

**2025 Department of Medicine and Whiting School of Engineering
Research Retreat and Poster Session**

Poster Directory* (by poster number)

Poster Number	Poster Presenter	Abstract Title
1	Anjira S. Ambade	Cathepsin S Upregulation in Pulmonary Arterial Hypertension: Implications for Endostatin Proteolytic Cleavage and Disease Progression
2	Han Zhang	Digital Twin Virtual Reality Training for Central Line Dressing Change
3	Yazmin B. Martinez-Martinez	Detrimental role of the host RNA sensor LGP2 during M. tuberculosis infection
4	Orian Stapleton	Characterizing the molecular signatures of bronchial epithelial cells exposed to urban particulate matter
5	Laura McDaniel	Fine Tuning of a Pretrained Gait Model for Frailty Classification/Prediction
6	Sampath Rapuri	ECG-Conditioned Echocardiogram Video Synthesis
7	Soo Jin Choi	3D electrophysiological mapping of cardiac organoids using shell microelectrode arrays
8	Yu Sun	Provable Probabilistic Imaging using Score-based Generative Priors
9	Tanner Grudda	High-dimensional droplet digital PCR of multiple hepatitis B splice variants
10	Yicheng Zhang	Long-acting Injectable Nanoparticle Formulation for Sustained Release of Anti-TNF- α Antibody Therapeutic in Ulcerative Colitis Treatment
11	Nikhil Ranjan	CR1 deficiency defines catastrophic antiphospholipid syndrome (CAPS) and response to complement inhibition
12	Mathias Unberath	The Advanced Robotics and Computationally Augmented Environments (ARCADE) Lab
13	Alessandro Ascani Orsini	Neuropulse: A wearable in-ear EEG/ECG microdevice for monitoring and modulating arousal for neurological care
14	Zefang Li	Ultrawide Property Range Thiol-Ene Photopolymers for 3D Printing
15	Wenjing Gu	Elevated Fucosylation and the Role of Fut1 in Asthma: A Key Contributor to Abnormal Glycosylation in Airway Epithelial Cells
16	Blanca Inigo	Automated Quality Assurance in Label Propagation for Large-scale Surgical Data Synthesis

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17	Jiahuan Helen He	Baseline Sex Hormone Binding Globulin Level Modifies Intensive Lifestyle Intervention Effect on Blood Pressure in Post-Menopausal Females
18	Arpita Jajoo	Machine-Learning Based Model Accurately Identifies the Probability of Cholelithiasis and Provides a Personalized Management Plan
19	Shanshan Lin	Demystifying Large Language Models for Abstract Screening for Systematic Reviews
20	Tianxu Chen	Dietary quality among pregnant people with overweight/obesity: comparison between randomized controlled trial participants in early pregnancy with non-pregnant NHANES matched participants
21	Emily Ariail	Expansion of neoantigen-specific patient T cells using neoepitope-based artificial antigen-presenting cells
22	Hyun Jun Jung	Transcription Regulatory Networks Driving Proliferative Cell State Transitions in The Kidney Distal Convoluted Tubule
23	H. Elizabeth Bird	Sleep Apnea in Persons Receiving Medication for Opioid Use Disorder (MOUD)
24	Carmen Elena Cervantes	Integrating Clinical Decision Support Tools in Chronic Kidney Disease Management
25	Kaveh Barri	Symmetric Bistability in 3D-Printed Metastructures via Programmed Thermal Buckling
26	Autumn Greco	Lipid nanoparticle-mediated nucleic acid delivery for microvascular endothelial cell metabolic modulation
27	Turash Haque Pial	Reducing Payload Heterogeneity in Lipid Nanoparticles for RNA-Based Therapeutics
28	Mahmoud Said	Delineo disease modeling: small-town interactive disease simulation
29	Jianing Li	GLP-1 RECEPTOR AGONISTS RARELY CAUSE DE-NOVO ACUTE PANCREATITIS BUT MAY CAUSE SERUM LIPASE ELEVATIONS OF UNCLEAR CLINICAL SIGNIFICANCE
30	Jianqiao Ma	Baseline Androgenic State Modifies the Effect of Intensive Lifestyle Intervention on triglyceride Levels in Males with Diabetes: The Look AHEAD Trial Sex Hormone Study
31	Jieneng Chen	GenEx: Generating an Explorable World
32	Shaquille Dias	Myoblast therapy ameliorates chronic skeletal muscle denervation atrophy
33	Lama Al-Qusairi	The DCT2/CNT is the Major Site of Regulated ROMK-Mediated K ⁺ Secretion

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34	Che-Min Lo	HIV decreases both hepatitis B antibody titer and neutralization after spontaneous HBV control
35	Andrew Kim	Optimizing Orthopedic Implants: Processing Mg-Ca Alloys for the Advancement of Biodegradable Bone Fixation Devices
36	Daniel Ames	Voxel interface control in multimaterial extrusion 3d printing
37	Helen Wang	Regulation of LOXL2 by nitric oxide in the vasculature
38	Mahin Gadkari	Sex-Specific Variations in Vascular Properties Across Pulmonary and Systemic Circulations
39	Matthew Czarny	TAVR outcomes for severe aortic stenosis according to baseline resting gradient
40	Shaobing Xie	Small Proline-Rich Protein 2A Drives Epithelial Remodeling in Eosinophilic Chronic Rhinosinusitis with Nasal Polyps via SAA2 Upregulation
41	Sanjeev Noel	Metagenomic whole genome sequencing of stool samples demonstrates distinct profiles in AKI and CKD participants from the NIH Kidney Precision Medicine Project
42	Kevin Sun	Cardiac MRI measures of T1Rho, a novel imaging marker of diffuse fibrosis, are elevated in postpartum women with preeclampsia
43	Tianyi Chen	Euclidean mirrors and first-order changepoints in network time series
44	Omobolade Odedoyin	Machine Learning-Driven Analysis and Predictive Modeling for Molten Salt Reactor Electrochemical Behavior
45	Faisal Rahman	Impact of Obesity Status on Management and Outcomes of Cardiogenic Shock
46	Shishir Patel	The Role of Olfactory Receptor 78 in Experimental Acute Kidney Injury
47	Steven Menez	Concordance of pre-biopsy and post-biopsy diagnosis in patients with acute kidney injury
48	Chi-Fen Lee	scLCM and ddPCR reveals HDV heterogeneity in liver biopsy from a person with HBV/HDV
49	Yang Zhang	Revealing neural mechanisms underlying species-specific vocalization in marmosets
50	Chris Acha	Neuronal regulation of brain organoids via 3D electrical stimulation for induced learning
51	Monika Mani	High proportion of HBV-human chimeric transcripts is associated with minimal declines in HBsAg levels
52	Peyton Krajcarski	The application of AI guided laser processed iPSC-derived cardiomyocytes.

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53	Joseph Criscione	An engineered heart tissue model of dystrophic cardiomyopathy for screening microdystrophin gene therapies
54	Chenzhi Ma	From Occurrence to Consequence: A Comprehensive Data-driven Building Fire Risk Analysis
55	Danish Iltaf Satti	Associations Between Social Determinants of Health, Cardiovascular Health, and Mortality Outcomes Among Sexual Minority Individuals in the United States
56	Sarah Propst	Time Code for Multifunctional 3D Printhead Controls
57	Qinchuan Wang	Chronic activation of CaMKII, a key signal transducer for exercise performance and adaptation, drives sarcopenia in aging
58	Marta Martinez Yus	Targeting LOXL2 against arterial stiffening in post-menopausal females
59	Nityasree Srialluri	Impact of Intensive Lifestyle Intervention on Kidney Disease Progression In People With Type 2 Diabetes: The Look AHEAD Study
60	Mohammad Keykhaei	Post-infarction Cardiac Function is Improved in Mice with TSC2 ^{-/-} Macrophages
61	Natalie Wang	Taxonomy-Based Prompt Engineering to Generate Synthetic Drug-Related Patient Portal Messages
62	Radhika Kapoor	Immune checkpoint molecule TIGIT modulates kidney T cell mitochondrial respiration and glucose uptake: implications for acute kidney injury and cancer
63	Nicole Robertson	The Burden of Preserved Ratio Impaired Spirometry (PRISm) in a High HIV Prevalence Cohort: Prevalence and Predictors
64	Manav C. Parikh	Assessment of Interstitial Fibrosis and Tubular Atrophy on Kidney Biopsy Using Urine Uromodulin Levels
65	Sydney Delman	Characterizing the role of PDGFR α as the primary cause of pulmonary disease
66	Nathan Brown	Hybrid Formative-Additive Manufacturing (HyFAM)
67	Thea Angela Calahatian	Hypusination of Eukaryotic Initiation Factor 5A controls ubiquitination in fibroblasts
68	Derosh George	Microfluidic shell for embryo-inspired 3D chemical patterning
69	Xirnan an	Engineering Soluble Neuropilins for the Treatment of Corneal Neovascularization
70	Wencheng Zhong	A Robustness Analysis of High Dimensional Consensus (HDC) Mass Spectra in Forensic Drug Identification
71	Yashas Mallikarjun	Manipulating stress granules to protect cardiac myocytes from cell death

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72	Xuan Yuan	Elevated Complement Component 3 (C3) in Allergic Rhinitis: Implications for Macrophage Polarization and Disease Severity
73	Jing Liu	Single iso-center location optimization for effective radiotherapy treatment of multi-lesion brain metastasis
74	Fardin Ganjkanloo	Enhancing Fall Risk Prediction: Integrating EHR Variables into the Johns Hopkins Fall Risk Assessment Tool
75	Ashkan Abdollahi	Association of Aortic Valve Calcification with Chronic Kidney Disease: The Multi-Ethnic Study of Atherosclerosis
76	Yang Yang	The Role of SETDB2 in Regulating Acetaminophen Induced Acute Liver Injury
77	Clara Cho	Deciphering the protective effects of sustained BRAF signaling in OGT cardiomyopathy
78	Daniel Foley	Electrostatic dose modulation improves lifespan of beam-sensitive specimens for advanced electron crystallography techniques
79	Aira Sarkar	"Affinity cocktails" of antibody-radioconjugates for solid tumor-penetrating alpha-particle radionuclide therapy and their digital twin
80	Andrew Henrichsen	Uncertainty Bounds on Classification (including Diagnostic) Uncertainty under
81	Emmett Springer	Personalized Nutrition Recommendation with Food Item Replacement: A Generalized Observation Noise Inverse Optimization Approach
82	Byunggik Kim	Engineering High-Throughput Human Neuromuscular Microphysiological System for Phenotypic Drug Testing
83	Dibakar Roy Sarkar	Accelerating Traumatic Brain Injury Modeling with Neural Operators: Toward Personalized Protective Gear Design
84	Wilson Tang	Biometric Insights and Clinical Outcomes in Interstitial Lung Disease Patients on Long-Term Oxygen Therapy: A Remote Patient Monitoring Study
85	Joseph Choy	Metabolic conditioning during ex vivo stimulation of naïve tumor antigen-specific CD8 T cells
86	Masih Tajdini	Cystatin C to Albumin Ratio as a Prognostic Indicator in Heart Failure with Preserved Ejection Fraction
87	Pooja Hariharan	Low-dose chemotherapy Empowers alpha-Particle Radionuclide Therapy Against Metastatic Triple Negative Breast Cancer

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88	Maryam Mojarrad Sani	Increased Lipoprotein(a) Levels Independently Predict a Higher Incidence of Ventricular Arrhythmias: A Comprehensive Retrospective Cohort Study
89	Lisa Yanek	Genomic Signatures of Aging for Frailty in the NHLBI TOPMed Program
90	Ladaisha Thompson	Dynamic Biomarkers of T cell Senescence
91	Prakriti Sinha	The single-cell intrahepatic hepatitis B virus transcriptional landscape in people with chronic infection
92	Emily Scott	Impact of extreme heat on asthma exacerbations: identifying health disparities in susceptible populations
93	Yuanmuhuang Long	Scalable Doxorubicin Nanoparticle Formulation with Tunable Release Profiles
94	Zahra Yousefli	Chronic neck or back pain is an independent risk factor for constant abdominal pain in patients with chronic pancreatitis
95	Vrinda Gupta	A comparison of single versus dual treatment with stabilizers and silencers in transthyretin amyloid cardiomyopathy
96	Jingyao Ma	Tuning extracellular fluid viscosity to enhance transfection efficiency
97	Malak Hoballah	Left-to-right ventricular volume ratio as a predictor of cardiovascular events: The Multi-ethnic Study of Atherosclerosis (MESA).
98	Tatsuya Matsubara	Engineered Tubular Microchannels for Smooth Muscle Cell Alignment Under Dynamic Cyclic Stretch
99	Shreyanshu Ray	A quantitative systems pharmacology model for predicting responses to PD-1/PD-L1 checkpoint blockade in classical Hodgkin lymphoma.
100	Hao Ding	Towards Robust Automation of Surgical Systems via Digital Twin-based Scene Representations from Foundation Models
101	Aida Metri	T1 Signal Intensity Ratio of the Pancreas to the Spleen and Paraspinal Muscle Predicts Fibrosis in Patients with Recurrent Acute and Chronic Pancreatitis
102	Eduardo Gomez-Banuelos	Autoantibodies To Transcription Factor A Mitochondria are associated with damage accrual, malignancy risk and mortality in SLE
103	Feiyu Yang	Dorsal-Ventral and Rostral-Caudal Patterning of Human Brain Organoids using a Localized Passive Diffusion-based Morphogen Gradient Generator
104	Catalina Gomez Caballero	Enhancing Glaucoma Referral Decisions with Explainable AI

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105	Camryn Byrum	Microstructure Engineering to Optimize Corrosion Resistance and Biocompatibility in Mg-9Al Implants
106	Joel Sop	The XBB.1.5 mRNA Booster Vaccine Does Not Significantly Increase XBB.1.5 Mono-Reactive T Cells
107	Ardian Latifi	Brachytherapy Seed Placement by Robotic Bronchoscopy with Cone-Beam CT Guidance for Peripheral Lung Cancer: A Human Cadaveric Feasibility Pilot
108	John Henry Brems	Disparities in post-discharge care provided to patients discharging 'before medically advised' following hospitalization for asthma exacerbation
109	Navid Koleini	Reduced Hypusination of eIF5A impairs ribosomal translation resulting in Heart Failure with Preserved Ejection Fraction
110	Vartika Tomar	Aberrant N-glycosylation in carriers of ZIP8 391T with Crohn's disease: Opportunity for genotype-driven therapy
111	Wenxuan Li	ScaleMAI: Accelerating the Development of Trusted Datasets and AI Models
112	Sandeep Verma	TRANSFORMATIVE EFFECT OF FMT ON RESTORATION OF INTESTINAL MICRO ECOLOGY IN PATIENTS WITH RECURRENT CLOSTRIDIODES DIFFICILE INFECTION
113	Haotian Zong	Optimal sequential hypothesis testing with costly information acquisition
114	Zhipeng Dong	Microfluidic blood-brain barrier chip for identifying repurposable drugs as glioblastoma chemotherapeutic agents
115	Tunde Ayodeji	In vitro corrosion-fatigue testing methodology for magnesium alloys in biomedical applications
116	A N M Tawsifur Rahman	An efficient automated diagnostic approach for cancer subtypes from H&E whole slide images using a context-aware attention deep learning model
117	Harriet He	Unraveling the Role of OGT/OGA-Mediated Modifications in Cardiac Dysfunction: A Focus on MAOB and ACADM as Therapeutic Targets
118	Scot Wilson	Polymer-based strategies for the induction of immunity and tolerance
119	Vivian Su	Evaluating collagen remodeling in dimethyl-prostaglandin E2 (dmPGE2)-induced short cervix model
120	Nimeesha Chan	Augmented LLMs for multimodal clinical data analysis

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121	Kailei Ding	Pro-angiogenic Response to Hyaluronic Acid Hydrogel Matrix With a Tunable Degradation Profile
122	Wangqu Liu	Microrobotic Grippers for Upper Urinary Tract Biopsy
123	Benjamin Killeen	Intelligent Control of Robotic X-ray Devices using a Language-promptable Digital Twin
124	Yulun Wu	Bioresorbable Shape-morphing Microrobots for Safer Precision Medicine
125	Prachi Agarwal	DURABLE: Dual HRV and Blood Pressure Assessment for Neurological Evaluation
126	Vineet Shenoy	Uncertainty-quantified Pulse Signal Recovery from Facial Video without Video Pre-training using Score-based Generative Priors
127	Prajakta Bedekar	A mathematical model of penetration of zona pellucida
128	Muhammed Rahim	Evaluation of Hemodynamic Data in Transthyretin Amyloid Cardiomyopathy Patients
129	Zaib Hussain	Impact of Internet Use on Knowledge of Clinical Trials: An analysis using the Health Information National Trends Survey (HINTS) Dataset
130	Ziwei Ouayng	Polyhedral Origami Shell MEAs for Brain Organoids
131	Chen-Yu Lee	The immune map of lupus nephritis: a spatially-resolved kidney proteomic approach.
132	Jiayuan Kong	Extracellular Vesicle-incorporated Biostimulatory Matrix Prevents Radiation Dermatitis
133	William Osburn	Hepatocyte-specific knockout of BCOR changes coagulation factor expression and increases clotting.
134	Sabrina Chen	Programming antitumor gamma delta T cells via a phosphoantigen nanoparticle delivery vehicle
135	Jacob M Chen	Just Trial Once: Ongoing Causal Validation of Updates to Machine Learning Models
136	Anthony Song	Slide-free tissue histology using back-illumination interference tomography and virtual H&E staining
137	Aidan Dunphy	Role of O-GlcNAcylation and ERK1/2 phosphorylation in cardiac ischemia-reperfusion injury
138	Anannya Kshirsagar	Engineering Brainstem Organoids: A Novel Platform for Modeling Neurological Diseases
139	Hyoryong Lee	Magnetically Actuated Bioactuator for Promoting Skeletal Muscle Tissue Maturation through Frequency-Dependent Hybrid Stimulation

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140	Liz Gonye	Understanding the role of AGTR1-mediated signaling in modulation of pericyte function during emphysema development
141	Vijaya Subramanian	Evaluating the role of Alpha-Cell Dysfunction in the Longitudinal Progression to Type 2 Diabetes
142	Cassie Parks	Spatial transcriptomics uncovers IL-6 inflammatory signature, progressive osteopontin expression, and mitochondrial dysfunction in dermatomyositis-associated calcinosis cutis
143	Ji- Hyun Lee	IPMK and Metabolic Remodeling in Cardiomyocytes: Implications for Heart Failure
144	Julie Lee	A Novel Connection between OGA and YAP in the Murine HFpEF model
145	Jochen Mueller	Recent Advances in Multimaterial Extrusion Additive Manufacturing
146	Ravi Gupta	Claims-Based Identification of Alzheimer Disease and Related Dementias using the National Health and Aging Trends Study (NHATS)
147	Sohanjit Ghosh	Rapid Compaction of Granular Materials
148	Sandeep Kumar	A polymeric opioid conjugate vaccine against fentanyl abuse

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