1125-33-1290 **Sarah Post*** (spost@hawaii.edu), 2565 McCarthy Mall, Honolulu, HI 96822. *Generalizations of the Askey-Wilson Algebra.*

In this talk, I will present extensions of Zhedanov's algebras QAW(3) and QR(3) from three different viewpoints. These algebras, originally defined in terms of integrable systems, have long been understood as the algebras generated by the three term recurrence and eigenfunctions relations for hypergeometric orthogonal polynomials (OPs). They also arise as the symmetry algebras for superintegrable systems with such OPs as overlap coefficients for different bases. From a purely algebraic perspective, the algebras can also be understood in terms of decompositions of triple tensor products of Lie algebras and their q-deformations.

The extensions of the algebras arise naturally from each of these viewpoints: in terms of bivariate OPs, extensions of the Hamiltonian systems in higher dimensions and quadruple tensor products. We will discuss these new algebras in detail and give indications of how to generalize to arbitrary dimensions. (Received September 20, 2016)