



Rush University Medical Center – Research Projects Funded in 2016

Four research projects will be funded from the proceeds of the summer 2015 Swim Across America – Chicago events, which included the open water swim at Ohio Street Beach and Swim Across Lake Michigan. The awards have been made to support projects focused on a variety of treatment disciplines that impact patients with breast, colon, liver, and lung cancers among others.

- Faraz Bishehsari, MD, PhD, and his colleagues continue to examine the role of disrupted eating pattern and alcohol on susceptibility to colon cancer. The modern lifestyle of humans (lack of exercise, eating larger meals late at night, consumption of moderate alcohol) disrupts the circadian rhythm in the gut. Using an animal model, the team is examining this link to determine what specific changes in the gut are causing this increase in cancer incidence. Outcomes from this research could then lead to diet modifications and prevention strategies.
- Jeffrey A. Borgia, PhD, will be examining the potential clinical benefit of an anti-diabetes medication in the treatment of inoperable stage I lung cancers. Specifically, he will evaluate the ability of metformin to sensitize tumor cells to radiotherapy using a series of patient-derived tumor cell lines. These findings may lead to new treatment options for patients receiving stereotactic body radiation treatment (SBRT). This method administers very focused and high dose of radiation precisely to the tumor. The goal is to deliver the most effective possible dose to kill the cancer while minimizing exposure to healthy organs. Dr. Borgia will show that the combination of metformin and SBRT has the potential to be just as effective as surgical resection, which results in reduced morbidity.
- Carl Maki, PhD, will target propyl peptidases as a possible mechanism to help prevent or alleviate tamoxifen-resistance in breast cancer. Tamoxifen is a standard therapy for estrogen-receptor positive breast cancer. Unfortunately, most advanced tumors develop resistance to tamoxifen. This research may uncover new avenues for treatment in cases where this resistance has developed.
- Amanda L. Marzo, PhD, continues to examine the impact tumor antigen load has on CD8 T cell memory induction and maintenance. The results from this project will enable researchers to refine the design and use of current immunotherapies and will help in the creation of an improved design for tumor vaccines.