

Brazil Platform

Select Research Program Highlights

Neuropathogenesis of Oropouche Virus

Dr. Katherine Spindler, from the Department of Microbiology and Immunology, has worked with her Brazilian collaborator, **Dr. Eurico de Arruda Neto** from the Cell Biology and Virology Research Center at the University of São Paulo Medical School at Ribeirão Preto (FMRP), since 2008. Their joint project, *Neuropathogenesis of Oropouche Virus (OROV)*, was one of the 3 UMMS recipients of the UM-FAPESP 2013 grants. The long-term goal of their project is to improve therapy for people with arboviral disease by understanding how viral gene products interact with the host to cause disease. Toward that goal, this team seeks to determine how OROV infects the central nervous system (CNS) using and further developing mouse models in which there is severe CNS involvement. In June 2013, **Dr. Luiza Antunes de Castro Jorge** began working as a post-doc in Dr. Kathrine Spindler's lab, supported by a "Science Without Borders" scholarship from Brazil.



Drs. Eurico de Arruda Neto (left) from FMRP and Kathy Spindler from UMMS have been studying the effects of arboviral diseases together since 2008

Adrenal and Other Endocrinological Cancers and Disorders

The partnership between the Adrenal Cancer and Diseases group at UMMS and FMUSP continues to strengthen and expand activities since President Coleman's delegation trip to Brazil in late 2012. UMMS team members, led by **Dr. Gary Hammer**, Millie Schembechler Professor of Adrenal Cancer, have traveled to Brazil a number of times giving talks, lectures, and building this relationship. Dr. Hammer and his colleagues in Michigan and at the Department of Endocrinology at USP are working together on the National Cancer Institute's (NCI) The Cancer Genome Atlas (TCGA) Project, and actively exchanging students and faculty. He currently has one Brazilian visiting scholar in his laboratory, **Dr. Antonio Lerário**, spearheading the TCGA project. Brazilian graduate student **Mônica Malheiros França** and medical student **Thiago Nogueira** have worked in his lab the past two years.

The adrenal team's efforts are now concentrated on the creation of TCGA, a comprehensive and coordinated effort to accelerate the understanding of the molecular basis of cancer through the application of genome analysis technologies, including large-scale genome sequencing. TCGA began as a three-year pilot in 2006 with an investment of \$50 million each from the NCI and the National Human Genome Research Institute.

The pilot project confirmed that an atlas of changes can be created for specific cancer types. It also showed that a national network of research and technology teams working on distinct but related projects can pool the results of their efforts, create an economy of scale, and develop an infrastructure for making the data publicly accessible. Importantly, the pilot demonstrated that making the data freely available enables researchers anywhere in the world to make and validate important discoveries.

The success of the pilot led the National Institutes of Health to commit resources to TCGA to collect and characterize tumor types. Adrenal cancer was selected as one of the first rare cancers to be studied by TCGA, largely due to the work of Dr. Hammer and the UM and USP adrenal investigators.

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Platform Symposium

Ann Arbor, Michigan

November 12-13, 2014