

2019 Funded Research Projects

SITEMAN CANCER CENTER

Targeting LXR regulation of prostate cancer immunometabolism

Goal: To determine the efficacy of a newly developed drug designed to make metastatic prostate cancer vulnerable to existing cancer immunotherapy treatments which are notoriously ineffective.

Principal Investigator: Colin Flaveny, PhD

Reprogramming epithelial stem cells in triple-negative breast cancer

Goal: To further study a new cause of triple-negative breast cancer and a new drug candidate in cell and animal models and ultimately transition this drug into human clinical trials.

Principal Investigator: Michael Holtzman, MD

The role of pericellular serine proteases in tumor progression and resistance to anticancer therapy

Goal: To test whether small molecule protease inhibitors developed in my lab are effective at overcoming and preventing resistance to anticancer therapy in lung cancer animal models.

Principal Investigator: James Janetka, PhD

Defining Transcriptional Regulators of Melanoma Initiation

Goal: To better understand how a key gene in melanoma is controlled and its role in the earliest mechanisms regulating the formation of melanoma and ultimately identify new potential treatment targets.

Principal Investigator: Charles Kaufman, MD, PhD

Lysine acetylation of human histone deacetylase 3 as a new cancer target

Goal: To study a recently discovered mechanism in cancer cells that can switch on and off genes that suppress tumors and genes that promote tumors and ultimately explore its use as a new cancer target and new class of cancer drugs.

Principal Investigator: Jinsong Zhang, PhD

Alkylating Chemotherapies Promote Heart Failure by Targeting Tissue Resident Cardiac Macrophages

Goal: To study the reasons behind the sensitivity of cardiac cells to common chemotherapeutics to be able to come up with effective means to counter heart failure in cancer survivors.

Principal Investigator: Nima Mosammaparast, MD, PhD

Magnetic Resonance-Guided Hypofractionated Adaptive Radiation Therapy

Goal: To study through a clinical trial whether higher doses of radiation delivered safely with chemotherapy using a unique, cutting edge MRI-guided radiation delivery system followed by standard-of-care immunotherapy will improve tumor control and survival in non-small cell lung cancer.

Principal Investigators: Gregory Vlacich, MD, PhD

Role of a novel IL-7 agonist, rhIL-7hyFc, in immune reconstitution in patients with gliomas

Goal: To better understand the mechanisms of a new drug currently in clinical trials that is designed to restore the immune status in patients with gliomas receiving radiation and chemotherapy.

Principal Investigator: Jian Campian, MD, PhD

Personalized Neoantigen Vaccine Immunotherapy for Prostate Cancer

Goal: To analyze immune responses from metastatic prostate cancer patients currently in a clinical trial designed to test a combination of immunotherapies, including a personalized vaccine.

Principal Investigator: Russel Pachynski, MD

Angiogenic mechanisms enhancing anti-tumor immunity

Goal: To develop a drug to block abnormal tumor blood-vessel formation in order to enhance cancer immunotherapy treatment.

Principal Investigator: Kyunghye Choi, PhD

Functional characterization of an uncharacterized cytokine, Gm525, as a potential target for cancer therapies

Goal: To better understand and test a recently discovered phenomenon in which cancer cells promote their own growth by releasing a molecule and develop tools to inhibit this cancer promoting mechanism.

Principal Investigator: Takeshi Egawa, MD, PhD

Role of Dkk1 in breast cancer progression and immune suppression

Goal: To investigate the effects of neutralizing a factor produced by bone cells, in conjunction with chemotherapy and/or immune therapy, to increase the efficacy of these cancer therapies in breast cancer.

Principal Investigator: Roberta Faccio, PhD

Developing strategies to prevent and treat chemotherapy-induced neuropathy

Goal: To investigate different therapeutic strategies that block a mechanism that leads to nerve fiber damage during chemotherapy treatment and ultimately prevent chemotherapy-induced neuropathy.

Principal Investigator: Stefanie Geisler, MD

Implementation of the Families Accelerating Cascade Testing Toolkit (FACTT) for Hereditary Breast and Ovarian Cancer and Lynch Syndrome

Goal: To create a standard toolkit for cancer providers to utilize for cancer patients with inherited disease-causing genetic mutations and their family members in educating on the importance of undergoing genetic testings.

Principal Investigator: Andrea Hagemann, MD

PEDAL THE CAUSE

SITEMAN CANCER CENTER (CONT.)

Modeling anti-PDL1 response and resistance in naturally occurring canine cancer

Goal: To develop new methods for measuring immune therapy response and resistance in companion dogs and ultimately create a powerful new system for understanding and improving immune therapies in both humans and companion animals.

Principal Investigator: Obi Griffith, PhD and Jeffrey Bryan, DVM, MS, PhD, DACVIM

Development of Novel ERK Inhibitor-Based Therapeutic Combinations In Pancreatic Cancer Based On Proteo-Transcriptomic Analyses

Goal: To develop new therapeutic strategies that can more effectively target the activated signaling pathway in pancreatic cancer and ultimately improve patient outcomes.

Principal Investigator: Kian Lim, MD, PhD

Recurrent long non-coding RNA gene fusions across solid tumors

Goal: To better understand how a fusion gene causes tumor growth in 11 different cancer types and ultimately identify a targeted therapy to inhibit the fusion genes and ultimately prevent cancer progression.

Principal Investigator: Christopher Maher, PhD

Implementing multilevel smoking cessation interventions to reduce rural cancer disparity

Goal: To reduce the high smoking prevalence in rural communities with a multi-level strategy to help patients quit smoking and reduce health disparity in rural communities.

Principal Investigator: Li-Shiun Chen, MD, MPH, ScD and Aimee James, PhD, MPH

Targeting the Nonsense-mediated RNA decay (NMD) pathway in cancer with aberrant splicing

Goal: To test if targeting a particular RNA degradation pathway in cells with spliceosome gene mutations (responsible for multiple types of cancer) is a viable strategy to treat cancer.

Principal Investigator: Zhongsheng You, PhD and Matthew Walter, MD

Phase I trial of best-in-class JAK inhibitor, baricitinib, as prophylaxis of Graft versus Host disease (GVHD) in patients undergoing allo-HCT for hematologic malignancies

Goal: To explore whether blood cancer patients who receive blood or marrow transplants experience less Graft versus Host Disease when given baricitinib.

Principal Investigator: Mark Schroeder, MD

ST. LOUIS CHILDREN'S HOSPITAL

How the DNA damage response effects the development and treatment of B cell leukemia

Goal: Determine the impact of genomic location on DNA damage response and define the unique properties of the RAG endonuclease that regulate the DNA damage response

Principal Investigators: Jeff Bednarski, MD, PhD

Cooperating mutations and resistance to FLT3-ITD inhibition in pediatric acute myeloid leukemias

Goal: To better understand the biology of pediatric leukemia cells that are left after cancer therapy and try to identify the genes that enable these leukemia cells to resist such cancer treatment.

Principal Investigator: Jeffrey Magee, MD, PhD

The role of targeting tetraspanin as new therapy for childhood leukemia

Goal: To investigate the tetraspanin family member CD53 as a therapeutic target in B-lineage hematopoietic malignancies

Principal Investigator: Laura Schuettpehl, MD, PhD

It takes world-class research to create a world without cancer. Thank you for supporting Pedal the Cause and helping to fund the best and brightest ideas in cancer research.

A full description of Pedal the Cause-funded research projects are available on our website: pedalthecause.org/research



Join us for another spectacular weekend of family and festivities at Pedal the Cause:

Sept. 26 & 27, 2020

PEDALTHECAUSE.ORG