

# 國立交通大學應用數學系

## 學術演講公告

主講人：林峻宇教授(國立交通大學生物資訊及系統生物研究所)

講題：From protein interaction to network medicine: membrane  
protein-regulated networks across human cancers

時間：109 年 4 月 21 日(星期二) 下午 14:00 –15:00

地點：(光復校區) 科學一館 223 室

茶會：當天下午 13:30 (科學一館 205 室)

### Abstract

As an increasing number of cancer omics data become available, there is a growing need to integrate these data with the biological networks to reveal cancer mechanisms.

Nevertheless, two open issues remain challenging. First, the interactomes in most of the organisms are still incomplete. Second, the static networks cannot reflect the variations in cells. For example, alterations in membrane proteins (MPs) and their regulated pathways have been established as cancer hallmarks; however, the analysis of MPinteracting proteins and downstream pathways across human malignancies is still an unmet need. In support of this pursuit, we develop a systematically integrated method to generate a resource of cancer membrane protein-regulated networks (CaMPNets) [1], containing 64,125 new PPIs for 1,964 MPs, using expression profiles from 5,922 tumors with overall survival outcomes across 15 human cancers. CaMPNets can reveal the cancer-wide atlas of MPs and their regulated pathways, with significant implications for facilitating the identification of gene set-based prognostic biomarkers as well as therapeutic targets and agents. Based on CaMPNets resource, we identify CHRNA9 with 12 PPIs (e.g., ERBB2) can be a therapeutic target and find its anti-metastasis agent for treatment in nicotine-induced breast cancer.

敬請公告 歡迎參加

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