SAA - CHARLOTTE

2020 GRANT AMOUNT: $140,000

GRANT RECIPIENT: Megan Jagosky, MD (Fellow, Hematology/Oncology), Colin Anderson, MD (Assistant Professor, Orthopedic Oncology) Will Ahrens, MD (Professor, Bone and Soft Tissue Pathology) Nury Steuerwald, PhD (Director, Molecular Sequencing Core Laboratory)
Levine Cancer Institute, Atrium Health

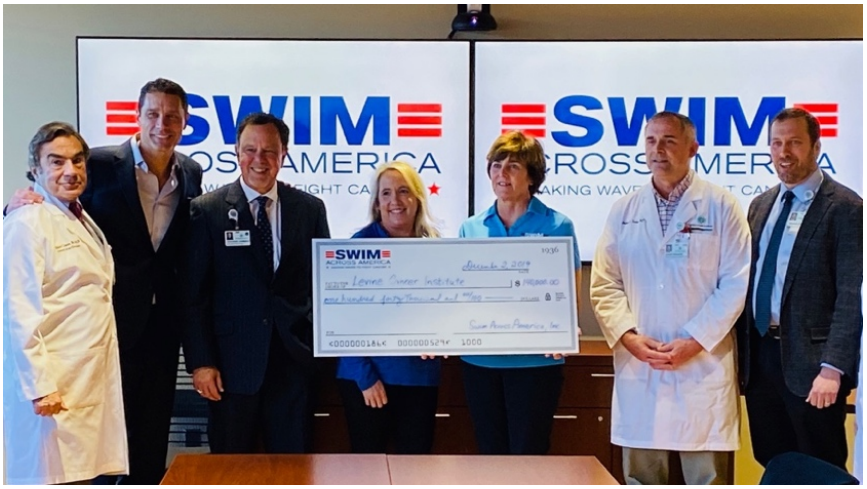
PROJECT: Epigenomic Characterization of Synovial Sarcoma to Identify Novel Prognostic and Therapeutic Biomarkers

Project Details: While the survival for synovial sarcoma has remained unchanged for decades, the results of the recent literature that have begun to characterize the unique pathogenesis of this tumor provide hope that through continued research efforts, more effective treatments can be discovered to dramatically improve outcomes and survival in these patients. At our institution, we have ascertained 78 synovial sarcoma biopsy specimens from approximately 53 patients. The majority of those specimens have been preserved and are available for further testing. The purpose for our proposal is to utilize these patient derived specimens in combination with their clinical data to broadly characterize the molecular epigenetic landscape of this tumor. We intend to compare tumor stage, grade, and metastatic events to understand mechanisms contributing to tumor progression. We intend to characterize uniformity of the epigenetic changes in cases of progression. We intend to analyze the data to identify prognostic biomarkers. We also intend to utilize this knowledge to postulate which treatment strategy may be most effective for this disease. This work will be useful in guiding the design of future pre-clinical and clinical trials in synovial sarcoma. This will also be an important first step in a comprehensive integrated genomics characterization of these cases that we would compile with genomics and transcriptomics data in the future. This would ultimately allow for the largest integrated genomic and epigenomic analysis of patient derived synovial sarcoma cases yet assembled.

GRANT RECIPIENT: Belinda R. Avalos, MD, Michael R. Grunwald, MD, Lawrence J. Druhan, Ph.D. Levine Cancer Institute, Atrium Health

PROJECT: Characterization of the Leukemia Stem Cell for Therapeutic Targeting and Risk Stratification

Project Details: Although most patients with acute leukemia achieve a complete remission (CR) following induction chemotherapy, the majority of patients subsequently relapse and die of their disease. Less than 25% of adults with acute leukemia are cured by current therapy. Leukemia stem cells (LSCs), from which the bulk of leukemia cells are derived, but which constitute less than 0.1% of the leukemia cells, appear to be responsible for chemotherapy resistance and for relapse.1-3 Thus, detection of LSCs prior to clinical evidence of relapse provides the opportunity to intervene earlier and improve patient outcomes.4 Moreover, identification of unique targets expressed on LSCs but not normal HSCs provides the ideal platform for development of targeted therapies that selectively kill the LSC and spare the normal HSC.



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