

**2023**

# **NIH MEDICAL RESEARCH SCHOLARS PROGRAM (MRSP) RESEARCH SYMPOSIUM**

## **ABOUT MRSP**

The National Institutes of Health (NIH) Medical Research Scholars Program (MRSP) is a comprehensive, year-long research enrichment program designed to attract creative, research-oriented medical, dental, and veterinary students to the intramural campus of the NIH in Bethesda, Maryland.

## **ACKNOWLEDGEMENT STATEMENT**

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# Monday, May 8, 2023

Time	Name	Presentation Title	Institute
<b>Session 1: Hematology/Oncology - Moderator: Barrett Dryden</b>			
9:00	Pranay Hegde	Tyrosine Kinase Domain-mutated FLT3 Measurable Residual Disease Before Transplant in Acute Myeloid Leukemia	NHLBI
9:15	Anirudh Rao	Dendrimer-based Lipid Nanoparticles for Efficient, Low-toxicity Gene Editing of Human Hematopoietic Stem and Progenitor Cells	NHLBI
9:30	Conor Kelly	High-throughput Screening of Chimeric Antigen Receptor (CAR) T Cells with Native and Non-native Costimulatory Domains	NHLBI
9:45	Gerard Hoeltzel	Engineering Biparatopic CAR T Cells Targeting GPC1 for the Treatment of Pancreatic Ductal Adenocarcinoma	NCI-CCR
10:00	Keagan Lipak	Impact of Fludarabine Exposure on the Depth and Duration of Lymphopenia and CAR T Cell Outcomes	NCI-CCR
10:15	Rajiv Trehan	Exploring the CD8 T Cell Landscape in the Setting of Hepatocellular Carcinoma	NCI-CCR
<b>10:30</b>	<b>BREAK (15 min)</b>		
<b>Session 2: Oncology II: Tumor Genetics and Genomics - Moderator: Riley Ferguson</b>			
10:45	Abdelrahman Rahmy	Identifying and Targeting Genetic Resistance Mechanisms in RET-mutated Medullary Thyroid Carcinoma (MTC) Through Genome-wide CRISPR Screening	NCI-CCR
11:00	Joshua Stark	TP53 in Rhabdomyosarcoma: Genotype and Clinical Outcomes in a 78-Patient Cohort	NCI-CCR
11:15	John Han	Evaluating the Specificity and Paralog Selectivity of MRTX1133, a Novel Non-covalent KRAS <sup>G12D</sup> Inhibitor	NCI-CCR
11:30	Briana Cortez	Advancing Precision Medicine in Neuroendocrine Tumors Using Patient-derived Organoids	NCI-CCR
11:45	J. Alberto Maldonado	Somatic Mutation Differences by Race and Ethnicity in Pancreatic Ductal Adenocarcinoma	NCI-CCR
12:00	Sarfraz Akmal	Evaluation of XPO7 and Tivozanib in Epithelial Cancers	NCI-CCR
<b>12:15</b>	<b>LUNCH (60 min)</b>		
<b>Session 3: Oncology III: Breast Cancer and Urologic Oncology - Moderator: Alex Valenzuela</b>			
1:15	Santiago Avila	Identifying Associations Between Reported Germline-Somatic Interactions and Clinical Treatment Response in Breast Cancer	NCI-CCR
1:30	Georgina Whelan	Association of Surgery and Radiotherapy with Risk of Thoracic Soft Tissue Sarcoma Among Older Breast Cancer Survivors	NCI-DCEG
1:45	Bhargav Arimilli	Metabolic Pathways of Oncometabolite Accumulation in Fumarate Hydratase-deficient Renal Tumor Cell Lines	NCI-CCR
2:00	Julie Solomon	Validation of a New Classification System for von Hippel-Lindau Disease	NCI-CCR
2:15	Fiona Obiezu	Detection of Anatomical Structures in Laparoscopic Nephrectomy Videos Using Convolutional Neural Networks (YOLOV7)	CC-DRIS
2:30	Yue Lin	Evaluation of a Cascaded Deep Learning-based Algorithm for Prostate Lesion Detection on Biparametric MRI	NCI-CCR
<b>2:45</b>	<b>WRAP-UP</b>		

# Tuesday, May 9, 2023

Time	Name	Presentation Title	Institute
<b>Session 4: Neurophysiology and Neuro-oncology - Moderator: Santiago Avila</b>			
9:00	Danielle McAuliffe	Stereotyped Sequences of Interictal Epileptiform Discharges May Utilize Underlying Functional Connectivity to Propagate	NINDS
9:15	Martin Arhin	Transcriptomic Characterization of Macrophages in Vestibular Schwannomas	NINDS
9:30	Alex Valenzuela	The Last of Us: A Novel Yeast-based Cancer Vaccine	NCI-CCR
9:45	Emma Byrne	Differentiating Pseudo-progression from Progression in Primary Brain Tumor Patients Treated with Immune Therapy: A Diagnostic Dilemma	NCI-CCR
10:00	Maeve Pascoe	Sleep on the Brain: An Evaluation of Sleep and Related Patient Reported Outcomes in Primary Brain Tumor Patients	NCI-CCR
<b>10:15</b>	<b>BREAK (15 min)</b>		
<b>Session 5: Neurology and Psychiatry - Moderator: Suzie Kim</b>			
10:30	Julia Denniss	Extracellular Vesicle-derived HIV RNA in CSF and Serum Reservoirs and Its Role in Mediating Neurocognitive Dysfunction	NINDS
10:45	Sarita Walvekar	Radiological Characterization of Cortical Lesions in Progressive Multifocal Leukoencephalopathy	NINDS
11:00	Thomas Gossard	Optimizing CRISPRi Strategies in iPSC-derived Neurons to Evaluate Neurodegeneration	NINDS
11:15	Barrett Dryden	From Genes to Behavior: The Link Between Dopamine Transmission and Implicit Learning in Cerebral Palsy	CC-RMD
11:30	Christina La Gamma	Prefrontal Cortex Opioid Regulation of Adaptive Conflict Resolution in a Murine Model	NIMH
11:45	Philip Wang	Peripheral Immune Cell Reactivity in Major Depressive Disorder	NIMH
<b>12:00</b>	<b>LUNCH (60 min)</b>		
<b>Session 6: Cardiology and Critical Care Medicine; Health Disparities - Moderator: Charles Osamor</b>			
1:00	Rebecca Oyetoro	Circulating Ketone Bodies and Mortality in Heart Failure: A Community Cohort Study	NHLBI
1:15	Manuel Cintron	Chronic Stress-induced Inflammation and Epigenetic Dysregulation: A Potential Pathway for Increased Subclinical Cardiovascular Disease Risk Through Trimethylamine N-Oxide	NHLBI
1:30	Dennis Gross	Evaluating Cell-free Mitochondrial DNA as a Diagnostic Tool in Pulmonary Arterial Hypertension	NHLBI; CC-CCMD
1:45	Trevor Stantliff	Tissue-specific T Cell Responses Among 44 COVID-19 Autopsy Cases	CC-CCMD
2:00	Alexis Green	Impact of Patient-Provider Racial-Ethnic and Gender Concordance on the Use of Preventive Services	NIMHD
2:15	Jordan Juarez	Differential Stress Exposure as a Mediator Between Racial Identity and Health Among Hispanic/Latino Individuals	NHLBI
<b>2:30</b>	<b>WRAP-UP</b>		

# Wednesday, May 10, 2023

Time	Name	Presentation Title	Institute
<b>Session 7: Ophthalmology; Autoimmune Disorders - Moderator: Manuel Cintron</b>			
9:00	Thilaka Arunachalam	Geographic Atrophy: A Prospective Longitudinal Analysis of Macular Sensitivity Using Microperimetry	NEI
9:15	Leah Cobb	Relationship of Patient Reported Outcomes with Visual Function in Retinitis Pigmentosa	NEI
9:30	Suzie Kim	Characterization of FAT1 and the Hippo Signaling Pathway in Human Retinal Pigment Epithelium	NEI
9:45	Riley Ferguson	Microglia in Spaceflight Associated Neuro-ocular Syndrome: Retinal Adaptations to Chronic Simulated Microgravity	NEI
10:00	Rebecca Kuan	T Cell Subset Analysis in Patients with Large Vessel Vasculitis	NIAMS
10:15	Estie Toth	Dried Blood Spot Analyses for the Diagnosis of Anti-cytokine Autoantibodies	NIAID
<b>10:30</b>	<b>BREAK (15 min)</b>		
<b>Session 8: Otology; Craniofacial and Orthopedic Medicine - Moderator: Emma Byrne</b>			
10:45	Zeynep Ozgur	Application of Adeno-associated Virus (AAV)-mediated Inner Ear Gene Therapy to a Mouse Model of Usher Syndrome 1B	NIDCD
11:00	Caitlin Foster	Central Role of Centrioles: Loss-of-function Mutation Leads to Craniofacial Dysgenesis	NIDCR
11:15	Sarah Lynn	Characterizing Temporomandibular Joint Disorders in Patients with Loey's-Dietz Syndrome and in a Murine Model	NIDCR
11:30	Aaron Sheppard	Development and Implementation of a Novel 18F-NaF PET/CT-based Imaging Technique to Quantify Vascular Microcalcification in Hyperphosphatemic Familial Tumoral Calcinosis	NIDCR
11:45	Charles Osamor	Mapping the Activity of Fibrous Dysplasia: Natural History and Response to Treatment	NIDCR
<b>12:00</b>	<b>LUNCH (60 min)</b>		
<b>Session 9: Reproductive Endocrinology; Head &amp; Neck Cancer; Bladder Cancer – Moderator: Pranay Hegde</b>			
1:00	Taylor Badger	Combinatory Effects of Unilateral Oophorectomy Plus Cyclophosphamide Treatment on Ovarian Reserve and Fertility in Mice	NICHD
1:15	Kelsey Mumford	Ethics of Couples' Decision Making About Expanded Non-invasive Prenatal Testing	CC-Bioethics
1:30	Magdalena Rainey	Combined TGF- $\beta$ /PD-L1 Blockade Enhances Systemic Antitumor Immunity in Head and Neck Cancer	NCI-CCR
1:45	Riley Larkin	Characterization of the Olfactory Neuroblastoma Tumor Environment Reveals Novel Immunotherapeutic Approaches	NCI-CCR
2:00	Rod Carlo Columbres	Exploring the Therapeutic Potential of SF3B1 Inhibitors in Bladder Cancer	NCI-CCR
<b>2:15</b>	<b>SYMPOSIUM CONCLUSION</b>		

# 2022-2023 MRSP SCHOLARS AND INSTITUTIONS

Mr.	Arhin	Martin	University of North Carolina School of Medicine
Ms.	Denniss	Julia	Duke University School of Medicine
Mr.	Gossard	Thomas	Creighton Univ School of Medicine
Ms.	McAuliffe	Danielle	Lewis Katz School of Medicine at Temple University
Ms.	Walvekar	Sarita	Cleveland Clinic Lerner College of Medicine
Ms.	Green	Alexis	University of Maryland School of Medicine
Mr.	Juarez	Jordan	Lewis Katz School of Medicine at Temple University
Ms.	La Gamma	Christina	Penn State College of Medicine
Mr.	Wang	Philip	Cleveland Clinic Lerner College of Medicine
Ms.	Foster	Caitlin	University of Connecticut School of Medicine
Ms.	Lynn	Sarah	University of Minnesota School of Dentistry
Mr.	Osamor III	Charles	McGovern Medical School at University of Texas, Houston
Mr.	Sheppard	Aaron	Louisiana State University School of Medicine, Shreveport
Mr.	Larkin	Riley	University of Miami Miller School of Medicine
Ms.	Ozgun	Zeynep	Northeast Ohio Medical University College of Medicine
Ms.	Rainey	Magdalena	Cleveland Clinic Lerner College of Medicine
Ms.	Badger	Taylor	Southern Illinois University School of Medicine
Ms.	Mumford	Kelsey	University of Texas at Austin, Dell Medical School
Ms.	Kuan	Rebecca	Western University College of Osteopathic Medicine of the Pacific
Mr.	Stantliff	Trevor	University of Cincinnati College of Medicine
Ms.	Toth	Eszter	Medical College of Georgia at Augusta University
Mr.	Cintron	Manuel	University of Illinois College of Medicine, Peoria
Mr.	Gross	Dennis	University of Central Florida College of Medicine
Mr.	Hegde	Pranay	Cleveland Clinic Lerner College of Medicine
Mr.	Kelly	Conor	Georgetown University School of Medicine
Ms.	Oyetero	Rebecca	University of Florida College of Medicine
Mr.	Rao	Anirudh	Drexel University College of Medicine
Ms.	Arunachalam	Thilaka	Albany Medical College
Ms.	Cobb	Leah	Medical University of South Carolina College of Medicine
Ms.	Ferguson	Riley	University of Cincinnati College of Medicine
Ms.	Kim	Suzie	Cleveland Clinic Lerner College of Medicine
Mr.	Stark	Joshua	University of Tennessee Health Sciences Center College of Medicine
Ms.	Whelan	Georgina	Cleveland Clinic Lerner College of Medicine
Mr.	Avila	Santiago	University of Chicago Pritzker School of Medicine
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Mr.	Arimilli	Bhargav	University of Texas Southwestern Medical School
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Mr.	Columbres	Rod Carlo	William Carey University College of Osteopathic Medicine
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Mr.	Hoeltzel	Gerard	Sidney Kimmel Medical College at Thomas Jefferson University
Mr.	Lin	Yue	Boston University School of Medicine
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