1167-05-193 **Rosa C Orellana*** (rosa.c.orellana@darmouth.edu), 6188 Kemeny Hall, Hanover, NH 03755, and **Mike Zabrocki** (zabrocki@mathstat.yorku.ca), Department of Mathematics and Statistics, York University, Toronto, Ontario M3J 1P3, Canada. *A combinatorial model for the decomposition of multivariate polynomial rings as symmetric group modules.*

In this talk we showed how multiset-filled tableaux are useful in understanding the decomposition of multivariate polynomial rings when we view them as symmetric group modules. For example, the symmetric group, S_n, acts on the commutative multivariate polynomial ring of m sets of n commuting variables. When we decompose this module, the multiplicities of the irreducible representations is the number of multiset-filled tableaux satisfying column strict conditions.

In this talk, we consider the S_n-module of the polynomial ring with m sets of n commuting variables and m' sets of n anti-commuting variables and show that the multiplicity of an irreducible indexed by the partition λ (a partition of n) is the number of multiset-filled tableaux of shape λ satisfying certain column and row strict conditions.

This is joint work with Mike Zabrocki (Received March 07, 2021)