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221 MEC

1:00 to 2:25pm

“Collaborations between Scientists and Engineers: Innovative patient care as we enter the era of prevention medicine”

Abstract: New era of economic conditions change traditional medical practice and demand for precision treatments that are tailored to individual patient and cost effective. The reimbursement strategies, clinical trials and healthcare budgets adapt steadily to ongoing economic status and consequent implications on the field of personalized medicine is to identify biomarker-driven methods for population and patient selection. Accurately identifying potential patients from the general population will provide prevention care and early detection of diseases for likely better outcome. Correctly diagnosing the patient, predicting the clinical outcome and delivering the best-suited drugs can potentially promise precision patient care for lower cost and improved quality of life. These interests match the overall goal of today's clinic for enhancing patient care, decreasing total treatment cost and eliminating clinic revisits while maintaining high revenue generation. This is challenging for all parties involved in the clinic, the reimbursement side and the sponsors for drug trials. Thus, close collaborations are needed between clinic and translational science to identify biomarkers with high specificity and sensitivity.

Discovery and validation of clinically relevant biomarkers are parts of translational research, and unmet clinical need for cancer biomarkers is found in two clinic sectors. One sector is population screening and selection for early detection of cancer. For obvious reasons, clinics do not have experiences in this sector because the population with early onset of cancer does not visit the clinic since they do not have symptoms and pain. For patients visiting clinic with symptoms, cancer is frequently at an advanced stage and oncologists will offer standard drugs as frontline therapeutic options that are covered by the payor/insurance side. At this point of diagnosis and post-baseline analyses, clinicians are not able to select patients that will or will not respond to the standard therapy; hence, 'one drug/combination of drugs fits all' approach is commonly practiced in the clinic worldwide. Here, biomarkers that can predict clinical outcome can contribute on clinical decision making and potentially guide oncologists to provide better alternative treatment options for high risk patients. For both sectors, the clinic needs disease specific biomarkers that are robust enough to override heterogeneous nature of the population. The presentation will show examples on how translational research laboratory will approach biomarkers discovery and validation. Ovarian cancer will be used as a model case for early detection of cancer in terms of population selection and subsequent guidance for further clinical analyses. Hodgkin lymphoma will be used as a model case for predicting clinical outcome with high risk and consequent patient selection to achieve patient-centered and personalized medicine.

About the Speaker: As scientific director of the Tissue Bank, K. Stephen Suh, Ph.D., manages scientific side of The Cancer Center's Tissue Repository and directs the Genomics and Biomarkers Program for multiple human cancer types. Dr. Suh's laboratory focuses on personalized medicine topics, including population screening diagnostics, biomarkers-driven patient selection and precision drugs for optimal clinical outcome and reducing healthcare costs. Dr. Suh has been conducting research in molecular and cell biology (PhD, University of Texas, Dallas: 1998), animal modeling/translational science (Postdoc and Staff, National Cancer Institute: 2007), biobanking and clinical science (Director, HackensackUMC: Present) for over 25 years.