AACR RESEARCH GRANT RECIPIENTS
2022-2023

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CONGRATULATIONS
2022-2023 GRANT RECIPIENTS

**THE AMERICAN ASSOCIATION FOR CANCER RESEARCH®
(AACR) IS PROUD TO PRESENT THE NEWEST CLASS OF
AACR GRANT RECIPIENTS.**

This year's scientific grant projects span the continuum from basic,
translational, and clinical research as well as prevention and disparities
research. This year's class is comprised of 45 outstanding scientists
who have dedicated their careers to advancing the detection,
prevention, and treatment of cancer.

Since its inception in 1993, the AACR grants program has seen
incredible growth and awarded more than $117 million in funding
to hundreds of scientists. These grants have funded scientists both
domestically and abroad at every career stage.

CONGRATULATIONS TO OUR NEWEST GRANT RECIPIENTS!

THANK YOU
FUNDING PARTNERS

The AACR would like to thank our funding partners, whose generosity and support have been instrumental to the continued success of our grants program, and our Scientific Advisory and Review Committees for their tremendous work and invaluable expertise in selecting the most meritorious proposals for funding and providing advice on the progress of research projects.

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2022
FELLOWSHIPS

AACR-Amgen Fellowship in Clinical/Translational Cancer Research

The AACR-Amgen Fellowship in Clinical/Translational Cancer Research represents a joint effort to encourage and support a mentored young investigator to conduct clinical or translational cancer research and to establish a successful career path in this field.

Maria Caterina Rotiroti, PhD

POSTDOCTORAL SCHOLAR

Stanford University | Stanford, California, USA

Engineering CAR T cells for enhanced signaling

Scientific Statement of Research

Loss or downregulation of the target antigen has emerged as a major mechanism of resistance to CAR T cell therapy. Conventional CAR T cells are susceptible to immune escape because they require high target antigen density for activation. Novel designs are required to target cancers with heterogeneous antigen expression. Dr. Rotiroti and her colleagues have engineered a novel platform that amplifies the CAR T cell response to tumor cells expressing lows levels of target antigen. They are set to deploy this platform to enhance CAR T cell efficacy in relevant *in vivo* models of DLBCL.

Biography

Dr. Rotiroti developed her interest in cancer immunotherapy by joining the Fondazione Tettamanti in Monza, Italy as an undergraduate student. After her graduation (University of Milano-Bicocca, Italy), she enrolled in a PhD program in Molecular and Translational Medicine (University of Milano-Bicocca), continuing her research studies focused on the development of CAR T cell therapies for the treatment of acute myeloid leukemia. She is currently a postdoctoral fellow at Stanford University. She is interested in developing new strategies to target tumors with heterogeneous antigen expression, to prevent immune escape through antigen downregulation.

Acknowledgment of Support

"I am a translational researcher focused on immunology and the development of novel CAR T cell therapies. I am strongly committed to use this fellowship to push the boundaries of my research and to develop my career as an independent investigator addressing major challenges in the field of cancer immunotherapy."

AACR-AstraZeneca Immuno-oncology Research Fellowship

The AACR-AstraZeneca Immuno-oncology Research Fellowship represents a joint effort to encourage and support a postdoctoral or clinical research fellow to conduct immuno-oncology research and to establish a successful career path in this field.

Shalom Lerrer, PhD

POSTDOCTORAL RESEARCH SCIENTIST

Columbia University | New York, New York, USA

Inhibition of PD-1-Effector VRK2 to improve cancer immunotherapy

Scientific Statement of Research

Despite the striking success of anti-PD-1/PD-L1 antibodies, most patients do not respond to PD-1 blockade, and many experience immune-related adverse events. Clearly, the need for therapeutics that go beyond interference with ligand binding is critical. By utilizing mass-spectrometry data and tumor models, the kinase VRK2 was established as a downstream mediator of PD-1. With a long-term goal of developing clinically useful VRK2 inhibitors, Dr. Lerrer is set to define the roles of the kinase domain and protein/protein-interaction domain of VRK2 in mediating PD-1 functions, and uncover the inhibitory roles of VRK2 in different T cell subsets.

Biography

Dr. Lerrer obtained his PhD from the Faculty of Life Sciences of Tel Aviv University, where he studied the inflammatory phenotype and pro-malignant functions of mesenchymal stem/stromal cells (MSC) in the context of the breast tumor microenvironment. Currently a postdoctoral research scientist, he is studying the basic mechanisms underlying PD-1 signaling and functions in T cells, with the anticipation that a better understanding of PD-1 biology will allow for better treatment of cancer patients.

Acknowledgment of Support

"My long-term goal is to develop VRK2 inhibitors that will be clinically useful to overcome resistance against current PD1 inhibitors. The AACR-AstraZeneca Immuno-oncology Research Fellowship will allow me to further establish VRK2 as a target, while expanding my skills and knowledge in the field of cancer immunology."

AACR-Day One Biopharmaceuticals Pediatric Cancer Research Fellowship

The AACR-Day One Biopharmaceuticals Pediatric Cancer Research Fellowship represents a joint effort to encourage and support a postdoctoral or clinical research fellow to conduct pediatric cancer research and to establish a successful career path in this field.

Joelle Straehla, MD

INSTRUCTOR IN PEDIATRICS

Dana-Farber Cancer Institute | Boston, Massachusetts, USA

Investigating the blood-tumor barrier to design effective nanocarriers

Scientific Statement of Research

Diffuse midline gliomas are a devastating pediatric brain tumor and despite hundreds of clinical trials, there are currently no curative therapies. One key treatment challenge is getting an effective dose of drugs into tumor cells, as most agents cannot cross the specialized blood vessels of the central nervous system. To develop effective treatments for pediatric diffuse midline glioma, Dr. Straehla plans to use a high-fidelity microfluidic model to rigorously investigate the structure and function of the blood-tumor barrier. She is set to incorporate spatial profiling of key structural, regulatory, and transport proteins, and link this information with functional studies investigating the trafficking of curated antibodies and nanocarriers that have potential for clinical applications.

Biography

Dr. Straehla received her MD from Northwestern University in 2013, and in 2016 completed a residency in pediatrics at the University of Washington. She then completed fellowship training in pediatric hematology/oncology at Dana-Farber/Boston Children's in 2019. She is currently a pediatric oncologist at DanaFarber/Boston Children's Cancer and Blood Disorders Center, an Instructor of Pediatrics at Harvard Medical School, and a Charles W. (1955) and Jennifer C. Johnson Clinical Investigator at MIT's Koch Institute. She is board-certified in pediatric hematology/oncology, and her clinical practice is focused on the care of children with tumors of the brain and spinal cord.

Acknowledgment of Support

"I am honored to receive the 2022 AACR-Day One Biopharmaceuticals Pediatric Cancer Research Fellowship. This award provides support at a critical juncture in my career, allowing me to focus on bringing new drug delivery technologies to the clinic for children with central nervous system tumors."

AACR-Exelixis Renal Cell Carcinoma Research Fellowship

The AACR-Exelixis Renal Cell Carcinoma Research Fellowship represents a joint effort to encourage and support a postdoctoral or clinical research fellow to conduct renal cell carcinoma research and to establish a successful career path in this field.

Jin Zhou, PhD

POSTDOCTORAL FELLOW

UT Southwestern Medical Center | Dallas, Texas, USA
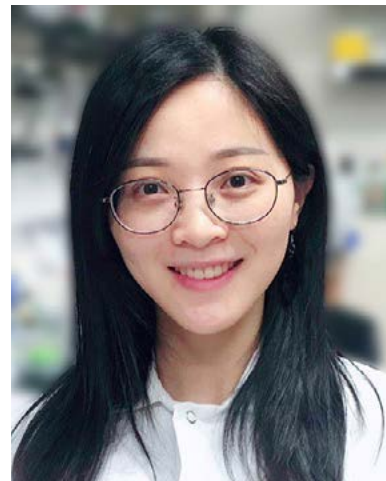
RBM39-DGAT1 axis is an oncogenic driver in clear cell renal cell carcinoma

Scientific Statement of Research

Accounting for 85% of renal cancers, clear cell renal cell carcinoma (ccRCC) is classically resistant to cytotoxic chemotherapy. JMJD6 has been identified to play critical roles in ccRCC tumorigenesis. A direct JMJD6 target, DGAT1, is an enzyme critical for triglyceride synthesis. Mechanistically, JMJD6 interacts with RBM39, co-occupy the DGAT1 gene promoter with H3K4me3, inducing DGAT1 expression. Although depletion of JMJD6 or DGAT1 has been shown to inhibit ccRCC tumorigenesis, the efficacy of DGAT1 inhibitor is limited in preclinical ccRCC models. On the other hand, RBM39 is an emerging cancer target, and its protein degrader indisulam has good inhibitory effects on multiple cancers. Nevertheless, the role of RBM39 in ccRCC tumorigenesis is unknown. Dr. Zhou aims to clarify the mechanism of RBM39's regulation of DGAT1 expression. In addition, she is set to explore the therapeutic potential of single-agent indisulam or the indisulam/DGAT1 inhibitor combination in kidney cancer.

Biography

Dr. Zhou completed her PhD at School of Basic Medical Sciences in Wuhan University, China, where she studied the relationship between intrauterine growth retardation and prenatal xenobiotics exposure. As a postdoctoral fellow in the department of Pathology at the University of Texas Southwestern Medical Center, she is focusing on parsing critical genes causing tumorigenesis, as well as cancer metastasis, in kidney cancer and exploring new therapeutic strategies.

Acknowledgment of Support

"It is a great honor to be awarded with this AACR fellowship. As a postdoctoral fellow, I think this experience will lay a good foundation for my independent research in the future. I will cherish this opportunity and try my best to achieve my research goal."

AACR-Genmab Non-Hodgkin B-Cell Lymphoma Research Fellowship

The AACR-Genmab Non-Hodgkin B-cell Lymphoma Research Fellowship represents a joint effort to encourage and support a postdoctoral or clinical research fellow to conduct non-Hodgkin B-cell lymphoma research and to establish a successful career path in this field.

Charlotte Graham, MBChB, PhD

RESEARCH FELLOW

Massachusetts General Hospital | Boston, Massachusetts, USA

Mechanisms of cytopenia associated with CAR T cell therapy

Scientific Statement of Research

Chimeric antigen receptor (CAR) T cell therapy targeting CD19 (CAR19) is an effective treatment for patients with relapsed and refractory B cell lymphoma. However, more than half of patients relapse or fail to respond. The Maus lab developed a novel CD37 targeting CAR T cell therapy (CAR37) to treat relapsing patients and CD19 negative lymphomas. However, two patients treated with CAR37 developed significant cytopenia and underwent a hematopoietic stem cell transplant. The exact mechanism of severe persistent cytopenia, which can also develop after other CAR therapies, including CAR19 and CAR-BCMA, is poorly understood. This project will assess for an immune signature implicated in the pathogenesis of immune-mediated cytopenia utilizing bio-banked samples from patients who received CAR19. Humanized mouse models will also be established to investigate which hematopoietic/immune cell lineages are targeted by CAR37 and CAR19 to distinguish on-target toxicities of specific CARs vs target-independent hematopoietic toxicities.

Biography

Dr. Graham completed her medical degree at the University of Warwick, her medical internship at Oxford University Hospitals, and her specialist Hematology training at King's College Hospital, London. She undertook her PhD in King's College London, investigating the use of gene-edited allogeneic chimeric antigen receptor (CAR) T cells in B cell malignancies. She joined the immune monitoring laboratory at Massachusetts General Hospital Cancer Center as a postdoctoral research fellow to conduct translational research in the field of CAR T cell therapy.

Acknowledgement of Support

"I am delighted to receive the 2022 AACR-Genmab Non-Hodgkin B-Cell Lymphoma Research Fellowship. This funding and mentorship will allow me to investigate cytopenia following CAR T cell therapy, an important complication for patients. It represents a key milestone in my career development, and I am incredibly grateful for this award."

AACR-Merck Cancer Disparities Research Fellowship

The AACR-Merk Cancer Disparities Research Fellowship represents an effort to encourage and support a postdoctoral or clinical research fellow to conduct cancer disparities research and to establish a successful career path in this field.

Roy Xiao, MD, MS

RESIDENT PHYSICIAN AND CLINICAL RESEARCH FELLOW

Massachusetts Eye and Ear Infirmary | Boston, Massachusetts, USA
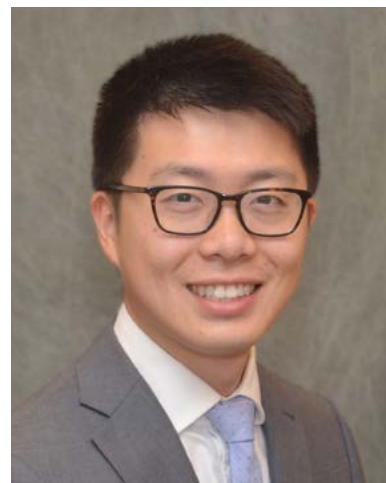
How hospital payer-negotiated prices exacerbate disparities in cancer care

Scientific Statement of Research

Underprivileged groups can suffer from greater financial burdens of care and can even forgo aspects of their cancer treatments. The Centers for Medicare & Medicaid Services require all hospitals and insurers to disclose negotiated prices for all items and services. Early research has revealed wide variations in pricing and significant hospital markup on cancer drugs. Dr. Xiao and his colleagues seek to understand what hospital and regional characteristics affect compliance with the Hospital Price Transparency rule, as well as what factors influence hospital- and insurer-negotiated prices for common cancer services and treatments. Understanding how healthcare pricing can adversely affect disadvantaged populations can empower patients to make financially informed decisions and educate lawmakers on future policies.

Biography

Dr. Xiao attended Princeton University for his undergraduate studies in chemistry and computer science, graduating magna cum laude. He then attended the Cleveland Clinic Lerner College of Medicine for his medical doctorate and master's degree. He also completed a fellowship at the NIH where he investigated inhibitors of apoptosis proteins in head and neck cancers. Dr. Xiao is now a resident in Otolaryngology–Head and Neck Surgery at Harvard Medical School and Massachusetts Eye and Ear, as well as a clinical research fellow studying healthcare price transparency.

Acknowledgment of Support

"I am excited and grateful for this support from the AACR-Merck Cancer Disparities Research Fellowship. This will be an unparalleled opportunity for me to jumpstart my independent research career, and I am eager to build on our initial body of work to shed further light into cancer disparities."

AACR-Merck Immuno-oncology Research Fellowship

The AACR-Merck Immuno-oncology Research Fellowship represents a joint effort to encourage and support a postdoctoral or clinical research fellow to conduct immuno-oncology research and to establish a successful career path in this field.

Deyang Yu, PhD

RESEARCH ASSOCIATE

Dana-Farber Cancer Institute | Boston, Massachusetts, USA

Targeting CDK4/6 and immune checkpoint to reduce liver cancer disparities

Scientific Statement of Research

American Indians and African Americans have higher mortality rates of liver cancer than non-Hispanic whites, an observation that has been attributed to the higher prevalence of obesity and diabetes in the former racial groups. Previous work established that obesity and diabetes promote hepatocellular carcinoma (HCC) by hyperactivating cyclin D1-cyclin-dependent kinase 4/6 (CDK4/6). Obesity and diabetes also contribute to an immune-suppressive microenvironment in the liver by stimulating release of immunosuppressive cytokines and modulating the expression of immune checkpoint proteins. These observations suggest that obesity and diabetes induce intrinsic vulnerabilities of HCC to CDK4/6 inhibitors and may sensitize HCC to immune checkpoint inhibition. In this project, Dr. Yu is set to study immune responses to CDK4/6 inhibition in obesity and evaluate anti-tumor efficacy of immune checkpoint inhibitors in combination with CDK4/6 inhibitors in pre-clinical HCC mouse models.

Biography

Dr. Yu obtained his doctoral degree at the University of Wisconsin-Madison. His thesis work was focused on understanding the regulation of metabolic health and aging by dietary quantity and composition. He is currently a postdoctoral fellow at Dana-Farber Cancer Institute (DFCI), where he is studying metabolic dependency and vulnerabilities of cancer and exploring novel combinatory therapies for cancer treatment. His long-term goal is to develop expertise/tools/strategies to target tumor metabolism for cancer therapy.

Acknowledgment of Support

"Combinatory therapy holds the promise to overcome drug resistance and improve efficacy in cancer treatment. This AACR-Merck Immuno-oncology Research Fellowship not only gives me freedom to pursue a novel combinatory therapy for liver cancer, but also allows me to develop expertise in immuno-oncology and expand my horizon beyond cancer biology."

AACR-Mirati Cancer Chemical Biology Research Fellowship

The AACR-Mirati Cancer Chemical Biology Research Fellowship represents a joint effort to encourage and support a postdoctoral or clinical research fellow to conduct chemical biology research directed at developing novel approaches to targeting the difficult-to-drug cancer drivers and to establish a successful career path in this field.

Fatima Alghoul, PhD

POSTDOCTORAL RESEARCH FELLOW

Dana-Farber Cancer Institute | Boston, Massachusetts, USA

Discovery of gene regulation by non-canonical metabolite cap structures

Scientific Statement of Research

Recent data has challenged the dogma that all mRNAs contain a conserved methylated m7G cap structure and has revealed that metabolic cofactors serve as non-canonical 5′ cap structures on mRNAs. This finding presents a potential new mechanism that links cellular metabolic state with gene regulation during homeostasis and in cancer. However, the identity of which transcripts contain non-canonical 5′ cap structures is unknown, and thus our ability to understand the function of these noncanonical caps remains limited. To address this challenge, Dr. Alghoul is set to develop an enzymatic and chemical biology tool to isolate and sequence mRNAs with non-canonical 5′ cap structures. By combining this novel approach with detailed biochemical and cell-based processes her research can provide further molecular and cellular understanding of the function of alternative 5′ cap structure in gene regulation and cellular physiology.

Biography

Dr. Alghoul obtained her PhD from the University of Strasbourg, France. Her research has elucidated the mechanisms by which translation of Hox mRNAs is regulated during embryonic development by Translation Inhibitory Elements. Dr. Alghoul is currently a postdoctoral fellow at the Dana Farber Cancer Institute and Harvard Medical School, where she focuses on the development of an innovative technology to capture mRNAs with metabolite cap structures.

Acknowledgment of Support

"I am deeply honored to be a recipient of the AACR-Mirati Cancer Chemical Biology Research Fellowship. This fellowship not only supports my project but also enhances my progress towards my career goal to leverage chemical biology approaches to provide innovative and fundamental insights on gene regulation."

AACR-QuadW Foundation Sarcoma Research Fellowship, in Memory of Willie Tichenor

AACR-QuadW Foundation Sarcoma Research Fellowship, in Memory of Willie Tichenor represents a joint effort to encourage and support a postdoctoral or clinical research fellow to conduct translational or clinical sarcoma research and to establish a successful career path in this field.

Emma Wrenn, PhD

POSTDOCTORAL FELLOW

Seattle Children's Hospital | Seattle, Washington, USA

Targeting mesenchymal cell states in Ewing sarcoma

Scientific Statement of Research

Ewing sarcomas are driven by fusions of EWS and ETS transcription factors, most commonly EWS::FLI1. Cells with lower EWS::FLI1 activity have more metastatic phenotypes. Yet, the molecular mechanisms underlying this aggression are largely unknown. Dr. Wrenn has previously identified a subset of mesenchymal and extracellular matrix-associated genes which mark pro-metastatic, EWS::FLI1-low subpopulations.

In this project, she aims to identify key upstream regulators of this cell state that can be targeted to reduce metastatic progression, and to determine if these EWS::FLI1-low subpopulations cooperatively promote metastasis of other adjacent cells through the secretion of paracrine and tumor microenvironment remodeling factors.

Biography

Dr. Wrenn received her PhD from the University of Washington's Molecular & Cellular Biology Graduate Program. She conducted her dissertation research at the Fred Hutchinson Cancer Center, studying how cell-cell interactions promote metastasis in breast cancer. She is currently a postdoctoral fellow at the Ben Towne Center for Childhood Cancer Research at Seattle Children's Hospital, where she focuses on the relationships between epigenetic plasticity, the tumor microenvironment, and metastasis in Ewing sarcoma.

Acknowledgement of Support

"My goal is to develop an independent research program that tackles difficult unanswered questions in sarcoma biology, including identifying mechanisms of metastasis. The AACR-QuadW Foundation Sarcoma Research Fellowship in Memory of Willie Tichenor will provide exceptional support and training as I work to understand how metastatic cell subpopulations can be identified and therapeutically targeted."

2022
CAREER DEVELOPMENT AWARDS

AACR Career Development Award to Further Diversity, Equity, and Inclusion in Cancer Research

Funding is provided by the AACR Cancer Stimulus Fund, which is supported by AbbVie and AstraZeneca

The AACR Career Development Award to Further Diversity, Equity, and Inclusion in Cancer Research has been established to support the development of a highly talented cancer researcher from an underrepresented group.

Daniel Arango, PhD

ASSISTANT PROFESSOR

Northwestern University | Chicago, Illinois, USA

Delineating the oncogenic mechanisms of NAT10 in hepatocellular carcinoma

Scientific Statement of Research

Previous studies have identified N-acetyltransferase 10 (NAT10) as an oncogenic driver in hepatocellular carcinoma (HCC). NAT10 is an evolutionarily conserved enzyme that regulates protein synthesis through the acetylation of RNA molecules. However, the mechanisms by which NAT10 promotes HCC, and the role of RNA acetylation in tumor formation remain poorly understood. This project will investigate how NAT10 promotes HCC growth, and regulates the response of hepatic cells to stress conditions. Dr. Arango hypothesizes that NAT10-catalyzed RNA acetylation rewires protein synthesis, providing a cancer-competent proteome that promotes cell proliferation and resiliency to stress conditions.

Biography

Dr. Arango received a BS in Biology from Universidad de Antioquia – Colombia, obtained a PhD in Molecular Biology from The Ohio State University, and conducted postdoctoral training in RNA Biology at the U.S. National Cancer Institute. He is currently an Assistant Professor in the Department of Pharmacology and the Robert H. Lurie Comprehensive Cancer Center at Northwestern University. His research program investigates how chemical modifications of RNA regulate protein synthesis and how this interplay affects cell fate decisions such as cell proliferation, cell differentiation, and cell death in cancer.

Acknowledgment of Support

"I am thrilled and honored to receive the 2022 AACR Career Development Award to Further Diversity, Equity, and Inclusion in Cancer Research. This award inspires my research and mentoring goals, while providing a more diverse and inclusive environment in cancer research."

AACR Career Development Award to Further Diversity, Equity, and Inclusion in Cancer Research

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Yves Chiswili Chabu, PhD

ASSISTANT PROFESSOR

University of Missouri | Columbia, Missouri, USA

Tolerogenic mechanisms of KRAS/STK11 co-mutated NSCLC

Scientific Statement of Research

The co-occurrence of KRAS and STK11 mutations in Non-Small Cell Lung Cancer (NSCLC) is associated with tolerogenic and immunotherapy-resistant cancers, leading to poor clinical outcomes for patients. The mechanisms by which KRAS/STK11 co-mutated NSCLC (KS-NSCLC) curtail anti-cancer immune activities remain unclear. Signaling extracellular vesicles (EV) are increasingly recognized as potent immune regulators. Data from Dr. Chabu's laboratory show that EV isolated from NSCLC patients' blood and KS-NSCLC cells specifically activate robust tolerogenic signals in immune cells. In this proposal, he and his research group will elucidate the impact of signaling synergy between KRAS and STK11 in EV-mediated immune suppression, and evaluate the therapeutic efficacy of blocking the downstream effects of this synergy in a mouse model of KS-NSCLC.

Biography

Dr. Chabu received his PhD from the University of Oregon/Howard Hughes Medical Institute (HHMI). He worked on understanding the molecular mechanisms controlling neuroblast cortical polarity and stemness. Afterward, Dr. Chabu completed his postdoctoral training at Yale University/HHMI, where he discovered novel RAS cell-cell signaling dynamics. He also found that oncogenic RAS triggers epithelial cells to release extracellular vesicles (EV) that fundamentally modulate the activity of tumor-associated immune cells in Drosophila. He is currently an Assistant Professor at the University of Missouri, where his interests include understanding the role of RAS tumor-derived EV in tumor immune escape and immunotherapy resistance.

Acknowledgement of Support

"My team and I are grateful to the AACR for this Career Development Award! It is a true honor! This award will allow us to expand our work on RAS tumor EV signaling while continuing to actively promote inclusive excellence in cancer research."

AACR Career Development Award to Further Diversity, Equity, and Inclusion in Cancer Research

Funding is provided by Genentech

The AACR Career Development Award to Further Diversity, Equity, and Inclusion in Cancer Research has been established to support the development of a highly talented cancer researcher from an underrepresented group.

Bolni Marius Nagalo, PhD

PRINCIPAL INVESTIGATOR

University of Arkansas for Medical Sciences | Little Rock, Arkansas, USA

Development of a new virotherapy platform to treat pancreatic cancer

Scientific Statement of Research

Progress in identifying novel therapeutics in pancreatic cancer has been limited for several reasons, including immunosuppressive factors from the tumor microenvironment (TME) and an abundant desmoplastic stroma composed of fibroblasts, endothelial cells, and extracellular matrix proteins. Dr. Nagalo's laboratory recently engineered a hybrid vesiculovirus, replacing the viral surface glycoprotein (G protein) with that of the Morreton virus (shown to be well-tolerated in immunocompetent murine models). In this project, he aims to further genetically modify this hybrid virus, enabling it to degrade the stroma and overcome immunosuppression in the TME. In addition, he will test the benefit of blocking the activity of virus-neutralizing antibodies, on the hybrid virus anti-tumor efficacy. The results of his proposed work can provide the necessary safety and efficacy data to translate this approach to the clinic to treat pancreatic cancer and other stroma-dense tumors.

Biography

Dr. Nagalo received his bachelor's degree, a master's in molecular genetics, and a PhD in Molecular Genetics, and Molecular Biology and Infectious Diseases from the University of Ouagadougou in Burkina Faso, West Africa. He completed a postdoctoral fellowship in the Department of Molecular Medicine at the Mayo Clinic in Rochester, Minnesota, and joined the Mayo Clinic faculty in Arizona as an Assistant Professor of Molecular Medicine and Oncology. He is currently an Assistant Professor of Pathology at the University of Arkansas for Medical Sciences (UAMS) and a member of the Winthrop P. Rockefeller Cancer Institute Cancer Biology Research Program.

Acknowledgment of Support

"The AACR Career Development Award to Further Diversity, Equity, and Inclusion in Cancer Research, which is supported by Genentech, a member of the Roche Group, will support my research program's goal to address the unmet clinical need of patients with advanced pancreatic cancer. It will also provide unparalleled opportunities for scientific nurturing and networking in the world's largest cancer research community."

AACR Career Development Award to Further Diversity, Equity, and Inclusion in Cancer Research
Funding is provided by Merck & Co., Inc.

The AACR Career Development Award to Further Diversity, Equity, and Inclusion in Cancer Research has been established to support the development of a highly talented cancer researcher from an underrepresented group.

Hai Dang Nguyen, PhD

ASSISTANT PROFESSOR

University of Minnesota | Minneapolis, Minnesota, USA

Delineating ATR response in U2AF1 mutant hematologic malignancies

Scientific Statement of Research

Genes that encode RNA splicing factors are commonly mutated in myelodysplastic syndromes (MDS) and other hematological malignancies. Dr. Nguyen previously reported preclinical evidence that suggests that patients with MDS and other myeloid malignancies driven by splicing factor mutations, may benefit from inhibition of the ATR checkpoint kinase. The proposed studies in this award seek to uncover mechanistic insights on the efficacy of ATR inhibition in splicing factor mutant MDS. Dr. Nguyen hopes to provide potential therapeutic marker(s) and a new drug combination as targeted therapy for patients harboring splicing factor mutations.

Biography

Dr. Nguyen earned his PhD from the University of Minnesota and completed his postdoctoral training at Harvard Medical School and the Massachusetts General Hospital Cancer Center. By using a combination of genetic, molecular, and biochemical approaches, he demonstrated that inhibiting regulatory circuitry of R-loops, a three-stranded nucleic acid structure containing an RNA:DNA hybrid and a displaced single-stranded DNA, may be an effective targeted treatment approach for splicing factor mutant myelodysplastic syndromes (MDS) and other myeloid malignancies. He is currently an Assistant Professor at the University of Minnesota Medical School and a member of the Masonic Cancer Center. His laboratory aims to develop new experimental tools to reveal molecular mechanisms underlying R-loop response pathways in different cancers and seeks to apply this knowledge to design the next generation of targeted therapeutic strategies. He is committed to a career at the intersection of basic and translation cancer research, prioritizing discoveries that can be translated for diagnostic and therapeutic purposes.

Acknowledgement of Support

"This award will allow me to represent our underrepresented research community in medicine, and to promote diverse and collaborative team science, with the goal of finding cures for cancers and alleviating health disparities in cancer patients."

AACR Career Development Award to Further Diversity, Equity, and Inclusion in Cancer Research

Funding is provided by Merck & Co., Inc.

The AACR Career Development Award to Further Diversity, Equity, and Inclusion in Cancer Research has been established to support the development of a highly talented cancer researcher from an underrepresented group.

Lia C. Scott, PhD

ASSISTANT PROFESSOR

Georgia State University | Atlanta, Georgia, USA

Structural inequity and breast cancer disparities by subtype

Scientific Statement of Research

Neighborhoods are key determinants of health, and structural features of one's social environment can impact health outcomes, regardless of race. The long-term goal of the Scott lab is to measure the impact of structural racism and other social factors on breast cancer etiology and outcomes and identify potential biological mechanisms that affect tumorigenesis and subsequent outcomes. The objective of this project is to quantify how structural racism and socioeconomic conditions contribute to racial and geospatial disparities in breast cancer incidence and mortality by subtype and other clinical characteristics at the individual and aggregate levels.

Biography

Dr. Scott received her PhD from Georgia State University, where she was an NIH Ruth L. Kirschstein National Research Service Award fellow. She completed her postdoctoral fellowship as a Steven M. Teutsch Prevention Effectiveness fellow at the Centers for Disease Control and Prevention. She is currently an Assistant Professor in the Department of Population Health Sciences at Georgia State University, where her research aims to understand how structural and social factors impact breast cancer etiology, survival and mortality.

Acknowledgement of Support

"I am deeply honored to receive the AACR Career Development Award to Further Diversity, Equity, and Inclusion in Cancer Research, which is supported by Merck. This support is integral to my career as an early-stage investigator. This grant will provide resources to carry out studies to understand structural drivers of breast cancer disparities."

AACR Career Development Award to Further Diversity, Equity, and Inclusion in Clinical Cancer Research

Funding is provided by the AACR Cancer Stimulus Fund, which is supported by AbbVie and AstraZeneca

The AACR Career Development Award to Further Diversity, Equity, and Inclusion in Clinical Cancer Research has been established to support the development and diversity of a highly talented cancer researcher from an underrepresented group in the field of clinical cancer research.

Ana Velázquez Mañana, MD, MSc

CLINICAL INSTRUCTOR

University of California, San Francisco | San Francisco, California, USA

Lung cancer equity through screening for social needs: The LESSON Study

Scientific Statement of Research

Recent years have seen significant progress in the development of novel biomarkers and therapies for non-small cell lung cancer (NSCLC). However, the clinical benefits of this progress have not been equally distributed across all patients, and significant disparities persist in NSCLC care. Social needs (such as financial toxicity, housing, or food insecurity) directly impact patients with cancer, yet little is known of the effect these unmet needs have on cancer care. The objectives of this study are to prospectively evaluate the burden of unmet social needs among patients with NSCLC, identify stakeholder priorities and resources needed to integrate social needs screening into NSCLC care, and develop and pilot test a social need screening intervention prototype.

Biography

Dr. Velázquez Mañana completed her MD at the University of Puerto Rico School of Medicine, Master of Biomedical Science at Mayo Clinic Graduate School, and Internal Medicine residency at Mount Sinai Beth Israel, where she was a Chief Resident. She completed her clinical fellowship in Medical Oncology and postdoctoral fellowship at the National Clinician Scholars Program at UCSF. She is currently an Assistant Professor of Medicine in the UCSF Division of Hematology/Oncology at Zuckerberg San Francisco General, a thoracic oncologist, and Assistant Director of Diversity, Equity, Inclusion, and Accessibility of the UCSF Helen Diller Family Comprehensive Cancer Center.

Acknowledgment of Support

"The AACR Career Development Award to Further Diversity, Equity, and Inclusion in Clinical Cancer Research is critical as I launch my career as an early-stage investigator in lung cancer disparities. I am incredibly grateful for the support this award provides, enabling me to develop my research portfolio and to strengthen collaborations with community partners and co-investigators."

AACR Career Development Award to Further Diversity, Equity, and Inclusion in Clinical Cancer Research

Funding is provided by the AACR Cancer Stimulus Fund, which is supported by AbbVie and AstraZeneca

The AACR Career Development Award to Further Diversity, Equity, and Inclusion in Clinical Cancer Research has been established to support the development and diversity of a highly talented cancer researcher from an underrepresented group in the field of clinical cancer research.

Roberto Vargas, MD

ASSOCIATE STAFF

Cleveland Clinic | Cleveland, Ohio, USA

Evolutionary experimentation and radio-genomics in endometrial cancer

Scientific Statement of Research

Dr. Vargas's research focuses on endometrial cancer (EC), the most common form of gynecologic malignancy. His proposal focuses on tumors associated with the worst clinical outcomes, namely those with TP53 alterations in the "serous-like" biologic cluster and those which have developed resistance to conventional chemotherapies.

Biography

Dr. Vargas was born and raised in Ponce, Puerto Rico. He obtained his BS and MD at the Pennsylvania State University. After medical school, he completed his Obstetrics and Gynecology residency at the Harvard University combined training program at Brigham and Women's Hospital/ Massachusetts General Hospital. He then completed a gynecologic oncology fellowship at The Cleveland Clinic. He has received a K12 award from the Case Comprehensive Cancer Center and currently serves as a board-certified gynecologic oncologist at The Cleveland Clinic.

Acknowledgment of Support

"I am honored to be a recipient of the AACR Career Development Award to Further Diversity, Equity, and Inclusion in Clinical Cancer Research. This award will support our investigative work aimed at improving clinical outcomes for endometrial cancer, an understudied disease with a growing incidence and poorly understood clinical outcome."

AACR Career Development Award to Further Diversity, Equity, and Inclusion in Clinical Cancer Research

Funding is provided by the AACR Cancer Stimulus Fund, which is supported by AbbVie and AstraZeneca

The AACR Career Development Award to Further Diversity, Equity, and Inclusion in Clinical Cancer Research has been established to support the development and diversity of a highly talented cancer researcher from an underrepresented group in the field of clinical cancer research.

Kristen Whitaker, MD, MS

CLINICAL ASSISTANT PROFESSOR OF ONCOLOGY

Medstar Georgetown Cancer Institute at Medstar Washington Hospital Center | Washington, D.C., USA

Understanding cascade testing for hereditary cancer in diverse families

Scientific Statement of Research

Guidelines recommend that once a mutation in a heritable cancer predisposition gene is identified in a family member (i.e., proband), the proband's family members should undergo genetic counseling and testing—a process called cascade testing (CT). The observed CT rate of 30% points to a missed opportunity to translate genetics into cancer prevention. Dr. Whitaker's team will use an innovative analytic methodology popularized in market research called perceptual mapping and vector modeling (PMVM) to identify barriers and facilitators to cascade testing in Black and White patients.

Biography

Dr. Whitaker received her MD from Drexel University College of Medicine. She completed her hematology/oncology fellowship and Master of Science at the University of Chicago. Previously an Assistant Professor in the Department of Clinical Genetics at Fox Chase Cancer Center, Dr. Whitaker is now an Assistant Professor of Oncology at Medstar Georgetown University and a breast medical oncologist at Medstar Washington Hospital Center. Dr. Whitaker's research program is focused on cancer health disparities, especially on disparities related to the use and communication of genetic testing in racial/ethnic minorities.

Acknowledgement Statement:

"I am honored to be selected as the recipient of the 2022 AACR Career Development Award to Further Diversity, Equity, and Inclusion in Clinical Cancer Research. AACR's generous support will be instrumental in furthering my research career while simultaneously furthering the understanding of the critically understudied area of cascade testing."

AACR-MPM Oncology Charitable Foundation Transformative Cancer Research Grant

The AACR-MPM Oncology Charitable Foundation Transformative Cancer Research Grant represents a joint effort to stimulate "high-risk, high-reward" research from an early- to mid-career investigator. This grant mechanism is intended to promote and support creative, paradigm-shifting cancer research that might not be funded through conventional channels. It is expected that this grant will catalyze significant scientific discoveries that will advance our understanding of cancer and have a potentially transformative impact on future clinical practice.

Rushika M. Perera, PhD

ASSOCIATE PROFESSOR

University of California, San Francisco | San Francisco, California, USA

Uncovering metabolic adaptations that drive metastatic organotropism

Scientific Statement of Research

Metastasis is a complex multi-step process, during which, tumor cells must profoundly alter their metabolism to adapt to the differing environments they encounter. Although metastatic seeding of specific organ sites can predict disease severity and patient prognosis, the molecular logic underlying when and to which organ a tumor cell will metastasize remains unclear. Dr. Perera's lab is set to explore the metabolic features within the primary tumor that define which secondary tissue a metastatic cell will ultimately colonize. Using innovative mouse models that enable metabolite profiling of tumor cells and their organelles, Dr. Perera aims to discover master regulators that promote metastasis, and manipulate these drivers to disable the aggressive features of metastatic pancreatic ductal adenocarcinoma.

Biography

Dr. Perera is the recipient of the NIH Director's New Innovator Award, the Damon Runyon-Rachleff Innovation Award, the AACR NextGen Star Award, and the 2021 Gunter Blobel Early Career Award of the American Society for Cell Biology. She is currently an Associate Professor in the School of Medicine at the University of California, San Francisco. Her research program seeks to understand how metabolic organelles such as the lysosome contribute to cellular plasticity and adaptation to stress, with a focus on pancreatic cancer.

Acknowledgement of Support

"The AACR-MPM Transformative Cancer Research Grant provides us with a unique opportunity to pursue a new line of research at the interface of cell biology, metabolism, and cancer biology. I am incredibly grateful to the AACR and MPM for supporting our ideas and research goals."

AACR-MPM Oncology Charitable Foundation Transformative Cancer Research Grant

The AACR-MPM Oncology Charitable Foundation Transformative Cancer Research Grant represents a joint effort to stimulate "high-risk, high-reward" research from an early- to mid-career investigator. This grant mechanism is intended to promote and support creative, paradigm-shifting cancer research that might not be funded through conventional channels. It is expected that this grant will catalyze significant scientific discoveries that will advance our understanding of cancer and have a potentially transformative impact on future clinical practice.

Xiaotian Zhang, PhD

ASSISTANT PROFESSOR

The University of Texas Health Science Center at Houston | Houston, Texas, USA

Dissect the novel function of mutant NPM1 on transcriptional hijacking

Scientific Statement of Research

Mutant transcriptional machineries have been found to form transcriptional condensates. While wild type nucleophosmin1 (NPM1) forms liquid-liquid phase separation (LLPS) at the nucleolus, mutant NPM1 (NPM1c) moves to the cytoplasm and forms smaller puncta dots in the nucleus. Dr. Zhang and his research group uncovered a neomorphic, transcriptional-amplifier function of NPM1c on chromatin that sustains a pathogenic leukemia transcription program. With this AACR grant, they seek to use state-of-the-art comprehensive approaches to address the fundamental question of transcriptional dysregulation in cancer.

Biography

Dr. Zhang obtained his bachelor's degree in Biological Sciences from Fudan University in Shanghai. He obtained his PhD in Molecular Human Genetics at Baylor College of Medicine. After a stint at the Van Andel Institute for a three-year special fellowship, he was appointed as a research investigator in the University of Michigan. He is currently a tenure-track Assistant Professor in the Department of Biochemistry and Molecular Biology at the University of Texas Health Science Center at Houston.

Acknowledgement of Support

"I want to thank AACR and MPM Oncology Charitable Foundation for the Transformative Cancer Research Grant, on behalf of a team that consists of a cancer biologist and biophysicist. This award will greatly enhance the existing collaboration of this exciting team that is focused on the condensate formed by mutant NPM1 in acute myeloid leukemia."

AACR-Novocure Career Development Award for Tumor Treating Fields Research

The AACR-Novocure Career Development Award for Tumor Treating Fields Research represents a joint effort to promote and support an early-career investigator who is conducting innovative research focused on Tumor Treating Fields (TTFields; intermediate frequency, low intensity, alternating electric fields that disrupt cell division in cancer cells). This grant is intended to provide a deeper understanding of the mechanisms of action of this novel anti-cancer treatment modality and to accelerate the development of new treatment strategies to advance therapeutic options for cancer.

Chirag B. Patel, MD, PhD

ASSISTANT PROFESSOR

The University of Texas MD Anderson Cancer Center | Houston, Texas, USA

Increasing glioblastoma cell membrane permeability with TTFields

Scientific Statement of Research

Tumor treating fields (TTFields) have been shown to prolong median overall survival and increase the survival rate of glioblastoma patients, when combined with adjuvant chemotherapy. Yet, the mechanisms by which TTFields potentiate the effects of chemotherapy are not completely understood. TTFields have been shown to permeabilize cancer cell membranes, thereby increasing access of therapies and diagnostic probes into cancer cells. Dr. Patel's lab is set to: identify cell-specific permeabilization frequencies of TTFields; determine the kinetics and durability of the cell membrane permeabilization effect under TTFields exposure; and quantitate the amount of chemotherapy that gains access into TTFields-exposed cancer cells.

Biography

Dr. Patel earned his BS/MSE degrees in Biomedical Engineering from Johns Hopkins University, prior to completing MD/PhD training at The University of Texas MD Anderson Cancer Center (MDACC) UTHealth Graduate School of Biomedical Sciences (GSBS) and McGovern Medical School. After his adult neurology residency at UCLA, he completed training at Stanford University as a postdoctoral fellow in molecular imaging and clinical neuro-oncology. After two years on faculty in the Stanford University neurology and radiology departments, he was recruited to MDACC. He is an Assistant Professor of Neuro-oncology and a McNair Scholar. He is also affiliated with the Neuroscience and Cancer Biology PhD programs at the GSBS.

Acknowledgement of Support

"I am grateful to receive this critical early support in my career development that will also provide an opportunity for me to mentor trainees in the lab. As a result of this award, we can further the understanding of TTFields-induced cancer cell membrane permeabilization, which could result in improved delivery of anti-cancer therapies."

Victoria's Secret Global Fund for Women's Cancers Career Development Award, in Partnership with Pelotonia & AACR

The Victoria's Secret Global Fund for Women's Cancers was established to accelerate innovation in cancer research for women, by women. This groundbreaking initiative will fund innovative research aimed at progressing outcomes for women's cancers and invest in the next generation of women scientists who represent the diverse population they serve. By focusing on prevention, detection, diagnostic, and treatment innovations for women's cancers and advancing outcomes for cancer health disparities, Victoria's Secret aims to improve and save the lives of millions of women around the world.

Valentina Hoyos Velez, MD

ASSISTANT PROFESSOR

Baylor College of Medicine | Houston, Texas, USA

Chimeric antigen-receptor T cell therapy against a novel target for the treatment of triple negative breast cancer

Scientific Statement of Research

Through computational analysis, Dr. Hoyos Velez and her colleagues have identified a novel target expressed on the cell surface of triple negative breast cancer (TNBC). This protein is otherwise only expressed in the ovaries of premenopausal women and no other normal tissues. They have cloned a second-generation CAR highly specific for this target and plan to test the therapeutic potential of T cells expressing this CAR in TNBC cell lines and PDX models. They also aim to understand the inhibitory mechanisms that affect CAR T cells in the breast tumor microenvironment.

Biography

Dr. Hoyos Velez completed her postdoctoral fellowship at the Baylor College of Medicine (BCM), her internal Medicine residency through BCM's Medical Resident Investigator Track, and her medical oncology fellowship at Johns Hopkins University. She is currently assistant professor at BCM's Center for Cell and Gene Therapy. She has engineered/validated CARs targeting a broad spectrum of malignancies and has designed strategies to enhance their efficacy and safety. She treats patients with breast cancer, and her research goal is to develop effective T-cell immunotherapies against novel breast cancer-specific targets, incorporating strategies to overcome the hostile tumor microenvironment.

Acknowledgement of Support

"This award grants me the opportunity to complete the pre-clinical validation for a completely novel T cell therapy approach for the treatment of TNBC, thereby bringing me closer to my goal of making these treatments available to breast cancer patients."

Victoria's Secret Global Fund for Women's Cancers Career Development Award, in Partnership with Pelotonia & AACR

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Martina McDermott, PhD

ADJUNCT ASSISTANT PROFESSOR

University of California, Los Angeles | Los Angeles, California, USA

Preclinical development of a novel anti-CLDN16 ADC for ovarian cancer

Scientific Statement of Research

Gynecological cancers have limited treatment options leading to poor patient outcomes. Dr. McDermott and her lab have discovered that CLDN16 is highly expressed in multiple human malignancies including ovarian and endometrial cancers while having limited expression in normal human tissues, making it an attractive target for the development of an Antibody Drug Conjugate (ADC). Under this grant, an ADC consisting of a humanized anti-CLDN6 monoclonal antibody coupled to MMAE via a cleavable linker will be generated and the *in vivo* efficacy of the ADC will be characterized in multiple preclinical models of cancer. Development of a novel CLDN16-ADC and companion diagnostic represent a large step forward in assessing the potential of CLDN16 as a target in gynecological cancers and is a critical step toward testing the clinical efficacy of a CLDN16-based ADC in patients with CLDN16 positive ovarian and endometrial cancers.

Biography

Dr. McDermott received her PhD from Dublin City University, Ireland and then completed her postdoctoral fellowship at the University of South Carolina. She focused on understanding and overcoming resistance to targeted therapies in breast cancer. She is currently an adjunct assistant professor in the David Geffen Department of Medicine at UCLA where she works to discover and develop novel targeted therapies for cancer.

Acknowledgement of Support

"I am honored to be awarded the 2022 Victoria's Secret Global Fund for Women's Cancers Career Development Award, in Partnership with Pelotonia & AACR. This award will be invaluable for my career development as I study novel therapeutics for ovarian and endometrial cancers."

Victoria's Secret Global Fund for Women's Cancers Career Development Award, in Partnership with Pelotonia & AACR

The Victoria's Secret Global Fund for Women's Cancers was established to accelerate innovation in cancer research for women, by women. This groundbreaking initiative will fund innovative research aimed at progressing outcomes for women's cancers and invest in the next generation of women scientists who represent the diverse population they serve. By focusing on prevention, detection, diagnostic, and treatment innovations for women's cancers and advancing outcomes for cancer health disparities, Victoria's Secret aims to improve and save the lives of millions of women around the world.

Chemtai Mungo, MD, MPH, FACOG

ASSISTANT PROFESSOR, OBSTETRICS AND GYNECOLOGY

University of North Carolina at Chapel Hill | Chapel Hill, North Carolina, USA

Feasibility of adjuvant topical therapy for cervical precancer treatment

Scientific Statement of Research

Women living with HIV (WLWH), the majority of whom reside in Sub-Saharan Africa (SSA), face the greatest burden of cervical cancer. Current prevention efforts are aimed at increasing precancer treatment with thermal ablation. However, up to 30% of WLWH with cervical precancer have disease recurrence following ablation. Building on evidence from US studies on the safety and efficacy of self-administered fluorouracil (5-FU) for cervical precancer treatment, Dr. Mungo will investigate the feasibility of using self-administered 5-FU to improve precancer treatment outcomes for WLWH in Africa. She plans to conduct in-depth interviews and focus groups to investigate whether self-administered therapies like 5-FU are acceptable to women with cervical precancer and their male partners in Africa. Additionally, she will perform a Phase I trial to establish the safety of using topical 5-FU following precancer treatment in this population to inform future efficacy studies.

Biography

Dr. Mungo received a bachelor's degree with Honors from the University of California, Berkeley and completed her medical training at the University of California, San Francisco, where she graduated with distinction in clinical and translational research. She also holds a masters' degree in public health from the Johns Hopkins School of Public Health. She is currently an assistant professor of obstetrics and gynecology at the University of North Carolina at Chapel Hill. Her research is focused on improving access to evidence-based, context-appropriate secondary prevention of cervical cancer in Africa, particularly among women living with HIV.

Acknowledgement of Support

"I am driven to improve the health of marginalized women globally. Global cervical cancer rates represent a dire inequity, with African women already facing the double burden of poverty and patriarchy being most affected. I am honored by the recognition and support provided by this career development award to carry out this vital research, whose goal is to save women's lives from a preventable cancer."

Victoria's Secret Global Fund for Women's Cancers Career Development Award, in Partnership with Pelotonia & AACR

The Victoria's Secret Global Fund for Women's Cancers was established to accelerate innovation in cancer research for women, by women. This groundbreaking initiative will fund innovative research aimed at progressing outcomes for women's cancers and invest in the next generation of women scientists who represent the diverse population they serve. By focusing on prevention, detection, diagnostic, and treatment innovations for women's cancers and advancing outcomes for cancer health disparities, Victoria's Secret aims to improve and save the lives of millions of women around the world.

Mya Roberson, PhD, MSPH

ASSISTANT PROFESSOR, DEPARTMENT OF HEALTH POLICY

Vanderbilt University School of Medicine | Nashville, Tennessee, USA

Centering equity in HBOC genetic testing: a mixed methods study

Scientific Statement of Research

Although barriers to genetic testing among eligible people are increasingly reported, evidence around enabling factors is limited. Dr. Roberson seeks to merge health insurance data with in-depth interviews with Black women with hereditary breast and ovarian cancers (HBOC) to understand population-level treatment received after genetic testing, as well as specific factors that enabled genetic testing. She and her research group aim to:

1. Evaluate the treatment trajectories of breast and ovarian cancer patients receiving germline genetic testing;

2. Characterize specific multi-level facilitating factors that enable the receipt of genetic testing, and

3. Develop educational materials based on the study's findings for participants and advocacy groups.

Biography

Dr. Roberson earned a bachelor's degree in public health from Brown University and master's and doctoral degrees in epidemiology from the UNC Gillings School of Global Public Health. She was a Robert Wood Johnson Foundation Health Policy Research Scholar and a Truman Scholar. She is currently an assistant professor of health policy at the Vanderbilt University School of Medicine. Her research interests are in applying epidemiologic methods to health services research to promote health equity using big datasets for Black people in the Southern United States.

Acknowledgment of Support

"My overarching goal is to improve cancer outcomes for Black women in the United States. It is a tremendous honor to be a recipient of the 2022 Victoria's Secret Global Fund for Women's Cancers Career Development Award, in Partnership with Pelotonia & AACR to support my work towards that goal."

Victoria's Secret Global Fund for Women's Cancers Career Development Award, in Partnership with Pelotonia & AACR

The Victoria's Secret Global Fund for Women's Cancers was established to accelerate innovation in cancer research for women, by women. This groundbreaking initiative will fund innovative research aimed at progressing outcomes for women's cancers and invest in the next generation of women scientists who represent the diverse population they serve. By focusing on prevention, detection, diagnostic, and treatment innovations for women's cancers and advancing outcomes for cancer health disparities, Victoria's Secret aims to improve and save the lives of millions of women around the world.

Shuang Zhang, PhD

ASSISTANT PROFESSOR

The Third Affiliated Hospital at Guangzhou Medical University | Guangzhou, Guangdong Province, China

Identification of epithelial stem cell markers in fallopian tube and HGSC

Scientific Statement of Research

High-grade serous ovarian cancer (HGSC) is the most common and deadly subtype of ovarian epithelial cancer, known for its aggressiveness, high rate of metastasis, development of resistance to current therapy, and near-universal recurrence. A major cause of recurrence is the existence of cancer stem cells (CSC). However, the genetic features and regulatory mechanisms of CSC are still largely unknown. Dr. Zhang plans to examine the molecular features and the differentiation hierarchy of CSC in HGSC to:

1. Define the cellular hierarchy and identify the stem/ progenitor cell properties in the fallopian tube (FT), and

2. Evaluate the potential functions of FT stem/progenitor cells in HGSC initiation and drug resistance.

Biography

Dr. Zhang obtained her doctoral degree in reproductive biology at the Chinese Academy of Science. She pursued her postdoctoral training at the Laura and Isaac Perlmutter Cancer Center of NYU Langone Health. Dr. Zhang is currently a principal investigator at The Third Affiliated Hospital of Guangzhou Medical University and is focused mainly on the pathogenesis of and precision therapy for HGSC, using human genomics-informed, immune-competent 3D organoid models.

Acknowledgment of Support

"Getting this grant has definitely invigorated me—a validation that my focus on high-grade serous ovarian cancer research is meaningful. I'm so honored to have this opportunity to work with Victoria's Secret to improve outcomes of ovarian cancer patients around the world."

2022
INDEPENDENT RESEARCH GRANTS

Friends of the AACR Foundation Early Career Investigator Award

The Friends of the AACR Foundation Early Career Investigator Award is supported by the funds raised at the Party with a Purpose, a cause-driven gala in Philadelphia that supports cancer research. The award for the year 2022 is dedicated to supporting lung cancer research.

Melina E. Marmarelis, MD, MSCE

ASSISTANT PROFESSOR

University of Pennsylvania | Philadelphia, Pennsylvania, USA

Scientific Statement of Research

Dr. Marmarelis' research focuses on early phase clinical trials in lung cancer and mesothelioma, determinants of therapy resistance and sensitivity, and molecular characteristics and testing in non-small cell lung cancer (NSCLC). Her work with real-world data aims to inform future clinical trial design and development of molecular biomarkers for novel therapies.

Biography

Dr. Marmarelis earned her medical degree at Harvard Medical School. She completed her residency at Brigham and Women's Hospital and Hematology/Oncology fellowship at the Hospital of the University of Pennsylvania. She is board certified in internal medicine and medical oncology. She is currently an assistant professor at the University of Pennsylvania and the Medical Director of the Penn Medicine Mesothelioma Program. She specializes in thoracic medical oncology, and is the co-director of the Molecular Tumor Board at the University of Pennsylvania.

Acknowledgement of Support

"I am honored to receive the 2022 Friends of the AACR Foundation Early Career Investigator Award and plan to use the grant for further statistical support to analyze real-world data of patients with NSCLC."

2022
GRANTS SUPPORTING RESEARCHERS IN AFRICA

Beginning Investigator Grant for Catalytic Research (BIG Cat) Initiative

The Beginning Investigator Grant for Catalytic Research (BIG Cat) represents a collaborative effort of African Organisation for Research and Training in Cancer (AORTIC), AACR, and the U.S. National Cancer Institute Center for Global Health (NCI/CGH), with funding support from Takeda Pharmaceuticals through their Center for Health Equity and Patient Affairs. This grant mechanism aims to promote and support an early-career investigator in Africa to establish a successful career path in cancer research, thereby increasing and sustaining a cadre of talented cancer researchers in Africa.

Leonardo Alves deSouza Rios, PhD

POSTDOCTORAL RESEARCHER

University of Cape Town | Cape Town, South Africa

Pathobiology of HIV-associated lymphomas- defining the role of HIV-1 Tat

Scientific Statement of Research

Non-Hodgkin Lymphomas (NHL) are a leading cause of cancer morbidity and mortality in HIV-infected patients, with Diffuse Large B Cell Lymphoma and Burkitt Lymphoma being among the most prevalent subtypes. Growing evidence supports an oncogenic role for HIV-1 and its antigens, particularly the transactivator of transcription (Tat) protein, in lymphomagenesis. Using ChIP-Seq and whole transcriptome analysis (RNA-Seq), Dr. Rios is set to identify Tat-association sites and elucidate their potential role as a transactivator of cellular genes within the B-cell genome. In addition, they plan to determine the impact of Tat on the miRNA-targetome.

Biography

Dr. Rios received his PhD from the University of Cape Town, where he studied the impact of HIV infection on lymphomagenesis. He showed that Tat can promote *c-MYC* and *AICDA* expression in lymphoma cells by interfering with transcriptional and post-transcriptional regulation of these oncogenes. He seeks to expand on these results during his postdoctoral work, aiming to identify the Tat interactome within B cells and to elucidate if these interactions promote lymphoma in HIV-positive patients.

Acknowledgement of Support

"I am honored to receive the Beginning Investigator Grant for Catalytic Research (BIG Cat) award. This grant will enable the expansion of research in the important field of HIV-associated malignancies that affects a large portion of our population. It also provides me with the opportunity and support to start an independent research program."

Beginning Investigator Grant for Catalytic Research (BIG Cat) Initiative

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Adwoa Bemah Boamah Mensah, PhD

SENIOR LECTURER

Kwame Nkrumah University of Science and Technology | Kumasi, Ghana

Development and evaluation of mobile app to promote breast cancer screening

Scientific Statement of Research

Breast cancer screening rates are low among women in low- and-middle-income countries, resulting in stark disparities in breast cancer burden around the world. This critical public health problem is highly relevant to Ghana where breast cancer is the leading cause of cancer deaths and only 4.5% of women have undergone screening. Dr. Bemah Boamah Mensah, along with a multidisciplinary team of independent investigators from KNUST and KATH, are set to use a mixed-methods design to understand barriers to breast cancer screening. They plan to develop a mobile phone-based app that can be used to educate women about screening for breast cancer. The study will be conducted in rural settings in Kumasi, Ghana, where a combination of barriers is likely to be responsible for the low participation in breast cancer screening.

Biography

Dr. Bemah Boamah Mensah has a doctorate in nursing with advanced training in oncology and palliative care. Other than doctoral training in South Africa, all her academic and research training including her fellowship has been in Ghana. She is currently a senior lecturer at Kwame Nkrumah University of Science and Technology (KNUST). She has devoted her career to oncology practice, teaching, and conducting health research in urban and rural districts in northern Ghana.

Acknowledgement of Support

"The 2022 BIG Cat program will expand my capacity for research and training in generating practice and policy-relevant evidence, thereby promoting and supporting me as I seek to establish a successful career path in cancer research in KNUST and Ghana. Ultimately, I will develop interventions that will potentially further the health of women."

Beginning Investigator Grant for Catalytic Research (BIG Cat) Initiative

The Beginning Investigator Grant for Catalytic Research (BIG Cat) represents a collaborative effort of African Organisation for Research and Training in Cancer (AORTIC), AACR, and the U.S. National Cancer Institute Center for Global Health (NCI/CGH), with funding support from Takeda Pharmaceuticals through their Center for Health Equity and Patient Affairs. This grant mechanism aims to promote and support an early-career investigator in Africa to establish a successful career path in cancer research, thereby increasing and sustaining a cadre of talented cancer researchers in Africa.

Abram Kamiza, PhD

POSTDOCTORAL RESEARCHER

University of the Witwatersrand | Johannesburg, South Africa

Evolving genetic factors for cervical cancer in women of African ancestry

Scientific Statement of Research

Almost all genome-wide association studies (GWASs) have been performed in Europeans or Asians despite the high incidence and mortality rates in women of African ancestry. Dr. Kamiza aims to identify genetic factors for cervical cancer in women of African ancestry, specifically from the Johannesburg Cancer Study and AWI-Gen cohort. He is also set to perform a trans-ethnic meta-analysis using publicly available summary data. Using two-sample Mendelian randomization, he also seeks to identify lifestyle factors causally associated with cervical cancer.

Biography

Dr. Kamiza obtained his bachelor's degree in Medical Laboratory Science at the University of Malawi, and his MSc and PhD degrees in Genetic Epidemiology at Taipei Medical University in Taiwan. He is currently a postdoctoral researcher at the Sydney Brenner Institute for Molecular Bioscience, the University of Witwatersrand, Johannesburg, South Africa. His research interests include the environmental, genetic, and epigenetic factors associated with cancer development. Currently, he is working on identifying genetic factors associated with cervical cancer in black South African women using genome-wide approaches.

Acknowledgement of Support

"This grant is important to me, as it will provide a platform to uncover genetic variants associated with cervical cancer in women of African ancestry, develop polygenetic risk scores that may be used for targeted screening and preventative strategies and establish local, regional and international networks for future collaborations."

Beginning Investigator Grant for Catalytic Research (BIG Cat) Initiative

The Beginning Investigator Grant for Catalytic Research (BIG Cat) represents a collaborative effort of African Organisation for Research and Training in Cancer (AORTIC), AACR, and the U.S. National Cancer Institute Center for Global Health (NCI/CGH), with funding support from Takeda Pharmaceuticals through their Center for Health Equity and Patient Affairs. This grant mechanism aims to promote and support an early-career investigator in Africa to establish a successful career path in cancer research, thereby increasing and sustaining a cadre of talented cancer researchers in Africa.

Imran O. Morhason-Bello, MD, PhD

SENIOR LECTURER AND CONSULTANT GYNECOLOGIST

University of Ibadan | Ibadan, Nigeria

Epigenetic biomarkers of anal HPV infection in women with cervical HPV

Scientific Statement of Research

There is emerging evidence that HPV-associated anal precancer and cancer are increasingly reported, particularly among women with history of high-risk HPV (hrHPV) infections, premalignant or cancer of the cervix, who had no history of anal sex. Dr. Morhason-Bello seeks to elucidate the mechanisms behind the detection of high-risk HPV in the anus of women that have high-risk HPV in their cervix, using biological samples collected from the Sexual Behavior and HPV infections in Nigerians in Ibadan (SHINI) study. He is set to identify potential biomarkers (using epigenome-wide association studies and gene-specific DNA methylation PCR) in women that have similar high-risk HPV in the cervix and anus. Such biomarkers could potentially be developed as a screening tool for early detection of precancer and cancer of the anus.

Biography

Dr. Morhason-Bello completed his undergraduate training in Medicine and Surgery and master's degree in Reproductive Biology at the University of Ibadan, Nigeria, a master's degree in public health (Epidemiology) at University of Liverpool, and a doctoral degree (PhD) at the London School of Hygiene and Tropical Medicine, UK. He is a Fellow of West African College of Surgeons and National Postgraduate Medical College in Obstetrics and Gynecology. Dr. Morhason-Bello is currently a Senior Lecturer at the College of Medicine, University of Ibadan and Honorary Consultant at University College Hospital, Ibadan. He is focused on understanding the behavioral, lifestyle and genetic components of human papillomavirus infections, associated precancers and cancers in different populations.

Acknowledgement of Support

"The BIG Cat grant is hopefully going to catalyze my aspiration as a clinician scientist who continuously attracts competitive grants and engages in cutting edge multidisciplinary team research using novel technologies to answer critical public health research questions on HPV infections and associated cancers and other cancers in Africa."

2023
FELLOWSHIPS

AACR Fellowship to Further Diversity, Equity, and Inclusion in Cancer Research

The AACR Fellowship to Further Diversity, Equity, and Inclusion in Cancer Research has been established to support the development of a highly talented cancer researcher from an underrepresented group.

Madelyn Espinosa-Cotton, PhD

POSTDOCTORAL RESEARCH ASSOCIATE

Memorial Sloan Kettering Cancer Center | New York, New York, USA

Bispecific antibody-based immunotherapy and radioimmunotherapy for desmoplastic small round cell tumors

Scientific Statement of Research

Desmoplastic small round cell tumor (DSRCT) is an aggressive sarcoma with a long-term survival rate under 30%. Despite intensive treatment with chemotherapy, whole-abdomen radiation, and surgery, the majority of patients relapse. Immunotherapy (IT) and radioimmunotherapy (RIT) have the potential to cure metastatic disease. Dr. Espinosa-Cotton is set to test bispecific antibody (BsAb)-based IT and RIT directed against proven targets B7-H3 and HER2, and the novel target CD24. In Aim 1, T cell-engaging BsAbs (T-BsAbs) against these targets will be tested in an *in vivo* model of intraperitoneal DSRCT. In Aim 2, Dr. Espinosa-Cotton is planning to use her laboratory's recently described self-assembling, disassembling (SADA) platform for pre-targeted RIT. In Aim 3, single nuclei RNA-seq and multiplexed ion beam imaging (MIBI) will be used to characterize the tumor microenvironment of DSRCT.

Biography

Dr. Espinosa-Cotton earned a PhD in Free Radical and Radiation Biology from the University of Iowa in 2018 where she conducted research on interleukin-1 signaling in head and neck cancer. Following completion of her PhD work, she accepted a postdoctoral fellowship in the Department of Pediatrics at Memorial Sloan Kettering Cancer Center. She currently works as a Research Associate, developing bispecific antibody-based immunotherapy and radioimmunotherapy for desmoplastic small round cell tumor.

Acknowledgment of Support

"This fellowship will allow me to continue my research for an additional 2 years, during which I hope to bring one of my antibodies to human trials. This additional time will also allow me to publish several in progress manuscripts, significantly improving my prospects on the academic job market."

AACR-Bristol Myers Squibb Immuno-oncology Research Fellowship

The AACR-Bristol Myers Squibb Immuno-oncology Research Fellowship represents a joint effort to encourage and support a postdoctoral or clinical research fellow to conduct immuno-oncology research and to establish a successful career path in this field.

Wenzhi Song, PhD

POSTDOCTORAL ASSOCIATE

The Rockefeller University | New York, New York, USA

Dissecting neuroimmune: cancer crosstalk in the tumor microenvironment

Scientific Statement of Research

Squamous cell carcinomas (SCCs) are among the most common malignancies and can occur in most stratified epithelial tissues including the skin. SCCs can metastasize and often recur following treatments, a feature conferred by a population of cancer stem cells. Risks for SCC invasion and metastasis rise precipitously in individuals with impaired immune function, highlighting the role of the immune system in safeguarding against malignancy. How immune cells interact with cancer stem cells to suppress SCC invasion and metastasis is poorly understood but could be key for future cancer therapeutics. Of equal importance are nerve fibers innervating SCCs and many other types of cancers. Tumor innervation is correlated with poor prognosis and has the potential to modulate tumor and immune cell activities. Dr. Song will interrogate the communication between cancer stem cells, immune populations, and sensory nerves in tumors to understand how these interactions may shape cancer progression.

Biography

Dr. Song graduated summa cum laude from Bryn Mawr College and received her PhD in Immunobiology from Yale University. During her graduate training, she studied how interactions between T and B lymphocytes shape protective and pathological immunity. Dr. Song is conducting her postdoctoral work at The Rockefeller University where she will study the cellular crosstalk between cancer stem cells, immune cells, and the peripheral nervous system.

Acknowledgment of Support

"I am honored and grateful to be the recipient of the 2023 AACR-Bristol Myers Squibb Immuno-oncology Research Fellowship. This invaluable opportunity will allow me to improve our collective understanding of the important and intricate cellular communication network underlying cancer progression."

AACR-D-Team Sarcoma Research Fellowship

The AACR-D-Team Sarcoma Research Fellowship represents a joint effort to encourage and support a postdoctoral or clinical research fellow to conduct translational or clinical sarcoma research and to establish a successful career path in this field.

Rachel Offenbacher, MD

PEDIATRIC HEMATOLOGY/ONCOLOGY FELLOW

Albert Einstein College of Medicine | Bronx, New York, USA

Targeting the tumor microenvironment to treat metastatic Ewing sarcoma

Scientific Statement of Research

Ewing sarcoma is the second most common primary malignant bone tumor in adolescents and young adults. Although metastasis was previously believed to be due to the aggressiveness of the tumor, the tumor microenvironment has been shown to share an equally important role. Dr. Offenbacher's collaborators have discovered a 3-cell assembly consisting of an invasive tumor cell, Tie2-high expressing macrophage and endothelial cell. This 3-cell assembly, called the tumor microenvironment of metastasis (TMEM,) serves as a modality in which cancer cells enter the bloodstream. Dr. Offenbacher has successfully demonstrated TMEM doorways in both their laboratory's clinically relevant mouse model, as well as in Ewing sarcoma patient samples. In this project she will evaluate the effect of chemotherapy on TMEM doorways in mice with Ewing sarcoma and then evaluate the effect of Rebastinib, a Tie2 kinase inhibitor and Nirogecestat, a Notch signaling inhibitor on Ewing sarcoma metastasis.

Biography

Dr. Offenbacher received her MD from SUNY Downstate College of Medicine and completed her pediatrics residency at the Children's Hospital at Montefiore (CHAM). She is currently a pediatric hematology/oncology fellow at CHAM/Albert Einstein College of Medicine where she will continue as an Instructor. Her research focuses on the tumor microenvironment in Ewing sarcoma, how chemotherapy may inadvertently increase metastasis and utilizing various compounds to prevent this.

Acknowledgement of Support

"The AACR-D-Team Sarcoma Research Fellowship will provide exceptional support and training to continue my work developing novel therapeutic strategies in Ewing sarcoma as I continue my path toward becoming an independent translational scientist in the field of pediatric sarcoma."

AACR-D-Team Sarcoma Research Fellowship

The AACR-D-Team Sarcoma Research Fellowship represents a joint effort to encourage and support a postdoctoral or clinical research fellow to conduct translational or clinical sarcoma research and to establish a successful career path in this field.

Chen Khuan Wong, PhD

RESEARCH ASSOCIATE

Memorial Sloan Kettering Cancer Center | New York, New York, USA
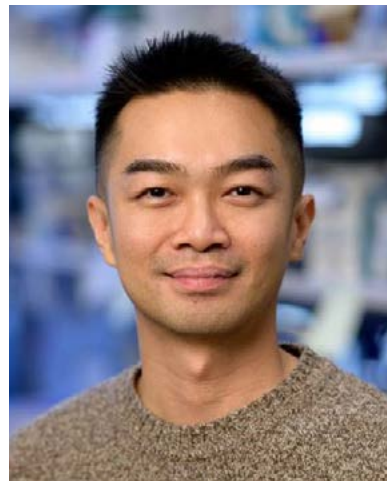
Dissecting MYC-mediated tumorigenesis and plasticity in angiosarcoma

Scientific Statement of Research

Angiosarcomas are rare cancers derived from endothelial cells and may arise from any part of the body. Clinically, angiosarcomas are aggressive with a poor prognosis, and a 5-year survival rate of <30%. In radiation-associated angiosarcoma (RAAS), the MYC gene is amplified and overexpressed in essentially all cases. MYC is a widely studied transcription factor that is critical for stemness endogenously. It is oncogenic when overexpressed in several cancer contexts. However, progress in understanding tumorigenesis in RAAS has been limited by the lack of relevant preclinical models. To address this, Dr. Wong has generated the first genetically engineered mouse model of angiosarcoma where *Myc* overexpression can be turned on specifically in endothelial cells. The mice develop pulmonary angiosarcoma which progresses from low-grade to high-grade to dedifferentiated with loss of endothelial lineage. These data indicate that in mouse pulmonary endothelial cells, *Myc* overexpression alone can initiate growth and mediate progression and lineage plasticity.

Biography

Dr. Wong acquired his PhD in Genetics and Genomics at Boston University School of Medicine. He is currently a Research Associate in the Human Oncology and Pathogenesis Program at Memorial Sloan Kettering Cancer Center. He is interested in modeling malignant diseases, characterizing aberrantly activated transcriptional factors, and screening for therapeutics to target oncogenic dependence. His long-term career goal is to become an independent scientific investigator in academia in the field of translational cancer research to improve personalized cancer medicine.

Acknowledgment of Support

"I believe this award is an excellent opportunity for me to gain advanced training in technical and soft skills from my mentor and collaborators to ensure a smooth transition towards independence. Furthermore, this award will allow me to complete the studies proposed and gather preliminary data for higher-level grant applications."

AACR-Incyte Immuno-oncology Research Fellowship

The AACR-Incyte Immuno-oncology Research Fellowship represents a joint effort to encourage and support a postdoctoral or clinical research fellow to conduct immuno-oncology research and to establish a successful career path in this field.

Mingzeng Zhang, MD, PhD

RESEARCH FELLOW

Dana-Farber Cancer Institute | Boston, Massachusetts, USA

Quantitative immune profiling of follicular lymphoma for precision therapy

Scientific Statement of Research

Follicular lymphoma (FL) is the most common indolent lymphoma. Poor responses to chemotherapy affect up to one fifth of patients. Bispecific T cell-engaging antibodies targeting CD3 and CD20 (CD3/CD20 BsAb) represent an emerging class of therapies with promising clinical data but significant potential for immune-related adverse events (irAEs). Leveraging well-annotated biospecimens from two clinical trials of frontline CD3/CD20 BsAb for FL, Dr. Zhang will apply her expertise in immunology and quantitative image analysis to define and validate tractable predictive immune biomarkers of clinical response and irAEs. The anticipated data will guide patient selection and dosing strategies to maximize the therapeutic window of BsAbs for individuals with FL as well as those with related disorders.

Biography

Dr. Zhang received her MD in Medicine at Hebei Medical University in Shijiazhuang, China. Following clinical training, Dr. Zhang oversaw the clinical treatment of patients with hematologic malignancies at Hebei Tumor Hospital. She performed doctoral work in basic immunology at the First Internal Department Laboratory in the School of Medicine, University of Occupational & Environmental Health, Japan. These complementary experiences imparted deep expertise and a passion for translational immuno-oncology. She now conducts postdoctoral research to define immune-inclusive predictive biomarkers for individuals with lymphoma at Harvard Medical School.

Acknowledgment of Support

"I am humbled and honored to receive the 2023 AACR-Incyte Immuno-oncology Research Fellowship. This award will support my ongoing efforts to leverage immunologic tools to advance precision therapeutic strategies for patients with lymphoma. It will also prepare me for a transition from mentored training to independent investigator."

AACR-John and Elizabeth Leonard Family Foundation Basic Cancer Research Fellowship

The AACR-John and Elizabeth Leonard Family Foundation Basic Cancer Research Fellowship encourages and supports a postdoctoral or clinical research fellow to conduct basic cancer research and establish a successful career path in this field.

Ana Rita Nobre, PhD

RESEARCH SCHOLAR

Memorial Sloan Kettering Cancer Center | New York, New York, USA

Unveiling the re-programming of choroid plexus and leptomeningeal metastasis

Scientific Statement of Research

Leptomeningeal metastasis (LM), or spread of cancer cells into the tissues surrounding the brain and spinal cord, is an increasingly common, fatal complication of cancer. Despite aggressive treatment, neurologic deficits accumulate rapidly, and patients generally succumb to LM within months. Under homeostatic conditions, choroid plexus (ChP), highly vascularized structures within the brain ventricles, restrict the entry of macromolecules and cells into the leptomeninges; however, select cancer cells can cross this barrier and grow within this space suggesting that interactions between cancer and ChP niche cells alter both the niche and the cancer cells, ultimately supporting LM. The use of clinically-annotated human cancer samples and mouse models of LM, and the integration of transcriptomics and proteomics will enable Dr. Nobre to identify novel therapeutic targets in both LM cells and their microenvironment prior to the accumulation of neurologic deficits, enabling both prevention and treatment of LM.

Biography

Dr. Nobre performed her PhD studies at Mount Sinai Hospital, New York, in breast cancer early dissemination and cancer dormancy. She is currently a postdoctoral fellow at Memorial Sloan Kettering, where she is integrating the use of human samples, mouse models, and cutting-edge techniques to uncover the crosstalk between the microenvironment and metastatic cancer cells in the leptomeningeal space.

Acknowledgment of Support

"I am honored and grateful to have been selected to receive the AACR-John and Elizabeth Leonard Family Foundation Basic Cancer Research Fellowship. This invaluable support will provide me with an opportunity to better understand and address a devastating disease, and it is a great recognition in my scientific career."

AACR-QuadW Foundation Sarcoma Research Fellowship, in Memory of Willie Tichenor

The AACR-QuadW Foundation Sarcoma Research Fellowship, in Memory of Willie Tichenor represents a joint effort to encourage and support a postdoctoral or clinical research fellow to conduct translational or clinical sarcoma research and to establish a successful career path in this field.

Tiffany C. Eng, PhD

POSTDOCTORAL FELLOW

Massachusetts General Hospital | Boston, Massachusetts, USA

Identifying drivers of elevated clonality and relapse in rhabdomyosarcoma

Scientific Statement of Research

Rhabdomyosarcoma (RMS) is the most common soft-tissue sarcoma of childhood. It is distinguished by tumor cells that are molecularly and morphologically similar to undifferentiated skeletal muscle. RMS comprises two major subtypes: fusion-positive RMS containing PAX3/7-FOXO1 translocations and fusion-negative (FN-)RMS characterized by RAS pathway activation. Irrespective of subtype, RMS requires aggressive multimodal treatment, including chemotherapy, radiation, and/or resection, which causes significant treatment-related morbidity. Moreover, survival rates of patients with refractory or relapsed disease drop to <20%, with little improvement seen in treatment options in the past four decades. There is thus a critical need to identify drivers of RMS progression and stem cell self-renewal to uncover new treatment options for preventing relapse. The focus of this study will be to characterize the mechanisms by which specific transcription factors regulate human FN-RMS growth and cancer stem cell function. This may lead to novel therapeutic targets to prevent relapse in RMS patients.

Biography

Dr. Eng completed her PhD in the Department of Molecular Medicine and Pathology at the University of Auckland, New Zealand. Her work focused on elucidating the developmental origins of lymphatic vessels, understanding the mechanisms regulating lymphangiogenesis, and developing novel anti-lymphangiogenic therapies to prevent lymphatic spread of tumor cells. Dr. Eng is currently continuing her training in cancer biology as a postdoctoral fellow at Massachusetts General Hospital.

Acknowledgment of Support

"My goal is to become an independent pediatric cancer biologist who specializes in uncovering novel therapeutic targets for curing children with sarcoma. The support gained from this fellowship is an important and invaluable contribution to my ongoing development as a researcher and assists with my transition into an independent investigator."

2023

CAREER DEVELOPMENT AWARDS

Lustgarten Foundation-AACR Career Development Award for Pancreatic Cancer Research, in Honor of John Robert Lewis

The Lustgarten Foundation-AACR Career Development Award for Pancreatic Cancer Research, in Honor of John Robert Lewis, has been established to honor the life and legacy of Representative Lewis, who worked tirelessly to advance the civil rights of all Americans, even while battling pancreatic cancer. The intent of this program is to support the development and diversity of talent working in pancreatic cancer research. Eligibility is limited to members of racial or ethnic groups that have been shown to be underrepresented in the cancer related sciences workforce.

Christina M. Ferrer, PhD

ASSISTANT PROFESSOR

University of Maryland | Baltimore, Maryland, USA

Metastasis-initiating cells in pancreatic cancer

Scientific Statement of Research

The primary cause of cancer-related mortality is distant metastasis, particularly in pancreatic cancer patients, where the high incidence of early dissemination results in poor patient outcomes. Dr. Ferrer and her colleagues' studies have recently shown that glutathione S-transferase, Gstt1, is required for dissemination and metastasis, and is retained within a latent subset of existing metastases. This subset is endowed with metastasis-initiating potential and preserves an expression signature characteristic of disseminated tumor cells, that is associated with poor prognosis in PDA. The knowledge on how this subset of cells remains latent while retaining metastasis-initiating capacity is still limited. Dr. Ferrer is set to focus on investigating cell-intrinsic as well as microenvironmental mechanisms governing metastasis-initiating cells (MICs) in pancreatic cancer. Using a combination of orthotopic lineage-tracing models, gene expression profiling and genetic approaches, she seeks to uncover insights into MIC ecosystems during each stage of the metastatic cascade and lay the foundation for the development of novel combination therapy regimens to target MICs in pancreatic cancer.

Biography

Dr. Ferrer made significant contributions to understanding how oncogenic alterations drive metabolic reprogramming in cancer during her doctoral work. She then continued her training as a postdoctoral fellow at Massachusetts General Hospital where she studied cancer metastasis in the context of identifying gene expression changes that are unique to existing metastatic tumors, particularly in pancreatic cancer. She is currently a faculty member of the Department of Pharmacology and the Greenbaum Comprehensive Cancer Center at the University of Maryland, Baltimore, where her lab focuses on identifying characteristics of metastasis-initiating cells.

Acknowledgment of Support

"I am extremely honored to receive the 2023 Lustgarten Foundation-AACR Career Development Award for Pancreatic Cancer Research, in Honor of John R. Lewis. The award will allow my group to explore critical questions regarding how pancreatic cancer cells metastasize and survive, while also providing a supportive environment for underrepresented minority trainees trainees."

Lustgarten Foundation-AACR Career Development Award for Pancreatic Cancer Research, in Honor of Ruth Bader Ginsburg

The Lustgarten Foundation-AACR Career Development Award for Pancreatic Cancer Research, in Honor of Ruth Bader Ginsburg, has been established to honor the life and legacy of Justice Ginsburg, who worked tirelessly to advance gender equality, even while battling pancreatic cancer. The intent of this program is to support the development and diversity of talent working in pancreatic cancer research. This Award represents a joint effort to encourage and support a female early career scientist with a strong scientific record and relevant experience in pancreatic cancer research.

Ashley Kiemen, PhD

ASSISTANT PROFESSOR

Johns Hopkins University | Baltimore, Maryland, USA

3D morphological analysis of human pancreatic cancer liver metastases

Scientific Statement of Research

Pancreatic ductal adenocarcinoma (PDAC) is often diagnosed after distant metastases are present. Recent anatomical studies use 3D mapping approaches to study invasion patterns of localized pancreatic cancer. Conversely, study of 3D PDAC morphology at distant sites is lacking. Dr. Kiemen is set to profile 3D anatomical, immune, and transcriptomic signatures of pancreatic cancer liver metastases. She plans to 3D reconstruct liver samples using CODA, a technique for quantifying complex microanatomy in large tissues containing billions of cells. CODA relies on serial sectioning and novel visualization and quantification software. CODA labels microanatomical components of the liver using hematoxylin and eosin staining and integrates techniques such as immunohistochemistry and spatial transcriptomics. Dr. Kiemen plans to compare untreated and neoadjuvant chemotherapy treated human liver, utilizing spatial transcriptomics to profile regions of interest.

Biography

Dr. Kiemen received her bachelor's degree in 2016 from the University of Michigan Ann Arbor, majoring in Chemical Engineering. She received her master's degree in 2017 from the London School of Economics and Political Science, majoring in Philosophy. She received her doctoral degree in 2021 from the Johns Hopkins University, in the Department of Chemical & Biomolecular Engineering. She is currently an Assistant Professor of Pathology and Oncology at the Johns Hopkins University School of Medicine. Her research focuses on use of image processing and deep learning algorithms for study of pancreatic cancer.

Acknowledgment of Support

"I am honored to be a recipient of a 2023 Lustgarten Foundation-AACR Career Development Award for a proposal studying pancreatic cancer morphology in liver metastases using 3D mapping tools. It is an honor to receive this award in the name of such an iconic and inspiring figure in our society."

2023
INDEPENDENT RESEARCH GRANTS

Lustgarten Foundation-Swim Across America-AACR Pancreatic Cancer Early Detection Research Grant

The Lustgarten Foundation-Swim Across America-AACR Pancreatic Cancer Early Detection Research Grant represents a joint effort to support innovative research to advance efforts towards the early detection and interception of pancreatic cancer.

Ajay Goel, PhD, AGAF

PROFESSOR AND CHAIR, DEPARTMENT OF MOLECULAR DIAGNOSTICS AND EXPERIMENTAL THERAPEUTICS

Beckman Research Institute of City of Hope | Duarte, California, USA

A circulating epigenetic signature for early detection of pancreatic cancer

Scientific Statement of Research

Due to the lack of adequate diagnostic modalities (e.g., serum CA19-9 and imaging tools), pancreatic ductal adenocarcinoma (PDAC) is often diagnosed at a late stage. Circulating cell-free DNA (cfDNA) contains epigenetic information, including 5-methylcytosine (5mC) and 5-hydroxymethylcytosine (5hmC). They are potentially powerful biomarkers of cancer development because they are chemically stable, abundant in the genome, and display aberrant epigenetic alterations that occur earlier in cancer development and in cancer-specific ways. Dr. Goel is set to perform LABS-seq and nano-hmC-Seal to probe 5mC and 5hmC epigenetic alterations in cfDNA, respectively, among patients with early-stage (stage I/II) PDAC and non-disease controls. Using advanced computational analyses of genome-wide methylation sequencing data, he seeks to identify specific diagnostic 5mC/5hmC biomarkers from circulating cfDNA for the early detection of PDAC.

Biography

Dr. Goel received his PhD in biophysics from Punjab University, completed his postgraduate work at the University of California San Diego, and went on to a 16-year career at Baylor Scott & White Research Institute in Texas. He joined City of Hope in June 2019 as founding chair of the Department of Molecular Diagnostics and Experimental Therapeutics and founding director of Biotech Innovations at Beckman Research Institute.

Acknowledgement of Support

"This grant will allow our research group to move forward with an early detection strategy that has potential for a major impact on patients. My hope is that a PCR test based on this research will someday become a part of regular physicals, detecting PDAC years earlier and saving lives."

Victoria's Secret Global Fund for Women's Cancers Rising Innovator Research Grant, in Partnership with Pelotonia & AACR

Victoria's Secret Global Fund for Women's Cancers Rising Innovator Research Grant, in Partnership with Pelotonia & AACR supports a female midcareer scientist conducting innovative research in breast and gynecologic cancers and globally fosters innovation in the understanding, prevention, interception, early detection, diagnosis, and treatment with the goal of eliminating cancer health disparities and improving patient outcomes.

Priscilla K. Brastianos, MD

DIRECTOR, CENTRAL NERVOUS SYSTEM METASTASIS CENTER

The Mass General Cancer Center | Boston, Massachusetts, USA

Identification of drivers of brain metastasis from breast cancer

Scientific Statement of Research

Central nervous system metastases occur frequently in breast cancer, with few effective systemic therapy options. However, understanding of the molecular underpinnings driving breast cancer metastasis to the brain, remains limited. There is an urgent need for more focused efforts to study the biology of brain metastases, develop pre-clinical models that recapitulate the metastatic process, and identify improved therapeutics for this disease. Dr. Brastianos aims to comprehensively characterize the constellation of epigenetic and genetic alterations associated with brain metastases from breast cancer and to functionally characterize the role of these alterations in the metastatic process in *in vivo* models of metastasis.

Biography

Originally from Vancouver, BC, Dr. Brastianos completed her medical school and internal medicine residency at Johns Hopkins School of Medicine and fellowship training in hematology/oncology and neuro-oncology at the Dana-Farber Cancer Institute and Massachusetts General Hospital/Harvard Medical School. She is now director of the Central Nervous System Metastasis Center at Massachusetts General Hospital and associate professor of medicine at Harvard Medical School. Her research focuses on understanding the genomic mechanisms that drive primary and metastatic brain tumors. She has led studies which have identified novel therapeutic targets in primary and metastatic brain tumors, and has translated her scientific findings to national multicenter trials. She also leads a multidisciplinary central nervous system metastasis clinic at Massachusetts General Hospital/Harvard Medical School.

Acknowledgement of Support

"I am very grateful for this Victoria's Secret Global Fund for Women's Cancers Rising Innovator Research Grant, in Partnership with Pelotonia & AACR. Brain metastases remain an unmet need in oncology. With funding from this grant, we hope to make great strides at identifying better therapies for patients with this devastating disease."

Victoria's Secret Global Fund for Women's Cancers Rising Innovator Research Grant, in Partnership with Pelotonia & AACR

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Kemi M. Doll, MD, MCSR

ASSOCIATE PROFESSOR

University of Washington | Seattle, Washington, USA

Dissemination tool of biopsy-first early detection of EC: Guides by US

Scientific Statement of Research

Black individuals face multi-level barriers to early diagnosis of endometrial cancer (EC). Current clinical guidelines that support using transvaginal ultrasound (TVUS) to screen individuals with postmenopausal bleeding underperform for Black women, who have markedly higher EC mortality. As biopsy-first pathways emerge as a preferred approach, public communication efforts are critical to avoid widening inequity. Dr. Doll's team will execute a mixed-methods, community-engaged project via the following specific aims:

1. Quantify patient-level risk factors beyond racial identity which most strongly associated with non-diagnostic TVUS within a cohort of nearly 3500 symptomatic Black people;

2. Identify the barriers and facilitators to acceptance of a biopsy-first early detection strategy via focus groups with Black women and gender expansive individuals; and use these data to;

3. Develop and test a culturally tailored public communication toolkit of the novel, but more invasive, biopsy-first approach using community-defined language, priorities, and engagement methods.

Biography

Dr. Doll completed a bachelor's degree in biomedical engineering from Duke University, attended medical school at Columbia University, and completed OB-GYN residency training at Northwestern Memorial Hospital. Her subspecialty training in gynecologic oncology was completed at University of North Carolina Hospitals, and she has a master's degree in clinical research from the University of North Carolina School of Public Health where she also completed a postdoctoral fellowship in cancer care quality in the Department of Health Policy and Management. She is a gynecologic oncologist and health services researcher, and is currently an Associate Professor in the Department of Obstetrics and Gynecology at the University of Washington School of Medicine.

Acknowledgement of Support

"I am grateful and honored to receive a Victoria's Secret Global Fund for Women's Cancers Rising Innovator Research Grant. This award represents an important recognition of the value of health equity research and the urgent challenge of leveraging all we can to improve the diagnosis, treatment, and survival of Black individuals affected by endometrial cancer."

Victoria's Secret Global Fund for Women's Cancers Rising Innovator Research Grant, in Partnership with Pelotonia & AACR

Victoria's Secret Global Fund for Women's Cancers Rising Innovator Research Grant, in Partnership with Pelotonia & AACR supports a female midcareer scientist conducting innovative research in breast and gynecologic cancers and globally fosters innovation in the understanding, prevention, interception, early detection, diagnosis, and treatment with the goal of eliminating cancer health disparities and improving patient outcomes.

Marleen Kok, MD, PhD

MEDICAL ONCOLOGIST AND SENIOR GROUP LEADER

The Netherlands Cancer Institute | Amsterdam, Netherlands

Single cell analyses of immunotherapy responses in TNBC

Scientific Statement of Research

Triple negative breast cancer (TNBC) is a difficult to treat breast cancer subtype. Although the introduction of anti-PD1 for treatment of TNBC is an enormous step forward, only a small subgroup of patients benefits from immunotherapy. Knowledge on how anti-PD1 remodels the tumor microenvironment (TME) in TNBC, which will enable biomarker discovery, is very limited. Using single cell profiling by combining single cell RNA sequencing and complex tissue imaging (multiplexed ion beam imaging), Dr. Kok and her team will determine which immune cells play a crucial role during anti-PD1 response in TNBC patients, either as effector cells or immunosuppressive players, as well as their cell state and exact location relative to the breast cancer cells.

Biography

Dr. Kok obtained her PhD from the Netherlands Cancer Institute (NKI) in 2009 in the field of biomarkers for treatment resistance in breast cancer. Her thesis was awarded best thesis in the field of medicine. She is a medical oncologist and associate professor in translational cancer research at NKI, where she leads the breast cancer immunotherapy program and a translational breast cancer immunology laboratory. She is working at the forefront of innovative immunotherapy trials. The mission of her clinical and translational team is to improve immunomodulatory treatments for breast cancer patients.

Acknowledgement of Support

"The Victoria's Secret Global Fund for Women's Cancers Rising Innovator Grant allows us to investigate cancer-immune interactions in-depth in patients with TNBC in the context of anti-PD1 treatment. This opportunity can form the foundation for both putative predictive tests as well as create novel avenues of immunomodulatory treatment for those patients with TNBC with poor disease outcome."

Victoria's Secret Global Fund for Women's Cancers Rising Innovator Research Grant, in Partnership with Pelotonia & AACR

Victoria's Secret Global Fund for Women's Cancers Rising Innovator Research Grant, in Partnership with Pelotonia & AACR supports a female midcareer scientist conducting innovative research in breast and gynecologic cancers and globally fosters innovation in the understanding, prevention, interception, early detection, diagnosis, and treatment with the goal of eliminating cancer health disparities and improving patient outcomes.
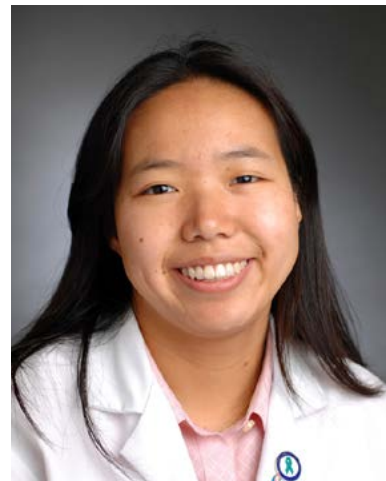
Joyce Liu, MD

ASSOCIATE CHIEF AND DIRECTOR OF CLINICAL RESEARCH, DIVISION OF GYNECOLOGIC ONCOLOGY

Dana-Farber Cancer Institute | Boston, Massachusetts, USA

Targeting Wee1 and ATR in high-grade/p53-mutated endometrial cancer

Scientific Statement of Research

Dr. Liu and her team will investigate whether targeting replication stress with combined WEE1 and ATR inhibition will have synergistic activity in high-grade endometrial cancer. These cancers are characterized by molecular alterations suggesting high intrinsic replication stress, including alterations in TP53, CCNE1, MYC, and ERBB2. The effect of WEE1 inhibitors and ATR inhibitors on replication stress biomarkers, including pRPA2-S33 and γH2AX, and replication fork dynamics, including replication fork speed and inter-origin distance, will be evaluated in cell lines and patient-derived organoid (PDO) models of high-grade endometrial cancer. The anti-tumor effect of combined WEE1 and ATR inhibition will be further evaluated in cell lines and PDOs utilizing ATP- and imaging-based assays of cell viability. Additionally, evaluation of anti-tumor activity of WEE1 and ATR inhibition will be performed in select patient-derived xenografts. The findings from these studies will provide critical information that could identify a novel active targeted therapy for high-grade endometrial cancers.

Biography

Dr. Liu received her MD from Harvard Medical School and her MPH from the Harvard School of Public Health. She completed internal medicine residency at Brigham and Women's Hospital and medical oncology fellowship at Dana-Farber Cancer Institute (DFCI). She is currently an associate professor of medicine at DFCI and Harvard Medical School, where she is a gynecologic medical oncologist. Dr. Liu is also the associate chief and director of clinical research for gynecologic oncology at DFCI and the associate clinical research officer for DFCI. Her research focuses on identifying and validating novel therapies for gynecologic cancers

Acknowledgement of Support

"I am extremely humbled and grateful to be a recipient of this grant. With this support, I am excited to be able to advance our research into how combining these two replication stress-targeting agents could bring an urgently needed new therapy to our patients with high grade endometrial cancer."

Victoria's Secret Global Fund for Women's Cancers Rising Innovator Research Grant, in Partnership with Pelotonia & AACR

Victoria's Secret Global Fund for Women's Cancers Rising Innovator Research Grant, in Partnership with Pelotonia & AACR supports a female midcareer scientist conducting innovative research in breast and gynecologic cancers and globally fosters innovation in the understanding, prevention, interception, early detection, diagnosis, and treatment with the goal of eliminating cancer health disparities and improving patient outcomes.

Sandra S. McAllister, PhD

ASSOCIATE PROFESSOR

The Brigham and Women's Hospital | Boston, Massachusetts, USA

Eliminating age-and race-based disparities in breast cancer outcomes

Scientific Statement of Research

Black women and older women of all races are disproportionately dying of breast cancer in the United States. Despite the critical role of immune fitness in cancer control and therapeutic response, immune health evaluation is not part of clinical risk assessment. It is therefore likely that there are missing opportunities for intervention that could eliminate outcome disparities. Dr. McAllister and her team will test a novel hypothesis that declining immune fitness, which would otherwise limit breast cancer progression, contributes to worse outcomes for both older women and Black women. For Black women in particular, they suggest that constant exposure to race-related stresses causes pre-mature immune aging. The objective of her project is to leverage multiparametric immunoprofiling and pre-clinical modeling to define age- and race-specific immune signatures and identify therapeutic strategies for improving anti-tumor immunity.

Biography

Dr. McAllister received her undergraduate degree from the University of Michigan and PhD from Washington University School of Medicine. Her pioneering postdoctoral work at the Whitehead Institute opened a new area of research into systemic regulation of breast cancer progression. She is currently associate professor of medicine at Harvard Medical School and in the Hematology Division of Brigham & Women's Hospital where her group studies the role of immune fitness in breast cancer control and response to therapy.

Acknowledgement of Support

"My team and I are extremely grateful to the Victoria's Secret Global Fund for Women's Cancers, in Partnership with Pelotonia and AACR. The support will enable us to gain critical insights into immune-related determinants that underlie the current disparities in breast cancer outcomes for both older women and Black women."

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