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**William D Taylor\*** (wdtaylor@uark.edu) and **Lance Edward Miller**. *Bounds for and Computations of  $s$ -multiplicity.*

In this talk, we will define  $s$ -multiplicities, a family of multiplicity functions that continuously deforms between Hilbert-Samuel and Hilbert-Kunz multiplicity, and discuss some of their most important properties. Included in those are several important lower bounds on  $s$ -multiplicity which allow us to attack a generalization of the Watanabe-Yoshida conjecture on Hilbert-Kunz multiplicity. We will also discuss some recent work on the polynomial-like behavior this function sometimes displays. (Received September 25, 2017)