



Winship Scientific Symposium

Integrating Artificial Intelligence and Big Data in Cancer Research at Winship *Emory Conference Center Hotel*

Monday, November 10, 2025

Emory Amphitheater Break Area

8:30 a.m. – 9:00 a.m.	CONTINENTAL BREAKFAST PROVIDED
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Emory Amphitheater

9:00 a.m. – 9:10 a.m.	WELCOME AND CHARGE FOR THE DAY SURESH RAMALINGAM, MD, FASCO Executive Director, Winship Cancer Institute of Emory University Associate Vice President for Cancer Woodruff Health Sciences Center Roberto C. Goizueta Distinguished Chair for Cancer Research Professor, Department of Hematology and Medical Oncology Emory University School of Medicine
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Emory Amphitheater - Morning Session

9:10 a.m. – 9:15 a.m.	MORNING SESSION INTRODUCTIONS BY SARWISH RAFIQ, PhD
9:15 a.m. – 9:40 a.m.	LEVERAGING POPULATION-BASED DATA TO IDENTIFY NOVEL PEDIATRIC CANCER PREDISPOSITION SYNDROMES PHILIP LUPO, PhD, MPH Professor, Department of Pediatrics Emory University School of Medicine
9:40 a.m. – 10:05 a.m.	METHYLOMIC AND OTHER -OMIC CONSEQUENCES OF CLONAL HEMATOPOIESIS OF INDETERMINATE POTENTIAL KAREN CONNEELY, PhD Professor, Department of Human Genetics Emory University School of Medicine
10:05 a.m. – 10:30 a.m.	AI-GUIDED DISCOVERY OF P38/MK2 PPI INHIBITORS TO TARGET TUMOR-PROMOTING INFLAMMATION ANDREY IVANOV, PhD Assistant Professor, Department of Pharmacology and Chemical Biology Emory University School of Medicine

10:30 a.m. – 10:40 a.m.	LLM-DRIVEN APPROACHES TO ENHANCE DIVERSITY IN CLINICAL TRIAL ENROLLMENT USING REAL-WORLD DATA KIERSTEN CAMPBELL, PHD STUDENT PIs: MATTHEW REYNA, PhD, MS AND SELEN BOZKURT, PhD, MSc
10:40 a.m. – 10:50 a.m.	INTEGRATING DRUG COMBINATION LANDSCAPE WITH MULTOMICS FOR AML RANJIT PELIA, MS, MPH PI: SHRUTI BHATT, PhD
10:50 a.m. – 11:05 a.m.	PANEL DISCUSSION/Q&A MODERATED BY JESSICA WELLS, PhD, RN, FAAN
11:05 a.m. – 11:15 a.m.	BREAK
Emory Amphitheater - Keynote Presentation	
11:15 a.m. – 12:05 p.m.	INTRODUCTION BY RENEE READ, PhD INTERPRETER OF MALADIES: APPLICATIONS OF AI IN PRECISION ONCOLOGY ANANT MADABHUSHI, PhD Professor, Wallace H. Coulter Department of Biomedical Engineering Georgia Institute of Technology and Emory University Executive Director Emory Empathetic AI for Health Institute
Dining Room	
12:05 p.m. – 1:15 p.m.	LUNCH
Emory Amphitheater - Afternoon Session	
1:15 p.m. – 1:25 p.m.	POSTDOCTORAL SCHOLAR AWARDS PRESENTATION
1:25 p.m. – 1:30 p.m.	AFTERNOON SESSION INTRODUCTIONS By RYAN SUK, PhD, MS
1:30 p.m. – 1:35 p.m.	INTRODUCTION TO THE AMERICAN CANCER SOCIETY INITIATIVE AND SELECTED JOINT PILOT PROJECT MADHUSMITA BEHERA, PhD
1:35 p.m. – 1:45 p.m.	INTEGRATED EXPOSOMICS FOR MAPPING ENVIRONMENT-IMMUNE RELATIONSHIPS IN NONHODGKIN'S LYMPHOMA DR. DOUGLAS WALKER, PhD Associate Professor, Department of Environmental Health Rollins School of Public Health, Emory University DR. LAUREN TERAS, PhD American Cancer Society Senior Scientific Director Epidemiology Research

1:45 p.m. – 1:55 p.m.	AIRCANCEROMICS: ASSESSING IMPACTS OF AIR POLLUTION EXPOSURES ON LUNG CANCER RISK USING EPIGENOMICS AND MULTI-OMICS IN THE CPS COHORTS DR. DONGHAI LIANG, PhD, MPH Associate Professor, Department of Environmental Health Rollins School of Public Health, Emory University DR. YING WANG, PhD American Cancer Society Senior Principal Scientist Epidemiology Research
1:55 p.m. – 2:20 p.m.	BIG DATA IN SMALL VOLUMES: QUANTIFYING THE GENOMIC FINGERPRINT OF CANCER ANDREA MOFFITT, PhD Assistant Professor, Department of Hematology and Medical Oncology Emory University School of Medicine Assistant Professor, Department of Human Genetics Emory University School of Medicine
2:20 p.m. – 2:45 p.m.	LEVERAGING DIGITAL TWINS FOR CLINICAL DEVELOPMENT, TRIAL DESIGN, AND DECISION SUPPORT IN ONCOLOGY RAVI PARikh, MD, MPP, FACP Associate Professor, Department of Hematology and Medical Oncology Emory University School of Medicine Medical Director, Winship Data and Technology Applications Shared Resource Winship Cancer Institute of Emory University
2:45 p.m. – 2:55 p.m.	SUPPRESSION OF LKB1-MUTANT LUNG ADENOCARCINOMA BY NATURAL KILLER CELLS FROM FEMALES YIJIAN FAN, POSTDOCTORAL FELLOW PI: WEI ZHOU, PhD
2:55 p.m. – 3:05 p.m.	PREDICTING DEPRESSION AFTER BREAST CANCER DIAGNOSIS USING REAL-WORLD EHR DATA FREDDIE YANG, PhD STUDENT PI: ILANA GRAETZ, PhD
3:05 p.m. – 3:20 p.m.	PANEL DISCUSSION/Q&A MODERATED BY ZACHARY BUCHWALD, PhD
3:20 p.m. – 3:25 p.m.	CLOSING REMARKS GREG LESINSKI, PhD, MPH John Kauffman Family Professorship for Pancreatic Cancer Research Professor and Vice Chair for Basic Research, Department of Hematology and Medical Oncology Emory University School of Medicine Associate Director for Basic Research and Shared Resources Co-Director Translational GI Malignancy Program Winship Cancer Institute of Emory University
Mountain Laurel and Hickory	
3:30 p.m. – 5:15 p.m.	POSTER SESSION AND RECEPTION



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Speaker Biographies



PHILIP LUPO, PhD, MPH

Professor, Department of Pediatrics
Emory University School of Medicine

Philip Lupo, PhD, MPH, is a genetic epidemiologist, a professor of pediatrics at Emory University School of Medicine, and co-director of the REACH Center at Emory and Children's Healthcare of Atlanta. Dr. Lupo is a member of the Cancer Prevention and Control Research Program at Winship Cancer Institute.

Dr. Lupo's research focuses on cancer predisposition in children and outcomes in these individuals. This work is facilitated through his work in the Children's Oncology Group, where he is the chair of the Epidemiology Committee. Examples of his currently funded research include the Genetic Overlap Between Anomalies and Cancer in Kids (GOBACK) Study, an international collaboration to identify novel cancer predisposition syndromes in children with structural birth defects; the Reducing Ethnic Disparities in Acute Leukemia (REDIAL) Study; and the Genetic Information for Families after Tumor Testing (GIFTT) Study, which seeks to evaluate outcomes in children with cancer predisposition syndromes and increase uptake of genetic services in their family members. The goal of Dr. Lupo's research is to discover factors that can be used in new prevention efforts and targeted interventions to limit the adverse consequences of pediatric cancer.

**KAREN CONNEELY, PhD**

Professor, Department of Human Genetics
Emory University School of Medicine

Karen Conneely, PhD, is a professor in the Department of Human Genetics at Emory University School of Medicine. Dr. Conneely is a member of the Cancer Immunology Research Program at Winship Cancer Institute. She received her PhD in Biostatistics from the University of Michigan in Ann Arbor, Michigan. Her research focuses on statistical methods for genetic association studies and large-scale studies of DNA methylation. She is currently involved in GWAS, candidate gene studies and methylation studies involving psychiatric outcomes, environmental stressors and aging. Through the development of novel techniques and adaptation of existing ones, her work seeks to identify biomarkers and variants involved in disease, and to explore the role of DNA methylation as a mediator between environment and phenotype.

**ANDREY IVANOV, PhD**

Assistant Professor, Department of Pharmacology and Chemical Biology
Emory University School of Medicine

Andrey Ivanov, PhD, is an assistant professor in the Department of Pharmacology and Chemical Biology at Emory University School of Medicine and the associate director for Computational Chemical Biology at Emory Chemical Biology Discovery Center. Dr. Ivanov is a member of the Discovery and Developmental Therapeutics Research Program at Winship Cancer Institute. In his research, he is leveraging the power of artificial intelligence (AI) and machine learning (ML) combined with structural modeling and systems biology to discover and regulate the molecular mechanisms of human diseases.

Dr. Ivanov integrates AI and machine learning methods with computational structural modeling and systems biology to uncover actionable mechanisms in cancer and inflammatory disorders. These AI/ML technologies allowed him to contribute to major multi-PI NIH consortia, including NCI ITCR, NCI CTD2, the Lung Cancer SPORE, and TREAT-AD, and have led to impactful discoveries, such as identifying the MKK3–MYC interaction as a driver in breast cancer, and the discovery of the first small molecule inhibitors of the inflammatory p38/MK2 complex. He is a member of the Board of Directors of the International Chemical Biology Society (ICBS) and serves as the chair of the ICBS Communication Committee. He also serves as the associate editor for *Frontiers in Genetics*, Computational Genomics section, and is a member of the Scientific Expert Review Panel (SERP) of the Chemical Probe Portal.

**KIERSTEN CAMPBELL, PhD STUDENT**

PIs: MATTHEW REYNA, PhD, MS, AND SELEN BOZKURT, PhD, MSc

Kiersten Campbell is a third-year PhD student in the Computer Science and Informatics Program at Emory University. Advised by Matthew Reyna, PhD, MS, her research focuses on developing novel computational methods to address emerging challenges in oncology research, ranging from innovative statistical approaches to identify driver genes from genomics data to exploring barriers to clinical trial enrollment using natural language processing. She collaborates closely with Selen Bozkurt, PhD, MSc, and other members of the Department of Biomedical Informatics, as well as clinicians at Winship Cancer Institute.

Prior to beginning her graduate studies at Emory, she earned her BA in biology and computer science from Williams College in 2021. She then began a post-baccalaureate fellowship at the National Institutes of Health as a member of NICHD's Bioinformatics and Scientific Programming Core. During the two-year fellowship, she implemented bioinformatics pipelines in a range of data modalities, including bulk/single-cell transcriptomics, proteomics, and methylation sequencing. These experiences continue to inspire her commitment to developing computational tools that advance cancer research.

**RANJIT PELIA, MS, MPH**

PI: SHRUTI BHATT, PhD

Ranjit Pelia, MS, MPH, is a bioinformatician in Dr. Shruti Bhatt's lab at Emory School of Medicine, Department of Hematology & Medical Oncology

He is an aspiring epigeneticist with a focus on developing personalized therapies for patients with acute myeloid leukemias through an integrative, multi-omics, approach.

KEYNOTE SPEAKER:



ANANT MADABHUSHI, PhD

Professor, Wallace H. Coulter Department of Biomedical Engineering
Georgia Institute of Technology and Emory University
Executive Director, Emory Empathetic AI for Health Institute

Anant Madabhushi, PhD, is the Robert W. Woodruff Professor in the Department of Biomedical Engineering at Emory University and Georgia Tech. He is a member of the Cancer Prevention and Control Research Program at Winship Cancer Institute.

Dr. Madabhushi received his master's in biomedical engineering from the University of Texas, Austin in 2000 and his PhD in bioengineering from the University of Pennsylvania in 2004. He joined the Department of Biomedical Engineering, Case Western Reserve University, in 2012, having been on the Biomedical Engineering faculty at Rutgers University from 2005-2012. He is currently a Fellow of the American Institute of Medical and Biological Engineering (AIMBE), the Institute of Electrical and Electronics Engineers (IEEE), and Wallace H. Coulter Foundation. He serves as an associate editor for multiple scientific journals including IEEE Transactions on Biomedical Engineering, BMC Cancer, and a guest editor for Medical Physics. In 2014, he was awarded a New Investigator Award in lung cancer by the Department of Defense. In 2015, he was named as one of Crain's Business Cleveland "40 under 40." He has had considerable experience in leading large interdisciplinary projects, having either served or is serving as the lead PI on multi-institutional, multi-site grants 1U01CA269181-01, 1U1U24CA199374-01, R01CA136535, 1R01CA208236-01A1, CDMRP PC120857 and CDMRP LC130463. In 2018, his work on developing "smart computers for identifying lung cancer patients who will benefit from chemotherapy" was ranked as one of the top 10 medical breakthroughs of 2018 by Prevention Magazine. In 2019, Nature Magazine named him one of five scientists pursuing truly offbeat and innovative approaches in cancer research.

Dr. Madabhushi's team has developed pioneering computer aided diagnosis, pattern recognition, image analysis tools for diagnosis and prognosis of different types of cancers (prostate, breast, medulloblastoma, oropharyngeal) based on quantitative and computerized histomorphometric image analysis of digitized histologic biopsy tissue specimens. This novel approach involves quantitatively mining the histologic image data for hundreds of image features via sophisticated image segmentation, feature extraction, machine learning and pattern recognition methods and then predicting the risk of disease recurrence and patient prognosis. His group has also pioneered new ways of combining histomorphometric imaging features with "omics" derived biomarkers for improved and integrated prediction of prostate cancer outcome. His team has published ~350 peer-reviewed journal papers and over 200 peer-reviewed conference papers (Google H-Index=90) and has over 200 patents awarded or pending. Most recently, he has been developing novel computationally derived image biomarkers for diagnosing disease and predicting response to therapy for a variety of different cancers.

**DOUGLAS WALKER, PhD**

Associate Professor, Gangarosa Department of Environmental Health
Rollins School of Public Health, Emory University

Douglas Walker, PhD, is an associate professor in the Gangarosa Department of Environmental Health at Rollins School of Public Health and adjunct assistant professor at Utrecht University. Dr. Walker is a member of the Cancer Prevention and Control Research Program at Winship Cancer Institute. Before joining Emory, he was an assistant professor in the Department of Environmental Medicine and Public Health at the Icahn School of Medicine in New York. He is an environmental engineer and analytical chemist with training in metabolomics and developing EWAS (exposome-wide association study) methodologies for environmental health and precision medicine research. Dr. Walker leads the Comprehensive Laboratory for Untargeted Exposome Science (CLUES), which was established to provide high-quality, untargeted screening of biological samples for nutrition, precision medicine and environmental health research. He earned his PhD in environmental and water resources engineering from Tufts University.

**LAUREN TERAS, PhD**

American Cancer Society
Senior Scientific Director
Epidemiology Research

As senior scientific director at the American Cancer Society, Lauren Teras, PhD, leads the breast and hematologic cancer research portfolios for the Department of [Population Science](#). Dr. Teras is a member of the Cancer Prevention and Control Research Program at Winship Cancer Institute. In addition to her own epidemiologic research on these cancers, she is part of the senior scientific team responsible for Cancer Prevention Study survey development and biospecimen acquisition.

**DONGHAI LIANG, PhD, MPH**

Associate Professor, Department of Environmental Health
Rollins School of Public Health, Emory University

Donghai Liang, PhD, MPH, is an exposure scientist and molecular epidemiologist whose research focuses on characterizing the human exposome and uncovering the molecular mechanisms linking environmental exposures to disease. Dr. Liang's work integrates high-resolution metabolomics and multi-omics approaches to investigate the health effects of pollutants such as air pollution and persistent organic pollutants, with applications in maternal and child health, cancer, and neurodegenerative diseases. He leads the Environmental Metabolomics and Exposomics Research Group at Emory (EMERGE) and serves in national and international leadership roles with the International Society of Exposure Science (ISES) and the National Cancer Institute Consortium of METabolomics Studies (COMETS). He is a recipient of the Joan M. Daisey Outstanding Young Scientist Award from ISES and Emory's Research Excellence Award.

**YING WANG, PhD**

American Cancer Society
Senior Principal Scientist
Epidemiology Research

As senior principal scientist at the American Cancer Society, Ying Wang, PhD, is leading a multidisciplinary area of research – metabolomics – to better understand the role of biologic, lifestyle and environmental factors on cancer risk and survival, capitalizing on her expertise in basic science, statistics, and cancer epidemiology. She focuses on prostate cancer.

Dr. Wang works closely with American Cancer Society Population Science colleagues in nutritional epidemiology to understand the role of diet in cancer risk and survival and contributes to the development and update of the nutrition guidelines for cancer prevention and survivors. She is also a member of the Cancer Prevention and Control Research Program at Winship Cancer Institute.

**ANDREA MOFFITT, PhD**

Assistant Professor, Department of Hematology and Medical Oncology

Emory University School of Medicine

Assistant Professor, Department of Human Genetics

Emory University School of Medicine

Andrea B. Moffitt, PhD, is an assistant professor in the Department of Hematology and Medical Oncology, and Human Genetics, at Emory University School of Medicine. Dr. Moffitt is a member of the Cell and Molecular Biology Research Program at Winship Cancer Institute. Her laboratory develops genomic tools for the sensitive detection and characterization of residual disease in cancer, with an emphasis on acute myeloid leukemia (AML). By searching for personalized genomic “fingerprints” of cancer in deep sequencing data, her team can detect a single leukemic cell among a million normal cells, enabling earlier prediction of relapse and more precise monitoring of treatment response. Dr. Moffitt trained at Duke University and Cold Spring Harbor Laboratory before establishing her translational cancer genomics laboratory at Emory in 2022.

**RAVI PARIKH, MD, MPP, FACP**

Associate Professor, Department of Hematology and Medical Oncology

Emory University School of Medicine

Medical Director, Winship Data and Technology Applications Shared Resource

Winship Cancer Institute of Emory University

Ravi B. Parikh, MD, MPP, is an associate professor in the Department of Hematology and Medical Oncology at Emory University School of Medicine and medical director of the Data and Technology Applications Shared Resource at Winship Cancer Institute. In this role, he is responsible for its overall strategic scientific management and operational oversight. Dr. Parikh directs the Human-Algorithm Collaboration Lab, an NIH-funded multidisciplinary laboratory focusing on developing and testing algorithm-driven interventions in cancer care and serious illness and serves on the board of the Coalition to Transform Advanced Care (C-TAC).



YIJIAN FAN, POSTDOCTORAL FELLOW

PI: WEI ZHOU, PHD

Yijian Fan is a postdoctoral fellow in the laboratory of Wei Zhou, PhD, at Emory University School of Medicine, where he completed his doctorate in cancer biology. His research focuses on LKB1-mutant lung cancer, specifically the sex difference associated with LKB1 mutation and how natural killer (NK) cells contribute to this sex difference.



FREDDIE YANG, PHD STUDENT

PI: ILANA GRAETZ, PHD

Freddie Yang is a third-year PhD student in the Department of Health Policy and Management at Rollins School of Public Health. His research focuses on health information technology policy and clinical informatics, with an emphasis on using large-scale EHR data to generate actionable clinical insights.

