



# **2025 RESEARCH SYMPOSIUM NIH MEDICAL RESEARCH SCHOLARS PROGRAM**

This research was made possible through the National Institutes of Health (NIH) Medical Research Scholars Program, a public-private partnership supported jointly by the NIH and generous contributions to the Foundation for the NIH.

May 5-7, 2025



Lipsett Auditorium



**REGISTER TO JOIN VIRTUALLY**

TIME	SPEAKER	TOPIC	INSTITUTE
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### Session I: Genetics, Genomics, Transcriptomics, and Metabolomics of Disease

**Moderator: Roshan Lodha**

9:00	Akanksha Nagarkar	Defining the Role of Germline Shelterin Variants in Cancer Etiology: A Genome-First, Population-Based Approach	NCI-DCEG
9:15	Jonathan Zou	Single-cell Transcriptomic Analysis of Human Olfactory Neuroblastoma and Olfactory Carcinoma Reveals Cell, Origin and Mechanisms of Tumorigenesis	NCI-CCR
9:30	Quashawn Chadwick	Spatial and Bulk Transcriptomics Analyses Reveal Distinct Gene Expression Profiles in Archival Skin Kaposi Sarcoma Lesions Based on Disease Characteristics	NCI-CCR
9:45	Jenny Saito	MAGT1 Deficiency Increases Polyomavirus Susceptibility and Risk of Early-onset Merkel Cell Carcinoma	NIAMS
10:00	Samantha Verling	Growth and Regrowth of Periungual Fibromas in Tuberous Sclerosis Complex	NHLBI
10:15	Jalin Jordan	Metabolomic Analysis Reveals Distinct Metabolic Pathways in Hidradenitis Suppurativa Patients	NIAID

### Session II: Brain, Pain, and Innovation - Approaches to Improved Outcomes

**Moderator: Bryan Torres**

10:45	Luke Jackson	Linking Serum-Based Immune Markers to Imaging Features and Clinical Outcomes in Glioblastoma	NCI-CCR
11:00	Alexis Price-Moyer	NeuroMapper: Unveiling Neurological Deficits, Spontaneous Recovery, and Personalized Treatment Strategies	NINDS
11:15	Conor Reid	Enhancing Transcranial Magnetic Stimulation Response through Real-Time EEG-Triggered Paired Associative Stimulation of Mu Rhythm	NIMH
11:30	Miranda Arakelian	BMI and Pain Jointly Moderate Ketamine Antidepressant Responses in Treatment Resistant Depression	NIMH
11:45	Snigdha Chigurupati	Proof of Concept Study Investigating the Safety & Efficacy of Topical Resiniferatoxin for Pain Control in Feline Chronic Gingivostomatitis (FCGS)	CC-DPM

### Session III: Epidemiology and Population Health

**Moderator: Richard Vuong**

1:00	Daem Celestin	Disparities in Patient Portal Access and Use: A Cross-Sectional Study	NIMHD
1:15	Amarachi Orakwue	The Impact of Fibroid Size on Bleeding Symptoms	NIEHS
1:30	Jacqueline Pujol	The Burden of Asthma Mortality by County, Race, Ethnicity, and Age in the United States, 2000–2019: A Systematic Analysis of Health Disparities	NHLBI
1:45	Eleanor Seo	Neighborhood-level Socioeconomic Deprivation Differentially Associates with Monocyte Phenotypes Involved in Atherogenesis: Results from the Multi-Ethnic Study of Atherosclerosis (MESA)	NHLBI
2:00	Ruhika Prasad	Parity Influences on Infant Gut Microbiome Development: A Longitudinal Cohort Study	NIAID
2:15	Kadiatou Traore	Association Between Helicobacter pylori, Serologic Gastric Atrophy, and Esophageal Cancer Risk: A Malawi Case-Control Study	NCI-DCEG

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### Session IV: Oncology Advances - Hematology, Transplant, & Cellular Therapies

**Moderator: Daniela Vultorius**

9:00	Victoria Rogness	Evaluating Interactions Between Tumor Genotype and Tissue Microenvironment in Chronic Lymphocytic Leukemia	NHLBI
9:15	Kellie Phipps	High Levels of Cell Free DNA Increases Risk of Mortality in Lung Transplant Patients	NHLBI
9:30	Avani Kelekar	Engineering of CD3ζ ITAMs Enhances the Function of GPC2-CD276 CAR T-Cells Against Neuroblastoma	NCI-CCR
9:45	Ryan Hannon	The Impact of Hypoxia on CAR T-Cell Manufacturing and Neuroblastoma Biology	NCI-CCR
10:00	August Culbert	Pre-Infusion Risk Factors Predict Severe Infectious Complications of CAR T-Cell Therapy in Pediatric and Adult Patients with B-ALL	NCI-CCR
10:15	Nicole Russell	Evolution of Coagulopathy in Complex Surgical Oncology Patients	NCI-CCR

### Session V: Vision, Hearing, Craniofacial, & Musculoskeletal Conditions

**Moderator: Jalin Jordan**

10:45	Fares Alrefai	Retinal Pigment Epithelium with Varying Pigmentation Exhibits Different Baseline Phenotypes and Responses to Oxidative Stress	NEI
11:00	Kenechukwu Charles-Obi	Integrating Mouse Cochlear Proteomics and Single-Nucleus Transcriptomics to Develop a Comprehensive Database of Inner Ear Tissue Expression	NIDCD
11:15	Steven Munoz	The Characterization of Osteoarthritis in Fibrous Dysplasia: A Rare Metabolic Bone Disease	NIDCR
11:30	Ermina Lee	Prediction of Dentoskeletal Malocclusion in Nonsyndromic Cleft Lip and Palate	NIDCR
11:45	Bryan Torres	The Role of Plastic and Reconstructive Surgery in Neurocristopathies: A Focus on Craniofacial Involvement, Surgical Burden, and Genetic Complexity	NIDCR

### Session VI: Immunology, Autoimmunity, and Inflammation

**Moderator: Avani Kelekar**

1:00	Sonakshi Sharma	Immune Cell Recruitment in Response to Biomaterial Implantation in a Volumetric Muscle Loss Model	NIBIB
1:15	Raphael Kirou	Unraveling Inclusion Body Myositis: Myeloid Dendritic Cells as Drivers of Inflammation	NIAMS
1:30	Safa Farrukh	Cardiac Involvement of Takayasu's Arteritis	NIAMS
1:45	Jennifer Lee	Insulin Receptor Family Autoantibodies in Patients with Type B Insulin Resistance	NIDDK

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### Session VII: Neurological Disorders

**Moderator: Luke Jackson**

8:45	Richard Vuong	The Association Between Cerebral Microbleed Patterns and Incident Dementia: The ARIC-Neurocognitive Study	NINDS
9:00	Daniela Vultorius	Impact of Progressive Multifocal Leukoencephalopathy on the Visual Pathway: From the Retina to the Visual Cortex	NINDS
9:15	Yashaar Hafizka	Dynamics and Immunological Characteristics of Meningeal Contrast Enhancement Patterns in Multiple Sclerosis	NINDS
9:30	Darrian McAfee	Automation of Optical Pooled Screens in Induced Pluripotent Stem Cell Derived Neurons	NINDS
9:45	Joseph Alisch	Targeted Genomic Excision of a COL6A1 Pathogenic Pseudoexon using AAV-delivered CRISPR/Cas9 and Dual Guide RNAs	NINDS

### Session VIII: Healthcare Technology & Other Insights in Neurology & Oncology

**Moderator: Ryan Hannon**

10:15	Milan Patel	Metastasectomy Outcomes in Renal Cell Carcinoma: Insights from Hereditary Leiomyomatosis and Succinate Dehydrogenase Deficient Cohorts	NCI-CCR
10:30	Nikhil Pramod	Genomic and Molecular Features of High Risk Locally Advanced Prostate Cancer Correlated to 18F-DCFPyL PET/CT Uptake	NCI-CCR
10:45	Hunter Stecko	Development and Multi-Reader Evaluation of an Artificial Intelligence Model for Determining Multi-parametric Prostate MRI Image Quality	NCI-CCR
11:00	Roshan Lodha	AI-Driven Spatial Transcriptomics Unlocks Large-Scale Breast Cancer Biomarker Discovery from Histopathology	NCI-CCR
11:15	Harris Jamal	Environmental Contributions to Hypertension Prediction: A Novel Machine Learning Pipeline	NIA



## 2024-2025 NIH Medical Research Scholars

Mr.	Joseph Alisch	Warren Alpert Medical School of Brown University
Mr.	Fares Alrefai	University of Oklahoma College of Medicine
Ms.	Miranda Arakelian	Cleveland Clinic Lerner College of Medicine of Case Western University
Ms.	Daem Celestin	David Geffen School of Medicine at UCLA
Mr.	Quashawn Chadwick	Brody School of Medicine at East Carolina University
Mr.	Kenechukwu Charles-Obi	Drexel University College of Medicine
Ms.	Snigdha Chigurupati	George Washington University School of Medicine and Health Sciences
Mr.	August Culbert	Cleveland Clinic Lerner College of Medicine of Case Western University
Ms.	Safa Farrukh	University of Missouri - Kansas City School of Medicine
Mr.	Yashaar Hafizka	David Geffen School of Medicine at UCLA
Mr.	Ryan Hannon	University of Connecticut School of Medicine
Mr.	Luke Jackson	Indiana University School of Medicine
Mr.	Harris Jamal	Medical College of Georgia at Augusta University
Mr.	Jalin Jordan	Perelman School of Medicine at the University of Pennsylvania
Ms.	Avani Kelekar	Keck School of Medicine of the University of Southern California
Mr.	Raphael Kirou	State University of New York, Downstate Medical Center College of Medicine
Ms.	Jennifer Lee	David Geffen School of Medicine at UCLA
Ms.	Ermina Lee	University of Cincinnati College of Medicine
Mr.	Roshan Lodha	Cleveland Clinic Lerner College of Medicine of Case Western University
Mr.	Darrian McAfee	University of Maryland School of Medicine
Mr.	Steven Munoz	Rutgers New Jersey Medical School
Ms.	Akanksha Nagarkar	UMass Chan Medical School
Ms.	Amarachi Orakwue	University of Minnesota Medical School
Mr.	Milan Patel	Hackensack-Meridian School of Medicine
Ms.	Kellie Phipps	Albert Einstein College of Medicine
Mr.	Nikhil Pramod	Cleveland Clinic Lerner College of Medicine of Case Western University
Ms.	Ruhika Prasad	Oregon Health & Science University School of Medicine
Ms.	Alexis Price-Moyer	Drexel University College of Medicine
Ms.	Jacqueline Pujol	Georgetown University School of Medicine
Mr.	Conor Reid	Cleveland Clinic Lerner College of Medicine of Case Western University
Ms.	Victoria Rogness	Cleveland Clinic Lerner College of Medicine of Case Western University
Ms.	Nicole Russell	Burnett School of Medicine at TCU
Ms.	Yoshine Saito	University of Maryland School of Medicine
Ms.	Jein Seo	Duke University School of Medicine
Ms.	Sonakshi Sharma	Penn State College of Medicine

Mr.	Hunter Stecko	Ohio State University College of Medicine
Mr.	Bryan Torres	Tulane University School of Medicine
Ms.	Kadiatou Traore	University of Rochester School of Medicine and Dentistry
Ms.	Samantha Verling	University of Miami Miller School of Medicine
Ms.	Daniela Vultorius	Indiana University School of Medicine
Mr.	Richard Vuong	Larner College of Medicine at the University of Vermont
Mr.	Jonathan Zou	University of Rochester School of Medicine and Dentistry