cytomegalovirus Retinal Necrosis with Emphasis on Pyroptosis and Inflammasomes**

Dr. Richard Dix*, PhD, Georgia State University/Emory University

02:20 **Corneal Application of rAAV-Delivered Ribozymes that Target the LAT of HSV-1 Significantly Reduce Viral Reactivation in the Eye**

Dr. Donna Neumann*, PhD, University of Wisconsin Madison

02:40 **MicroRNA Regulation of HSV-1 and Host Interaction in a Murine Model of Ocular Keratitis**

Dr. Afsar Naqvi, PhD, UIC

02:50 PM Break (30 minutes)

03:20 PM Session 4: New Targets for Intervention in Ocular Health

Chair: Dr. Michael Flavin, PhD; Co-Chair: Dr. Rakesh Kumar Sahoo, PhD

03:20 **Therapeutic Modulation of Ocular Surface Inflammation with Mesenchymal Stromal/Stem Cells**

Dr. Ali Djalilian, MD, UIC

03:40 **Mesenchymal Stem Cell Regulation of Ocular Surface Inflammation and Promotion of Tissue Regeneration.**

Dr. Sunil Chauhan*, DVM, PhD, Harvard University

04:00 **Translational Nano-Scale Technologies for the Enhanced Ocular Drug Delivery**

Dr. Abhijit Date*, PhD, University of Arizona

04:20 **Airborne Exposure to PM₁₀ Increases Corneal Susceptibility to *P. aeruginosa* Infection**

Dr. Linda Hazlett*, PhD, Wayne State University

04:40 **The Protective Role of Topical IFN- λ at Corneal Epithelial Surface and Therapeutic Implications Against Acyclovir-resistant Recurrent Corneal HSV-1 Infections**

Dr. Amol Suryawanshi*, DVM, PhD, North Carolina State University

05:00 **Carbon Based Sustained Drug Release Systems for the Cornea**

Dr. Tejabhram Yadavalli, PhD, UIC

05:10 PM Break (20 minutes)

05:30 PM Trainee session-I

Session chairs: Rashmi Kadam and Joseph Adams (PhD candidates)

05:30 **Metabolic Factors Unique to Host Cells Harboring Persistent Intracellular *P. aeruginosa***

Andrew Marten, Loyola University Chicago

05:35 **Anti-Inflammatory Actions of Functionally Engineered Extracellular Vesicles Overexpressing Mir-22-3p**

Destiny Ogbu, University of Illinois Chicago

05:40 **Treatment Outcomes in Pediatric Blepharokeratoconjunctivitis**

Mohammadali Ashraf, MD, MPH, University of Illinois Chicago

05:45 **Assessing the Ocular Surface Microbiome and Immune Profile in Patients Undergoing Treatment for Hematopoietic Malignancies Over Time**

Trevor Hale, Loyola University Chicago

05:50 **Modulation of Bacterial Capsule During Attachment of *Streptococcus pneumoniae* to the Cornea**

George J. Azar, University of Mississippi

05:55 **Gene Networks Perturbed In HSV-1 Keratitis Model Identifies Novel Ocular Therapeutic Antiviral Targets**

Araceli Valverde, PhD, University of Illinois Chicago

06:00 **ICP34.5-Driven Syndecan-1 Shedding: A Crucial Pathway for HSV-1 Release**

Divya Kapoor, University of Illinois Chicago

06:05 **The Role of Endothelial Notch4 in Retinal Angiogenesis**

Christine Kang, University of Illinois Chicago

06:10 **Combining proteomics and in vitro approaches to evaluate the regenerative effect of extracellular vesicles from bone marrow and cornea mesenchymal stem cells cultured in 2D and 3D systems on corneal nerve regeneration**

Hamed Massoumi, University of Illinois Chicago

06:20 **Ocular Rosacea and SJS: Microbial Findings on the Ocular Surface**

Julien Stroumza, Loyola University Chicago

06:25 **Nuclear HPSE Regulates DNA Damage Signaling in Response to Genotoxic Stress**

Ipsita Voley, University of Illinois Chicago

06:30

END OF DAY 1

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AGENDA: DAY 2 Sunday, 29th September**

8:00 AM Registration and Breakfast

08:30 AM Session 5: Eye Infections and Immunology

Chair: Dr. Maria S Cortina, MD; Co-Chair: Dr. Sugasini Dhavamani, PhD

08:30 **Antibiotic Drug Development for the Treatment of Bacterial Keratitis**

Dr. Rachel Wozniak*, MD, University of Rochester Medical Center

08:50 **Sticking Around - Using Anchors to Extend the Use of Biologics on The Ocular Surface**

Dr. Robert Shanks*, PhD, University of Pittsburgh

09:10 **The Relationship Between the Eye and a Classical Bacterial Virulence Factor: It's Complicated**

Dr. Mary Marquart*, PhD, University of Mississippi

09:30 **Targeting Innate Immunity in Bacterial Endophthalmitis**

Dr. Michele Callegan*, PhD, FARVO, Dean McGee Eye Institute

09:50 **Mapping The Immune Cell Landscape in Epithelial and Stromal Layers of HSV-1 Infected Cornea by Flow Cytometry**

Dr. Susmit Suvas*, PhD, Wayne State University

10:10 **Neuroimmune Crosstalk in The Cornea: The Role of Corneal Leukocytes in Regulating Nerve Function**

Dr. Pedram Hamrah*, MD, FACS, FARVO, Tufts University School of Medicine

10:30 **How Do Neutrophils and NETs Restrict HSV-1 Eye Infections?**

Dr. Chandrashekhara D. Patil, PhD, UIC

10:40 AM Break (20 minutes)

Session 6: Inflammation and Eye Health

Chair: Dr. Asim Farooq, MD; Co-Chair: Dr. Ankita Sarkar, PhD

11:00 **Inflammation in Ocular Sarcoidosis: Emerging Insights and Therapeutic Challenges**

Dr. Nadera Sweiss, MD, UIC

11:20 **Epigenetic Regulators of Wound Healing and Inflammation in the Human Diabetic Cornea**

Dr. Alex Ljubimov*, PhD, Cedars-Sinai/UCLA

11:40 **Impact Of Inflammation in Corneal Repair and Fibrosis**

Dr. Rajiv Mohan*, PhD, University of Missouri

12:00 **Optineurin-Mediated Mitophagy and Antiviral Immunity in Neurodegeneration**

Dr. Henry Tseng*, MD, PhD, Duke University

12:20 **Revisiting the Role of Microglia in Retinal Detachment**

Dr. Daniel Enrique Maidana, MD, PhD, UIC

12:30 PM Trainee session-II

Session Chair: Earon Grinage (MD/PhD candidate)

12:30 **Understanding the Role of the Microbiome in Keratoprosthesis Outcomes**

Raiza Perez, University of Illinois Chicago

12:35 **Selenium Nanoparticles Enhance Antioxidant and Antimicrobial Signaling in Bacterial Endophthalmitis**

Zeeshan Ahmad, Wayne State University

12:40 **Characterizing the Diversity and Longitudinal Changes of the Ocular Surface Microbiome in Stevens-Johnson Syndrome/Toxic Epidermal Necrolysis (SJS/TEN)**

Julie Ha, Loyola University Chicago

12:45 **Proteomic Analysis of Ocular Fluid to Predict Infectious Pain and Inflammation**

Tomaras, Nicholas Alexander, University of Illinois Chicago

12:50 **HerpDock: A GUI-Based Gateway to HSV-1 Molecular Docking Insights**

Sudhanshu Kumar Singh, University of Illinois Chicago

12:55 PM Closing remarks

Dr. Deepak Shukla/Dr. Sandeep Jain, UIC

01:10 PM Lunch and Depart

*Featured speaker