Timeline of Achievements

The Swim Across America Lab at Johns Hopkins

2010 – With funds raised in the inaugural Swim Across America Baltimore, the Swim Across America Laboratory was established at the Hopkins Kimmel Cancer Center, dedicated to understanding human cancers and formulating effective patient care. The primary objective of the lab is to translate laboratory science "from the bench to the bedside" and bring the science closer to the patient. Support from Swim across America is invaluable to projects that involve cancer re-search and patient care. Appointed to direct the lab is Luis Diaz, M.D.

2011 – Monies raised in the 2011 Swim Across America Baltimore funded, among numerous projects, an important ther-apeutic trial for patients suffering with pancreatic cancer. Also, genomic sequencing was accomplished on pediatric brain tumors. A colon cancer survivorship clinic was established that helps patients through their journey with cancer. Addi-tionally, the first couples retreat for patients with metastatic cancer took place that allowed couples to connect and share with each other and learn from Johns Hopkins experts.

2012 – Swim Across America funded groundbreaking research in endometrial and ovarian cancers that garnered world-wide attention. The Papgene Test study was a significant advance that promises early detection of these two deadly can-cers. It is based on the Pap test, routinely performed since the 1950's in gynecologists' offices across the country to de-tect and prevent cervical cancer. The PapGene test captures DNA that is shed from cancer cells that have been deter-mined to lead to endometrial and ovarian cancers, according to Dr. Diaz and his colleagues. There are currently no screening tests for these cancers, and the new test could one day make it possible to test for three female cancers at a woman's wellness exam.

2013 – Swim Across America Lab Director Luis Diaz, M.D. was a senior author on an international study that provides strong evidence that that circulating tumor DNA (ctDNA) can be used as a "personalized biomarker" test and cancer screening tool. It is an extrapolation of the PapGene Test study which was made possible in part through funding from Swim Across America last year. According to results of the study, certain fragments of DNA shed by tumors into the bloodstream can potentially be used to non-invasively screen for early-stage cancers, monitor responses to treatment and help explain why some cancers are resistant to therapies. The study "provides a wealth of information on the potential utility and limitations of ctDNA measurements to assess patients with various cancers," according to Diaz.

2014, 2015 and 2016 - Monies from the 2014, 2015 and 2016 Swim events funded groundbreaking research in immunotherapy. In a report of a proof-of-principle study of patients with colon and other cancers for whom standard therapies failed, researchers at the Johns Hopkins Kimmel Cancer Center saw that mistakes in so-called mismatch repair genes, first identified by Johns Hopkins and other scientists two decades ago, may accurately predict who will respond to certain immunotherapy drugs known as PD-1 inhibitors. Results of the trial with pembrolizumab, marketed as Keytruda, was published by the New England Journal of Medicine on June 25, 2015. On May 23, 2017 the U.S. Food and Drug Administration granted accelerated approval to a treatment for patients whose cancers have a specific

genetic feature (biomarker). This is the first time the agency has approved a cancer treatment based on a common biomarker rather than the location in the body where the tumor originated.

We have also continued our patient outreach and survivorship program for patients with colorectal cancers. This clinic is run by our nurse coordinator and has been visited by dozens of patients through their journey with cancer. Lastly, we are supporting an internship program to work with the Swim Across America Lab research team. They are integral in the daily activities of the SAA laboratory. We hope to continue this important program that introduces young people to science and medicine with the support of SAA.

2017 - With funding from the 2017 Swim event, several projects will be launched.

Drs. Dung Le and Katie Bever are studying a rare type of aggressive cancer known as high grade neuroendocrine carcinoma or small cell carcinoma. They are specifically interested in studying the host immune response to these cancers and plan to perform analyses of banked tissue samples, with the ultimate goal of identifying targets for novel therapies to serve as a basis for future clinical trials in these patients.

Dr. Josh Lauring and his team have recognized that a very common kind of breast cancer mutation, in a gene called GATA3, may represent an excellent immune target that could be widely shared among women with breast cancer. His research aims to show that the immune system can recognize and destroy breast cancer cells with this mutation.

Dr. Jon Webster knows that targeted therapies have become a major component of treatment in many different cancers and have led to significantly improved survival in a number of poor-risk leukemias. However, when treated with targeted agents, these leukemias disproportionately relapse in the central nervous system (CNS). In Dr. Webster's study he will seek to better understand how well these targeted therapies enter the central nervous system and how effective they are in hitting their target when they get there.