



統計科學研究所

INSTITUTE OF
STATISTICAL SCIENCE



S E M I N A R



S T A T I S

Seminar

Title : Challenges and Opportunities in Applied Mathematics, Statistics and Data Science for Cancer Research

Speaker : Dr. Yu Shyr (石 瑜 博 士)

(Department of Biostatistics, Vanderbilt University School of Medicine, U.S.A.)

Time : 4:00 PM ~5:30 PM , Tuesday, Dec 27, 2022

Place : Auditorium, 1F , Research Center for Environmental Changes Building

Abstract

The key concepts of precision medicine are prevention and treatment strategies that take individual molecular profile and clinical information into account. Single-cell next-generation sequencing technologies (NGS), liquid biopsy for circulating tumor DNA (ctDNA) analysis, microbiomics, radiomics, spatial omics, and other types of high-throughput assays have exploded in popularity in recent years, thanks to their ability to produce an enormous volume of data quickly and at relatively low cost.

In this presentation, I will offer some perspectives on the changing landscape for applied mathematical and statistical science, including the concept of treating unstructured text as quantitative data; the need for statisticians to adjust their mindset around the explosive growth in information technology; machine learning; and the AI revolution. These areas present great opportunities for our profession to strengthen our role in the data science arena. I will finish up with my recent research about single cell RNA-seq data analysis which we developed a new method to identify dysregulated ligand-receptor interactions from single cell transcriptomics.

※ The tea reception will be held at 15:40.

※ Online live streaming through Cisco Webex will be available.