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Christopher D Sinclair* (csinclai@uoregon.edu), Department of Mathematics, University of Oregon, Eugene, OR 97403. *Mahler measure, volumes of polynomials and random matrix theory.*

In 2001, Chern and Vaaler demonstrated an amazing formula for the volume of the set of polynomials of fixed degree and bounded Mahler measure. My thesis problem, working under Vaaler, was to explain and generalize this formula to other multiplicative distance functions on polynomials. In this talk I will explain a general framework which explains Chern and Vaaler's remarkable formula and show how their discovery leads to a deeper connection between number theory and random matrix theory. (Received September 26, 2017)