

July 23, 3:00-7:00pm, Lerner Hall Auditorium

# CUPP SYMPOSIUM

PROFESSIONAL DEVELOPMENT • ADMISSIONS FAIR • POSTER PRESENTATIONS

## PROGRAM AT A GLANCE

### PROFESSIONAL DEVELOPMENT SESSIONS

Receive guidance from Columbia Admission Officers regarding the application procedures for Undergraduate and Graduate School:

#### College Admissions Session (for High School Students)

3:00-4:30pm | Room 555 (5th Floor) | With Sarah Campbell, Undergraduate Admissions and Financial Aid, Columbia College & Columbia Engineering

#### Graduate Admissions Workshop (for Undergrad Students)

3:30-4:30pm | Room Satow (5th Floor) | With Jenny Choy, Graduate Admissions, Columbia Fu Foundation School of Engineering and Applied Science

### PROFESSIONAL HEADSHOTS

4:30-7:00pm | North Lobby (1st Floor)

Take a professional headshot to elevate your CV and LinkedIn profile. Join the virtual queue at [bit.ly/2024HeadshotsSignUp](https://bit.ly/2024HeadshotsSignUp) and you'll be notified via text message when it's your turn to show up in the North Lobby.

### MINI ADMISSIONS FAIR

5:00-7:00pm | Lerner Hall Auditorium (1st Floor)

Meet with Admission Officers from Columbia University's Undergraduate and Graduate Schools, as well as from Columbia University Irving Medical Center.

See participating Columbia Schools on p. 2.

### POSTER PRESENTATIONS

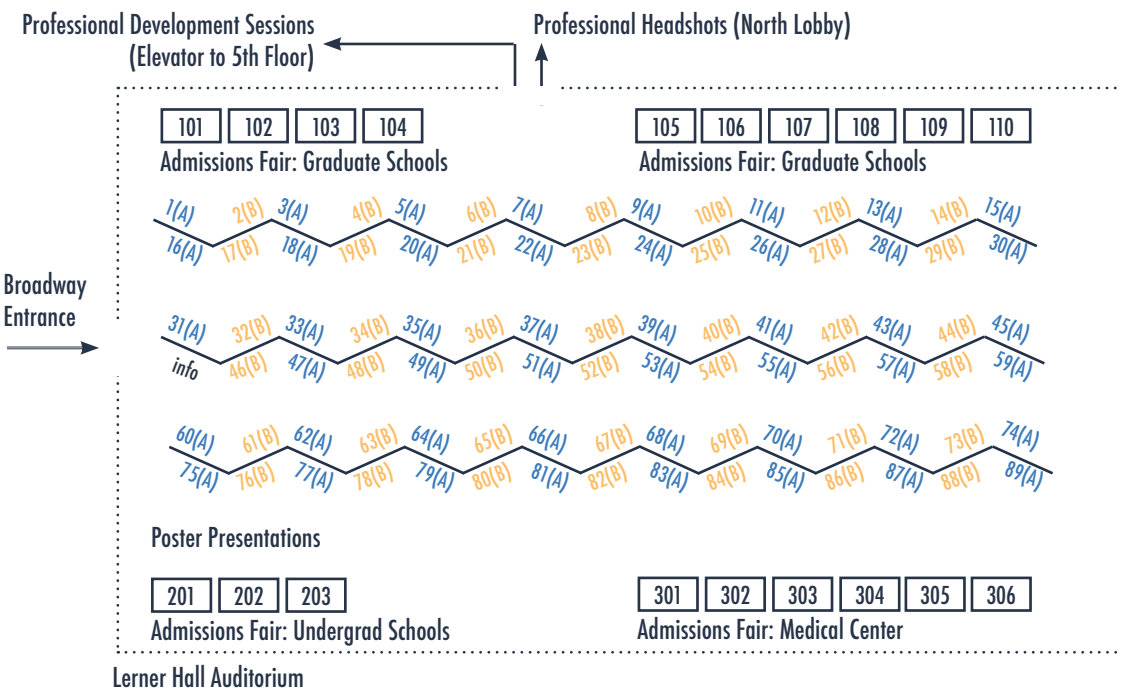
5:00-7:00pm | Lerner Hall Auditorium (1st Floor)

**GROUP A:** presenting 5:00-6:00pm | Lerner Hall Auditorium

**GROUP B:** presenting 6:00-7:00pm | Lerner Hall Auditorium

Discover insights from CUPP Scholars on their research at Columbia University. See presenting scholars and Pathways Programs on pp. 2-5.

## MAP



# MINI ADMISSIONS FAIR

Lerner Hall Auditorium | 5:00-7:00pm

Meet with admission officers from Columbia University's Undergraduate and Graduate Schools, as well as from Columbia University Irving Medical Center.

## GRADUATE SCHOOLS

101 · Columbia Business School  
102 · Columbia Graduate School of Arts and Sciences  
103 · Columbia Law School  
104 · Columbia School of International and Public Affairs  
105 · Teachers College  
106 · Columbia School of Professional Studies  
107 · Columbia Climate School  
108 · Columbia School of Social Work  
109 · Columbia Journalism School  
110 · Columbia Engineering

## UNDERGRADUATE SCHOOLS

201 · Barnard College  
202 · Columbia Undergraduate Admissions  
203 · Columbia University School of General Studies

## COLUMBIA UNIVERSITY IRVING MEDICAL CENTER

301 · Mailman School of Public Health  
302 · Columbia School of Nursing  
303 · Columbia Vagelos College of Physicians and Surgeons  
304 · Programs in Occupational Therapy at Vagelos College  
305 · Programs in Physical Therapy at Vagelos College  
306 · Columbia College of Dental Medicine

# POSTER PRESENTATIONS

Lerner Hall Auditorium | 5:00-7:00pm

Discover Insights from CUPP Scholars on their Research at Columbia University

**GROUP A:** presenting 5:00-6:00pm

**GROUP B:** presenting 6:00-7:00pm

## PRESENTING SCHOLARS

**1(A)** · **Theophilus Acheampong** · SPURS · 5-6pm

*Molecular Mechanisms of Cardiac Complications Associated with COVID-19*

**2(B)** · **Patrick Ajayi** · SPURS · 6-7pm

*Exploring Glial Cell Roles in Intracerebral Hemorrhage: Insights from an Inducible Mouse Model*

**3(A)** · **Patrizia Lynnel Alpapara** · SPURS · 5-6pm

*Comparing Smo Inhibition and Kras Inhibition in Pancreatic Cancer*

**4(B)** · **Audrey Anigbo** · SPURS · 6-7pm

*Automated Gait and Pose Analysis for Motor Phenotype Characterization in Parkinson's Mouse Models*

**5(A)** · **Joselyn Auquilla** · SPURS · 5-6pm

*Exploring the Opinion of NYCHA Residents on the Smoke-Free Housing Policy and its Connection to Smoking Products in New York City Housing Developments*

**6(B)** · **Leah Berhanu** · SPURS · 6-7pm

*Investigating Age-Delaying Benefits of Time Restricted Feeding in Drosophila Melanogaster*

**7(A)** · **Dexter Chow** · SPURS · 5-6pm

*Hacking the Protein Degradative Pathways to Distinctively Modulate Ion Channel Functional Expression*

**8(B)** · **Somarr Elliott** · SPURS · 6-7pm

*Exploration of the Impact of Seizures on Sleep Architecture in Mice Models*

**9(A)** · **Soah Franklin** · SPURS · 5-6pm

*Ultrastructural Diversity of Extracellular Vesicles in Human Biofluids Vary by Sample Type*

**10(B)** · **Fatima Gbla** · SPURS · 6-7pm

*Trafficking Regulation of Cav1.2 Channel by Targeted Deubiquitination*

**11(A)** · **Seseel Gergis** · SPURS · 5-6pm

*Developing Nanobody Modulators for Neuronal Sodium Channels*

**12(B)** · **Meley Haile** · SPURS · 6-7pm

*Expression of Molecular Markers of Touch Throughout the Spinal Cord*

**13(A)** · **Brian Havens** · SPURS · 5-6pm

*Profiling the Effect of Macrophage-*IKK2* KO in Efferocytic Thymic Macrophages in a Dexamethasone Thymus Model*

**14(B)** · **Megan Hickey** · SPURS · 6-7pm

*Development of SARS-CoV-2 Specific B Cell Responses in Pediatric Tonsil Tissue*

**15(A)** · **Kemka Ihemelandu** · SPURS · 5-6pm

*Evaluating Machine Learning Models for Early Prediction of Endometriosis*

**16(A)** · **Hannah Kerbyson** · SPURS · 5-6pm

*Delineating Cancer Associated Fibroblasts Roles in Initiation and Progression of Esophageal Adenocarcinoma*

**17(B)** · **Shaharia Khan** · SPURS · 6-7pm

*Decoding Neural Dynamics in Mice Behavior Tasks Using Fiber Photometry*

- 18(A)** · Jayden Lai · SPURS · 5-6pm  
*FCAR, FCRL3, and IL6R Levels in Serum of Pediatric IgAN and HSP Patients*
- 19(B)** · Christian Lee · SPURS · 6-7pm  
*BACH2 Super-enhancer Hypermutation in the Pathogenesis of Diffuse Large B Cell Lymphoma*
- 20(A)** · Selene Lin · SPURS · 5-6pm  
*pTDP-43 Phenotypical Differences in ALS Patient Brain Tissue*
- 21(B)** · Lindy Lin · SPURS · 6-7pm  
*Effects of Exercise-induced Lactate in Hypothalamic POM-C Neuron Activation*
- 22(A)** · Naoroz Mahmood · SPURS · 5-6pm  
*Investigation of the Neuronal Expression of SHH Coreceptors and Regulators in Vitro*
- 23(B)** · Angel Brianna Martinez · SPURS · 6-7pm  
*Optimizing CRISPR-based Tools to Alter Methylation Levels in Mammalian Cell DNA*
- 24(A)** · Helen Osunsanya · SPURS · 5-6pm  
*Greenspace Quality, Biodiversity, and Cognition: Influence of Local Plant Biodiversity on Memory and Cognition*
- 25(B)** · Xavier Pina · SPURS · 6-7pm  
*Mechanosensory Basis of Chemical Defense Systems in Inquiline Rove Beetle Myrmecophiles*
- 26(A)** · Margaret Pozo · SPURS · 5-6pm  
*Developing a Computational Method for Detecting Skin Pattern Change in Dwarf Cuttlefish*
- 27(B)** · Lindsay Pramono · SPURS · 6-7pm  
*Opposing Roles of Notch 1 and Notch 2 In Metabolic Dysfunction-Associated Steatotic Liver Disease*
- 28(A)** · Ana Ramos De Jesus · SPURS · 5-6pm  
*Elucidating the Role of Autophagic Dysfunction in a Knock-in Model of Huntington's Disease*
- 29(B)** · Richard Ren · SPURS · 6-7pm  
*Treating Human Natural Killer Cells with An  $\alpha$ -Mannosidase I Inhibitor Increases Phosphorylation of CD3 $\zeta$  and SYK in Response to Fc Receptor Ligation*
- 30(A)** · Adama Sowe · SPURS · 5-6pm  
*Developing Split-Venus Tau Constructs to Examine Effects of Glucocorticoid on Tau aggregation in Alzheimer's Pathology*
- 31(A)** · Susan Takang · SPURS · 5-6pm  
*Examining Intrinsic and Extrinsic Factors on Hematopoietic Stem Cell Aging*
- 32(B)** · Claire Thayer · SPURS · 6-7pm  
*Investigating the Role of Secreted Frizzled-Related Protein 1 in Lung Development*
- 33(A)** · Kale Tornwini · SPURS · 5-6pm  
*Examining the Role of GPR6 in Dopamine Dependent Striatal Synaptic Plasticity*
- 34(B)** · Andrew Tran · SPURS · 6-7pm  
*Expression and Purification of WW4-HECT (Nedd4-2) and HECT-Targeting Nanobody*
- 35(A)** · Madison Williams · SPURS · 5-6pm  
*Pipeline for High Resolution Imaging of Human Parainfluenza Surface Glycoproteins*
- 36(B)** · Gonzalo Gutierrez · SPURS · 6-7pm  
*Engineering of Yeast Based Biosensors for 2,4-Dinitrotoluene Detection*
- 37(A)** · Chiara Chanoi · Bridge to the PhD · 5-6pm  
*Deadly Force in Historical Perspective*
- 38(B)** · Lisa Disalvo · Bridge to the PhD · 6-7pm  
*Weaving the Future: Innovations in Computational Fabrics for Enhanced Wearable Health*
- 39(A)** · Lisa Disalvo · Bridge to the PhD · 5-6pm  
*Virtual Time Capsules: Preserving Community Stories with Augmented Reality*
- 40(B)** · Mohammed Haque · Bridge to the PhD · 6-7pm  
*HTS Strain Optimization for the Columbia Stellarator eXperiment*
- 41(A)** · Alex Montenegro · Bridge to the PhD · 5-6pm  
*Language Use in Major Depression: Analyzing Negative Autobiographical Memories Using LIWC-22*
- 42(B)** · Shradha Ravikumar · Bridge to the PhD · 6-7pm  
*Microstructures of Binary Ice-Salt Systems Relevant to Ocean Worlds*
- 43(A)** · Briana Robles · Bridge to the PhD · 5-6pm  
*Does Inhibiting Mitochondrial Motility Reduce Mitochondrial Biogenesis in Neurons in Vivo?*
- 44(B)** · Michael Rodriguez · Bridge to the PhD · 6-7pm  
*Comparing the Halo Model Prediction for the Projected-fields kSZ Estimator with Websky Simulations*
- 45(A)** · Eden Shaveet · Bridge to the PhD · 5-6pm  
*Using Social Media to Detect Foodborne Illness in New York City: Insights from Yelp Reviews and Short-Form Video Platforms*
- 46(B)** · Anthony Ayala · YES in THE HEIGHTS · 6-7pm  
*Modulation of Hydrophobic Modification of Hyaluronic Acid-Based Hydrogels for Immunotherapeutic Delivery*

- 47(A)** · **Lorraine Benn** · YES in THE HEIGHTS · 5-6pm  
*Gynecological Cancer Disparities Across NYC Zip Codes*
- 48(B)** · **Kaila Fernandez** · YES in THE HEIGHTS · 6-7pm  
*An Aspect of Data Collection: Experience with Organizing Data from the EpiRbMx Study*
- 49(A)** · **Raven Herring** · YES in THE HEIGHTS · 5-6pm  
*Underrepresentation of Black Women in Breast Cancer Research: The Case of Mammographic Density and Molecular Subtypes*
- 50(B)** · **Nia Jenkins** · YES in THE HEIGHTS · 6-7pm  
*A Systematic Review of the Association Between the Measures of Structural Racism and Cervical Cancer Diagnosis and Treatment Across the Cancer Continuum Among Women Within the United States*
- 51(A)** · **Ngozi Obi** · YES in THE HEIGHTS · 5-6pm  
*Structural Racism in Cervical Cancer Care: A Systematic Review of the Impact on Screening, Diagnosis, Treatment, and Survivorship Outcomes*
- 52(B)** · **Daniella Uvaldo** · YES in THE HEIGHTS · 6-7pm  
*Using Cell-derived Nanovesicle Hydrogels as a Cancer Vaccine in Melanoma*
- 53(A)** · **Sangam Bhati** · ACCOMPLISHED · 5-6pm  
*Concussions: Underlying Mechanisms and Their Effects on Different Body Systems*
- 54(B)** · **Grace Haderaj** · ACCOMPLISHED · 6-7pm  
*The Impact of Multiple Sclerosis on Physical and Mental Health*
- 55(A)** · **Victor Lai** · ACCOMPLISHED · 5-6pm  
*The Effects of Sleep Deprivation on Performance*
- 56(B)** · **Abigail O'Connor & Jamie O'Connor** · ACCOMPLISHED · 6-7pm  
*Combating the Lack of Menstrual Health Information and Period Poverty*
- 57(A)** · **Chloe Tan** · ACCOMPLISHED · 5-6pm  
*Prevalence, Risk Factors, and Possible Solutions to the Teen Vaping Crisis*
- 58(B)** · **Dmitry Vysotskiy** · ACCOMPLISHED · 6-7pm  
*Heartful Harmony: An Art Centered Approach for Improvement of the Overall Well-Being*
- 59(A)** · **XinRui Zhang** · ACCOMPLISHED · 5-6pm  
*Mental Health Awareness: A Health Liaison Intervention*
- 60(A)** · **Alina Wang & Kathy Chen** · CSUREMM · 5-6pm  
*Predicting M&A Success in the US Retail Industry Based on Financial Metrics*
- 61(B)** · **Claire Qu & Jacqueline Lyu** · CSUREMM · 6-7pm  
*Predicting M&A Success in the US Retail Industry Based on Stock Performance*
- 62(A)** · **Elizabeth Casey & Alexandra Ehlinger** · CSUREMM · 5-6pm  
*Unemployment: How Consumer Expectations May Affect Vulnerable Workers*
- 63(B)** · **Ruimian Zheng & Alena Chan** · CSUREMM · 6-7pm  
*Controlling Your Attitude is What Gets You To the Stars: Development of an Attitude Determination and Control System for CubeSats via Extended Kalman Filter*
- 64(A)** · **Sandra Zelen, Kathy Xu, & Caroline Smyth** · CSUREMM · 5-6pm  
*Exploring the Influence of Subway Station Centrality on Public High School Performance in Manhattan*
- 65(B)** · **Shiva Yeshlur, Amy X. Chen & Cionnie Pineda** · CSUREMM · 6-7pm  
*Developing a Superblock Model for Manhattan*
- 66(A)** · **Tim Barron, Jarrett Reimers, & Andrew Yoo** · CSUREMM · 5-6pm  
*A Mathematical Model for Citi Bike's Rebalancing Crisis*
- 67(B)** · **Milena Harned, Pranav Konda, Felix Liu, Nikhil Mudumbi, Eric Shao & Tony Xiao** · CMUSR · 6-7pm  
*Khovanov Homology and Quantum Error-Correcting Code*
- 68(A)** · **Kay-La Blair** · E.E. Just Scholars · 5-6pm  
*Investigating the Impact of DNA Ligase on C-Circle Formation*
- 69(B)** · **Maya-Jean Hilaire** · E.E. Just Scholars · 6-7pm  
*Early Childhood Growth After Pre-Pregnancy Metabolic and Bariatric Surgery*
- 70(A)** · **Jordan Jackson** · E.E. Just Scholars · 5-6pm  
*Adhesion G Protein-coupled Receptor Latrophilin-3 (ADGRL3) Modulation of Dopaminergic Neurotransmission*
- 71(B)** · **Jabari Mobley** · E.E. Just Scholars · 6-7pm  
*The Effect of Olfactory Fear Conditioning on the Main Olfactory Epithelium in Mice*
- 72(A)** · **Layla Seaton** · E.E. Just Scholars · 5-6pm  
*Identification of CD36 and CD44 as Novel Surface Markers for Stress Reticulocytes*
- 73(B)** · **Kiara Smith** · E.E. Just Scholars · 6-7pm  
*Expression of Disease-Causing Mutations in Drosophila Insulin Receptor DNA using 293FT cells*
- 74(A)** · **William Manriquez** · LEAP NSF-REU · 5-6pm  
*Understanding and Modeling the Impact of Air-Sea Heterogeneity on Surface Fluxes*

- 75(A)** · **Amie Choe** · IICD SRP · 5-6pm  
*Optimizing Reference Cluster Mapping in Cross-Species Analysis Using Single-Cell Graph Convolutional Networks*
- 76(B)** · **Sophie Gardiner** · IICD SRP · 6-7pm  
*Fluctuating Fitness in Heterogeneous Environments: Birth-Death and Death-Birth Models in Structured Populations*
- 77(A)** · **Chenjishi Lin** · IICD SRP · 5-6pm  
*Establishing Cell Type Matching Equivalence in Reference Cluster Mapping through Transfer Learning*
- 78(B)** · **Jun Lin** · IICD SRP · 6-7pm  
*Identifying Gene Combinations that Influence Epithelial to Mesenchymal Transition Using an Inducible Cas12a Knockout Screen*
- 79(A)** · **Dassi Mayerfeld** · IICD SRP · 5-6pm  
*Comparing Accuracy of Optimal Transport and Machine Learning Methods for Reference Cluster Mapping in Cross-Species Analysis*
- 80(B)** · **Abdullah Naqvi** · IICD SRP · 6-7pm  
*Genetically Engineering Antigen and Immune-Matched Patient-Derived Glioblastoma Neurospheres*
- 81(A)** · **Yash Patel** · IICD SRP · 5-6pm  
*Gene Regulatory Network Inference Utilizing Transformers and Autoencoders*
- 82(B)** · **Vanessa Rivas** · IICD SRP · 6-7pm  
*Understanding Heterogeneity in Large Transcriptomic Datasets using a Deep Generative Model*
- 83(A)** · **Elliott Seo** · IICD SRP · 5-6pm  
*Decoding Tumor Evolution History from Mutational Data*
- 84(B)** · **Kyle Tsai** · IICD SRP · 6-7pm  
*The Effects of Cumulative Mutations on Selection and Heterogeneity in the Structured Moran Process*
- 85(A)** · **Eesha Alladin** · GSAS SRP · 5-6pm  
*Dynamics of Histone Post-translational Modification in Squamous Differentiation and Tumorigenesis*
- 86(B)** · **Amanda Lopez** · GSAS SRP · 6-7pm  
*Upregulating Protein Production in Haploinsufficiency by Inhibiting 3' UTR Degradation*
- 87(A)** · **Arwa Mehra** · GSAS SRP · 5-6pm  
*Betta Beginnings: A Developmental Atlas*
- 88(B)** · **Sid Varmn** · GSAS SRP · 6-7pm  
*Role of Serotonergic Modulation of GABAergic Signaling in the Dorsolateral Periaqueductal Gray: Implications for Fear Response and Anxiety Disorders*
- 89(A)** · **Ashley Nguyen** · LEAP NSF-REU · 5-6pm  
*Emulating Lagrangian Ice Crystal Evolution in Cirrus Clouds Using Machine Learning*

## PRESENTING COLUMBIA UNIVERSITY PATHWAYS PROGRAMS

- SPURS** · Summer Program for Undergraduate Rising Stars | Posters **1(A)** to **36(B)**
- Bridge to the PhD** · Bridge to the PhD Program in STEM | Posters **37(A)** to **45(A)**
- YES in THE HEIGHTS** · Youth Enjoy Science: Training in Health Equity, Highlighting Environmental Inequities, & Growing Neighborhood Teachers and Students | Posters **46(B)** to **52(B)**
- ACCOMPLISHED** · Adolescents Caring for Community by Promoting Literacy on Insurance, Stroke, Health Education, Emergencies, and Dementia | Posters **53(A)** to **59(A)**
- CSUREMM** · Columbia Summer Undergraduate Research Experiences in Mathematical Modeling | Posters **60(A)** to **66(A)**
- CMUSR** · Columbia Math Undergraduate Summer Research | Poster **67(B)**
- E.E. Just Scholars** · Ernest E. Just Biomedical Research Scholars | Posters **68(A)** to **73(B)**
- LEAP NSF-REU** · Learning the Earth with Artificial Intelligence and Physics Summer REU Program | Posters **74(A)** & **89(A)**
- IICD SRP** · Irving Institute for Cancer Dynamics Summer Research Program for Undergraduates | Posters **75(A)** to **84(B)**
- GSAS SRP** · Graduate School of Arts and Sciences Leadership Alliance Summer Research Program | Posters **85(A)** to **88(B)**

## STAY IN TOUCH



Columbia University Pathways Programs

[inclusivefacultypathways@columbia.edu](mailto:inclusivefacultypathways@columbia.edu)