AACR RESEARCH GRANT RECIPIENTS 2023–2024

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FINDING CURES TOGETHER®

CONGRATULATIONS
2023-2024 GRANT RECIPIENTS

CONGRATULATIONS TO OUR 2023-2024 GRANT RECIPIENTS

The American Association for Cancer Research® (AACR) is proud to present the newest class of AACR grant recipients.

This year's class is comprised of 47 outstanding scientists whose research projects have been recognized by scientific leaders for their potential to advance cancer research. Their projects span the continuum of basic, translational, and clinical research as well as prevention and disparities research, and display their dedication to advancing the detection, prevention, and treatment of cancer.

Since its inception in 1993, the AACR grants program has seen incredible growth and distributed more than $529 million and 1000 grants. These grants have funded scientists both domestically and abroad at every career stage.

CONGRATULATIONS TO OUR NEWEST GRANT RECIPIENTS!

THANK YOU TO OUR **FUNDING PARTNERS** AND **SCIENTIFIC REVIEW COMMITTEES**

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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2023 FELLOWSHIPS

AACR-AstraZeneca Breast Cancer Research Fellowship

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

Jenny Hogstrom, PhD

POSTDOCTORAL SCHOLAR

Beth Israel Deaconess Medical Center | Boston, Massachusetts, USA

Mechanisms of succinate-mediated drug resistance in HR+ breast cancer

Scientific Statement of Research

Hormone receptor positive (HR+) breast cancer patients are usually treated with targeted therapies, including CDK4/6 inhibitors. Despite initial encouraging responses, tumors usually become resistant. In addition to intrinsic resistance that tumors develop, tumor-extrinsic factors, such as cancer-associated fibroblasts residing in the tumor microenvironment, also contribute to treatment-resistance. Dr. Hogstrom seeks to elucidate the function of CAF-secreted metabolites in stimulating treatment resistance to CDK4/6 inhibitors in HR+ breast cancer. To accomplish this, she has established a library of patient-derived organoid cultures and matching cancer-associated fibroblasts from primary and metastatic HR+ breast cancer.

Biography

Dr. Hogstrom received her doctorate at the University of Helsinki in Finland, where she studied gene regulation in intestinal stem cells and colorectal cancer. After completing her graduate studies, she joined Beth Israel Deaconess Medical Center as a postdoctoral research fellow. Her research focuses on the metabolic interaction between the breast tumor and tumor microenvironment in HR+ breast cancer.

Acknowledgment of Support

"I'm truly honored to receive the AACR-AstraZeneca Breast Cancer Research Fellowship. This fellowship will help me advance my postdoctoral training in understanding how the tumor microenvironment influences treatment resistance and will be invaluable for my transition from a fellow to an independent investigator."

AACR-AstraZeneca Breast Cancer Research Fellowship

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

Milos Spasic, PhD

POSTDOCTORAL FELLOW

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

Understanding how age-associated changes in immune function impact TNBC

Scientific Statement of Research

The risk of developing most cancers increases with age. Despite over 50% of breast cancer patients being over 60 years old, less than 20% of clinical trial enrollees fall in this age bracket. Further, most preclinical work is performed in young mice. Dr. Spasic's preliminary data demonstrate that triple negative breast cancer (TNBC) progression and response to chemotherapy (paclitaxel) and immune checkpoint blockade (anti-PD-L1) is distinct between immunologically young and aged mice and is driven by age-associated differences in immune cells. Dr. Spasic proposes to use a novel DNA barcoding system to investigate clonal dynamics to uncover tumor intrinsic drivers of age-associated TNBC progression and manipulate interferon gamma signaling to direct immune cell function to improve responses to therapy.

Biography

Dr. Spasic received his undergraduate degree in bioengineering from the University of California, San Diego in 2012. He then completed his doctorate in 2018 in biomedical engineering at Columbia University, where he studied strategies to promote bone regeneration for the treatment of osteoporosis. Currently, Dr. Spasic is a postdoctoral fellow at Brigham and Women's Hospital. Dr. Spasic's research focuses on understanding how age impacts the immune system to dictate breast cancer progression and response to therapy.

Acknowledgment of Support

"Through the incredible support of this fellowship, I will have the ability to continue my work understanding how age impacts triple negative breast cancer progression and response to therapy to help us get closer to improving outcomes for all breast cancer patients."

AACR-AstraZeneca Clinical Immuno-oncology Research Training Fellowship

The AACR-AstraZeneca Clinical Immuno-oncology Research Training Fellowship Program is designed to encourage exceptional clinical research by bridging close collaboration between academia and industry. The selected fellow will gain experience in early-stage and/or late-stage clinical development at the facilities of AstraZeneca in Gaithersburg, Maryland.

Kazuki Sone, MD, PhD

POSTDOCTORAL FELLOW

Icahn School of Medicine at Mount Sinai | New York, New York, USA

Research Activities at AstraZeneca

During the research year at AstraZeneca, Dr. Sone will be paired with an AstraZeneca scientist who will serve as his mentor. He will shadow the mentor on various activities, including meetings with project and study teams and discussions on various topics (e.g., drug development strategy and execution, regulatory strategy implementation, statistics, marketing, clinical operations) with key stakeholders. Research conducted during this year will provide Dr. Sone with the opportunity to gain experience in drug development and understand challenges in early-stage and/or late-stage clinical research. Additional focus areas may also be provided (e.g., preclinical research, biomarker discovery, real-world evidence).

Biography

Dr. Sone received his medical degree at Nagoya City University in Nagoya, Japan before completing a residency and fellowship in respiratory medicine at Kainan Hospital in Japan. He then completed his doctorate at Nagoya City University Graduate School of Medicine, followed by a postdoctoral research year at Nagoya University. He currently works as a postdoctoral fellow at Icahn School of Medicine at Mount Sinai in New York, where he aims to interrogate HPV-specific immune responses in patients with head and neck cancers.

Acknowledgment of Support

“I am grateful and honored to be awarded the AACR-AstraZeneca Clinical Immuno-oncology Research Training Fellowship. This fellowship will provide me with further training opportunities in drug development from a different perspective and will be invaluable for my career development as a physician-scientist in the field of immuno-oncology.”

AACR-AstraZeneca Hematology/Oncology Research Training Fellowship

The AACR-AstraZeneca Hematology/Oncology Research Training Fellowship Program is designed to encourage exceptional clinical research by bridging close collaboration between academia and industry. The selected fellow will gain experience in early-stage and/or late-stage clinical development at the facilities of AstraZeneca in Gaithersburg, Maryland.

Brittaney-Belle E. Gordon, MD

HEMATOLOGY AND ONCOLOGY FELLOW, PGY-5

University of Pittsburgh | Pittsburgh, Pennsylvania, USA

Research Activities at AstraZeneca

During the research year at AstraZeneca, Dr. Gordon will be paired with an AstraZeneca scientist who will serve as her mentor. She will shadow the mentor on various activities, including meetings with project and study teams and discussions on various topics (e.g., drug development strategy and execution, regulatory strategy implementation, statistics, marketing, clinical operations) with key stakeholders. Research conducted during this year will provide Dr. Gordon with the opportunity to gain experience in drug development and understand challenges in early-stage and/or late-stage clinical research. Additional focus areas may also be provided (e.g., preclinical research, biomarker discovery, real-world evidence).

Biography

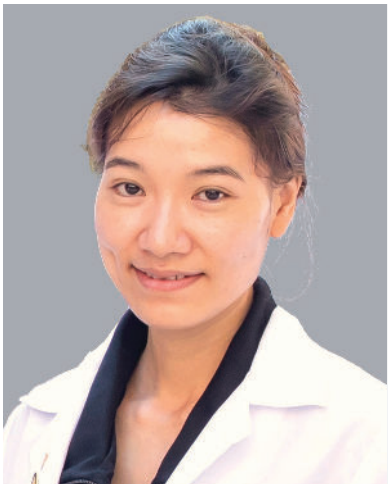
Born in Jamaica, Dr. Gordon learned the importance of effective, equitable, and economical cancer care for all patients. Accordingly, after her graduation from Princeton University, Dr. Gordon matriculated to the UNC School of Medicine, where she successfully won several training grants to investigate the basis of healthcare disparities in cancer care as well as develop novel interventions to improve outcomes. She has continued this essential work through her internal medicine residency at the NYU Langone Medical Center and her current hematology and oncology fellowship at the UPMC Hillman Cancer Center. Currently, she is actively working to eliminate healthcare disparities in cancer outcomes and increase minority presence in clinical trials so that all patients can experience excellent, equitable, and economical healthcare.

Acknowledgment of Support

"I am incredibly excited to complete the AACR-AstraZeneca Hematology/Oncology Research Training Fellowship due to its in-depth training and mentorship in clinical trial design and management from an industry perspective, as well as the opportunity to build protocols and procedures to diversify patient enrollment in clinical trials."

AACR-Bayer Clinical Oncology Research Training Fellowship

The AACR-Bayer Clinical Oncology Research Training Fellowship Program is designed to encourage exceptional clinical research by bridging close collaboration between academia and industry. The selected fellow will gain experience in early-stage and/or late-stage clinical development at the facilities of Bayer in Cambridge, Massachusetts.



Ha Pham, MD, PhD

RESIDENT PHYSICIAN IN RADIATION ONCOLOGY

Vanderbilt University Medical Center | Nashville, Tennessee, USA

Research Activities at Bayer

During the research year at Bayer, Dr. Pham will be paired with a Bayer scientist who will serve as her mentor. She will shadow the mentor on various activities, including meetings with project and study teams and discussions on various topics (e.g., drug development strategy and execution, regulatory strategy implementation, statistics, marketing, clinical operations) with key stakeholders. Research conducted during this year will provide Dr. Pham with the opportunity to gain experience in drug development and understand challenges in early-stage and/or late-stage clinical research. Additional focus areas may also be provided (e.g., preclinical research, biomarker discovery, real-world evidence).

Biography

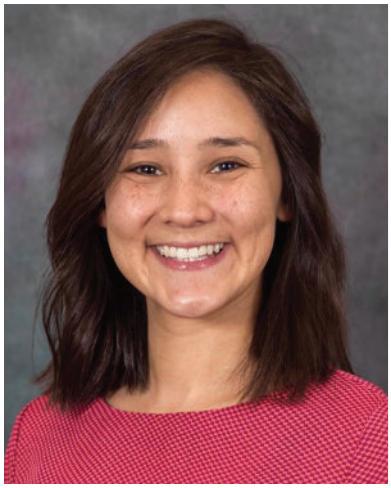
Dr. Pham received her doctorate in chemistry from Carnegie Mellon University, before completing her medical degree at the University of Central Florida. She completed her internship in internal medicine at the University of Illinois. She is currently a resident physician of radiation oncology at the Vanderbilt-Ingram Cancer Center and is interested in combining precision radiotherapy with systemic therapy to improve locoregional control for patients with advanced head and neck, and genitourinary cancers.

Acknowledgement of Support

“I am humbled and honored to be a recipient of the AACR Bayer Clinical Oncology Research Training Fellowship. This opportunity will expose me to numerous facets of premier drug and clinical trial developments that would not otherwise be available in the traditional medical curriculum.”

AACR-Bristol Myers Squibb Cancer Disparities Research Fellowship

The AACR-Bristol Myers Squibb Cancer Disparities Research Fellowship represents a joint 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.



Nicole B. Halmai, PhD

POSTDOCTORAL RESEARCH FELLOW

University of California, Davis | Davis, California, USA

Genetic ancestry and DNA methylome in gastric cancer among Latinos

Scientific Statement of Research

Gastric cancer (GC) is a significant cause of cancer incidence and mortality disparities among Hispanic/Latinos (HLs). HLs are ~2x more likely to be diagnosed with and die from gastric cancer compared with non-Latino whites and are also more often diagnosed at earlier ages but at later stages of disease, for which survival rates are significantly worse. Despite this high burden of disease, relatively little data exists characterizing the molecular etiology of GC among HLs.

This research project will leverage existing genomic and epigenomic sequencing data from HLs with GC generated in a large multi-center NCI-funded study (U54 CA233306) to identify driver somatic epigenetic changes and genetic ancestry-associated germline risk loci that contribute to GC development, therapeutic response, and ultimately health disparities among HLs in the US.

Biography

Dr. Halmai received her doctorate from the University of California (UC) Davis in 2019 in molecular, cellular and integrative physiology where she developed a novel genome editing platform for the functional modeling of cancer risk-associated variants. As a graduate student, Dr. Halmai was both an NIH-Initiative for Maximizing Student Development and NIH-Molecular and Cellular Biology T32 training fellow. She is currently a postdoctoral researcher at the UC Davis Genome Center. Her research is focused on the development of pre-clinical cancer models and (epi)genomic data from racial/ethnic minority populations to advance cancer health equity for these communities.

Acknowledgment of Support

“I am exceedingly grateful to the AACR and Bristol Myers Squibb for providing this opportunity. Being a Cancer Disparities Research Fellow will provide me with the support to advance my career in the field of cancer health disparities and, most importantly, give back to our communities of color through my research.”

AACR-Johnson & Johnson Lung Cancer Initiative Clinical Oncology Research Training Fellowship

The AACR-Johnson & Johnson Lung Cancer Initiative Clinical Oncology Research Training Fellowship Program is designed to encourage exceptional clinical research by bridging close collaboration between academia and industry. The selected fellow will gain experience in early-stage and/or late-stage clinical development at a Johnson & Johnson facility in the United States.

Nerea Lopetegui-Lia, MD

HEMATOLOGY AND MEDICAL ONCOLOGY FELLOW

Cleveland Clinic | Cleveland, Ohio, USA

Research Activities at Johnson & Johnson

During the research year at Johnson & Johnson, Dr. Lopetegui-Lia will be paired with a Johnson & Johnson scientist who will serve as her mentor. She will shadow the mentor on various activities, including meetings with project and study teams and discussions on various topics (e.g., drug development strategy and execution, regulatory strategy implementation, statistics, marketing, clinical operations) with key stakeholders. Research conducted during this year will provide Dr. Lopetegui-Lia with the opportunity to gain experience in drug development and understand challenges in early-stage and/or late-stage clinical research. Additional focus areas may also be provided (e.g., preclinical research, biomarker discovery, real-world evidence).

Biography

Dr. Lopetegui-Lia received her medical degree from the University Complutense of Madrid, Spain. After completing her internal medicine residency at the University of Connecticut, she was appointed as chief medical resident. She is currently a fellow in Hematology/Medical Oncology at the Cleveland Clinic where she has developed an interest in immuno-oncology and phase I clinical trials. In close collaboration with the Center for Immunotherapy and Precision Immuno-Oncology, she is studying immune cell subsets and their function as a novel means of understanding the effects of systemic therapy and seeking to identify new strategies to effectively treat triple negative breast cancer.

Acknowledgment of Support

“I am deeply honored to be awarded the 2023 AACR-Johnson & Johnson Clinical Oncology Research Training Fellowship. This award will be instrumental in achieving my goal of being an independent researcher by honing my skills in designing innovative clinical trials and advancing my knowledge in drug development.”

AACR-Lobular Breast Cancer Alliance Invasive Lobular Carcinoma Research Fellowship

The AACR-Lobular Breast Cancer Alliance Invasive Lobular Carcinoma Research Fellowship is a joint effort to support and encourage innovative research projects with direct applicability and relevance to invasive lobular carcinoma (ILC) and to help establish a successful career path in the field.

Capucine Héraud, PhD

RESEARCH FELLOW

Dana-Farber Cancer Institute | Boston, Massachusetts, USA

Elucidating the unique biology of ILC and response to endocrine treatments

Scientific Statement of Research

ILC is the second most common histological subtype of breast cancer. ILC is relatively resistant to tamoxifen suggesting that ILC may have a distinct estrogen receptor axis compared to invasive ductal carcinoma (IDC). To shed light on this, Dr. Héraud will conduct single-cell ATACseq and single-cell RNAseq on tumor samples from the PELOPS clinical trial obtained before and after treatment with tamoxifen and an aromatase inhibitor. In addition to potentially revealing epigenetic differences, these single cell analyses will enable her to identify the cellular populations in ILC and IDC, and the key transcription factors and regulatory circuits that are altered in response to tamoxifen and aromatase inhibitors.

Biography

Originally from France, Dr. Héraud completed her bachelor's degree at the University of Nantes, and her master's degree and doctorate at the University of Bordeaux. The focus of her doctoral studies was endometrial cancer. She is currently a research fellow at the Dana-Farber Cancer Institute in Boston, MA, focusing on fundamental and translational research of breast cancer. She aims to better understand the causes and mechanisms of cancer as well as to find new biomarkers and effective cancer therapies.

Acknowledgment of Support

"I am extremely honored and grateful to be a recipient of this AACR-LBCA Invasive Lobular Carcinoma Research Fellowship. With this support, I am excited to be able to advance our research into epigenetic changes in ILC versus IDC by using single-cell analysis."

2023 FELLOWSHIPS

AACR-Pediatric Brain Tumor Foundation Medulloblastoma Research Fellowship

The AACR-Pediatric Brain Tumor Foundation Medulloblastoma Research Fellowship represents a joint effort to encourage and support a postdoctoral or clinical research fellow to conduct brain cancer research and to establish a successful career path in this field.

Jennifer C. Coleman, PhD

RESEARCH ASSOCIATE

University of Cambridge | Cambridge, England

Examining life-or-death stress responses in DEAD-box helicase X-linked (DDX3X)-mutated medulloblastoma

Scientific Statement of Research

Medulloblastoma (MB) is the most common primary brain tumor in children. DDX3X, encoding an ATP-driven RNA helicase, is the second most frequently mutated gene in the WNT and SHH subtypes of MB. DDX3X is a life-or-death gatekeeper of the cerebellum, modulating hindbrain development and MB suppression by restricting the growth of cell lineages that can generate tumors. DDX3X mutations induce hyper-assembly of stress granules (SGs) – phase-separated cytoplasmic organelles that enhance survival through translation stalling and pro-growth signaling. Dr. Coleman will investigate how DDX3X mutations contribute to aberrant SG assembly and MB formation on a molecular level, by utilizing novel CRISPR-generated models of DDX3X-driven MB in combination with super-resolution microscopy and innovative RNA/protein interactome studies. Dr. Coleman is also developing a high-throughput screening platform to identify potential compounds for treating DDX3X-driven MB through specific targeting of SG assembly in vitro, uncovering potential candidates for drug discovery in childhood brain tumors.

Biography

Dr. Coleman completed her doctorate at King's College London as part of the Medical Research Council's Doctoral Training Partnership. She was awarded the King's Outstanding Thesis Award for her doctoral studies, in which she investigated how RNA-binding proteins (RBPs) contribute to osteosarcoma tumorigenesis. She is currently a postdoctoral fellow at the University of Cambridge, where she is a research associate at the Cancer Research UK Cambridge Institution and postdoctoral affiliate of Newham College. Dr. Coleman's research focuses on improving our understanding of how RBPs and RNA structures contribute to pediatric malignancies, including childhood brain tumors such as MB.

Acknowledgement of Support

"I am honored to be awarded the AACR-Pediatric Brain Tumor Foundation Medulloblastoma Research Fellowship and feel immensely grateful for this opportunity to lay the groundwork for my independent career. This fellowship will enable important work on the molecular basis of DDX3X-driven medulloblastoma, accelerating the discovery of new treatments for childhood patients."

2023 FELLOWSHIPS

AACR-Pfizer Breast Cancer Research Fellowship

The AACR-Pfizer Breast Cancer Research Fellowship represents a joint effort to encourage and support a postdoctoral or clinical research fellow to conduct breast cancer research and to establish a successful career path in this field.

Mariana Bustamante Eduardo, PhD

POSTDOCTORAL FELLOW

Northwestern University | Chicago, Illinois, USA

Lipid metabolism, epigenetic reprogramming, and ER negative breast oncogenesis

Scientific Statement of Research

A connection between lipid metabolism and estrogen receptor negative breast cancer development has been demonstrated. Exposing non-transformed breast epithelial cells to lipid increases metabolic flux and histone methylation and alters gene expression. Dr. Bustamante's preliminary data showed lipid-induced production of S-adenosyl methionine (SAM), the oncometabolite 2-Hydroxyglutarate (2-HG), and antioxidant defenses. She hypothesizes that lipid metabolism enables the survival of specific luminal progenitor cells and simultaneously increases SAM and 2-HG, and consequently, histone methylation. This leads to epigenetic-fostered plasticity, resulting in an inappropriate neural/neural stem differentiation associated with malignant transformation. She is set to pursue these provocative results at the intersection of neurobiology and breast cancer biology.

Biography

Dr. Bustamante Eduardo obtained her undergraduate degree in biology from the Universidad Mayor de San Simon in Cochabamba, Bolivia, and a master's degree in biology (option Genetics, Development and Evolution) from the University of Geneva, Switzerland. She received her doctorate in biochemistry and molecular biology from the University of Bern, Switzerland where she studied breast cancer heterogeneity, with a special focus on the progesterone receptor. She is currently a postdoctoral researcher at Northwestern University. Her research focuses on breast cancer prevention, specifically studying the connection between lipid metabolism, epigenomic reprogramming, and malignant transformation.

Acknowledgement of Support

"I am honored to be awarded the AACR-Pfizer Breast Cancer Research Fellowship to continue working in breast cancer prevention. This opportunity will allow me to contribute to the understanding of local breast biology that promotes the development of estrogen receptor negative breast cancer, which is critical for developing biomarkers and novel preventive strategies."

2023 FELLOWSHIPS

AACR-Pfizer Breast Cancer Research Fellowship

The AACR-Pfizer Breast Cancer Research Fellowship represents a joint effort to encourage and support a postdoctoral or clinical research fellow to conduct breast cancer research and to establish a successful career path in this field.

Zuen Ren, MD, PhD

RESEARCH FELLOW

Massachusetts General Hospital | Boston, Massachusetts, USA

Exploring damaged progenitors as targets for breast cancer prevention

Scientific Statement of Research

Making major impacts on the incidence and lethality of BRCA1/2 breast cancer requires increased knowledge of the target cells of pathological transformation. Luminal progenitors (LPs), the suspected cancer cell of origin of BRCA1/2 breast cancer, are found to display frequent polyclonal chromosomal damage. This damage may endow them with the capacity for context-dependent multi-lineage differentiation, and may allow them to exhibit a degree of cellular plasticity, resulting in the development of either BRCA1 basal type or BRCA2 luminal type breast cancer. Dr. Ren aims to 1) discover markers defining LPs that may propel the development of new tissue-based predictors of breast cancer risk; 2) identify key regulators that may endow damaged LPs the capacity to differentiate into distinct breast cancer types; and 3) explore therapeutic vulnerabilities that could be exploited to eliminate these cells as a possible cancer prevention strategy.

Biography

Dr. Ren completed his doctorate at the Albert Einstein College of Medicine, New York, in breast cancer and pathology. He is currently a postdoctoral fellow at Massachusetts General Hospital and Harvard Medical School, where he is employing surgical specimens from BRCA1/2 mutation carriers to dissect early pathogenesis of hereditary breast cancer for risk prediction and prevention.

Acknowledgement of Support

“I am honored and grateful to have been selected to receive the AACR-Pfizer Breast Cancer Research Fellowship. This invaluable support will provide me with an opportunity to better understand the process of hereditary breast cancer development and fulfill the unmet need in the breast cancer field, and it will absolutely be a highlight of my academic career.”

AACR-Sontag Foundation Brain Cancer Research Fellowship

The AACR-Sontag Foundation Brain Cancer Research Fellowship represents a joint effort to encourage and support a postdoctoral or clinical research fellow to conduct brain cancer research and to establish a successful career path in this field.

Zulekha A. Qadeer, PhD

POSTDOCTORAL SCHOLAR

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

Targeting epigenetic drivers in group 3 medulloblastoma

Scientific Statement of Research

Medulloblastoma (MB), the most common malignant brain tumor in children, arises in the cerebellum. Group 3 (G3) MBs show poor overall survival (<50%) and recurrent metastases within the central nervous system and have frequent amplifications of both MYC and TGFβ pathway effectors. Remarkably, some tumors have no reported mutations, suggesting roles for aberrant epigenetic mechanisms in remodeling the transcriptional landscape of G3MB. Dr. Qadeer is utilizing a unique model of MYC-driven G3MB based on human-induced pluripotent stem cells differentiated into neuroepithelial stem cells to investigate therapeutic vulnerabilities. Dr. Qadeer will investigate the chromatin landscape of G3MB and screen for epigenetic factors that cooperate with MYC to promote therapy resistance using high-resolution Perturb-seq. This technique combines multiplexed CRISPRi with scRNA-seq, integrating genetic/therapeutic perturbations to transcription phenotypes.

Biography

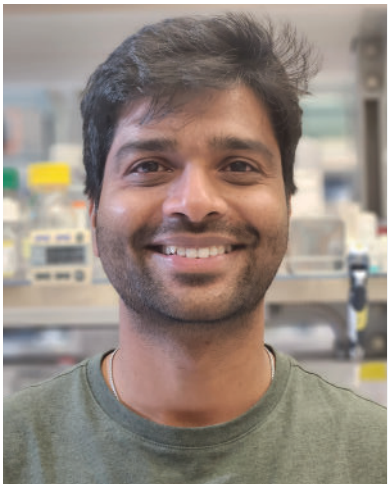
Dr. Qadeer completed her doctorate in biomedical sciences at the Icahn School of Medicine at Mount Sinai investigating epigenetic dysregulation in neuroblastoma. She is currently a postdoctoral fellow at the University of California, San Francisco, where her studies focus on utilizing innovative humanized stem cell-based models to identify drivers of medulloblastoma progression. Her goal is to understand the chromatin and transcriptional landscape of these tumors and to integrate these findings to identify new targets to overcome resistance and recurrence. Dr. Qadeer was a recipient of the Damon Runyon-Sohn Pediatric Cancer Fellowship as well as the Alex Lemonade Stand Foundation Young Investigator Grant.

Acknowledgement of Support

“I am immensely honored to receive the 2023 AACR-Sontag Foundation Brain Cancer Research Fellowship. This award will help me build the foundation for my independent scientific career and make an impact in pediatric brain tumors. I am grateful to be a part of the incredible AACR and Sontag research communities.”

AACR-StacheStrong Glioblastoma Research Fellowship

The AACR-StacheStrong Glioblastoma Research Fellowship represents a joint effort to encourage and support a postdoctoral or clinical research fellow to conduct brain cancer research and to establish a successful career path in this field.



Raghavendra Vadla, PhD

POSTDOCTORAL RESEARCHER

University of California, San Diego | San Diego, California, USA

Targeting bromodomain containing 2 protein to inhibit mesenchymal transition in recurrent glioblastoma

Scientific Statement of Research

Emerging studies reveal a frequent mesenchymal transition in recurrent glioblastoma (GBM) patients, linked with high tumor-associated macrophage infiltration, increased therapeutic resistance, and poorer outcomes. By utilizing genetic and pharmacological approaches, Dr. Raghavendra will investigate the role of the BET (bromodomain and extra terminal domain) family of enhancer proteins and their associated bromo domains in mesenchymal transition to identify strategies to restore sensitivity to salvage radiation therapy in in vitro and in vivo models of recurrent GBM.

Biography

Dr. Vadla earned his doctorate at the Centre for DNA Fingerprinting and Diagnostics, India. During his doctoral studies, he focused on epigenetic mechanisms of glioma metabolism. He is currently a postdoctoral researcher at the University of California, San Diego, where he concentrates on unraveling the mechanisms of mesenchymal transition in GBM. His work aims to establish a foundation for targeted strategies to combat therapy resistance in GBM patients.

Acknowledgement of Support

“I am deeply honored to be the recipient of the 2023 AACR-StacheStrong Glioblastoma Research Fellowship. This fellowship will allow me to complete my postdoctoral studies, which has the potential to identify druggable pathways to improve survival for recurrent GBM patients.”

The Bosarge Family Foundation-Waun Ki Hong Scholar Award for Regenerative Cancer Medicine

The Bosarge Family Foundation-Waun Ki Hong Scholar Award for Regenerative Cancer Medicine represents a joint effort to encourage and support a postdoctoral or clinical research fellow to conduct highly novel and provocative research in the field of regenerative cancer medicine and to establish a successful career path in this field.

Qiwen Gan, PhD

POSTDOCTORAL FELLOW

Icahn School of Medicine at Mount Sinai | New York, New York, USA

Regenerate salivary glands via combinatorial pathway intervention

Scientific Statement of Research

Cancer survivors often endure lifelong dry mouth post radiotherapy, due to the ultra-high radiosensitivity and limited regenerative capacity of salivary glands. To address this major clinical challenge, Dr. Gan has developed a murine salivary gland transduction system involving in-utero injection of lentiviral pools containing barcodes and/or gene targeting constructs. This system allows for high fidelity lineage tracing and pathway perturbation and enables the identification of crucial cell populations contributing to salivary gland regeneration post-irradiation. Dr. Gan will functionally dissect the barriers impeding salivary gland regeneration by perturbing differentially regulated molecular pathways post-irradiation. He hypothesizes that the combinatorial removal of several regeneration barriers will lead to comprehensive salivary gland regeneration post-irradiation.

Biography

Dr. Gan earned his doctorate in cell biology from the Institute of Genetics and Developmental Biology, Chinese Academy of Sciences. Following a brief postdoctoral training in stem cell and cancer initiation at Columbia University, he is currently engaged in postdoctoral research focused on salivary gland regeneration at the Icahn School of Medicine at Mount Sinai.

Acknowledgement of Support

“The 2023 Bosarge Family Foundation-Waun Ki Hong Scholar Award for Regenerative Cancer Medicine is crucial to me as a postdoctoral fellow aspiring to become an independent scientist focusing on glandular epithelial regeneration post cancer radiotherapy. This prestigious award provides critical support and vital resources to establish my own research program.”

2023

CAREER DEVELOPMENT AWARDS

AACR Career Development Award in Lung Cancer Research

The AACR Career Development Award in Lung Cancer Research has been established to encourage and support an early-career investigator to conduct lung cancer research and establish a successful career in this field.

Lindsay M. LaFave, PhD

ASSISTANT PROFESSOR

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

Investigating chromatin plasticity in lung cancer evolution

Scientific Statement of Research

Lung adenocarcinoma is the most common subtype of non-small cell lung cancer and remains a leading cause of cancer-related mortality. Recent work using single-cell transcriptomic and epigenomic technologies has demonstrated the expansive heterogeneity and plasticity of lung cancer cells. Yet, there is a limited understanding of the mechanisms that drive lung cancer heterogeneity and therapeutic vulnerabilities introduced during this cellular diversification process. Dr. LaFave has previously shown that transformation of alveolar type 2 cells with KrasG12D and deletion of p53 leads to a continuum of cell states reminiscent of developmental trajectories in lung specification and other cellular identities. This project aims to study whether chromatin plasticity following oncogenic transformation emerges due to disruption of underlying lineage-specifying transcription factor programs. These studies will use organoid modeling and epigenomic profiling to uncover the mechanisms that drive intratumoral heterogeneity in lung tumors and identify new therapeutic strategies to target these programs.

Biography

Dr. LaFave is a cancer biologist with a long-standing interest in studying chromatin biology. She received her doctorate in cancer biology at Gerstner Sloan Kettering Graduate School in 2015. Funded by a Damon Runyon Postdoctoral Fellowship, Dr. LaFave completed her postdoctoral training at Massachusetts Institute of Technology and Harvard University. Dr. LaFave is currently an assistant professor in the Department of Cell Biology at Albert Einstein College of Medicine and a member of the Montefiore Einstein Cancer Center. Her independent research group uses evolving epigenomic technologies and cancer models to dissect chromatin-mediated mechanisms that facilitate lung cancer initiation and progression.

Acknowledgment of Support

“I am incredibly grateful to receive a 2023 AACR Career Development Award in Lung Cancer Research to fund our work studying mechanisms that facilitate chromatin plasticity. As an early career investigator, this award is invaluable to support our research efforts to identify new therapeutic rationales in lung cancer.”

AACR Career Development Award in Lung Cancer Research

The AACR Career Development Award in Lung Cancer Research has been established to encourage and support an early-career investigator to conduct lung cancer research and establish a successful career in this field.

Alexandre Reuben, PhD

ASSISTANT PROFESSOR

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

T cell receptor engineering for the treatment of lung cancer

Scientific Statement of Research

FOXM1 is expressed in 90% of lung cancer tumors, making it an attractive therapeutic target. Recent work has highlighted the promise of engineering a specific T cell receptor into recipient T cells for therapeutic purposes in a variety of solid tumors. Dr. Reuben hypothesizes that epitopes of FOXM1 give rise to immunogenic tumor antigens, which can be effectively targeted by T cell engineering. He aims to develop a library of T-cell receptors targeting FOXM1 epitopes presented on the 10 most prevalent HLA alleles, which could be used to treat the overwhelming majority of lung cancer patients in the United States and across the world.

Biography

Dr. Reuben obtained his doctorate degree at the University of Montreal in Canada, studying the interplay between iron metabolism and antigen processing and presentation. He then pursued a postdoctoral fellowship at MD Anderson Cancer Center under the mentorship of Dr. Jennifer Wargo, studying tumor heterogeneity and mechanisms of response and resistance to targeted immunotherapy in melanoma. Since 2018, he has held a faculty appointment in the Department of Thoracic/Head & Neck Medical Oncology where his lab focuses on the development of novel immunotherapies for the treatment of lung cancer.

Acknowledgement of Support

“Our team is truly honored to receive a prestigious AACR Career Development Award in Lung Cancer Research. This award will allow us to expand our cell therapy efforts and to build a library of T cell receptors with the potential to treat hundreds of thousands of lung cancer patients.”

AACR Gertrude B. Elion Cancer Research Award

With generous support from GlaxoSmithKline, the AACR Gertrude B. Elion Cancer Research Award encourages and supports tenure-eligible junior faculty to conduct research in cancer etiology, diagnosis, treatment, or prevention.

Yadira Soto-Feliciano, PhD

ASSISTANT PROFESSOR

Massachusetts Institute of Technology | Cambridge, Massachusetts, USA

Revealing cancer epigenomes through the lens of chromatin adaptor proteins

Scientific Statement of Research

The role of chromatin adaptor/scaffold proteins is largely unexplored. Additionally, a rapidly advancing area in chromatin biology aims to understand the non-enzymatic activities and potential structural roles of many chromatin-modifying enzymes. Dr. Soto-Feliciano aims to uncover how chromatin adaptors contribute to interpreting chemical modifications and their specific effects in different contexts, and to investigate how chromatin adaptors control gene activity in normal and disease conditions.

Biography

Dr. Soto-Feliciano earned her undergraduate degree in chemistry from the University of Puerto Rico-Mayagüez in 2008 and her doctorate in biology from Massachusetts Institute of Technology (MIT) in 2016. She completed her postdoctoral training at the Rockefeller University supported by a Damon Runyon fellowship and K99/R00 award. Joining MIT's faculty as an assistant professor in 2022, Dr. Soto-Feliciano's work integrates cancer biology, functional genomics, and chromatin biology to uncover molecular mechanisms underlying transcriptional regulation. Her research focuses on chromatin scaffold-mediated transcriptional regulation in the effort to uncover new insights into cancer development and treatment.

Acknowledgment of Support

"The 2023 AACR Gertrude B. Elion Cancer Research Award is important to me because it recognizes the immense value of fundamental biomedical research in combating cancer. This prestigious honor inspires me to continue my pursuit of groundbreaking discoveries, ultimately aiming to make a meaningful impact in the lives of cancer patients."

AACR-AstraZeneca Career Development Award for Physician-Scientists, in Honor of José Baselga

The AACR-AstraZeneca Career Development Award for Physician-Scientists, in Honor of José Baselga has been established to honor the life and legacy of Dr. José Baselga, who was a scientific leader and supportive mentor to an entire generation of physician-scientists. The intent of this program is to encourage and support a junior physician-scientist to conduct research and bolster the development of innovative targeted therapeutics.

Kristopher Bosse, MD

ASSISTANT PROFESSOR

Children's Hospital of Philadelphia | Philadelphia, Pennsylvania, USA

Murine GPC2 CAR T cells to define mechanisms of immune escape

Scientific Statement of Research

Glypican 2 (GPC2) is an oncoprotein that is found on neuroblastomas but not vital normal tissues. Dr. Bosse's laboratory developed human GPC2 CAR T cells that are being tested in a first-in-human phase 1 clinical trial. In parallel, to define the role of the tumor immune microenvironment in GPC2 CAR efficacy, Dr. Bosse developed paired-murine GPC2 CARs. He performed studies in immunocompetent neuroblastoma allograft models that nominated limited CAR T cell tumor trafficking and enhanced tumor infiltration of immunosuppressive myeloid-derived suppressor cells (MDSCs) as mechanisms of GPC2 CAR immune escape. These studies provide the motivation to 1) characterize how MDSCs modulate GPC2 CAR T cells, 2) develop CXCR2-armored GPC2 CARs to enhance CAR T cell tumor trafficking and circumvent MDSC-mediated immune suppression, and 3) utilize serial blood samples from the phase 1 trial to define the relationship between MDSCs and GPC2 CAR T cell persistence and efficacy in patients with neuroblastoma.

Biography

Dr. Bosse graduated *summa cum laude* from Bowdoin College and completed his medical degree and training at the University of Pennsylvania (Penn) and the Children's Hospital of Philadelphia (CHOP). He began studying neuroblastoma as a Howard Hughes Medical Institute Fellow during medical school. Dr. Bosse is an Assistant Professor of Pediatrics at the Perelman School of Medicine at Penn and CHOP. His laboratory is currently focused on using an integrated genomic and functional approach to identify novel cell surface molecules for immunotherapeutic targeting in neuroblastoma and other pediatric cancers.

Acknowledgement of Support

"Receiving a 2023 AACR-AstraZeneca Career Development Award for Physician Scientists, in Honor of José Baselga, is a tremendous honor and will allow us to define mechanisms of glypican 2 CAR T cell immune escape to enable development of more potent immunotherapies for children with cancer."

AACR-Debbie's Dream Foundation Career Development Award for Gastric Cancer Research

The AACR-Debbie's Dream Foundation Career Development Award for Gastric Cancer Research represents a joint effort to encourage and support a junior faculty to conduct gastric cancer research and to establish a successful career path in this field.

Heather McGee, MD, PhD

ASSISTANT PROFESSOR

City of Hope | Duarte, California, USA

Radiation-induced inflammasome activation and alarmins in gastric cancer

Scientific Statement of Research

Dr. McGee aims to investigate the effect of radiation-induced inflammasome activation and alarmin production on the tumor immune microenvironment in gastric cancer. The McGee lab will investigate whether radiation induces inflammasome-mediated pyroptosis in gastric cancer and determine if radiation-induced IL-18 activates immune cells in the gastric tumor microenvironment. In addition, the McGee lab will elucidate whether inflammasome-targeted therapy can synergize with radiation to improve outcomes in a unique immunocompetent murine xenograft model of gastric cancer developed with Dr. Thinzar Lwin (City of Hope Department of Surgery). Ultimately, Dr. McGee and colleagues hope to learn how to enhance radiation's ability to activate anti-tumor immune responses in gastric cancer to improve treatment options for patients with this disease.

Biography

Dr. McGee studied biochemistry at UC Berkeley and earned a Master of Philosophy in immunology at the University of Cambridge. She completed her medical degree and doctorate in immunobiology at Yale. After an internship at the University of California, San Francisco and a radiation oncology residency at Mount Sinai, she worked as a postdoctoral fellow at the Salk Institute. Currently, she is a physician-scientist and an assistant professor in the Departments of Radiation Oncology and Immuno-Oncology at City of Hope, where she treats patients with gastrointestinal cancers. Her laboratory is funded by an NIH/NCI R00 award and is investigating the role of tissue-resident immune cells in response to radiation in unique tumor microenvironments.

Acknowledgement of Support

"I am very grateful to receive the AACR-Debbie's Dream Foundation Career Development Award for Gastric Cancer Research. This grant allows me to expand my lab's research in a new direction to investigate the role of radiation-induced immune cell activation in gastric cancer. I am honored to partner with the AACR to study this rare gastrointestinal malignancy."

AACR-Novocure Career Development Award for Cancer Research

The AACR-Novocure Career Development Award for Cancer Research represents a joint effort to promote and support early-career investigators who are conducting innovative research focused on Tumor Treating Fields (TTFields; intermediate frequency, low intensity, alternating electric fields that disrupt cell division in cancer cells) as well as to encourage early-career investigators to enter the TTFields research field.

Christopher A. Alvarez-Breckenridge, MD, PhD

ASSISTANT PROFESSOR

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

Tumor treating field modulation of metastatic bone tumor microenvironment

Scientific Statement of Research

Spinal metastases are treated with radiotherapy alone or in combination with surgery. Despite these interventions, tumors frequently recur, treatment options are limited, and patients experience exceptionally high rates of tumor progression and neurologic compromise. There is an urgent clinical need to develop novel, alternative treatments for radiation refractory spinal metastases. While tumor treating fields (TTFields) possess tumor suppressive effects against multiple tumor histologies, they are also influenced by the electrical conductivity of each tissue layer in proximity to the tumor. In this setting, the anatomic features of bone provide a potential therapeutic advantage for the application of TTFields against spinal metastases. This work will leverage a series of *in vitro*, *ex vivo*, and *in vivo* studies that will decipher the unique cellular cross talk between the tumor-bone microenvironment in the setting of TTFields.

Biography

Dr. Alvarez-Breckenridge was a member of the Medical Scientist Training Program at The Ohio State University where he received his medical and doctorate degrees and researched oncolytic viral therapy for gliomas. He subsequently completed his neurosurgery residency at Massachusetts General Hospital and conducted research on immunotherapy for brain metastases and leptomeningeal disease. He pursued a neurosurgical oncology fellowship at The University of Texas MD Anderson Cancer Center and joined the faculty in 2020 as an assistant professor. His clinical practice focuses on treating spinal tumors and he leads a laboratory studying novel treatment approaches for brain and spine metastases.

Acknowledgment of Support

“This award is an incredibly valuable resource to expand the research scope and capability of my laboratory, particularly as we a) strive to achieve novel insights into the utility of TTFields for spinal metastases, b) decipher underlying mechanisms of action within the bone context, and c) move towards clinical investigation.”

AACR-St. Baldrick's Foundation Pediatric Cancer Research Grant

The recipient of the AACR-St. Baldrick's Foundation Pediatric Cancer Research Grant is chosen from among several outstanding junior faculty investigators at the level of assistant professor who have been nominated by the recipient of the AACR-St. Baldrick's Foundation Award for Outstanding Achievement in Pediatric Cancer Research.

Alanna Joyce Church, MD

ASSISTANT PROFESSOR

Boston Children's Hospital | Boston, Massachusetts, USA

Scientific Statement of Research

Cutting edge techniques in molecular pathology are transforming the standards of cancer care. Dr. Church's research and clinical practice focus on molecular profiling to support the care of children with cancer. She has demonstrated that sequencing technologies have a significant impact on making the right diagnosis and in selecting the correct targeted treatment for children with cancer.

Biography

Dr. Church received her master's and medical degrees at Queen's University, Canada, before completing her residency in anatomic pathology at the same institution. She then moved to Boston to complete her education in both molecular genetic pathology and pediatric pathology at Harvard Medical School. She stayed at Boston Children's Hospital as the founding director and the Associate Director of the Laboratory for Molecular Pediatric Pathology (LaMPP). She is currently the Program Director for the Harvard Molecular Genetic Pathology Fellowship and the Chair of Training and Education for the Association for Molecular Pathology.

Acknowledgment of Support

"I am so honored and grateful for this award. This grant will support my mission to bring the power of molecular profiling from research labs directly to the clinical care of children battling cancer, giving them the best available treatment, which each child deserves."

Breast Cancer Research Foundation-AACR Career Development Award to Promote Diversity and Inclusion

The Breast Cancer Research Foundation-AACR Career Development Award to Promote Diversity and Inclusion represents a focused effort to encourage and support investigators from diverse backgrounds that are underrepresented in cancer research and to foster their career advancement.

Yehoda M. Martei, MD, MSCE

ASSISTANT PROFESSOR

University of Pennsylvania | Philadelphia, Pennsylvania, USA

Effectiveness of community health workers on access to breast cancer care

Scientific Statement of Research

Social determinants of health (SDOH) may worsen cancer disparities. The Penn Individualized Management for Patient-Centered Targets (IMPaCT) model is a standardized community health worker intervention for addressing health inequity and the SDOH, with proven effectiveness in chronic disease management. The IMPaCT program has currently been scaled up to 50 organizations in 20 states and the Veterans Administration health system, but the effectiveness of this model has not been previously studied in patients with cancer. The goal of this proposal is to evaluate the effectiveness of IMPaCT on cancer stage distribution, missed oncology clinic appointment rates and cancer-related outcomes in patients previously enrolled in IMPaCT across the University of Pennsylvania Health System from 2013-2022, who received any cancer diagnosis following enrollment in IMPaCT. Additionally, Dr. Martei and her team plan to pilot and evaluate implementation outcomes of a breast cancer-adapted CHW program integrated into breast cancer care delivery, using the Implementation Mapping for Adaptation framework.

Biography

Dr. Martei graduated from Harvard College and Yale School of Medicine. She completed her internal medicine training at the University of California, San Francisco, and hematology-oncology fellowship and Master of Science in clinical epidemiology at University of Pennsylvania. Dr. Martei is currently a medical oncologist, an assistant professor of medicine, and the vice chief of diversity, inclusion, and health equity in the Hematology-Oncology Division at the University of Pennsylvania. Her research is focused on implementation strategies for eliminating global disparities in breast cancer outcomes by optimizing high quality breast cancer therapy delivery in low-resource settings and among patients with complex co-morbidities.

Acknowledgement Statement:

“This research focus aligns with my vision for health equity in cancer, and I am excited for the opportunity to be able to implement this proposal through this Breast Cancer Research Foundation-AACR Career Development Awards to Promote Diversity and Inclusion mechanism. This funding is critical for building preliminary data in an area of disparity and great need.”

Breast Cancer Research Foundation-AACR Career Development Award to Promote Diversity and Inclusion

The Breast Cancer Research Foundation-AACR Career Development Award to Promote Diversity and Inclusion represents a focused effort to encourage and support investigators from diverse backgrounds that are underrepresented in cancer research and to foster their career advancement.

Evanthia Roussos Torres, MD, PhD

ASSISTANT PROFESSOR

University of Southern California | Los Angeles, California, USA

Suppressing suppression: myeloid centric approach to an anti-tumor response

Scientific Statement of Research

Patients with breast cancer are thought to be intrinsically resistant to immune checkpoint inhibitors, in part, due to a suppressed tumor microenvironment (TME) by myeloid derived suppressor cells (MDSCs). Previous work by the Roussos Torres lab demonstrated in preclinical models that entinostat decreased MDSC suppression. A better understanding of mechanisms to overcome the immunosuppressive TME of breast cancer will provide a basis for more specific molecular and/or cellular targets. Dr. Roussos Torres will examine the molecular and cellular mechanisms regulating intra- and inter-tumoral MDSC response to entinostat as well as the contribution of entinostat-treated macrophages and dendritic cells on decreased MDSC suppressive function. These findings will be validated in samples collected from patients enrolled in a clinical trial (NCI-9844).

Biography

Dr. Roussos Torres received undergraduate degrees in microbiology, immunology and molecular genetics and dance, from the University of California at Los Angeles in 2005. She then received her medical and doctorate degrees from the Albert Einstein College of Medicine in 2012. She completed her internal medicine residency at the Hospital of the University of Pennsylvania in 2014, and a fellowship in oncology in 2018 at Johns Hopkins University. Dr. Roussos Torres became an assistant professor at Johns Hopkins University and is now an assistant professor at the University of Southern California in the Division of Oncology.

Acknowledgement of Support

“As a passionate female physician-scientist in the throes of building my career, I am honored to receive this award from BCRF and AACR! This type of national recognition and support is invaluable and a tremendous honor as I continue to strive for excellence in all that I do.”

Breast Cancer Research Foundation-AACR NextGen Grant for Transformative Cancer Research

The Breast Cancer Research Foundation-AACR NextGen Grant for Transformative Breast Cancer Research represents the AACR's flagship funding initiative to stimulate highly innovative research from young investigators. This grant mechanism is intended to promote and support creative, paradigm-shifting cancer research that may not be funded through conventional channels.

Igor Bado, PhD

ASSISTANT PROFESSOR

Icahn School of Medicine at Mount Sinai | New York, New York, USA

Determining FGF2-mediated DTC fate in breast cancer bone metastasis

Scientific Statement of Research

The bone microenvironment plays an important role in breast cancer progression. In previous studies, Dr. Bado and colleagues identified a central role of osteogenic cells in mediating epigenetic reprogramming in bone metastasis. This process was associated with therapeutic resistance and metastasis progression. In this project, Dr. Bado's team will profile and investigate pro-survival niches during bone metastasis using multiplex imaging and transcriptomic approaches.

Biography

Dr. Bado completed his doctorate at the University of Houston, where he worked on tumor suppressive mechanisms of estrogen receptor ß in breast cancer. He then joined Baylor College of Medicine where he worked on dissecting the interplay between osteogenic cells and cancer cells during bone metastasis progression as a postdoctoral fellow, and subsequently, as an instructor. He is now an assistant professor in the Department of Oncological Sciences at the Icahn School of Medicine at Mount Sinai. His lab works on epigenetic plasticity and multi-organ metastasis in breast cancer.

Acknowledgement of Support

"Being a recipient of the Breast Cancer Research Foundation-AACR NextGen Grants for Transformative Cancer Research is a true honor for me. It is a reminder that I don't stand alone as a young investigator in the fight against cancer. This grant will allow my team to study highly complex mechanisms associated with bone metastasis."

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 Career Development Award, in Partnership with Pelotonia and the AACR is intended to fund innovative research projects in breast and gynecologic cancers and to invest in the next generation of female early-stage scientists domestically and globally. The aim of this award is to foster innovation in the understanding, prevention, interception, early detection, diagnosis, and treatment of breast and gynecologic cancers with the goal of eliminating cancer health disparities and improving patient outcomes.

Sarah E. Johnstone, MD, PhD

ASSISTANT PROFESSOR

Dana-Farber Cancer Institute | Boston, Massachusetts, USA

The impact of architectural protein disruption on the 3D cancer genome

Scientific Statement of Research

The study of 3D genome organization in cancer offers a novel space to identify vulnerabilities and to develop breakthrough therapies in cancers of the uterus and ovaries. Genetic and transcriptional analyses in gynecologic carcinomas demonstrated disruption of the architectural proteins CTCF and BORIS that are known to regulate the 3D genome. Dr. Johnstone and her research group are set to use cellular models to query the impact of architectural protein alteration in gynecologic tumors. They hypothesize that these alterations mis-regulate tumor cells by reshaping genome structure to facilitate tumor-promoting gene activity. They plan to generate *in vitro* models of CTCF and BORIS disruption in cancer cells and define how these changes alter protein binding, genome structure and tumor cell state. Additionally, they are set to perform a CRISPR-screen to identify associated vulnerabilities to identify therapeutic pathways that can be targeted in these tumors.

Biography

Dr. Johnstone received her bachelor's degree in Cellular and Molecular Biology with honors from the University of Chicago. She completed her doctorate in genetics from Massachusetts Institute of Technology and her medical degree from the Johns Hopkins School of Medicine. Following her clinical training at Massachusetts General Hospital, she pursued a postdoctoral fellowship at the same institution. She joined the Dana-Farber Cancer Institute in 2021 and is currently an assistant professor at Harvard Medical School and Associate Member of the Broad Institute. She is also an attending pathologist in the Brigham and Women's Hospital Women's and Perinatal Pathology group.

Acknowledgement of Support

"This award represents some of my first funding to study malignancies of the female gynecologic tract. While I routinely diagnose these tumors clinically, I have not yet studied ovarian or endometrial 3D genomes in my lab, and I am grateful to have this critical support for our early investigations."

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Purna Joshi, PhD

ASSISTANT PROFESSOR

The University of Texas at Dallas | Dallas, Texas, USA

The role of adipocyte progenitors in obesity-driven mammary cancer

Scientific Statement of Research

Women who are overweight and obese have an increased breast cancer risk, poorer prognosis, and an approximately 30% increased risk of cancer recurrence and death compared to normal-weight women. To design more targeted and effective therapies, cellular drivers that promote cancer in the context of obesity need to be identified. Adipocyte progenitors undergo adipogenesis and increase fat mass during obesity. Studying the mouse mammary gland, Dr. Joshi first uncovered the capacity of adipocyte progenitors to generate epithelial cells during tissue growth. She and her team seek to elucidate the contribution of adipocyte progenitors in shaping a pro-tumorigenic microenvironment in obesity. Using mouse models of obesity, and manipulation of breast cancer and adipocyte lineage, they plan to investigate obesity effects on mammary adipocyte progenitor cell state and the functional role of this lineage in mammary cancer.

Biography

Dr. Joshi received her doctorate from the Department of Laboratory Medicine and Pathobiology at the University of Toronto and completed a postdoctoral fellowship at the Princess Margaret Cancer Centre. She is currently an assistant professor and principal investigator in the Department of Biological Sciences at The University of Texas at Dallas. Research in her lab focuses on deciphering the role of stem/progenitor cells and microenvironment mechanisms in tissue regeneration and cancer. In particular, her work is centered on identifying the cellular links between breast cancer, hormones, and obesity.

Acknowledgement of Support

"I am truly grateful and honored to receive the 2023 Victoria's Secret Global Fund for Women's Cancers Career Development Award, in Partnership with Pelotonia & AACR. This funding is vital to support my career development and fuel research in my lab that will advance our understanding of excess adiposity-driven breast cancer in the midst of a growing global obesity epidemic."

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

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Mary Mullen, MD

ASSISTANT PROFESSOR

Washington University in St. Louis | St. Louis, Missouri, USA

Targeting platinum chemotherapy resistance in ovarian cancer

Scientific Statement of Research

Over 85% of patients with ovarian cancer develop tumor resistance to standard platinum-based chemotherapy and die within 5 years of diagnosis. To identify targets for overcoming platinum resistance, Dr. Mullen and her lab performed a high-throughput screen. Knockdown of the top candidate, COP9 signalosome complex subunit 6 (COPS6), increased cisplatin-induced DNA damage and platinum sensitivity up to six-fold in ovarian cancer cells. Further, COPS6 transcript levels were noted to be higher in platinum resistant patient tumors. Given the promise of COPS6 inhibition to overcome platinum resistance, Dr. Mullen and her group plan to 1) determine the contribution of COPS6 to platinum resistance in ovarian cancer and to 2) define the mechanisms by which COPS6 promotes platinum resistance.

Biography

Dr. Mullen received her bachelor's degree from The University of Notre Dame and her medical degree with a distinction in research from Saint Louis University. She then completed her obstetrics and gynecology residency and gynecologic oncology fellowship at Washington University in St. Louis. She is currently an assistant professor at Washington University in St. Louis, where she medically and surgically treats patients with gynecologic cancers. Her research is focused on targeting DNA damage response to establish novel biomarkers and therapies to identify and overcome platinum chemotherapy resistance in ovarian cancer.

Acknowledgement of Support

"It is an honor to be recognized amongst such esteemed and established researchers. My ultimate goal is to improve the outcomes of women with ovarian cancer through the development of novel targeted therapies. This Career Development Award provides the resources, collaborations, and recognition necessary to work towards this goal."

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

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Angelina T. Regua, PhD

ASSISTANT PROFESSOR

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

Role of RET in mediating brain metastasis of triple-negative breast cancer

Scientific Statement of Research

Breast cancer brain metastases (BCBM) of triple-negative breast cancers (TNBC) are aggressive, have poor prognoses, and lack effective therapies. Therefore, identifying novel druggable targets in TNBC BCBM is a critical task. RET receptor tyrosine kinase is aberrantly activated in lung and thyroid cancers, and treatment with FDA-approved RET inhibitors potently reduces brain metastases in these cancer types. However, the role of RET in mediating BCBM and efficacy of RET inhibitors in TNBC BCBM is unknown. Dr. Regua's preliminary data suggest that RET activity is preferentially enhanced in BCBM compared to primary breast tumors and is correlated with shortened time to develop BCBM. Treatment of brain-metastatic breast cancer cells with RET inhibitors significantly reduced cell viability, suggesting that RET inhibitors can target TNBC BCBM. In this project, she aims to focus on investigating the role of RET in BCBM and determining the therapeutic potential of pharmacological RET inhibition in BCBM.

Biography

Dr. Regua received her doctorate in Biochemistry and Molecular Biology from the State University of New York Upstate Medical University. She completed her postdoctoral fellowship in the Department of Cancer Biology at the Wake Forest School of Medicine, where she focused on characterizing a novel and druggable signaling crosstalk in triple-negative and HER2-positive breast cancers. Dr. Regua is currently an assistant professor in the Department of Neurosurgery at the University of Texas Health Science Center. Her research is focused on identifying actionable targets in breast cancer brain metastases.

Acknowledgement of Support

"I am honored to receive this award from the AACR. This award provides me with the opportunity to investigate a novel therapeutic target in breast cancer brain metastases, with the ultimate goal of improving therapeutic intervention for patients with metastatic breast 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 Career Development Award, in Partnership with Pelotonia and the AACR is intended to fund innovative research projects in breast and gynecologic cancers and to invest in the next generation of female early-stage scientists domestically and globally. The aim of this award is to foster innovation in the understanding, prevention, interception, early detection, diagnosis, and treatment of breast and gynecologic cancers with the goal of eliminating cancer health disparities and improving patient outcomes.

Ana Ruiz-Saenz, PhD

GROUP LEADER

Center for Cooperative Research in Biosciences (CIC bioGUNE) | Derio, Bizkaia, Spain

Unmasking cancer cells to maximize the impact of antibody-drug conjugates

Scientific Statement of Research

Targeted therapies have revolutionized the treatment of HER2-positive breast cancer patients. Recently, a promising antibody-drug conjugate, trastuzumab-deruxtecan (T-DXd), has shown impressive results in HER2-positive and, unexpectedly, HER2-low and negative cancers. Dr. Ruiz-Saenz and her team plan to address how tumor-specific glycosylation, a largely understudied field in cancer, impacts the efficacy of T-DXd using 3D breast cancer spheroids, functional assays, advanced 3D live-microscopy, and co-culture systems. The proposed research holds the potential to reveal new glycan-based biomarkers of response to T-DXd and open new directions in the development of glycan-specific therapeutics.

Biography

Dr. Ruiz-Saenz received her doctorate in molecular biology at the Autonomous University of Madrid and completed her postdoctoral studies at the University of California, San Francisco. In 2019, she established her research group as an assistant professor at the Erasmus Medical Center in The Netherlands, with the support of the Marie Skłodowska-Curie Actions Program and Dutch Research Council. She currently leads the Cancer Therapies Resistance Lab at the Center for Cooperative Research in Biosciences in Spain. Her research focuses on the molecular mechanisms regulating the efficacy of targeted therapies in HER2-amplified breast cancer.

Acknowledgment of Support

"I am extremely honored to receive the 2023 Victoria's Secret Global Fund for Women's Cancers Career Development Award. This award supports a line of research with the potential of setting new paradigms in the treatment of breast cancer and provides a solid foundation for my scientific career development as an independent researcher."

2023

INDEPENDENT RESEARCH GRANTS

AACR-Debbie's Dream Foundation Innovation and Discovery Grant

The inaugural AACR-Debbie's Dream Foundation Innovation and Discovery Grant is a new grant mechanism that seeks to encourage innovation and translation of ideas from basic research into new treatment options for gastric cancer.

Eunyoung Choi, PhD

ASSOCIATE PROFESSOR

Vanderbilt University Medical Center | Nashville, Tennessee, USA

Fatty acid desaturation as a novel druggable target for gastric cancer

Scientific Statement of Research

Gastric dysplasia is a key stage for malignant transformation to gastric cancer. While the role of metabolism is recognized in supporting the exponential growth and proliferation of cancer cells, it remains obscure which metabolic pathways regulate gastric carcinogenesis. Dr. Choi's group identified a unique monounsaturated fatty acid (MUFA) which fuels dysplastic cell hyperproliferation and survival. Stearoyl-CoA desaturase 1 (SCD1), a catalytic enzyme in the synthesis of unsaturated fatty acids, is specifically upregulated in the transitioning area from metaplasia to dysplasia and strongly expressed in human gastric patient tissues with dysplasia and adenocarcinoma. Dr. Choi's group showed that SCD inhibition decreased cell growth and induced cell death in a mouse model. In this project, the group seeks to evaluate the potential of aberrant fatty acid metabolism as a novel druggable target for prevention or treatment of gastric cancer by assessing levels of MUFA metabolites in human tissues and determine the efficacy of SCD1-targeting drugs.

Biography

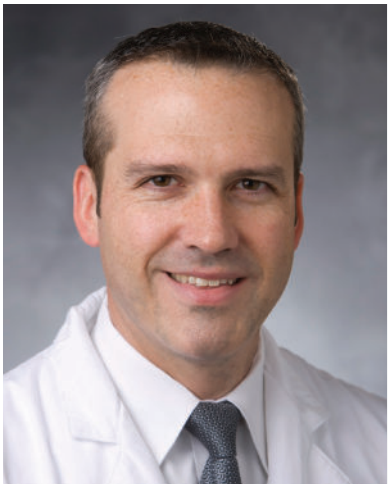
Dr. Choi is an assistant professor at Vanderbilt University Medical Center. She has broad research experiences in stem cell biology and gastric cancer biology. Her group focuses on defining functional roles of oncogenes and stem cell plasticity in gastric pre-cancer, which can lead to dysplasia evolution to adenocarcinoma and is a clear knowledge gap in the field. She is a group leader of a new NCI Program on the Origins of Gastroesophageal Cancers.

Acknowledgement of Support

"I'm truly honored to receive the 2023 AACR-Debbie's Dream Foundation Innovation and Discovery Grant. This grant will allow me to conduct a high-risk project for a novel drug target as a prevention and early intervention strategy for gastric cancer and to obtain key data for future funding."

AACR-Debbie's Dream Foundation Innovation and Discovery Grant

The inaugural AACR-Debbie's Dream Foundation Innovation and Discovery Grant is a new grant mechanism that seeks to encourage innovation and translation of ideas from basic research into new treatment options for gastric cancer.



Brent Allen Hanks, MD, PhD

ASSOCIATE PROFESSOR

Duke University | Durham, North Carolina, USA

The NLRP3-HSP70 axis and immunotherapy resistance in gastric cancer

Scientific Statement of Research

Despite the recent availability of checkpoint inhibitor immunotherapies, the majority of gastric cancer patients do not benefit from this treatment modality. Dr. Hanks's Lab has identified the tumor-intrinsic NLRP3 inflammasome-HSP70 signaling axis as a driver of checkpoint inhibitor resistance in melanoma. Their recent clinical specimen studies suggest that NLRP3 amplification and enhanced NLRP3 activity levels correlate with anti-PD-1 resistance in advanced gastric cancer patients. They now propose to examine the role of the NLRP3-HSP70 signaling axis in regulating anti-tumor immunity in an orthotopic murine gastric cancer model. His team will examine the ability of pharmacologic inhibitors of both NLRP3 and HSP70 to overcome resistance to anti-PD-1 immunotherapy and determine whether NLRP3 genetic amplification can serve as a marker of response to this treatment strategy. This work aims to support a phase I clinical trial testing NLRP3 inhibitors in combination with anti-PD-1 immunotherapy in advanced gastric cancer patients.

Biography

Dr. Hanks completed his medical and doctorate degrees in tumor immunology in the Medical Scientist Training Program at Baylor College of Medicine. He then completed his internal medicine residency and oncology fellowship training at Duke University. Dr. Hanks is currently an associate professor of medical oncology in the department of medicine and an assistant professor of pharmacology and cancer biology at Duke University and the Duke Cancer Institute. A medical oncologist, he also directs a basic/translational research lab focusing on developing novel strategies for overcoming immunotherapy resistance in patients with upper gastrointestinal and cutaneous malignancies.

Acknowledgement of Support

"It is truly an honor to be selected as a recipient of the 2023 AACR-Debbie's Dream Foundation Innovation and Discovery Grant. This award provides critical support as we transition our cancer immunotherapy resistance and toxicity research program into the field of gastrointestinal oncology."

AACR-Debbie's Dream Foundation Innovation and Discovery Grant

The inaugural AACR-Debbie's Dream Foundation Innovation and Discovery Grant is a new grant mechanism that seeks to encourage innovation and translation of ideas from basic research into new treatment options for gastric cancer.

Ryan H. Moy, MD, PhD

ASSISTANT PROFESSOR

Columbia University | New York, New York, USA

Targeting CCNE1 amplification in gastric cancer

Scientific Statement of Research

Cyclin E1 (CCNE1) amplifications are found in approximately 10% of stomach cancers and are associated with DNA replication stress, chromosomal instability, therapeutic resistance, and immune cell exclusion. Recent studies found that CCNE1-amplified tumors are selectively vulnerable to loss of Protein Kinase, Membrane Associated Tyrosine/Threonine 1 (PKMYT1), a member of the Wee1 G2 checkpoint kinase family that negatively regulates CDK1. PKMYT1 inhibition leads to unscheduled mitotic entry and DNA damage induction, which can trigger innate immune responses. Dr. Moy and colleagues will leverage CCNE1-amplified gastric cancer patient-derived organoids and syngeneic mouse models to investigate the activity and mechanism of combined PKMYT1 inhibition and immune checkpoint blockade. These studies aim to define a new biomarker and drug target for combination immunotherapy and targeted therapy with the potential to improve treatment options for patients with gastric cancer.

Biography

Dr. Moy received his medical and doctorate degrees in immunology from the University of Pennsylvania. After his internal medicine residency at Weill Cornell, he completed his medical oncology fellowship at Memorial Sloan Kettering Cancer Center, during which he also pursued postdoctoral research at The Rockefeller University studying cancer metastasis. He is currently an assistant professor and gastrointestinal medical oncologist at Columbia University Irving Medical Center. In addition to heading the gastric cancer clinical trial program, he leads laboratory-based translational studies focused on developing novel therapeutic strategies for gastric cancer.

Acknowledgement of Support

"I am extremely honored to be a recipient of the 2023 AACR-Debbie's Dream Foundation Innovation and Discovery Grant. This award will allow my group to investigate a novel combination of targeted therapy and immunotherapy for gastric cancer, which we hope will eventually lead to new therapeutic options for patients."

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 2023 is dedicated to supporting neuroblastoma research.

Timothy T. Spear, MD, PhD

FELLOW PHYSICIAN

Children's Hospital of Philadelphia | Philadelphia, Pennsylvania, USA

Scientific Statement of Research

Dr. Spear is interested in developing novel immunotherapies for childhood cancers. He has developed next-generation syngeneic and humanized murine models of high-risk neuroblastoma to evaluate novel immunotherapies. These strategies include a novel class of chimeric antigen receptor-engineered T cells (CAR T cells) targeting intracellular oncogenic proteins, *in vivo* RNA-mediated delivery of CARs, oncolytic viruses, and vaccine developed to enhance efficacy and persistence of CAR T cells, as well as personalized neoantigen-based vaccines.

Biography

Dr. Spear graduated *cum laude* from the University of Notre Dame and earned both his doctorate and medical degrees from Loyola University Chicago Stritch School of Medicine. He completed his residency in general pediatrics at the Children's Hospital of Philadelphia (CHOP) and stayed for a fellowship in pediatric hematology/oncology. After completing his first year of clinical fellowship training, Dr. Spear joined the laboratory of Dr. John Maris, where his research focuses on the development of novel immunotherapeutic strategies for childhood cancers. He is currently a third-year pediatric hematology/oncology fellow at CHOP in its physician-scientist program.

Acknowledgement of Support

"Receiving the Friends of the AACR Foundation Early Career Investigator Award is a humbling honor. Only 4% of federal funding is allocated to childhood cancer research, so foundational funding opportunities such as these are critical to accelerating efforts to understand mechanisms of disease and develop safer and more effective therapies. Funding for early-career investigators, such as myself, affords scientific freedom and precedent to compete for other funding opportunities."

2023

GRANTS SUPPORTING RESEARCHERS IN AFRICA

Beginning Investigator Grant for Catalytic Research (BIG Cat)

BIG Cat is a premier initiative by the African Organization for Research and Training in Cancer (AORTIC) to build capacity for cancer research in Africa. The goal of BIG Cat is to aid the next generation of African cancer researchers to base their careers in their home countries and institutions, and to contribute to the overall expansion of capacity for research and training in Africa by generating evidence that will guide practice and policy. BIG Cat was initiated in 2010 by the US National Cancer Institute Center for Global Health (NCI/CGH), and it is now a collaborative effort of AORTIC, American Association for Cancer Research, and NCI/CGH, with funding support from Partners including academic, industrial, and scientific organizations.

Katherine Rae Antel, MD, PhD

CLINICAL HEMATOLOGIST

University of Cape Town | Cape Town, South Africa

Liquid biopsy for the diagnosis of lymphoma in Sub-saharan Africa

Scientific Statement of Research

In endemic tuberculosis (TB) areas, lymphoma is often misdiagnosed as extrapulmonary TB, leading to treatment delays and increased mortality. Clinical and basic investigation findings can overlap between TB and lymphoma, complicating accurate diagnosis. Limited access to specialized pathology services exacerbates challenges in lymphoma diagnosis, especially in regions like Sub-Saharan Africa (SSA). Dr. Antel and her team aim to develop a consolidated liquid biopsy panel for lymphoma detection using cell-free DNA in peripheral blood. This approach involves targeting recurrent somatic mutations associated with prevalent lymphomas in SSA and detecting functional VDJ genes of the immunoglobulin loci. This panel offers immediate utility in areas where lymph node biopsies are not feasible. As sequencing costs decline, such 'liquid biopsy' methods promise enhanced molecular diagnosis, addressing the urgent need for improved accuracy in lymphoma diagnosis.

Biography

Dr. Antel is a South African-trained clinical hematologist and physician-scientist. Her research focus lies at the intersection of infectious disease and cancer, particularly HIV-associated lymphomas in SSA. Dr. Antel has been based at the University of Cape Town (UCT) for this project, where she holds an honorary senior lecture appointment and is an associate member of the Institute for Infectious Disease and Molecular Medicine. She has a dual appointment in the Division of Medical Oncology at the Dana-Farber Cancer Institute as a senior scientist, where she works remotely on molecular diagnostic initiatives and on *in vitro* and *in vivo* models of germinal center dysfunction in the context of HIV. Dr. Antel's goal is to integrate clinical need in resource-poor regions with advanced technologies to enhance regional molecular diagnostics.

Acknowledgement of Support

"I'm deeply thankful for this support, which enables me to transition from clinical practice to molecular research. This award allows dedicated time for research and has facilitated the development of a specimen processing lab at UCT and acquisition of cancer genomics skills in junior trainees involved in the project in South Africa."

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Brehima Diakite, MD, PhD

ASSISTANT PROFESSOR

University of Sciences, Techniques and Technologies of Bamako | Bamako, Mali

Pharmacogenetics of hormonal breast cancer treatment

Scientific Statement of Research

In Mali, nearly 25% of women diagnosed with breast cancer (BC) succumb to the disease within 12 months, despite treatment. A commonly used BC drug, tamoxifen, is metabolized by cytochrome P450 (CYP450) and glutathione S-Transferase (GST) enzymes. Dr. Diakite is set to elucidate the impact of CYP450 and GST polymorphism genes on the response to tamoxifen-based treatment using AS-PCR and RT-PCR. Additionally, using NGS, he seeks to identify new biomarkers involved in tamoxifen response. This research seeks to uncover the genetic basis of differential treatment outcomes in BC, potentially leading to improved personalized therapeutic approaches and better outcomes for BC patients in Mali.

Biography

Dr. Diakite received his medical degree from the University of Bamako in 2008 before completing a university diploma course in medical genetics from the University of Versailles in 2009. He obtained his doctorate in genetic and molecular pathology from Hassan II University, Morocco in 2015. Dr. Diakite is currently an assistant professor of genetic and molecular biology at the University of Sciences, Techniques and Technologies of Bamako where he is embarking on a two-year fellowship. During this fellowship, his research will concentrate on the pharmacogenetic aspect of breast cancer. His ultimate objective is to become an independent clinical-scientist and a leader in basic research, with a focus on the molecular epidemiology, epigenetic, and pharmacogenetic aspects of breast cancer.

Acknowledgement of Support

“I am deeply honored to be awarded the Beginning Investigator Grant for Catalytic Research (BIG Cat). This grant will significantly enhance and expand research in the critical field of pharmacogenetics of breast cancer. Moreover, it provides me with the invaluable opportunity and support to establish an independent and impactful research program.”

Beginning Investigator Grant for Catalytic Research (BIG Cat)

BIG Cat is a premier initiative by the African Organization for Research and Training in Cancer (AORTIC) to build capacity for cancer research in Africa. The goal of BIG Cat is to aid the next generation of African cancer researchers to base their careers in their home countries and institutions, and to contribute to the overall expansion of capacity for research and training in Africa by generating evidence that will guide practice and policy. BIG Cat was initiated in 2010 by the US National Cancer Institute Center for Global Health (NCI/CGH), and it is now a collaborative effort of AORTIC, American Association for Cancer Research, and NCI/CGH, with funding support from Partners including academic, industrial, and scientific organizations.

Alex Mremi, DDS, MMed, FCPath-(ECSA), PhD

CONSULTANT PATHOLOGIST

Kilimanjaro Christian Medical Centre | Moshi, Tanzania

Cytosponge cytology screening for esophageal cancer in Tanzania

Scientific Statement of Research

Esophageal squamous cell carcinoma (ESCC) is a major cause of mortality in Eastern Africa. Both ESCC and its asymptomatic precursor esophageal squamous dysplasia (ESD) are typically diagnosed by endoscopy. An alternative method, the Cytosponge, or "pill-on-a-string", is being explored for its potential utility for early detection and etiologic research of ESCC/ESD. In this study, Dr. Mremi is set to administer Cytosponge to 500 high-risk individuals in Tanzania and assess acceptance rates. In addition, he plans to build a Cytosponge biobank that can be used to identify biomarkers and to conduct molecular studies.

Biography

Dr. Mremi recently completed a doctoral fellowship, where he focused on improving access to cervical cancer screening and early detection in Tanzania. He is an anatomic pathologist and head of the pathology department at Kilimanjaro Christian Medical Centre, a referral and teaching hospital in northern Tanzania. He has seven years of clinical experience. He seeks to improve access to cancer screening and diagnosis, particularly in resource-constraint settings. His research areas of interest include esophageal and women's cancers. As a lecturer, he is extensively involved in undergraduate and postgraduate training, and the supervision of medical students in clinical research.

Acknowledgement of Support

"I would like to thank the AORTIC and AACR for this Beginning Investigator Grant for Catalytic Research (BIG Cat). I believe that the grant is an important and critical step for my career development towards becoming an independent African cancer researcher. Underrepresented researchers when funded can address unmet patient needs and inequities by building an inclusive research landscape."

Beginning Investigator Grant for Catalytic Research (BIG Cat)

BIG Cat is a premier initiative by the African Organization for Research and Training in Cancer (AORTIC) to build capacity for cancer research in Africa. The goal of BIG Cat is to aid the next generation of African cancer researchers to base their careers in their home countries and institutions, and to contribute to the overall expansion of capacity for research and training in Africa by generating evidence that will guide practice and policy. BIG Cat was initiated in 2010 by the US National Cancer Institute Center for Global Health (NCI/CGH), and it is now a collaborative effort of AORTIC, American Association for Cancer Research, and NCI/CGH, with funding support from Partners including academic, industrial, and scientific organizations.

Rizine Robert Mzikamanda, MBBS, MMed

PEDIATRIC HEMATOLOGIST-ONCOLOGIST

Baylor College of Medicine Children's Foundation | Lilongwe, Malawi

Acute leukemia diagnostics in Malawian children

Scientific Statement of Research

The majority (~80%) of children with cancer live in low- and middle-income countries, where five-year overall survival of acute leukemia, the most common childhood malignancy, is as low as 15%. The most significant challenges in childhood acute leukemia survival in sub-Saharan Africa (SSA) include limited cancer diagnosis capacity and a lack of molecular characterization. Dr. Mzikamanda aims to integrate immunophenotype and molecular characteristics of acute leukemias to understand subtypes in Malawi, and to generate preliminary evidence on locally appropriate risk-adapted treatment protocols. He is set to: a) implement custom Nanostring gene fusion assays, b) determine the feasibility and impact of incorporating acute leukemia gene fusion testing into clinical care, and c) correlate immunophenotypic and molecular features with clinical and epidemiological features. The data he obtains can help describe the biology of acute leukemia in children in SSA and validate the applicability of current risk-adapted protocols in the region.

Biography

Dr. Mzikamanda received his medical degree from the University of Malawi College of Medicine. He completed his residency in pediatrics from the University of Malawi and the University of Pretoria in South Africa. He completed his fellowship training in the East African Pediatric Hematology-Oncology Fellowship Program. He is currently a pediatric hematologist-oncologist at the Texas Children's Hospitals' Global Hematology-Oncology Pediatric Excellence program in Malawi, where he translates clinical best practices into actions that positively impact children with cancer and blood disorders in Malawi. His interest is in the clinical and molecular characteristics of childhood hematological malignancies.

Acknowledgement of Support

"Accurate and timely cancer diagnoses are crucial for improving survival in sub-Saharan Africa. The Beginning Investigator Grant for Catalytic Research (BIG Cat) is a steppingstone to support my aspiration of becoming a leading clinical researcher in understanding immunological and genetic modifiers of childhood hematologic malignancies and developing clinical care programs of excellence."

2023

GRANTS SUPPORTING RESEARCHERS IN LATIN AMERICA

2023 GRANTS SUPPORTING RESEARCHERS IN LATIN AMERICA

AACR Maximizing Opportunity for New Advancements in Research in Cancer (MONARCA) Grant for Latin America

The AACR Maximizing Opportunity for New Advancements in Research in Cancer (MONARCA) Grant for Latin America represents an AACR initiative to address the regional cancer burden by promoting and supporting early career investigators in Latin America to establish a successful career path in cancer research, thereby increasing and sustaining a cadre of talented cancer researchers in Latin America.

Rafael Loch Batista, MD, PhD

RESEARCHER PHYSICIAN

University of Sao Paulo Medical School | Sao Paulo, Brazil

Human endogenous retrovirus reactivation in triple-negative breast cancer

Scientific Statement of Research

Human Endogenous Retroviruses (HERVs) are remnants of ancient retroviruses that integrated into the human genome and can be reactivated under certain conditions, such as cancer. Dr. Batista aims to investigate the role of reactivated HERVs in triple-negative breast cancer (TNBC). Analyzing gene expression data from a biobank and The Cancer Genome Atlas, he seeks to identify differentially expressed HERVs, associated host genes, and potential links to adaptive immunity regulators. Significant progress in his work can demonstrate the potential of using reactivated HERVs as innovative biomarkers for TNBC diagnosis, prognosis, and treatment response assessment.

Biography

Dr. Batista obtained his medical degree from the Federal University of Santa Maria. He pursued further medical specialization by completing an internal medicine and endocrinology residency. Subsequently, he obtained a doctorate in endocrinology from the University of Sao Paulo. Following his doctoral studies, he conducted postdoctoral research at the McKusick/Nathans Institute of Genetic Medicine at Johns Hopkins Medical School. Since 2019, he has held the position of clinician researcher at the Institute of Cancer of Sao Paulo affiliated with Sao Paulo University. In this role, he contributes to both clinical practice and conducts research related to hormones and cancer.

Acknowledgement of Support

“Raising public funds for research in Brazil is exceptionally challenging due to the lack of government policies that support science. Therefore, recognizing the potential to generate impactful translational data, the AACR opportunity is of utmost importance to us. It represents a crucial avenue through which we can obtain the necessary resources to advance our research efforts and contribute to the field of cancer science.”

2023 GRANTS SUPPORTING RESEARCHERS IN LATIN AMERICA

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Javiera Garrido, MSc, PhD

POSTDOCTORAL RESEARCHER

Universidad de Desarrollo | Santiago, Chile

Factors affecting tumor variability and clinical progression in lung cancer

Scientific Statement of Research

The landscape of lung cancer genomes of Latin-American populations has not been comprehensively described. On the one hand, Latin-American patients are commonly underrepresented in both clinical trials and epidemiological studies and appear to present higher incidence and mortality rates in comparison to the developed world. On the other hand, this population is comprised of mixed ancestry backgrounds and is also affected by specific patterns of environmental exposures. Dr. Garrido's project attempts to close this knowledge gap by investigating the effect that inherited genetic constitution and non-genetic characteristics exert on the genomic landscape of this population. She will also investigate the combined effect of these factors on the clinical course of the disease.

Biography

Dr. Garrido completed her undergraduate degree at the University of Chile. She then continued her academic development with postgraduate studies at Imperial College London (London, UK) where she was awarded a master's degree and a doctorate in epidemiology and biostatistics. Her research interests mainly relate to the application of novel statistical approaches and computationally efficient models to provide mechanistic insight into the onset and progression of complex non-communicable chronic diseases. Her current work is focused on elucidating the interplay between inherited genetic constitution, acquired genetic alterations, and population-specific exposure structures with the clinical course of lung cancer.

Acknowledgement of Support

"The AACR Maximizing Opportunity for New Advancements in Research in Cancer (MONARCA) Grant for Latin America is the first grant I have received as an independent researcher, and I am honored and humbled to have been given this remarkable opportunity. I will work very hard to make the most of this achievement and to further the scope of cancer epidemiology research in Latin-America."

2023 GRANTS SUPPORTING RESEARCHERS IN LATIN AMERICA

AACR Maximizing Opportunity for New Advancements in Research in Cancer (MONARCA) Grant for Latin America

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Sofia Russo, PhD

ASSISTANT PROFESSOR

Institut Pasteur de Montevideo | Montevideo, Uruguay

Modulation of Th17 cells polarity in cancer immunotherapy by TMEM176B

Scientific Statement of Research

The role played by Th17 cells in cancer immunity and immunotherapy is highly controversial with both anti-tumor and pro-tumor effects being reported. Dr. Russo and her colleagues will study a possible new intrinsic regulator of Th17 cells, TMEM176B. Their preliminary results show that TMEM176B is associated with Th17 cell polarity in the context of PD-1 blockade. They plan to characterize whether and how intrinsic TMEM176B expression controls the anti-tumoral capacity of Th17 cells, characterizing whether TMEM176B controls cooperation of Th17 cells with exhausted CD8+ T cells. They will also evaluate if there is a correlation between TMEM76B expression in Th17 cells and CD8+ T cell exhaustion in tumor biopsies from patients treated with PD-1 blockers.

Biography

Dr. Russo studied at the University of the Republic, Uruguay, where she obtained an undergraduate degree in biochemistry and a master's degree and doctorate in cellular and molecular biology. She then completed a year as a postdoctoral fellow at the Institut Pasteur de Montevideo. Presently, she holds a position as an assistant professor in the Immunobiology department of the Medical School, University of the Republic.

Acknowledgement of Support

"The AACR Maximizing Opportunity for New Advancements in Research in Cancer (MONARCA) Grant for Latin America will drastically improve the quality of our research focusing on Th17-exhausted CD8+ T cell cooperation in the context of cancer immunotherapy. Personally, this project will mark a milestone in my career as it brings me closer to my goal of becoming an independent researcher."

2024

FELLOWSHIPS

AACR-Conquer Cancer®, the ASCO Foundation Young Investigator Award for Translational Cancer Research

The AACR-Conquer Cancer®, the ASCO Foundation Young Investigator Award for Translational Cancer Research provides funding to a promising investigator to encourage and promote quality research in translational oncology. The purpose of this jointly supported award is to fund a physician-scientist during the transition from a fellowship program to a faculty appointment.

Nolan Priedigkeit, MD, PhD

MEDICAL ONCOLOGY FELLOW

Dana-Farber Cancer Institute | Boston, Massachusetts, USA

Fusion RNAs as individualized therapeutic targets in advanced breast cancer

Scientific Statement of Research

Breast cancer stands out among epithelial malignancies due to its distinct genomic landscape which is characterized by a high degree of structural variation and genomic instability. These genomic changes produce nucleotide sequences that are highly specific to cancer cells; occasionally in the form of expressed fusion RNAs. Dr. Priedigkeit will merge advances in genomic discovery and gene therapy to better define the landscape of fusion RNAs in metastatic breast cancer and credential novel gene therapy approaches to exploit these sequences as recruitment biomolecules for cytotoxic payload delivery. Ultimately, his goal is to challenge our protein-centric view of cancer medicine and to innovate nucleotide-based therapeutics in advanced malignancies.

Biography

Dr. Priedigkeit received his undergraduate degree from the University of Oregon. He received his medical degree and doctorate from the University of Pittsburgh School of Medicine. His thesis applied translational genomics to discover acquired molecular dependencies in metastatic breast cancers. He completed an internal medicine residency at Brigham and Women's Hospital and is currently a medical oncology fellow at the Dana-Farber Cancer Institute and a postdoctoral scholar at the Broad Institute of MIT & Harvard. In his clinical practice, Dr. Priedigkeit sees patients with breast cancer and his research aims to merge computational and genomic sciences with technology development to improve how we understand and treat advanced cancers.

Acknowledgment of Support

"The AACR-Conquer Cancer®, the ASCO Foundation Young Investigator Award for Translational Cancer Research will help catalyze my development as an independent physician scientist focused on applying genomic technologies to improve how we care for patients with advanced malignancies."

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.

Erica M. Pimenta, MD, PhD

MEDICAL ONCOLOGY FELLOW

Dana-Farber Cancer Institute | Boston, Massachusetts, USA

IGF1 loss as a molecular driver of liposarcoma de-differentiation

Scientific Statement of Research

Liposarcoma (LPS) is an informative model to investigate dysregulated differentiation given its well and de-differentiated subtypes (WDLPS, DDLPS). WDLPS transitions to DDLPS in 25% of patients, leading to metastatic disease, but the mechanisms governing the transition are poorly understood. Dr. Pimenta utilized single nucleus RNA sequencing to compare 23 adipose, WDLPS, and DDLPS patient samples, and this analysis revealed loss of IGF1 signaling in DDLPS. In normal adipocytes, IGF1 autocrine signaling maintains differentiation, therefore, this proposal will investigate whether restoration of IGF1 signaling in DDLPS results in terminal differentiation and a less metastatic phenotype. In Aim 1, Dr. Pimenta will measure the effect of exogenous IGF1 on DDLPS morphology and behavior *in vitro*. In Aim 2, external DDLPS bulk RNA-sequencing datasets will be analyzed to assess if IGF1 loss predicts metastatic disease. Completion of this proposal will elucidate the role of IGF1 in liposarcoma and determine its utility as a prognostic tool and novel therapeutic target.

Biography

Dr. Pimenta obtained both her bachelor's degree in molecular biology and medical and doctorate degrees from Rutgers University. Her thesis work focused on transcriptional programs that govern disease behavior and immune response in solid tumors. Dr. Pimenta completed a combined internal medicine and pediatrics residency at Brigham and Women's and Boston Children's Hospitals in 2020. She is clinically and scientifically focused on sarcoma pathogenesis and immune evasion, leveraging both computational and molecular biology approaches. Dr. Pimenta is currently a medical oncology fellow at the Dana-Farber Cancer Institute.

Acknowledgment of Support

"I am extremely grateful and honored to be awarded the AACR-QuadW Foundation Sarcoma Research Fellowship in Memory of Willie Tichenor. In the sarcoma clinic, many patients have asked me why there is a relative lack of data about this group of cancers. Becoming a sarcoma-focused physician-scientist has allowed me to proudly tell my patients that sarcoma research is active and state-of-the art. This award means so much to me because it allows for the continuation of this necessary and important work, with protected research time to pursue excellence in biologic discovery. I am very thankful to all who made this possible."

2024

CAREER DEVELOPMENT AWARDS

Breast Cancer Research Foundation-AACR Career Development Award to Promote Diversity and Inclusion

The Breast Cancer Research Foundation-AACR Career Development Award to Promote Diversity and Inclusion represents a focused effort to encourage and support investigators from diverse backgrounds that are underrepresented in cancer research and to foster their career advancement.

Paola Betancur, PhD

ASSISTANT PROFESSOR

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

A genomic insertion variant activates immune escape in breast cancer

Scientific Statement of Research

Tumors can evade the immune system by intrinsically upregulating genes of immune evasion (e.g., CD47). However, it remains unknown whether mechanisms activating the immune evasion program in cancer cells are patient-specific. This information is key for generating tailored treatments to recruit the immune system for the eradication of cancer. Super-enhancers are long genomic regions that have potent gene regulatory activity and are critical for the upregulation of immune suppressive genes within breast cancer cells.

This proposal aims to determine whether an eight-base pair binding motif, encoded by a patient-specific genomic insertion, actives a super-enhancer-driven program of immune evasion through the dual regulation of CD47 and the long intergenic non-coding regulatory gene 00636 (LINC00636). Therefore, this insertion could be a signature of tumor immune escape and, consequently, progression in patients carrying this genomic variant.

Biography

Dr. Betancur received her bachelor's degree in biology from Stony Brook University, NY, and her doctorate in cell biology from California Institute of Technology. She completed her postdoctoral training at Stanford University, where she studied the genomic mechanisms that activate an immune evasion program in cancer cells through CD47 upregulation. Dr. Betancur became a faculty member at the University of California, San Francisco in 2019, where her research focuses on gene regulation and immunogenomics.

Acknowledgment of Support

"The Breast Cancer Research Foundation-AACR Career Development Award to Promote Diversity and Inclusion enables me to engage in programs that promote diversity and inclusion while performing cancer research. This preserves my passion for both causes and ensures I can contribute to them with dedication."

Breast Cancer Research Foundation-AACR Career Development Award to Promote Diversity and Inclusion

The Breast Cancer Research Foundation-AACR Career Development Award to Promote Diversity and Inclusion represents a focused effort to encourage and support investigators from diverse backgrounds that are underrepresented in cancer research and to foster their career advancement.

Francisco Sanchez-Vega, PhD

ASSISTANT ATTENDING COMPUTATIONAL ONCOLOGIST

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

Race-aware multimodal data integration for outcome models in breast cancer

Scientific Statement of Research

Dr. Sanchez-Vega's team will create and analyze a comprehensive multimodal database for a racially diverse population of 1,600 locally advanced breast cancer patients treated with neoadjuvant chemotherapy. This database will include comprehensive clinical information, as well as digitized pathology slides, magnetic resonance images, and targeted DNA sequencing data. This cohort will be used to build race-informed multimodal machine learning algorithms that predict complete pathological response to neoadjuvant therapy. Dr. Sanchez-Vega will investigate the predictive performance of individual data modalities when patients are stratified by race and relevant molecular subtypes. His team will design deep learning models that integrate multiple data modalities in a race-informed manner and optimize them to generalize to diverse real-world populations. The database and computational pipelines generated will be made publicly available to facilitate long term development of multimodal methods that further improve predictive and prognostic capabilities for breast cancer patients.

Biography

Dr. Sanchez-Vega earned his doctorate in applied mathematics and statistics, with an area of specialization in computational medicine, from Johns Hopkins University. He is currently an assistant attending in the computational oncology service of the Department of Epidemiology and Biostatistics at Memorial Sloan Kettering. Dr. Sanchez-Vega's research focuses on translational applications of machine learning, statistical modeling, and computational methods to the field of cancer genomics and precision oncology. His group is also interested in the use and implementation of novel computational approaches for multimodal integration of genomic sequencing data and orthogonal sources of biological and clinical information.

Acknowledgment of Support

"The Breast Cancer Research Foundation-AACR Career Development Award to Promote Diversity and Inclusion will provide me with dedicated resources and protected research time to work on breast cancer disparities research. Importantly, the analysis methodology and the race-informed computational models that my team will develop will be extendable to investigate related questions in other cancer types in the future."

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 G. Towers, PhD

ASSISTANT PROFESSOR

Salk Institute for Biological Studies | La Jolla, California, USA

Targeting metabolic adaptations to autophagy inhibition in PDAC

Scientific Statement of Research

There is an immediate need for more effective treatments for pancreatic cancer. Most pancreatic ductal adenocarcinoma (PDAC) cells rely heavily on the catabolic recycling process, autophagy. Targeting autophagy *in vitro* and *in vivo* has shown encouraging results leading to several clinical trials in PDAC. Despite some favorable responses, the impact on overall PDAC survival with these therapies is limited, likely due to inherent and acquired resistance. Recently, Dr. Towers found that cultured PDAC cells also acquire resistance to pharmacological autophagy inhibition. She proposes that a better understanding of these adaptive mechanisms will help identify ideal combination therapies to improve the efficacy of autophagy inhibition in pancreatic cancer patients. Preliminary analyses from Dr. Towers' lab suggest that PDAC cells resistant to autophagy inhibition have an increased dependency on nucleotide metabolism pathways. Dr. Towers' project will leverage these mechanisms to identify new combination therapies to treat pancreatic cancer.

Biography

Dr. Towers completed both her doctorate and postdoctoral studies at the University of Colorado. During this time, she developed unique CRISPR/Cas9 tools to understand the recycling process, autophagy, in cancer cells. Dr. Towers is currently an assistant professor at the Salk Institute of Biological Studies in San Diego, where she launched her own lab in 2021 that focuses on targeting autophagy in pancreatic cancer. She was recently named a Pew-Stewart Scholar and V scholar and has received the Black in Cancer Young Investigator Award, Chan Zuckerberg Initiative Diversity Leadership Award, and the NIH New Innovator Award.

Acknowledgment of Support

"I am so grateful to The Lustgarten Foundation and AACR for funding our work. It's an honor to be funded by this award in the name of the civil rights leader John Robert Lewis. This will help us make fundamental discoveries about pancreatic cancer metabolism and identify better combination therapies."

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 support the career advancement of a female scientist engaged in pancreatic cancer research.

Tracy W. Liu, PhD

ASSISTANT PROFESSOR

West Virginia University | Morgantown, West Virginia, USA

Expanding immunotherapy in pancreatic cancer by targeting myeloperoxidase

Scientific Statement of Research

Pancreatic cancer has a survival rate of less than 12% beyond 5 years post diagnosis. This highlights the urgent need for improved treatments as current therapies face significant patient resistance. Immunotherapy, while successful in certain cancers, has limited efficacy in pancreatic cancer due to a highly immunosuppressive tumor microenvironment characterized by extensive infiltration of tumor-associated neutrophils. The immunosuppressive function of tumor-associated neutrophils is dependent upon the increased production of reactive oxygen species, primarily by myeloperoxidase. Although myeloperoxidase inhibitors show promise in other diseases, their application in cancer remains unexplored. The proposed studies will provide mechanistic insight into how myeloperoxidase regulates tumor-associated neutrophil function and impacts immunotherapy response. This project aims to investigate whether inhibiting myeloperoxidase improves immune checkpoint therapy, which could be a clinically translatable treatment strategy that would expand current therapeutic options for pancreatic cancer patients.

Biography

Dr. Liu earned her bachelor's degree from the University of British Columbia and her doctorate in medical biophysics from the University of Toronto. Following her doctoral studies, Dr. Liu completed her postdoctoral fellowship at the University of Texas MD Anderson Cancer Center. She is currently as assistant professor in the Department of Microbiology, Immunology and Cell Biology at West Virginia University.

Acknowledgment of Support

"I'm incredibly honored to receive the 2024 Lustgarten Foundation-AACR Career Development Award for Pancreatic Cancer Research, in Honor of Ruth Bader Ginsburg. Her legacy in advancing gender equality has paved the way for my career as a woman scientist. This award supports my pancreatic cancer research and boosts my confidence, affirming the potential impact of my work."

2024

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.

Renato Ostuni, PhD

ASSOCIATE PROFESSOR

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Targeting the PGE2-IL-1b axis for PDAC diagnosis and early treatment

Scientific Statement of Research

Pancreatic ductal adenocarcinoma (PDAC) is a highly aggressive disease with limited diagnostic and therapeutic options. Abnormal inflammation and tissue repair processes often cooperate with activated oncogenes to promote tumor initiation, progression, and immune escape. The proposed research aims to elucidate the immunological dynamics and spatial correlates of PDAC initiation, focusing on the pathogenic interplay between a recently described subset of IL-1b-expressing tumor-associated macrophages (TAMs) and pancreatic cancer cells. By integrating advanced molecular analyses in patients with pre-neoplastic lesions of the pancreas with mechanistic experiments in preclinical models, this proposal aims to assist the development of diagnostic methods and immune-based strategies for prevention and early interception of PDAC.

Biography

Dr. Ostuni is an associate professor of tissue biology at San Raffaele Institute in Milan (Italy) whose research interests lie at the interface of immunology, genomics, cancer biology, and gene therapy. Throughout his career, Dr. Ostuni has made substantial contributions to our understanding of regulatory principles underlying the development and function of innate immune cells – such as macrophages and neutrophils – during homeostasis and cancer. His research has been published in top scientific journals and has received major international recognitions. Dr. Ostuni actively engages in public outreach and scientific communication projects and has made multiple appearances on national television and radio shows.

Acknowledgement of Support

“I am honored and thrilled to receive the Lustgarten Foundation-Swim Across America-AACR Pancreatic Cancer Early Detection Research Grant. This recognition will not only support our best research – it will foster exchange and collaborative interactions with AACR fellows, ultimately resulting in scientific discoveries for the benefit of pancreatic cancer patients.”

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