1139-05-648 **Angela Hicks*** (anh316@lehigh.edu), **Cristina Ballantine**, **Zajj Daugherty**, **Sarah Mason** and **Elizabeth Niese**. *Computing with the Quasisymmetric Power Sums.*

The symmetric functions (SYM) have a number of well known bases: the monomials are dual to the complete homogeneous functions, the forgotten basis is dual to the elementary bases, while the Schur functions and the power sums (up to rescaling) are each self dual. Two related spaces, the quasisymmetric functions (QSYM) and the noncommutative symmetric functions (NSYM) are dual as combinatorial Hopf algebras, and most of these well known bases of SYM have analogues in at least one of QSYM and NSYM. In Gelfand et. al's 1995 paper, they define not just one but two analogues of the power sum basis in NSYM using generating functions. The duals of their bases, up to scaling, are naturally the quasisymmetric power sums, the subject of this talk. In contrast to the simplicity of the symmetric power sums, or the other well known bases of the quasisymmetric functions, the quasisymmetric power sums have a more complex combinatorial description. Thus, although symmetric function proofs often translate directly to quasisymmetric analogues, this is not the case for quasisymmetric power sums. We discuss joint work with Ballantine, Daugherty, Mason, and Niese which explores the properties of these two families of quasisymmetric power sums. (Received February 20, 2018)