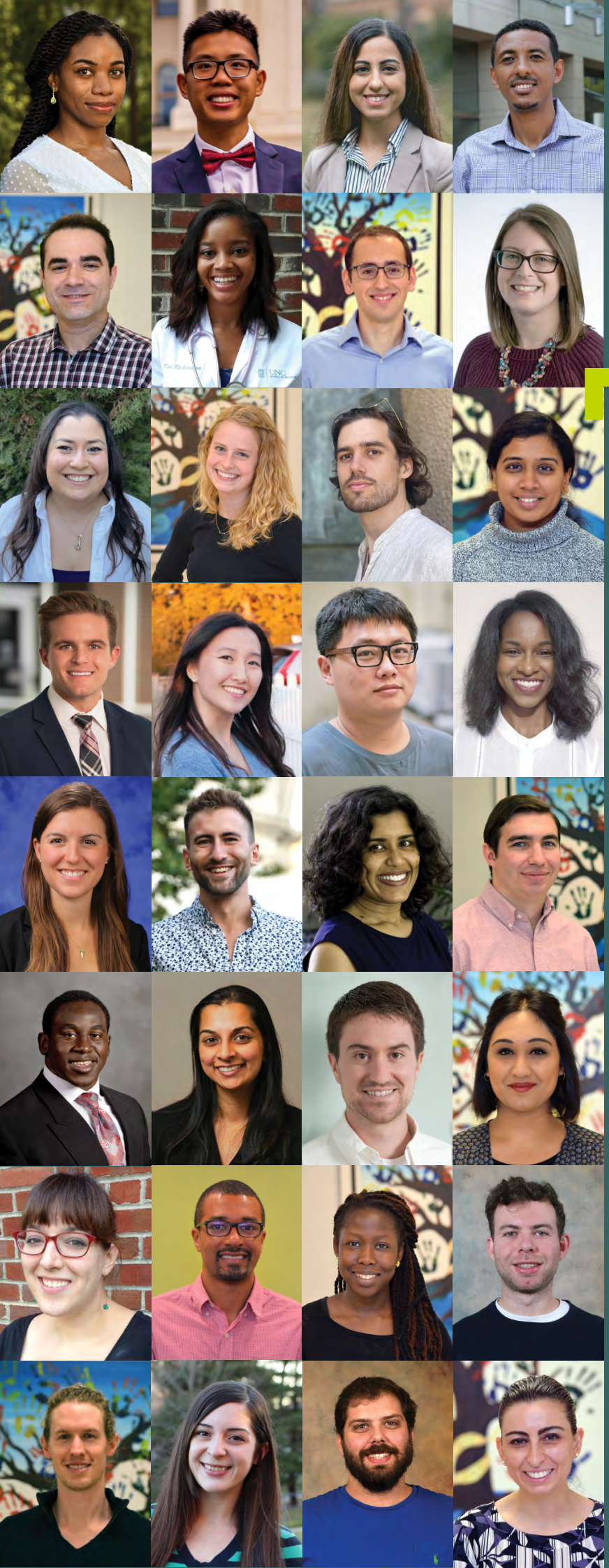


National Institutes of Health

21ST ANNUAL

NIH Graduate Student Research Symposium

FACES OF TOMORROW'S SCIENCE

FEBRUARY 13, 2025

Natcher Conference Center
Bethesda, Maryland

Office of Intramural TRAINING & EDUCATION
www.training.nih.gov

2025

21ST ANNUAL

NIH Graduate Student Research Symposium

Graduate Partnerships Program

Office of Intramural Training & Education

Office of Intramural Research

National Institutes of Health

U.S. Department of Health & Human Services

FOREWORD

Every year, the National Institutes of Health (NIH) Graduate Student Research Symposium showcases the breadth of scientific research and the achievements of the graduate student community in the NIH Intramural Research Program. The symposium is the largest graduate student event of the year — an event in which graduate students can come together to share their research, appreciate the work of their colleagues, and celebrate the successes of the graduate student community.

This year, we are excited to celebrate the 21st NIH Graduate Student Research Symposium. This annual symposium provides an opportunity to acknowledge the scientific accomplishments of the hundreds of graduate students working on their dissertation research at the NIH. The symposium highlights the broad spectrum of scientific research conducted by graduate students at the NIH, who represent numerous universities across the world and span nearly all institutes and centers within the NIH. The NIH Graduate Research Symposium recognizes the diversity of research specialties supported by the NIH and exhibits the scientists of tomorrow, from those developing new research proposals to those preparing to defend years of dissertation research.

The symposium will be held in person on February 13th and will provide the graduate student community with the chance to hear about the scientific work of our peers in several formats. Over 100 students will present their research through scientific posters judged by NIH postdoctoral fellows and staff scientists. Winners of the poster competition will be awarded the prestigious NIH Graduate Student Research Award, generously funded by the OITE. In addition, four current students will give oral presentations chosen based on scientific merit and diversity. Our 9th annual elevator pitch competition will give current graduate students the opportunity to explain their science to a general audience in two minutes or less.

In between poster sessions, we will host a lunch-time networking session that will allow current students to connect with new fellows traveling from NIH campuses outside of the Bethesda area. In the afternoon, we are honored to welcome Dr. Charles Zuker, Professor of Biochemistry and Molecular Biophysics and of Neuroscience at Columbia University for a keynote presentation titled “The Body-Brain Axis” moderated by Yizhen Zhang, Brown GPP Fellow and Graduate Student Council Chair. We are excited to hear from this influential leader of the neuroscience and molecular biology community.

The symposium will conclude with our annual award ceremony. During a graduate ceremony to recognize those students who have defended their dissertations within the past year, Dr. Sharon Milgram and Dr. Nina Schor will present the recent graduates with a certificate in honor of their accomplishments. Our success as graduate students would not be the same without the guidance of high-quality research mentors who have supported us in innumerable ways, from providing networking opportunities to career development advice. We are grateful for the influential mentorship provided at the NIH to help us become independent scientists and forge relationships extending beyond graduate school. We will conclude the day by recognizing two outstanding mentors, nominated by their students, for their leadership, support, and dedication to graduate research at NIH.

We are thankful for the opportunity to share our research with the entire NIH community at the 21st Annual NIH Graduate Student Research Symposium. We thank all of the graduate students who have participated in this event and those mentors and loved ones who have provided us with continuous support in our scientific careers. We hope this event establishes new connections and collaborations and inspires future scientific contributions to the community at the NIH.

ACKNOWLEDGEMENTS

We are grateful to the Training and Scientific Directors of the NIH Institutes and Centers, the Graduate Partnerships Program (GPP) Directors, and the Graduate Student Council (GSC) for their continuous support of the graduate student community and for the opportunity to recognize the achievements of the NIH graduate students at this symposium. We would like to thank Dr. Gail Seabold for organizing the symposium poster session, and we acknowledge the effort of the postdoctoral fellow and staff scientist judges for helping to make the poster competition possible. We would like to thank the 2024-2025 GSC chair, Yizhen Zhang for managing the Outstanding Mentor Awards and for all of her efforts and dedication to the GSC and graduate student community. This symposium would not be possible without the help of the Office of Intramural Training and Education (OITE). We are especially thankful for Dr. Sharon Milgram, Dr. Phil Ryan, Dr. LaKeya Hardy, and other OITE staff who have contributed significantly to the planning of this event. Finally, we would like to thank the graduate students, mentors, alumni, and all attendees whose participation made this event successful.

THE 21TH ANNUAL NIH GRADUATE STUDENT RESEARCH SYMPOSIUM COMMITTEE

Federica Bichicchi, NIDCR, Università di Bologna
Leandro Coutinho, NCI, Universidade de Sao Paulo
Artur Gevorgyan, NIDDK, Brown University
Ting-Yi Lin, NEI, National Yang-Ming University and Academia Sinica
Aurelia Moses, NCI, University of Maryland
Caitlin Tedesco, NIDA, University of New South Wales
Quyan Zhang, NEI, Central South University
Yizhen Zhang, NIDCR, Brown University

TWENTY-FIRST ANNUAL NIH GRADUATE STUDENT RESEARCH SYMPOSIUM

FEBRUARY 13, 2025 PROGRAM OF EVENTS

9:00 am - 10:00 am	**ELEVATOR PITCH COMPETITION** Rooms C1/C2, E1/E2, F1/F2, and G1/G2 Registration in Lower Lobby
10:00 am - 11:30 am	**WELCOME AND STUDENT ORAL PRESENTATIONS** Room E1/E2 **Sharon L. Milgram, Ph.D.** Director, NIH Office of Intramural Training and Education **Katie Pierce**, University of Arkansas for Medical Sciences, NIAID **Manipulation of Human Macrophage p38 Signaling By *Coxiella burnetii*** **Bradley Olinger**, Johns Hopkins University, NIA **Senescence Signatures Show Tissue-Specific Clinical Associations in Human Longitudinal Studies** **Preston Siegler**, University of North Carolina at Chapel Hill, NIEHS **The Effect of Prenatal Corticosterone Exposure on Hippocampal Area CA2 Development and Social Behavior** **Mihirkumar Prajapati**, University of Maryland, College Park, NHLBI **Type II Topoisomerase Substrate Geometry Revealed Through Combined Experiment and Computation**
11:45 am - 12:45 pm	**POSTER SESSION I** Atrium Odd numbered posters presenting
12:45 pm - 1:15 pm	**LUNCH BREAK** Food will be available for purchase in cafeteria. Seating is available in Room A/B.
1:15 pm - 2:15 pm	**POSTER SESSION II** Atrium Even numbered posters presenting
2:30 pm - 3:45 pm	**KEYNOTE PRESENTATION** Ruth L. Kirschstein Auditorium **Charles S. Zuker, Ph.D.** **Keynote Presentation: "The Body Brain Axis"** Professor of Biochemistry and Molecular Biophysics and of Neuroscience Principal Investigator at Columbia's Zuckerman Institute Investigator at the Howard Hughes Medical Institute **Moderator:** **Yizhen Zhang**, Brown University GPP Fellow, NIDCR
4:00 pm - 5:00 pm	**AWARDS CEREMONY** Ruth L. Kirschstein Auditorium **Graduation Ceremony** Certificates presented by: **Nina Schor, M.D., Ph.D.**, Deputy Director for Intramural Research, NIH **Sharon L. Milgram, Ph.D.**, Director, Office of Intramural Training and Education, NIH **Outstanding Mentor Awards**

GPP GRADUATION AWARD RECIPIENTS

GPP GRADUATION AWARD RECIPIENT, GRADUATE UNIVERSITY, DISSERTATION TITLE	NIH IC, NIH RESEARCH ADVISOR (PI)	UNIVERSITY RESEARCH ADVISORS
Faisal Saleh A. Almansour *Georgetown University* Topologically Associating Domains: At the Crossroads of Genome Structure and Function	NCI **Tom Misteli**	
Melissa Arroyo-Mendoza *Iowa State University* Elucidating adaptation strategies of Escherichia coli: from environmental survival to host-phage interactions	NIDDK **Deborah Hinton**	
Shonda Campbell *University of Maryland Baltimore County* Identification and Characterization of Genes Influencing Changes in Immunity and Sleep using Drosophila	NHLBI **Susan Harbison**	
Chidchanok Chawiwithaya *Mahidol University* The Potential Development of SCFV Derived CDR3 as Anti-Cancer Peptide and Chimeric Nanoparticles	NCI **Mitchell Ho**	**Dan Li**
Jose Francisco Delgado Jimenez *University of Maryland, College Park* Development of an X-ray and Ultrasound Imageable Poloxamer-based Gel for Image-guided Local Percutaneous Drug Delivery	CC **Bradford J. Wood**	
Erin Leiser Fingleton *Brown University* A Role for Trio and CRMP2 in Limiting Axon Branching	NINDS **Katherine Roche**	
Steven Blake Gierlack *Uniformed Services University of the Health Sciences* Systematic Exploration of Transient Phase Epidermal Growth Factor Signaling using Computational Modeling and Quantitative Experimental Assays: Combining theoretical and experimental approaches to examine complex biological systems	NIAID **Martin Meier-Schellersheim**	
Jacob Gordon *University of Cambridge* A Structural and Functional Atlas of the Human Rixosome Complex	NIEHS **Robin E Stanley**	
Julia L. Gross *Emory University* Defining the role of Antibiotic Treatments in Shaping Host Innate Inflammatory Responses to Bacterial Infection	NIAID **Iain Fraser**	
Alexandra Hollo *University of Pecs* Molecular Regulatory Mechanism of Human Myosin-7a	NHLBI **James Sellers**	

GPP GRADUATION AWARD RECIPIENTS

GPP GRADUATION AWARD RECIPIENT, GRADUATE UNIVERSITY, DISSERTATION TITLE	NIH IC, NIH RESEARCH ADVISOR (PI)	UNIVERSITY RESEARCH ADVISORS
Wei-Lun Huang *Johns Hopkins University* Advancing Total Body Photography for Early Detection and Spatio-temporal Monitoring of Skin Cancer	NICHD **Amir Gandjbakhche**	
Tony laMark James *George Washington University* Activation of innate Immune Response by HERV-K/HML-2 Envelope via Interactions with TLR2 in Amyotrophic Lateral Sclerosis	NINDS **Avindra Nath**	**Lisa Henderson**
Michael Ayele Kebede *University of North Carolina, Chapel Hill* Moderate to Vigorous Physical Activity and Breast Tumor Biology	NCI **Charles Matthews**	
Paul K. LaFosse *University of Maryland, College Park* Untangling Cortical Circuitry with Holographic Optogenetics: How the Cortex Shapes Input and How Input Shapes the Cortex	NIMH **Mark Histed**	
Benjamin Lee *University of Oxford* Diversity and Evolution of Viroids and Viroid-like RNA Agents	NLM **Eugene Koonin**	**Peter Simmonds**
Shanna S. Leventhal *University of Montana* A Replicating RNA Vaccine for Crimean-Congo Hemorrhagic Fever Virus Protects via Non-Neutralizing anti-Nucleoprotein Antibodies and TRIM21	NIAID **Heinz Feldmann**	**David Hawman**
Xiaoyi Li *Johns Hopkins University* Enhancing Visual Signal Fidelity in a Mouse Model of Retinitis Pigmentosa	NINDS **Jeffrey S. Diamond**	
Jimmy Liu *Johns Hopkins University* Residual Neuropathy Target Esterase Activity Defines the PNPLA6 Disorder Spectrum	NEI **Rob Hufnagel**	
Ramon A. Lujan *Duke University* Exploring Antiviral Activities of Barrier Tissue-Resident Lymphocytes	NIAID **Heather D. Hickman**	
Megan Roselle Majocha *Georgetown University* RESF1 Is a Tumor Suppressor and Metastasis-Associated Gene in Triple-Negative Breast Cancer	NCI **Kent Hunter**	

GPP GRADUATION AWARD RECIPIENTS

GPP GRADUATION AWARD RECIPIENT, GRADUATE UNIVERSITY, DISSERTATION TITLE	NIH IC, NIH RESEARCH ADVISOR (PI)	UNIVERSITY RESEARCH ADVISORS
Lee Mason *Queen's University Belfast* Interactive Visualization of Data-Driven Methods for the Exploration of Spatiotemporal Public Health Data	NCI **Jonas Almeida**	
Khalin E. Nisbett *University of Illinois Chicago* Interaction of Opioid & Oxytocin Systems in the Context of Anxiety-Like Behavior	NIDA **George Koob**	
Aidan O'Brien *Queen's University Belfast* Functional Characterisation of the 5p15.33 Pancreatic Cancer Risk Locus	NCI-DCEG **Laufey Amundadottir**	
Bradley Andrew Olinger *Johns Hopkins University* Circulating Biomarkers of Senescence Predict High Resolution Health Status in Human Longitudinal Studies	NIA **Nathan Basisty**	
Tanviben Patel *Bowie State University* Enhanced Blood Cell Classification Performance and Conditional Image Generation With Transformer Based Models	NHGRI **Benjamin Solomon**	**Dat Duong**
Zhaoyi Peng *Xi'an Jiaotong University* The Role of Protein Arginine Methyltransferase 1 in the Maintenance of Adult Intestinal Homeostasis and Intestinal Inflammation	NICHD **Yun-Bo Shi**	
Sadia Perveen *University of Turin, Italy* Regeneration Harnessing Nanomedicine-Based Strategies from Heart to Blood: Advancing Cardiac Repair and Human Hematopoietic Stem Cells Expansion	NHLBI **Andre Larochelle**	
Ira Phadke *University of Montpellier* Redox and Polyamine Metabolism Govern Hematopoietic Progenitor Differentiation to the Erythroid Lineage	NCI **Naomi Taylor**	
Stacey L. Piotrowski *Purdue University* Herpesviruses in Neurodegenerative Disease and Dementia	NINDS **Steven Jacobson**	
John Andrew Quinlan Jr. *University of Maryland* Preparation of a Nanosuspension of the Photosensitizer Verteporfin for Photodynamic and Light-Independent Therapy in Glioblastoma	NCI **Michael Gottesman**	**Robert Robey**

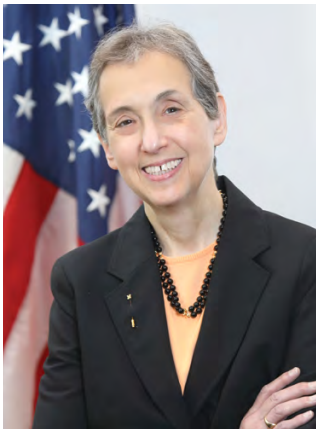
GPP GRADUATION AWARD RECIPIENTS

GPP GRADUATION AWARD RECIPIENT, GRADUATE UNIVERSITY, DISSERTATION TITLE	NIH IC, NIH RESEARCH ADVISOR (PI)	UNIVERSITY RESEARCH ADVISORS
Giulia Solazzo *University of Milan* The Effect of Indoor Total Suspended Particles (TSP) on the Human Upper Respiratory System: From the Microbiome to HERV Methylation	NIAID **Elodie Ghedin**	
Joshua A. Taylor *Johns Hopkins University, School of Medicine* The Role of B Cells and Autoantibody Production in Atherosclerotic Cardiovascular Disease	NIA **Patricia J. Gearhart**	**Robert W. Maul**
Danni Wang *Shanghai Jiao Tong University* Structural Fingerprinting of the Frontal Aslant Tract and Its Predicitive Potential for Cognitivie Control Abilities	NIDA **Yihong Yang**	

KEYNOTE SPEAKER

Dr. Charles Zuker is a Chilean molecular geneticist and neurobiologist renowned for his groundbreaking work in sensory biology. In collaboration with Dr. Nick Ryba at the NIH, Dr. Zuker's lab identified the receptors and cells responsible for the five basic taste modalities — sweet, sour, bitter, salty, and umami. Their work revealed that individual taste receptor cells are specialized to encode specific taste qualities and are hardwired to dedicated brain circuits to trigger innate behaviors, such as attraction to sweet and aversion to bitter. More recently, his lab has been studying the biology of the body-brain axis. Their research has defined the neural basis for the insatiable appetite for sugar and fat (the gut-brain axis) and brain control over the immune system (the neuro-immune axis). Prior to his work on mammalian taste and the body-brain axis, Dr. Zuker's lab identified the receptors and transduction pathways involved in Drosophila phototransduction and mechanotransduction. Dr. Zuker has been elected to several prestigious scientific communities, including the American Academy of Arts and Sciences, the National Academy of Sciences, and the National Academy of Medicine. Outside of academia, Dr. Zuker is a co-founder of Kallyope, Cajal Neuroscience and Nilo Therapeutics.

AWARDS CEREMONY SPEAKERS

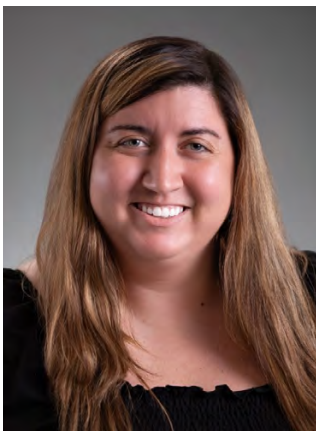


Nina F. Schor, MD, PhD is currently NIH Deputy Director for Intramural Research, a post she has held since August 2022. In that position, she is responsible for oversight of research conducted by the 27 institutes and centers of the National Institutes of Health. Before coming to NIH, Dr. Schor spent 20 years on faculty at the University of Pittsburgh, ultimately becoming the Carol Ann Craumer Professor of Pediatric Research, Chief of the Division of Child Neurology in the Department of Pediatrics, and Associate Dean for Medical Student Research at the medical school. In 2006, Dr. Schor became the William H. Eilinger Chair of the Department of Pediatrics, and Pediatrician-in-Chief of the Golisano Children's Hospital at the University of Rochester, posts she held until January 2018, when she became Deputy Director of the NINDS. For 27 years in academia, her research on neural crest development and neoplasia was continuously funded by NIH. At NINDS, she led the Division of Intramural Research and the Ultra-Rare GENe-targeted Therapies (URGenT) Network and strategic planning and career development programs. She currently serves as a member of the Executive Committee of the Board of Directors of the American Board of Psychiatry and Neurology.

Sharon Milgram, PhD joined the NIH Office of the Director in 2007 as the Director of the Office of Intramural Training and Education (OITE) where she directs a trans-NIH Office dedicated to the career advancement of over 6000 trainees.

Sharon received a BS degree in Physical Therapy from Temple University & a PhD in Cell Biology from Emory University. She completed postdoctoral training at The Johns Hopkins University before joining the faculty at The University of North Carolina at Chapel Hill. There, she rose to the rank of Full Professor in the Department of Cell & Developmental Biology. She served as the Associate Director of the Medical Scientist Training Program, Director of the Interdisciplinary Biomedical Sciences Graduate Program, & the Director of the Summer Undergraduate Research Experience.

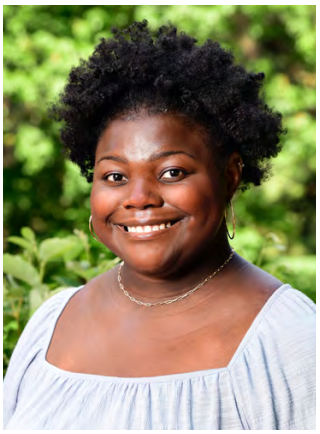
STUDENT SPEAKERS



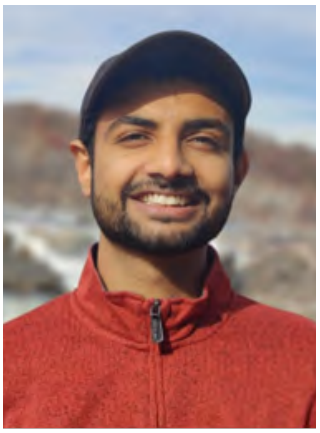
Katie Pierce is a third year PhD student in the Department of Microbiology and Immunology at the University of Arkansas for Medical Sciences (UAMS) in partnership with the Bacterial Immunology and Pathogenesis Unit of the National Institute of Allergy and Infectious Disease (NIAID). Katie graduated from the Indiana University with a BS in Human Biology. Following graduation, she worked as the Lead Quality Control Laboratory Technician at Vivolac Cultures Corporation where she assayed bacterial cultures used in dairy and probiotic products. Katie pursued her MS in Biology at Louisiana Tech University in Dr. Rebecca Giorno's laboratory, where she synthesized novel short antimicrobial peptides and developed techniques to evaluate their antimicrobial activity. After obtaining her MS, Katie began doctoral studies at UAMS in Dr. Daniel Voth's laboratory and entered the National Institutes of Health-Graduate Partnerships Program (NIH-GPP) working with Dr. Carrie Long at NIAID in 2024. Her dissertation aims to characterize host-pathogen interactions in human alveolar macrophages during *Coxiella burnetii* infection. The long-term goal of her research is to identify critical events influencing *C. burnetii* infection as potential therapeutic targets. Katie is especially grateful for the support she continually receives from her mentors, committee, and laboratory colleagues at the NIH and UAMS that make her work possible. She is also honored to share her work with the graduate student community.

Bradley Olinger is a graduate student at the National Institute on Aging, pursuing a PhD in Cell, Molecular, and Developmental Biology, & Biophysics (CMDB) through Johns Hopkins University and the National Institutes of Health. He received a Master of Health Science in Biochemistry and Molecular Biology from the Johns Hopkins School of Public Health, where he also completed their Humane Sciences program at the JHSPH Center for Alternatives to Animal Testing that emphasized the translational potential of human-derived models of research. His master's thesis focused on stem cell regulation, aging, and therapeutic potential, and reviewed mechanisms underlying mammalian aging. Prior to graduate school, he was a post-bac research fellow at the NIH/NIDCR where he used confocal microscopy to investigate the role of pluripotency factors – stemness genes – in regulating stem cell potential. For his thesis project, Brad uses machine learning to identify circulating biomarkers of senescence. These senescence signatures reveal high resolution health status and trajectories in human longitudinal studies and can provide a non-invasive tool to inform future clinical care.

STUDENT SPEAKERS

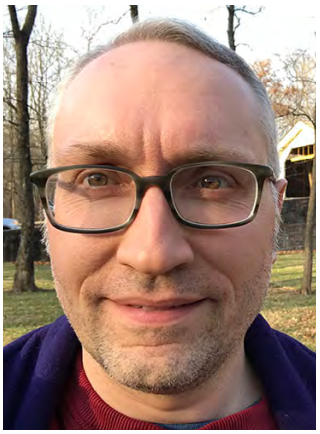


Preston Siegler is a fourth year PhD student in the Neuroscience Curriculum in the Biological & Biomedical Sciences Program (BBSP) at UNC Chapel Hill. She is doing her dissertation work in partnership with the Synaptic Plasticity Group in the Neurobiology Laboratory of the National Institutes of Environmental Health Sciences (NIEHS). Preston graduated from Columbia College in Columbia South Carolina with a B.S. in Biology and a minor in Chemistry. During her undergraduate degree, she completed a Summer Undergraduate Research Fellowship with Dr. Timothy Hewett at the Mayo Clinic where she worked on developing a method of modeling human knee cartilage. Upon receiving her bachelor's degree, she completed a post-baccalaureate research fellowship with Dr. James Otis at the Medical University of South Carolina (MUSC), where she investigated how drugs of abuse (i.e. cocaine and heroin) altered a key reward circuit of the brain in a rodent model. Following her post-baccalaureate fellowship, Preston joined UNC's BBSP program and began working at NIEHS in Dr. Serena Dudek's lab. Preston has been involved in multiple projects, ranging from identifying and characterizing Hippocampal Area CA2—the lab's main focus—in voles and hamsters to investigating how this region changes with natural daily fluctuations in circadian rhythm. Her dissertation aims to answer outstanding questions regarding how prenatal stress influences the development and molecular profile of hippocampal area CA2 and behaviors associated with this region. The ultimate goal of her work is to determine how the effects of prenatal stress on CA2 can lead to behavioral and molecular phenotypes consistent with mouse models of neuropsychiatric and neurodevelopmental disorders. Preston is especially grateful for the support she continually receives from her mentors, committee, and lab members at the NIH and UNC that make her work and education possible. She is also honored to share her work with the larger graduate student community.



Mihirkumar Prajapati is a fourth year PhD student in the Department of Mechanical Engineering at University of Maryland, College Park in partnership with the Biochemistry and Biophysics core of the National Heart, Lung, and Blood Institute (NHLBI). Mihirkumar graduated from the Indian Institute of Technology with a dual degree (B.Tech + M.Tech) in Mechanical Engineering. Following his post-graduation, Mihirkumar entered the National Institutes of Health - Graduate Partnerships Program (NIH-GPP) working with Dr. Neuman at NHLBI. His dissertation aims to develop understanding the mechanism of an enzyme (topoisomerase) that is pivotal in cancer research. My work involves both the experimental and the computational approach towards developing the understanding of the enzyme. Mihirkumar is especially grateful for the support he continually receives from his mentor, committee, and lab members at the NIH and UMD that make his work possible. He is also honored to share his work with the graduate student community.

MENTOR AWARDS



Chris Baker, PhD is Senior Investigator and Chief of the Section on Learning and Plasticity in the Laboratory of Brain and Cognition in the National Institute of Mental Health. He received his BA in Neuroscience in 1995 from the University of Cambridge in England, and his PhD in Psychology in 1999 from the University of St. Andrews in Scotland, where he worked with Dr. David Perrett on neurophysiological studies of face and body perception. During a postdoctoral fellowship at the Center for the Neural Basis of Cognition in Pittsburgh, he worked with both Carl Olson and Marlene Behrmann on combined monkey neurophysiological and human behavioral studies of visual object representation and learning. In 2003, he moved to MIT to work with Nancy Kanwisher, using functional brain imaging techniques to investigate learning, plasticity and high-level vision in human cortex. Dr. Baker started at NIMH in 2006 and his group uses a wide of variety of neuroimaging (fMRI, MEG, EEG), brain stimulation (TMS, tES) and behavioral measures (eye tracking, drawing, performance) to study visual perception, learning, and plasticity.

Fadila Bouamr, PhD is a staff scientist in the Molecular Parasitology Section with Dr. Michael Grigg's group at the National Institute of Allergy and Infectious Diseases (NIAID). She earned her PhD from Victor Segalen Bordeaux University in 1997. Dr. Bouamr completed her postdoctoral research under the mentorship of Dr. Carol Carter at the State University of New York at Stony Brook and Dr. Steve Goff at Columbia University. She joined the Laboratory of Molecular Microbiology in December 2004 and is currently a part of the Laboratory of Parasitic Diseases (LPD). Her research focuses on the molecular mechanisms governing the genesis and transmission of retroviruses and coronaviruses, as well as the host innate immune response to human enveloped viruses, including flaviviruses and coronaviruses.

STUDENTS Listed alphabetically by last name

Poster #	Last Name, First	IC	University
107	Addissie, Yonit	NCI	University of Maryland School of Medicine
50	Ahamed, Mukshud	NLM	Stony Brook University
41	Ahrend, Franziska	NIDDK	University of Regensburg, Germany
39	Aljabri, Ashwaq	NCI	Southern Illionis University
86	Allen, Cameron	NINDS	Johns Hopkins University
118	Bardwil-Lugones, Elizabeth	NIDDK	Georgetown University
44	Berg, Nick	NIAID	Brandeis University
104	Bonczkowski, Amanda	NIDCD	University of Maryland Baltimore County
19	Boydston, Darren	NHLBI	Johns Hopkins University
29	Branch, Briana	NCI	Johns Hopkins University
61	Brooks, Brittany	NINDS	Howard Univeristy
66	Bussgang, Jason	NINDS	Georgetown University
79	Carmichael, Kathleen	NIA	Brown University
37	Chawiwithaya, Chidchanok	NCI	Mahidol University
82	Combista, John Carlo	NIMH	University of Maryland, College Park
28	Contreras, Cristina	NCI	University of Oxford
64	Dalaty, Giulia	NINDS	Karolinska Institutet
116	Dave, Shivangi	NIAID	University of Alabama at Birmingham
68	David, Sandeep	NIDCD	Brown University
78	Delgado, Angel	NIA	Johns Hopkins University
90	Detels, Megan	NICHD	Johns Hopkins
73	Doctor, Reid	NICHD	University of Maryland, College Park
30	Dorman, Jack	NIAID	Johns Hopkins University
60	Elnaggar, Manar	NCI	University of Maryland, Baltimore
81	Fan, Angela	NIMH	Monash University
63	Filio, Benjamin	NINDS	Brown University
67	Friedman, Nina	NIMH	University of Maryland, College Park
52	Fritz, Douglas	NIAID	University of Cambridge
100	Fu, Lihong	NIAAA	Shanghai University of Traditional Chinese Medicine
55	Fulda, Evelynne	NHGRI	University of Oxford
42	Gaertner, Kristen Elyse	NIAID	Georgetown University

STUDENTS Listed alphabetically by last name

Poster #	Last Name, First	IC	University
119	Gaitsch, Hallie	NINDS	University of Cambridge
57	Genner, Rylee	NIA	Johns Hopkins University
83	Greer, Lacey	NIDA	University of Maryland, Baltimore
27	Grimme, Acadia	NIDDK	Johns Hopkins University
88	Gruel Budet, Luiza	NINDS	Brown University
71	Hawrot, James	NINDS	Brown University
12	Heffner, Audrey	NICHD	Johns Hopkins University
25	Heikal, Rehab	NCI	University of Massachusetts Amherst
113	Herzog, Helena	NEI	Tuebingen University
54	Horton, Bella	NIBIB	University of Maryland
106	Inoue, Yoshitaka	NLM	University of Minnesota
26	Jean Pierre, Makheni	NIAID	Georgetown University
48	Jiang, Angela	NLM	University of Maryland, College Park
40	Johnston, Timothy	NIAID	University of Pennsylvania
13	Kelly, Ryan	NCI	Queen's University Belfast
15	Khan, Sebastian	NHLBI	Johns Hopkins University
85	Kidder, Alexis	NIMH	Dartmouth College
45	Krishnan, Anagha	NCI	University of Oxford
58	Kuehn, Noah	NIMH	Georgetown University
77	Kuo, Austin	NIMH	Stanford University
89	Lantz, Christian	NINDS	University of Oxford
7	Lawston, Marlene	NIMH	University of Oxford
75	Lehr, Alexander	NINDS	Brown University
92	Li, Kathy	NCI	Medical College of Georgia
93	Licholai, Julia	NIDCR	Brown University
102	Lin, Ting-Yi	NEI	National Yang Ming University
46	Louis, Emeric	NICHD	Museum of Natural History of Paris
35	Mager, Hannah	NIMH	University College London
80	McCormick, Moira	NCI	Johns Hopkins University
11	McDaniel, Kathryn	NINDS	Brown University
53	McNell, Erin	NIEHS	University of North Carolina at Chapel Hill

STUDENTS Listed alphabetically by last name

Poster #	Last Name, First	IC	University
111	Meehan, Cristina	NIAID	University of Alabama at Birmingham
34	Meloun, Audrey	NIAID	University of Alabama at Birmingham
84	Molano, Olivia	NIDCD	Brown University
38	Molina-Lopez, Ivanna	NIAID	University of Pennsylvania
103	Molnar, Abby	NIA	Johns Hopkins University
31	Moses, Aurelia	NCI	University of Maryland
6	Mungale, Ameera	NCI	Georgetown University
22	Nicklas, Jonathan	NHGRI	Georgetown University
110	Oakeson, Ryan	NIMH	University College London
97	Olinger, Bradley	NIA	Johns Hopkins University
59	Olofsson, Michelle	NIMH	Karolinska Institute
43	Pane, Anthony	NHLBI	University of Maryland, College Park
32	Patel, Shil	NCI	University of Maryland School of Medicine
49	Pederson, Jacob	NIAID	Oregon State University
65	Pham, Linh	NIMH	University of Oxford
10	Pierce, Katie	NIAID	University of Arkansas for Medical Sciences
2	Planitzer, Steven	NIAID	Brandeis University
112	Platt, Ava	NINDS	Brown University
51	Prajapati, Mihirkumar	NHLBI	Mihirkumar Prajapati
72	Pratt, Ashley	NICHD	Brown University
109	Quinlan, John	NCI	University of Maryland
62	Radant, Bella	NICHD	Marshall University
70	Rahman, Areebah	NIDDK	Brown University
4	Rajgopal, Sanjana	NCI	University of Nebraska Medical Center
101	Reichert, Dominik	NEI	Johannes Gutenberg University Mainz
117	Rodriguez Gonzalez, Shakira	NIDDK	Johns Hopkins University
99	Ronzetti, Michael	NCATS	University of Maryland
20	Ruiz, Stormy	NIA	Johns Hopkins University School of Medicine
9	Sakhawala, Rima	NIDDK	Johns Hopkins University
36	Santiago, Nathan	NIAID	University of Alabama at Birmingham
17	Shults, Christopher	NIDCD	University of Maryland, Baltimore

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95	Silverstein, Sarah	NINDS	Rutgers New Jersey Medical School
47	Simon, Benjamin	NCI	University of Oxford
1	Song, Shuxuan	NHLBI	University of Maryland, College Park
16	Spada, Stephanie	NIAID	University of Oxford
5	Strauss DeFilipp, Jemma	NIEHS	North Carolina State University
23	Sucich, Dylan	NIAAA	Johns Hopkins University
8	Sun, Mitchell	NCI	University of Oxford
74	Suri, Reecha	NHLBI	University of Kentucky
114	Tagay, Yerbol	NIBIB	Penn State University
33	Tricola, Gianna	NCI	Johns Hopkins University
14	Tung, Wesley	NIAID	University of Oxford
76	Tyan, Jean	NIDDK	Karolinska Institutet
115	Wali, Neha	NCI	University of Oxford
24	Wang, Harrison	NIDCR	University of Pennsylvania
3	Wegerski, Andrew	NEI	University of Maryland, Baltimore County
18	Williams, Stephanie	NIAID	University of Oxford
69	Wlaschin, Josette	NICHD	Johns Hopkins University
98	Wu, Ningjin	NIDCD	University of Maryland School of Medicine
108	Wu, Xueyao	NCI	Sichuan University
105	Xue, Minghao	NICHD	Johns Hopkins University
21	Yaghoubi, Sanam	NCI	University of Barcelona
56	Yang, Yifan	NLM	University of Maryland, College Park
96	Zarei, Kasra	NIMHD	Karolinska Institute, University of Iowa
87	Zhang, Yizhen	NIDCR	Brown University
94	Zou, Xinrui	NIBIB	Johns Hopkins University

POSTERS

1

NGF Upregulation Through Insulin-FOXO1 Signaling in Small Fiber Neuropathy of Obesity and Type 2 Diabetes

Shuxuan Song, Yuta Koui, and Yoh-suke Mukouyama
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2

Influenza A Virus-Receptor Interaction: Identifying Novel Determinants of Membrane Fusion

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3

Tipping the Scales: Using Lizards to Model Human Foveal Development

Andrew E. Wegerski, Courtney E. Murr, Brian P. Brooks, Ashley M. Rasys, and Robert B. Hufnagel
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University Research Advisor: Phyllis Robinson
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4

Anti-tumor Actions of Neutrophils on Bone Metastatic Prostate Cancer

Sanjana Rajgopal, Massar Alsamraae, Diane Costanzo-Garvey and Leah M. Cook
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CRAC Channel Inhibition as a Therapeutic Target for Psoriasis

Jemma Strauss DeFilipp and Anant B. Parekh
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6

Vascular Endothelial Growth Factor Receptor 3 Regulates the KSHV Replication Cycle

Ameera Mungale, Sarah Dremel, and Joseph Ziegelbauer
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University Research Advisor: Stephan Menne
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7

Do Astrocytes Drive Neuronal Differences In 16p Duplication Syndrome?

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8

A Novel Yeast-Based Dendritic Cell Vaccine

Mitchell Y Sun, Alex Valenzuela, Herui Wang, Xueyu Sang and Zhengping Zhuang
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9

A New Noncanonical Biogenesis Pathway Generates a Germline Enriched miRNA Family in C. Elegans

Rima M. Sakhawala, Karl-Frédéric Vieux, Guoyun Yu, Dustin Haskell, Anna Zinovyeva, and Katherine McJunkin
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POSTERS

10

Manipulation of Human Macrophage p38 Signaling by Coxiella burnetii

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11

Intracellular Signaling of Neuroligin-3 Post-Cleavage

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University Research Advisor: Justin Fallon
Graduate University: Brown University

12

Investigating the Effect of Iron-sulfur Cluster Hijacking By a Human Coronavirus, HCoV-OC43

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13

Sp8 Shapes GRN Dynamics and Governs Cell Lineage Decisions During Mouse Embryogenesis

Ryan C Kelly, Ravi Chalamalasetty, Sam Kuo, Sara Thomas, Rob Garriock, Yaser Atlas, and Terry Yamaguchi
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University Research Advisor: Yaser Atlasi
Graduate University: Queen's University Belfast

14

Investigating the Role of Gain-of-function Variants in the Cytosolic Viral RNA Sensor RIG-I in Severe SARS-CoV-2 infection

Wesley Tung, Mihai Solochi, Emma Gebauer, Huie Jing, Yu Zhang, Eesha Chattopadhyay, Andrea Biondi, Kerry Dobbs, Colin Sweeney, Andrew Oler, Jingwen Gu, Justin Lack, Andrea Lisco, Laura Rachele Bettini, Mariella D'Angio', Paolo Bonfanti, Riccardo Castagnoli, Daniela Montagna, Amelia Licari, Gian Luigi Marseglia, Francesco Licciardi, Jose Ramon Fiore, Maria Antonietta Di Stefano, Teresa Santantonio, Luisa Imberti, Alessandra Sottini, Simone Paghera, Eugenia Quiros-Roldan, Camillo Rossi, Annalisa Saracino, Qian Zhang, Paul Bastard, Aurelie Cobat, Laurent Abel, Margaret Abaandou, Jelena Bezbradica-Mirkovic, Jean-Laurent Casanova, Michael Lenardo, Gigi Notarangelo, Akiko Iwasaki, Andrew Snow, Smita Patel, and Helen Su
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15

Analysis of a Novel Species Barrier In Mice

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16

The Essential Role of ER-Localized TRIM5α in Defending Against Tick-Borne Orthoflaviviruses

Stephanie J. Spada, Kevin M. Rose, Anatasia Coutlakis, Zhen Hou, Zhengyi Yang, Abhilash Chiramel, Margery Smelkinson, Juraj Kabat, Beth Gregg, Michael E. Grigg, Sonja M. Best, Peijun Zhang, and Fadila Bouamr
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University Research Advisor: Peijun Zhang
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POSTERS

17

The Transcription Factor Helios is Necessary for Both Outer Hair Cell Maturation and Functional Maintenance

Christopher Shults, Hannah Odom, Wei Song, Reza Amanipour, Beatrice Milon, Elena Chrysostomou, Ran Elkon, Michael R Bowl, and Ronna Hertzano
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University Research Advisor: Dr. Timmothy O'Connor
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18

The Evolution of MX1 Antiviral Escape in 1918 H1N1 Pandemic Influenza

Stephanie L. Williams, Jacob Bjorgen, Jane Sharp, Chengyu Liu, Li Qi, Yongli Xiao, Zong-Mei Sheng, Jaspal Khillan, Ervin Fodor, and Jeffery K. Taubenberger
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19

Identifying New Regulators of the Nonsense-mediated mRNA Decay Pathway

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20

Delayed Transcription Elongation May Allow AID Access to ssDNA in the Immunoglobulin Variable Region

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University Research Advisor: Patricia Gearhart
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21

Integrative Analysis of Multiplex Interphase FISH Copy Number with Whole Exome Sequencing Identifies Clonal Evolution in Stage II Colon Cancer

Sanam Yaghoubi, Kerstin Heselmeyer-Haddad, Ivan Archilla, Carolina Parra, Darawalee Wangsa, Giancarlo Castellano, Jack Zhu, Diba Yaghoubi, Sara Lahoz, Veronica Pablo-Fontecha, Daniela Hirsch, Wei-Dong Chen, Thomas Ried, Miriam Cuatrecasas, Jordi Camps, and Paul S. Meltzer
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22

Candida auris Lipid Metabolism Genes Upregulated in Skin-Like Media

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Graduate University: Georgetown University
University Research Advisor: Yaser Atlasi
Graduate University: Queen's University Belfast

23

Functional epigenetic effects of promoter tandem repeats and steroids on gene expression

Dylan Gilbert Sucich, Qiaoping Yuan, Cheryl Marietta, Colin Hodgkinson and David Goldman
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24

Role of DNASE1L1 in Inflammation and Autoimmunity

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25

Uncovering the Mechanism of CaMKII Ubiquitination-Proteasome System (UPS)-directed Degradation

Rehab Heikal, Geeske van Woerden, Kylie Walters, Margert Stratton, and Eric Strieter

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26

Investigating the Role of Ifng During Chronic Cryptococcus Neoformans Infection

Makheni Jean Pierre, and Eric V. Dang

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27

A lncRNA Degrades an Embryonic MicroRNA Family in a Noncanonical Mechanism

Acadia L. Grimme, Lu Li, Bridget F. Donnelly, Mingyi Xie, and Katherine McJunkin

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28

Uncovering the Key Mediators of Monocyte Trogocytosis of Cancer Cells and its Impact on Antibody-mediated Responses, Monocyte Function and Antigen Presentation

Cristina F. Contreras, Kathy P. Li, Shadin Ahmed, Sabina Kaczanowska, Francesca M. Buffa, and Rosandra N. Kaplan

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29

An Improved TEAD Dominant-negative Protein Inhibitor to Study Hippo YAP1/TAZ-dependent Transcription

Briana Branch, Yao Yuan, Mariastella Cascone, Francesco Raimondi, and Ramiro Iglesias-Bartolome

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30

West Nile Envelope Protein Adaptation Across the 20th Century

Jack Dorman and Patrick Dolan

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31

Imaging The Subcellular Localization of Argonaute 2

Aurelia Moses, Arpita Upadhyaya, and Joana A. Vidigal

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32

Tracking the Development of Self-reactive T Cells Using Spatial Transcriptomics

Shil Patel, Jennifer Matta, Jatinder Singh, Laura B. Chopp, Marieke Lavaert, Susannah Shissler, Neel Shah, Elijah Edmondson, Parimal Kumar, Lawrence Sternberg, Avinash Bhandoola, Michael C. Kelly, and Rémy Bosselut

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POSTERS

33

A Comparative Approach to Identify ALT Vulnerabilities

Gianna M. Tricola, Lara El Touny, Ken Cheng, Gianluca Pegoraro, Travis H. Straker, and Eros Lazzerini Denchi
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34

Ly6G/Nur77-Expressing Lung Perivascular Macrophages Control Initiation of TH2 Responses to Allergen-Derived Proteases.

Audrey Meloun and Beatriz Leon-Ruiz
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35

Cellular Characteristics of iPS Cell-Derived Microglia from Individuals with Down Syndrome Regression Disorder

Hannah L. Mager, Kyeyoon Park, GenaLynne C. Mooneyham, Jonathan D. Santoro, Jennifer M. Pocock, and Christopher M. Bartley
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36

House Dust Mite-induced Asthma Impairs Heterosubtypic Immunity Against Influenza A

Nathan Santiago, Holly Bachus, and Andre Ballesteros-Tato
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37

Searching for Therapeutic Targets in Cholangiocarcinoma

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38

Macrophage Metabolism in Vivo During Acute and Chronic Helminth Infections

Ivanna Molina-Lopez, Oyesola Oyebola, Camila de Oliveira Silva E Souza, and Png Loke
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39

Unraveling SMARCA1's Role in Cancer Progression, Drug Resistance, and Muscle Differentiation: Mechanisms Involving EMT-Related Signaling Pathways, TGF-β, and Key Transcription Factors

Ashwaq K. Aljabri, Yuliya Kriga, Juan Manuel Caravaca, Jyoti Shetty, Bao Tran, Matthew Geisler, Judith K. Davie, and Marielle E. Yohe
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40

SARS-CoV-2 Exposure History Shapes Memory B Cell Repertoire and Protection from Variant Challenge

Timothy Johnston, Mike Castro, Leonid Serebryannyy, Amy Ransier, Louis Estrada, Lizzie Longtine, Shayne Andrew, Barbara Flynn, William Gibson, Anne Werner, Chaim Schramm, Nicole Doria-Rose, Matthew Gagne, Kathryn Foulds, Robert Seder, and Daniel Douek
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POSTERS

41

Three Classes Of Pirna Clusters In Human Spermatogenesis

Franziska Ahrend, Parthena Konstantinidou, Zuzana Loubalova, Alexandr Friman, Gunter Meister, and Astrid D Haase

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42

A LACV-specific Antibody to the Head Region of the Trimeric Glycoprotein Spike Reveals a Small Non-Neutralized Fraction of Virus

Elyse Gaertner, Danealle Parchment, Katherine Burgomaster, David Gordon, Allison Crouch, Zoji Bomya, Laura VanBlargan, and Ted Pierson

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43

Parameterization of CHARMM36 Sphingomyelin Intermolecular Hydrogen Bonding

Anthony J Pane, Zack Jarin, Jeffery B. Klauda, and Richard W. Pastor

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44

Characterizing and Quantifying Influenza A Virion Aggregation with Flow Virometry

Nick Berg, Tongyu Liu, Anna Jaeggi-Wong, Edward Partlow, and Tijana Ivanovic

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45

The Great Divide: CD8+ T Cell Polarization Drives Selection and Spatial Segregation In the Tumor Microenvironment

Anagha Krishnan, Vivian Lau, Roisin Stephens, Kit Gallagher, Gracie Jennah Mead, Hannah Dada, Madison Wahlsten, Davide Randazzo, Philip Maini, Helen Byrne, Gregoire Altan-Bonnet, and Audrey Gerard

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NIH Research Advisor: Gregoire Altan-Bonnet
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46

Decoding Metamorphosis: Epigenetic Modifications of Thyroid Hormone and Dot1L in Xenopus tropicalis

Emeric M. Louis, Liezhen Fu, Nga Luu, Laurent Sachs, and Yun-Bo Shi

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University Research Advisor: Laurent Sachs
Graduate University: Museum of Natural History of Paris

47

Multimodal Artificial Intelligence for Prostate Cancer Radiation Therapy Treatment Outcome Prediction: A Pilot Study

Benjamin D. Simon, Avani D. Rao, Stephanie A. Harmon, J. Daniel Pennington, Lindsay Rowe, Lei Clifton, Anshul Thakur, Krishnan R. Patel, Luca F. Valle, Peter A. Pinto, Peter L. Choyke, Deborah E. Citrin, David A. Clifton, and Baris Turkbey

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48

EzSEA: An Interactive Web Interface for Enzyme Sequence Evolution Analysis

Angela Jiang, Jerry Zhao, and Xiaofang Jiang

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Fatty Acids and Microbiome Pathobionts Elicit Macrophage Inflammation and Metabolic Disease

Jacob W. Pederson, Jyothi Padiadpu, Andrey Morgun, Natalia Shulzhenko, and Aleksandra Nita-Lazar
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Graduate University: Oregon State

50

Comparative Genomics and Evolutionary Analysis of Bacterial Lipid Binding Lipoproteins

Mukshud Ahamed, Jessica Seeliger, and Aravind Iyer
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51

Type II Topoisomerase Substrate Geometry Revealed Through Combined Experiment and Computation

Mihirkumar N. Prajapati, Yeonee Seol, Jonathan Silver, Siddhartha Das, and Keir C. Neuman
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52

Temperature-Driven Dengue Viral Dynamics & Antigenicity

Douglas Fritz and Leah Katzelnick
Graduate Student: Douglas Fritz
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University Research Advisor: Henrik Salje
Graduate University: University of Cambridge

53

Associations of Urinary Biomarkers of Placental and Renal Dysfunction with Preeclampsia

Erin E. McNell, Danielle R. Stevens, Elena Sinkovskaya, Ann Przybylska, George Saad, Alfred Abuhamad, Suzanne E. Fenton and Kelly K. Ferguson
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54

Application of Non-Canonical Interferons In Acute Traumatic Injury To Promote Soft Tissue Regeneration

Isabella Horton, Dr. Parinaz Fathi, and Dr. Kaitlyn Sadtler
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55

Phenotyping of Longitudinal Step Count and Sleep Data: Insights from the All of Us Research Program

Evelynne S. Fulda, Anya Topiwala, Aiden Doherty, and Joshua C. Denny
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56

Ensuring Safety and Trust: Analyzing the Risks of Large Language Models in Medicine

Yifan Yang, Qiao Jin, Robert Leaman, Xiaoyu Liu, Guangzhi Xiong, Maame Sarfo-Gyamfi, Changlin Gong, Santiago Ferrière-Steinert, W. John Wilbur, Xiaojun Li, Jiaxin Yuan, Bang An, Kelvin S. Castro, Francisco Erramuspe Álvarez, Matías Stockle, Aidong Zhang, Furong Huang, and Zhiyong Lu
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POSTERS

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Using Long-read Sequencing to Identify Phylogenetic and Epigenetic Differences in APOE Alleles

Rylee M. Genner, Pilar Jerez Alvarez, Cory Weller, Laksh Malik, Breeana Baker, Erika Lara Flores, Dhairya Patel, Alexandra Beylina, Andrew B. Singleton, Kimberley J. Billingsley, and Cornelis Blauwendraat
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NIH Institute-Center: NIA
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University Research Advisor: None
Graduate University: Johns Hopkins University

58

Defining the Developmental Role of the Medial Pulvinar

Noah Kuehn and Dr. James Bourne
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University Research Advisor: Dr. Patrick Forcelli
Graduate University: Georgetown University

59

Associations Between Childhood Trauma and Extended Difficulties Following the Use of Psychedelic Drugs

Michelle Olofsson, Walter Osika, Tonya White, Predrag Petrovic, Simon Goldberg, Peter Hendricks, and Otto Simonsson
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60

Investigating The Role of Cell Polarity Proteins in Modulating Immune Tolerance in Cancer

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University Research Advisor: None
Graduate University: University of Maryland, Baltimore

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Understand the Wnt Signaling Pathways Role in Neural Stem Cell Trajectories and Adult Neurogenesis during Injury Induced Regeneration

Brittany Brooks, Jonathan Lovas, Whitney Heavner, and John Ngai
Graduate Student: Brittany M Brooks
NIH Institute-Center: NINDS
NIH Research Advisor: Dr. Whitney Heavner and Dr. John Ngai
University Research Advisor: Dr. Mildred Pointer
Graduate University: Howard University

62

Diaphragm and Rib Cage Pathology Contribute to Perinatal Lethal Lung Hypoplasia in a Mouse Model of Osteogenesis Imperfecta

Bella Radant, Elena Makareeva, Megan Sousa, Andy Tang, and Sergey Leikin
Graduate Student: Bella Radant
NIH Institute-Center: NICHD
NIH Research Advisor: Sergey Leikin
University Research Advisor: Maria Serrat
Graduate University: Marshall University

63

The Cerebellum Encodes Non Motor Reward Signals

Benjamin A Filio III and Mark J Wagner
Graduate Student: Benjamin A Filio III
NIH Institute-Center: NINDS
NIH Research Advisor: Mark J Wagner
University Research Advisor: None
Graduate University: Brown University

64

Investigating the Expression of Kv2 and KvS Subunits in Peptidergic Nociceptors

Giulia Dalaty and Kenton Swartz
Graduate Student: Giulia Dalaty
NIH Institute-Center: NINDS
NIH Research Advisor: Kenton Swartz
University Research Advisor: Patrik Ernfors
Graduate University: Karolinska Institutet

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65

A Cross-Species Analysis of Neuroanatomical Covariance Sex Differences in Humans and Mice
Linh Pham, Elisa Guma, Jacob Ellegood, Jason Lerch, and Armin Raznahan
Graduate Student: Linh Pham
NIH Institute-Center: NIMH
NIH Research Advisor: Armin Raznahan
University Research Advisor: Jason Lerch
Graduate University: University of Oxford

66

Characterizing Autophagy Dysfunction and Nuclear-cytoplasmic Transport Defects in ALS4 Caused By Mutations of Senataxin
Jason Bussgang, Jahan Misra, George Harmison, and Christopher Grunseich
Graduate Student: Jason J. Bussgang
NIH Institute-Center: NINDS
NIH Research Advisor: Christopher Grunseich
University Research Advisor: None
Graduate University: Georgetown University

67

Activity-dependent Cortical Plasticity in Vivo: Input Perturbations to Drive Learning
Nina G. Friedman, Connor M. Phillips, Paul K. LaFosse, and Mark H. Histed
Graduate Student: Nina G. Friedman
NIH Institute-Center: NIMH
NIH Research Advisor: Mark Histed
University Research Advisor: Daniel Butts
Graduate University: University of Maryland, College Park

68

Identifying Key Molecules Involved in the Biogenesis, Transport, and Recycling of Synaptic Vesicles at Ribbon Synapses
Sandeep David, Katherine Pinter, and Katie Kindt
Graduate Student: Sandeep David
NIH Institute-Center: NIDCD
NIH Research Advisor: Katie Kindt
University Research Advisor: Diane Hoffman-Kim
Graduate University: Brown University

69

Decoding motor neuron responses to TDP-43 loss: Insights into ALS pathogenesis
Josette Wlaschin, Peyton Lee, Hanna Silberberg, Mira Soh, and Claire Le Pichon
Graduate Student: Josette J Wlaschin
NIH Institute-Center: NICHD
NIH Research Advisor: Claire Le Pichon
University Research Advisor: Rejji Kuruvilla
Graduate University: Johns Hopkins University

70

Examining the Machinery and Functions of Glial-derived Neuropeptides
Areebah Rahman, Carrie Sheeler, and Ashley Frakes
Graduate Student: Areebah Rahman
NIH Institute-Center: NIDDK
NIH Research Advisor: Ashley Frakes
University Research Advisor: Diane Hoffman-Kim
Graduate University: Brown University

71

RanBP1 Loss Decreases STMN2 Expression
James Hawrot, Sandeep Aryal, Sasha Stavsky, Shamchal Bakavayev, Benjamin Wymann, Mercedes Prudencio, Anna-Leigh Brown, Andy Qi, Brian Haas, Leonard Petrucelli, Pietro Fratta, Clotilde Lagier-Tourenne, and Michael E Ward
Graduate Student: James Hawrot
NIH Institute-Center: NINDS
NIH Research Advisor: Dr. Michael E Ward
University Research Advisor: Dr. Anne Hart
Graduate University: Brown University

72

Elucidating the Role of Kv4.2 in Synaptic Integration Within the Striatum
Ashley Pratt and Dax Hoffman
Graduate Student: Ashley Pratt
NIH Institute-Center: NICHD
NIH Research Advisor: Dax Hoffman
University Research Advisor: None
Graduate University: Brown University

73

Calcium Imaging of Neural Activity During Escape Behavior in Free-swimming Zebrafish
Reid Doctor and Harold Burgess
Graduate Student: Reid Doctor
NIH Institute-Center: NICHD
NIH Research Advisor: Harold Burgess
University Research Advisor: Jens Herberholz
Graduate University: University of Maryland, College Park

74

Downregulation of Fibroblast-mediated Immune Activation in Prolidase Deficient Patients
Reecha Suri, Kevin Emmerich, and Manfred Boehm
Graduate Student: Reecha Suri
NIH Institute-Center: NHLBI
NIH Research Advisor: Manfred Boehm
University Research Advisor: Anika Hartz
Graduate University: University of Kentucky

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Identifying Clinically Relevant Domains of Neuroligins using Human Genetic Data
Alexander W. Lehr, and Katherine W. Roche
Graduate Student: Alexander W. Lehr
NIH Institute-Center: NINDS
NIH Research Advisor: Katherine W. Roche
University Research Advisor: Diane Hoffman Kim
Graduate University: Brown University

76

Activity-based Proteome Profiling to Identify Serum Biomarkers in Neurodegenerative Diseases
Jean Tyan, Yue Xu, Layla Saidi, Juhyung Lee, Daniel Ferreira, and Yihong Ye
Graduate Student: Jean Tyan
NIH Institute-Center: NIDDK
NIH Research Advisor: Dr. Yihong Ye
University Research Advisor: Dr. Daniel Ferreira
Graduate University: Karolinska Institutet

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Orientation Selectivity In Mouse Superior Colliculus Modeled With Center-Surround Receptive Fields
Austin Kuo, Justin L. Gardner, and Elisha P. Merriam
Graduate Student: Austin Kuo
NIH Institute-Center: NIMH
NIH Research Advisor: Elisha Merriam
University Research Advisor: Justin Gardner
Graduate University: Stanford University

78

Analytical Comparisons of CNS-derived B Cell Transcriptomes in Murine Models of Severe-onset Alzheimer's Disease
Angel M. Delgado, Braxton D. Greer, and Patricia J. Gearhart
Graduate Student: Angel M. Delgado
NIH Institute-Center: NIA
NIH Research Advisor: Patricia Gearhart
University Research Advisor: Patricia Gearhart
Graduate University: Johns Hopkins University

79

Sex-specific Behavioral Effect of Impaired Glutamatergic Input to Aldehyde Dehydrogenase 1A1-positive Neurons in Mice
Kathleen Carmichael and Huaibin Cai
Graduate Student: Kathleen Carmichael
NIH Institute-Center: NIA
NIH Research Advisor: Huaibin Cai
University Research Advisor: None
Graduate University: Brown University

80

Lysophospholipid Transfer as a Putative Mechanism of Pericyte-induced Tumor Cell Quiescence
Moira McCormick, Tamara McErlain, Mikaela Mallin, Vincent Pai, and Meera Murgai.
Graduate Student: Moira McCormick
NIH Institute-Center: NCI
NIH Research Advisor: Meera Murgai
University Research Advisor: Kevin O'Connell and Kumaran Ramamurthi
Graduate University: Johns Hopkins University

81

Profiling Unique Monosynaptic Inputs onto Parvalbumin Interneurons of the Primate Prefrontal Cortex, Across Development
Angela Y Fan, Jack T Scott, Gord Fishell, Josephine C Kleve, and James A Bourne
Graduate Student: Angela Y Fan
NIH Institute-Center: NIMH
NIH Research Advisor: James A Bourne
University Research Advisor: James A Bourne
Graduate University: Monash University

82

Understanding the Topographic Organization of Oligodendrocytes in White Matter
John Carlo J. Combista and Tobias D. Merson
Graduate Student: J. Carlo Combista
NIH Institute-Center: NIMH
NIH Research Advisor: Tobias D. Merson
University Research Advisor: Ricardo C. Araneda
Graduate University: University of Maryland, College Park

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KDEL Receptor Overexpression Disrupts Dopaminergic Gene Expression in Vivo
Lacey Greer, Katherine Savell and Brandon Harvey
Graduate Student: Lacey Greer
NIH Institute-Center: NIDA
NIH Research Advisor: Brandon Harvey
University Research Advisor: Tom Blanpied
Graduate University: University of Maryland, Baltimore

84

Visualizing How Presynaptic Activity Shapes Ribbon Formation in Zebrafish
Olivia Molano, Saman Hussain, Sophie Lear, Katherine Pinter and Katie Kindt
Graduate Student: Olivia Molano
NIH Institute-Center: NIDCD
NIH Research Advisor: Katie Kindt
University Research Advisor: Diane Hoffman-Kim
Graduate University: Brown University

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The Temporal Dynamics of Dimensions Underlying Visual Object Processing
Alexis Kidder, G.L. Quek, T. Grootswagers, and Chris Baker
Graduate Student: Alexis Kidder
NIH Institute-Center: NIMH
NIH Research Advisor: Dr. Chris Baker
University Research Advisor: Dr. Brad Duchaine
Graduate University: Dartmouth College

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Differentiating Exogenous and Endogenous Reverse Transcription Activity
Cameron H. Allen and Avindra Nath
Graduate Student: Cameron H. Allen
NIH Institute-Center: NINDS
NIH Research Advisor: Avindra Nath
University Research Advisor: None
Graduate University: Johns Hopkins University

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Characterizing Rostral Ventromedial Medulla Serotonergic Neurons in Pain Modulation
Yizhen Z. Zhang and Mark A. Hoon
Graduate Student: Yizhen Z. Zhang
NIH Institute-Center: NIDCR
NIH Research Advisor: Mark A. Hoon
University Research Advisor: Christopher Moore
Graduate University: Brown University

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Using High Sensitivity PINK1 Reporters to Identify Modulators of PINK1 Stabilization and Sites of Neuronal Mitochondrial Vulnerability in Parkinson's Disease
Luiza M. Gruel Budet
Graduate Student: Luiza M. Gruel Budet
NIH Institute-Center: NINDS
NIH Research Advisor: Dr. Derek Narendra
University Research Advisor: Dr. Diane Hoffman-Kim
Graduate University: Brown University

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Elucidating CHCHD10 Mutant Phenotypes in iPS Cell Models and Developing an Antisense Oligonucleotide Therapy
Christian Lantz, Katherine N Dore, Chiara Giorgi, [Carlo Rinaldi], and Derek Narendra
Graduate Student: Christian Lantz
NIH Institute-Center: NINDS
NIH Research Advisor: Derek Narendra
University Research Advisor: Carlo Rinaldi
Graduate University: University of Oxford

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The Role of Calcium Signaling During Angiogenesis
Megan Detels, Dr. Miranda Marvel, Dan Castranova, Van Pham, Dr. Brant Weinstein
Graduate Student: Megan Detels
NIH Institute-Center: NICHD
NIH Research Advisor: Brant Weinstein
University Research Advisor: None
Graduate University: Johns Hopkins University

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The Effect of Prenatal Corticosterone Exposure on Hippocampal Area CA2 Development and Social Behavior
Preston Siegler, Darrien Coates, Stephanie Jones, Leslie Wilson, Jariatu Stallone, Jesse Cushman, Fred Lih, Jason Willams, Georgia Alexander, and Serena Dudek
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NIH Institute-Center: NIEHS
NIH Research Advisor: Dr. Serena Dudek
University Research Advisor: Dr. Serena Dudek
Graduate University: University of North Carolina at Chapel Hill

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CXCR3 Expressing Myeloid Cells as Potential Promoters of Effective Cellular Therapy
Kathy Li, Cristie Contreras Burrola, Sabina Kaczanowska, James Cronk, Etan Aber, and Rosandra Kaplan Graduate Student: Kathy Li
NIH Institute-Center: NCI
NIH Research Advisor: Rosandra Kaplan
University Research Advisor: Lynn Hedrick
Graduate University: Medical College of Georgia

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Is Input During Development Critical for Normal Nociception?
Julia A. Licholai and Nicholas J. P. Ryba
Graduate Student: Julia Licholai
NIH Institute-Center: NIDCR
NIH Research Advisor: Nicholas J. P. Ryba
University Research Advisor: None
Graduate University: Brown University

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Leveraging Augmented Reality for Visualization and Manipulation on Volumetric Medical Imaging Data

Xinrui Zou, Alejandro Martin-Gomez, Raisa Freidlin, Manu Platt, and Richard Leapman
Graduate Student: Xinrui Zou
NIH Institute-Center: NIBIB
NIH Research Advisor: Manu Platt
University Research Advisor: Alejandro Martin-Gomez
Graduate University: Johns Hopkins University

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Expanded Precision Splice Correction: Multiple Pathogenic Variants In a Deep Intronic Hotspot In IGHMBP2 Can Be Addressed With a Single ASO

Sarah Silverstein, Sandra Donkervoort, Thomas Cassini, Veronique Bolduc, Francesco Vetrini, Erin Conboy, Adam Komer, Kayla Treat, Khurram Liaqat, Lili Mantcheva, Aneesh Patankar, Pimchanok Kulsirichawaroj, Oranee Sanmaneechai, Kye-yoon Park, Diana Bharucha-Goebel, William Macken, A. Reghan Foley, Katherine R Chao, Sarah Neuhaus, David R Adams, Christopher Grunseich, and Carsten G Bonnemann
Graduate Student: Sarah Silverstein
NIH Institute-Center: NINDS
NIH Research Advisor: Carsten Bonnemann
University Research Advisor: Padmini Salgame
Graduate University: Rutgers New Jersey Medical School

96

Cannabis and Tobacco Use in U.S. Adults

Kasra Zarei, Kristen R. Hamilton-Moseley, Lilianna Phan, Ayesha Azeem, Bambi Jewett, Kiana Hacker, and Kelvin Choi
Graduate Student: Kasra Zarei
NIH Institute-Center: NIMHD
NIH Research Advisor: Kelvin Choi
University Research Advisor: Kelvin Choi
Graduate University: University of Iowa

97

Senescence Signatures Show Tissue-Specific Clinical Associations in Human Longitudinal Studies

Bradley Olinger, Carlos Anerillas, Reema Banarjee, Allison B. Herman, Dimitrios Tsitsipatis, Julian Candia, Eleanor M. Simonsick, Stefania Bandinelli, Keenan A. Walker, Myriam Gorospe, and Nathan Basisty
Graduate Student: Brad Olinger
NIH Institute-Center: NIA
NIH Research Advisor: Nathan Basisty
University Research Advisor: Alecia Flynn
Graduate University: Johns Hopkins University

98

Determining the Critical Window of Expression of Rfx1/3 in Hair Cell Development and Maintenance

Ningjin Wu, Kathleen Gwilliam, Reza Amanipour, Wei Song, Beatrice Milon, Ran Elkon, and Ronna Hertzano
Graduate Student: Ningjin Wu
NIH Institute-Center: NIDCD
NIH Research Advisor: Ronna Hertzano
University Research Advisor: Zubair Ahmed
Graduate University: University of Maryland School of Medicine

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Advancing Therapeutic Targeting of Borrelia HtrA Protease Through High-Throughput Production and Biophysical Profiling

Michael Ronzetti, Bolormaa Baljinnyam, Sankalp Jain, Dan Talley, Yuhong Fang, Dingyin Tao, Alexey Zakharov, Ganesha Rai, Utpal Pal, and Anton Simeonov
Graduate Student: Michael Ronzetti
NIH Institute-Center: NCATS
NIH Research Advisor: Anton Simeonov
University Research Advisor: Utpal Pal
Graduate University: University of Maryland, College Park

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Interleukin-22 Ameliorates Hepatorenal Syndrome in Mice by Activating the Stat3 Pathway

Lihong Fu, Burhan Yokus, Dechun Feng, Arif Muhammad, Bin Gao, and Pal Pacher
Graduate Student: Lihong Fu
NIH Institute-Center: NIAAA
NIH Research Advisor: Pal Pacher
University Research Advisor: Yueqiu Gao
Graduate University: Shanghai University of Traditional Chinese Medicine

101

Decoding Ciliopathy Phenotypes in Patient-Derived iPSC-RPE Cells Reveals Mutation-Agnostic Therapeutic Targets

Dominik Reichert, Davide Ortolan, Sena Gul, Jair Montford, Kati Veres, Wadih Zein, Rafael Villasmil, Colby Lewallen, Laryssa Huryn, Claudia Doege, Stephen H. Tsang, Brian P. Brooks, Helen May-Simera, Ruchi Sharma and Kapil Bharti
Graduate Student: Dominik Reichert
NIH Institute-Center: NEI
NIH Research Advisor: Kapil Bharti
University Research Advisor: Helen May-Simera
Graduate University: Johannes Gutenberg University Mainz

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Genetic and Epigenetic Insights into the Aging of the Human Retina

Ting-Yi Lin, Jayshree Advani, Milton English, Sudeep Mehrotra, Puja Mehta4, Yuyang Luo, Deborah A. Ferrington, Ayellet V. Segrè, and Anand Swaroop
Graduate Student: Ting-Yi Lin
NIH Institute-Center: NEI
NIH Research Advisor: Anand Swaroop
University Research Advisor: Pui Yan Kwok
Graduate University: National Yang Ming University

103

Investigating the Molecular Basis of NAD Metabolism Imbalance and its Therapeutic Applications in Bone Marrow Failure Disorders

Abigail Molnar, Kala Puligilla, and Yie Liu
Graduate Student: Abigail Molnar
NIH Institute-Center: NIA
NIH Research Advisor: Dr. Yie Liu
University Research Advisor: None
Graduate University: Johns Hopkins University

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Single-Nucleus RNA-Sequencing Profiling of Mouse Cochlea in Response to Cisplatin

Amanda Bonczkowski, Franz Gareza, Erica Sadler, Katharine Fernandez, Rafal Olszewski, Michael Hoa, Mark Warchol, Cathy Yea Won Sung, and Lisa L. Cunningham
Graduate Student: Amanda Bonczkowski
NIH Institute-Center: NIDCD
NIH Research Advisor: Cathy Yea Won Sung and Lisa L. Cunningham
University Research Advisor: Mohammad Yousef
Graduate University: University of Maryland, Baltimore

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Automated Skin Lesion Analysis and Reporting Using Multi-Modal Large Language Models

Minghao Xue, Mehran Armand, and Amir Gandjbakhche
Graduate Student: Minghao Xue
NIH Institute-Center: NICHD
NIH Research Advisor: Amir Gandjbakhche
University Research Advisor: Mehran Armand
Graduate University: Johns Hopkins University

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Interpretable Drug Response and Drug-Target Interaction Prediction Using Artificial Intelligence

Yoshitaka Inoue, Tianci Song, Tianfan Fu, and Augustin Luna
Graduate Student: Yoshitaka Inoue
NIH Institute-Center: NLM
NIH Research Advisor: Augustin Luna
University Research Advisor: Rui Kuang
Graduate University: University of Minnesota

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Synergistic lethality of Combination Treatment with Trop2-directed Antibody-drug Conjugate (IMMU-132) and Apo2L/TRAIL in Triple Negative Breast Cancer

Yonit A. Addissie, Yoshimi E. Greer, and Stanley Lipkowitz
Graduate Student: Yonit A. Addissie
NIH Institute-Center: NCI
NIH Research Advisor: Stanley Lipkowitz
University Research Advisor: Nevil Singh
Graduate University: University of Maryland School of Medicine

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Investigating the Relationship Between Breast Cancer Risk Factors and an AI-generated Mammographic Texture Feature In the Nurses' Health Study II

Xueyao Wu, Shu Jiang, Aaron Ge, Constance Turman, Graham Colditz, Rulla Tamimi, and Peter Kraft
Graduate Student: Xueyao Wu
NIH Institute-Center: NCI
NIH Research Advisor: Peter Kraft
University Research Advisor: Xia Jiang
Graduate University: Sichuan University

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Formulation of Pure-drug Verteporfin Nanoparticles for Photodynamic and Light-independent Cancer Therapy

John Andrew Quinlan, Kaylin Baumiller, Anandita Gaur, Wen-An Chiou, Robert Robey, Michael M. Gottesman, and Huang-Chiao Huang
Graduate Student: John Andrew Quinlan
NIH Institute-Center: NCI
NIH Research Advisor: Michael Gottesman
University Research Advisor: Huang-Chiao Huang
Graduate University: University of Maryland

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Listening Effort: a Novel, Naturalistic, and Preliminary Magnetoencephalography Study
Ryan J Oakeson, Amaia Benitez, Fred Carver, Anna Namyst, and Allison C Nugent
Graduate Student: Ryan J Oakeson
NIH Institute-Center: NIMH
NIH Research Advisor: Allison C Nugent
University Research Advisor: Sophie K Scott
Graduate University: University College London

111

Novel Assay Characterizes the Functional Antibody Response to Malaria Transmission Blocking Vaccine Pfs230D1-EPA/AS01
Cristina A. Meehan, Robert Morrison, Jen. C. Hume, Matthew Cowles, Issaka Sagara, Sara A. Healy, Jonathan P. Renn, and Patrick E. Duffy
Graduate Student: Cristina Adelia Meehan
NIH Institute-Center: NIAID
NIH Research Advisor: Patrick Duffy
University Research Advisor: Paul Göpfert
Graduate University: University of Alabama at Birmingham

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Delineating Functional Connectivity of Dopamine-mediated Threat Circuits
Ava R. Platt, Lorenzo Sansalone, and Zayd M. Khaliq
Graduate Student: Ava R. Platt
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NIH Research Advisor: Zayd Khaliq
University Research Advisor: Diane Hoffman-Kim
Graduate University: Brown University

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Modeling Lysosomal Dysfunction in Retinal Pigment Epithelium (RPE) Cells Using Hydroxychloroquine: Insights into RPE Aging and Disease
Helena Herzog, Jair Montford, Ali Otadi, Devika Bose, Kapil Bharti and Ruchi Sharma
Graduate Student: Helena Herzog
NIH Institute-Center: NEI
NIH Research Advisor: Ruchi Sharma and Kapil Bharti
University Research Advisor: Marius Ueffing and Robert Lukowski
Graduate University: Tuebingen University

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Cracking the Code of Nuclear Rigidity: New Frontiers in Cell Migration and Therapy
Yerbol Tagay, Alexis Manning, Chynna Smith, Jian Wang, Xuefei Ma, Nikolay V. Dokholyan, Rakesh K. Singh, Sami Alawadhi, Dimitrios Vavylonis, Alexander S. Zhovmer, Denis Tsygankov, Alexander X. Cartagena-Rivera, and Erdem D. Tabdanov
Graduate Student: Yerbol Tagay
NIH Institute-Center: NIBIB
NIH Research Advisor: Alexander X. Cartagena-Rivera
University Research Advisor: Erdem D. Tabdanov
Graduate University: Penn State University

115

Elucidating Potential Use Cases for the Novel Repurposing of Arsenic Trioxide to Serve As a First Targeted Anticancer Therapy for Individuals With Li-Fraumeni Syndrome
Neha Wali, Richard P. Owen, Curtis C. Harris, and Xin Lu
Graduate Student: Neha Wali
NIH Institute-Center: NCI
NIH Research Advisor: Curtis C. Harris
University Research Advisor: Xin Lu
Graduate University: University of Oxford

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The Non-canonical Role of T Follicular Helper Cells in the Maintenance of Peripheral Tolerance
Shivangi Dave, Holly Bachus, and Andre Ballesteros-Tato
Graduate Student: Shivangi Dave
NIH Institute-Center: NIAID
NIH Research Advisor: Andre Ballesteros-Tato
University Research Advisor: Robert Welner
Graduate University: University of Alabama at Birmingham

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Investigating the Brain Circuitry Modulating Cagriltinide in Mice
Shakira Rodriguez Gonzalez, Chia Li, and Michael Krashes
Graduate Student: Shakira Rodriguez Gonzalez
NIH Institute-Center: NIDDK
NIH Research Advisor: Michael Krashes
University Research Advisor: Yeka Aponte, Hey-Kyoung-Lee, and Patricia Janak
Graduate University: Johns Hopkins University

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Generation and Characterization of E1-Dependent High-Affinity Nanobodies

Elizabeth Bardwil-Lugones, Ailis Grieshaber, Jaime Sanchez-Meza, Christopher Ma, Renbin Yang, Tapan Kanai, Yarozlav Tsybovsky, Ashish Kumar, Joseph Marcotragiano, Mansun Law, Zongyi Hu, and T. Jake Liang

Graduate Student: Elizabeth Bardwil-Lugones
NIH Institute-Center: NIDDK
NIH Research Advisor: Jake Liang
University Research Advisor: Stephen Menne
Graduate University: Georgetown University

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Plasma cfDNA-based Epigenetic Liquid Biopsy For Demyelinating Disease Biomarkers

Hallie Gaitsch, Moon K. Jang, Temesgen Andargie, Tom Hill, Woojin Park, Neelam Redekar, David H. Rowitch, Robin J. M. Franklin, Maria I. Gaitan, Irene Cortese, Sean Agbor-Enoh, and Daniel S. Reich

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University Research Advisor: Dr. David Rowitch & Dr. Robin Franklin
Graduate University: University of Cambridge

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