

**Title:** Some Applications of Graph-packing on Group Testing

**Speaker:** Hung-Lin Fu

Department of Applied Mathematics  
National Chiao Tung University,  
Hsin Chu, Taiwan 30050

**Abstract:** An  $H$ -packing of a graph  $G$  is a collection of edge-disjoint subgraphs of  $G$  each of them is isomorphic to  $H$ . If  $G$  is the complete graph of order  $n$  and the union of subgraphs in an  $H$ -packing is  $G$ , then we have an  $H$ -design of order  $n$ . In this talk, I'll first introduce an  $H$ -packing of order  $n$  where  $H$  is the Cartesian product of two complete graphs  $K_r$  and  $K_c$ . For convenience,  $H$  is called an  $r \times c$  grid-block. Then, I shall report how to apply an  $r \times c$  grid-block design or a resolvable  $r \times c$  grid-block packing to DNA Library Screening.