統計科學研究所
INSTITUTE OF
STATISTICAL SCIENCE

Promotion Seminar

Title：Exposome, Genome Editing, Tumorigenesis, and Precision Immuno-Oncology

Speaker：Dr. Hsuan-Yu Chen（陳璿宇 博士）

（Institute of Statistical Science, Academia Sinica）

Time：10:30 AM~12:00 PM, Monday, Mar. 27, 2023

Place：Auditorium, B1F, Institute of Statistical Science

Abstract

High throughput sequencing methods enable us to determine the changes/variations in different molecular levels such as genome, transcriptome, epigenome etc. It is a very powerful tool in the precision medicine era. However, the data generated from the high throughput sequencer is huge and complex. It reaches the difficulty for explorations of the key findings. Our core competency is based on the concepts and analytical methods of the data science to reveal the important patterns from the big and complex molecular data. Several critical problems are addressed in our works in past years. We reported the first evidences of associations between exogenous-exposome (environmental carcinogens) and tumorigenesis in never-smoking lung adenocarcinoma (LUAD). The endogenous-exposome named APOBEC was obtained in the early onset non-smoking female LUAD and showed higher response to the immuno-therapies. Based on the mutatome and aberrant transcriptome data, we have the progress in the precision immuno-oncology. We developed the neo-antigen (neoAg) prediction method and used it to generate the personalized cancer intelligent vaccine. The first indications of above personalized cancer therapeutic vaccine are pancreatic cancer and lung cancer. The phase 1 clinical trials applications had been submitted to the TFDA and IRB of the hospitals.

※Online live streaming through Cisco Webex will be available.

※ The tea reception will be held at 10:10.