

# KEYNOTE TALK

Monday, October 14, 2019 at 9am  
(Emerald Bay 1-2-3)

## Breast Cancer Genomics: Tackling Complexity with Functional Genomics and Patient-Derived Organoids

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**Abstract:** Breast cancer is a heterogeneous disease with multiple molecular subtypes and three major clinical subtypes: hormone receptor positive, HER2 positive, and triple negative breast cancer. These three clinical subtypes are very important because they determine the drugs used for patient treatment. Cellular, molecular, and genomic understanding of breast cancer has resulted in new treatments for breast cancer. In 2019, the FDA approved an oral PIK3CA inhibitor for PIK3CA mutated, hormone receptor positive, Stage IV breast cancer and immunotherapy for triple negative, Stage IV breast cancer. Major challenges facing future research on breast cancer and other cancers are: 1) Interpreting genome sequencing results to better understand the effects and significance of new or under-characterized mutations, and 2) having platforms for rapid biological testing of hypotheses. I will provide examples of how my laboratory is trying to address both of these challenges.



**Speaker Bio-Sketch:** Dr. Ron Bose is a breast cancer specialist and a breast cancer researcher at the Siteman Cancer Center at Barnes-Jewish Hospital and Washington University School of Medicine. He is board certified in Medical Oncology and Internal Medicine. He received his MD and PhD degrees from Cornell University. He performed medical training at the top hospitals in the country, including Oncology training at The Johns Hopkins Hospital in Maryland and Memorial Sloan-Kettering Cancer Center in New York City and Internal Medicine residency at Barnes-Jewish Hospital. He joined the faculty of Siteman Cancer Center in 2007 and has received many awards including being named the Susan G. Komen for the Cure - St. Louis, Health Professional of the Year in 2013 and being elected to the prestigious academic medicine society, the American Society for Clinical Investigation (ASCI), in 2017. His research focuses on the HER2 gene in breast cancer and his lab uses genome sequencing, high throughput protein measurements, and 2D and 3D tissue culture methods to study HER2. He is funded by the National Institutes of Health and the Department of Defense Breast Cancer Research Program.