SPEAKER: Mee Seong Im (United States Military Academy)

TITLE: Natural transformations between induction and restriction on iterated symmetric group algebras

ABSTRACT: The representation theory of symmetric groups is a classical and a rich mathematical subject, where Schur first studied their irreducible representations. Once the representation category of symmetric groups is understood, we can study induction and restriction functors on this category since symmetric groups naturally form a tower via $S_n \hookrightarrow S_{n+1}$, where $s_i \mapsto s_i$. I will explain a different tower, arising from iterated wreath product of symmetric groups, and explain categories whose objects are bimodules and whose morphisms are bimodule homomorphisms by describing the natural transformations between induction and restriction functors in a monoidal 1-category. This is achieved by explicitly finding 'Jucys-Murphy' elements for the iterated wreath product tower. This is joint with Can Ozan Oğuz.