SWIM ACROSS AMERICA
★ MAKING WAVES TO FIGHT CANCER ★

Benefiting Aflac Cancer & Blood Disorders Center CHILDREN'S HEALTHCARE OF ATLANTA

SAA - ATLANTA

2020 GRANT AMOUNT: $500,000

GRANT RECIPIENT: Douglas Graham M.D., Ph.D Chief of the Aflac Cancer and Blood Disorders Center of Children's Healthcare of Atlanta
PROJECT: Leukemia Research and Clinical Trials

Project Details: Funds raised from the 2016-2019 swims supported leukemia research and clinical trials under the direction of Dr. Douglas Graham and his team of researchers at the Aflac Cancer Center and the Winship Cancer Institute of Emory University. Thanks to the strong partnerships between Swim Across America, Children's Healthcare of Atlanta, the Aflac Cancer and Blood Disorders Center, and the Graham/DeRyckere laboratory, clinical trials are underway to help pediatric and adult patients with AML.

GRANT RECIPIENT: Rafi Kazi, MD
PROJECT: Pediatric Leukemia

Project Details: Leukemia is the most common type of childhood cancer. Although significant progress has been made in the treatment of some pediatric leukemias, certain leukemias continue to have a poor prognosis. We propose to further investigate these proteins as novel interactors with the CALM-AF10/CRM1 complex. Additionally, to better understand the role of CRM1 in CALM-AF10 leukemogenesis, we propose to perform similar proximity-based labeling experiments and subsequent validation experiments. These studies will identify proteins that interact directly with CRM1 in the CALM-AF10/CRM1 complex. By better understanding these protein-protein interactions, we hope to identify novel therapeutic targets for these difficult-to-treat leukemias.

GRANT RECIPIENT: Sherri K. Smart, MD PhD
PROJECT: Targeting the receptor tyrosine kinase MERTK in osteosarcoma

Project Details: These studies represent the first critical steps toward development of MRX-2843 for treatment of osteosarcoma, with potential to directly inform and enable a clinical trial in pediatric patients with osteosarcoma and, ultimately, to improve both outcomes and quality of life for patients with this disease.

GRANT RECIPIENT: Curtis J. Henry, Ph.D.
PROJECT: Acute Lymphoblastic Leukemia Research

Project Details: Acute lymphoblastic leukemia (ALL) is the most common malignancy in childhood accounting for about 20% of pediatric malignancies and >3,000 new diagnoses each year. Even though there have been vast improvements in the treatment of pediatric ALL, leading to an overall survival of about 90%, emerging epidemiologic studies have shown that children who are overweight/obese at diagnosis have poorer overall survival and higher rates of relapse. Aim1: To determine how tumor necrosis factor-alpha (TNF-α) regulates the expression of immunoinhibitory proteins on malignant B-cells. Aim 2: To determine how adipocyte-secreted factors compromise CAR T-cell function. Aim 3: To determine how obesity impacts the efficacy of CAR-T cell immunotherapy in mouse models of obesity.

GRANT RECIPIENT: **Waitman Aumann, MD, MS**
PROJECT: **Investigating the Role of the SIX1 Homeobox Gene in CALM-AF10 Leukemias**

Project Details: Leukemia is the most common cancer seen in childhood. Despite significant progress in the treatment of some pediatric leukemias, the prognosis for others, including leukemias harboring the CALM-AF10 fusion protein remains poor. CALM-AF10 expression results in abnormally high levels of HOXA genes, which are critical for white blood cell development and are known to play a key role in leukemias. However, given their importance, targeting HOXA genes could lead to significant side effects. We have determined that the SIX1 gene is also activated by CALM-AF10. SIX1 is a protein that is highly active during development, but it is not highly expressed post-development, indicating there may be fewer side effects if targeted. Notably, SIX1 expression is increased a number of solid tumor cancers. This project's first aim is to explore whether CALM-AF10 activates the SIX1 gene in a similar manner to the HOXA genes. The second aim is to identify the role of the interaction between SIX1 and a companion protein, EYA, in CALM-AF10 leukemia.

GRANT RECIPIENT: **Ryan Summers, MD**
PROJECT: **Screening high-risk leukemia patient samples for sensitivity to targeted therapy and correlation with genomic sequencing**

Project Details: Acute leukemia is the most common childhood cancer, and the second-leading cause of death due to illness in children. Though many children with leukemia are cured, those with acute myeloid leukemia (AML), recurrent T- lymphoblastic leukemia (T-ALL), and infant B-lymphoblastic leukemia (infant ALL) have worse outcomes. It is therefore important to find new ways to treat patients with these types of leukemia. Funding from Swim Across America will allow us to test leukemia cells from patients with AML, T-ALL, and infant ALL to see if they are sensitive to targeted therapies, with the hope that this information will ultimately lead to improved treatment outcomes and better quality of life for patients with AML, T-ALL, and infant ALL.

SWIM ACROSS AMERICA HAS SUPPORTED CHILDREN'S HEALTHCARE OF ATLANTA SINCE 2013