

1135-11-1954      **Robert Grizzard\*** ([grizzarr@lafayette.edu](mailto:grizzarr@lafayette.edu)), 217 Spring Garden St #101, Easton, PA 18042.  
*Counting reducible polynomials.* Preliminary report.

Building off of the work of Chern-Vaaler, in 2007 Masser and Vaaler gave an asymptotic estimate for the number of algebraic numbers of given degree and bounded height. Part of establishing this result is to estimate how many polynomials of given degree and bounded height are reducible. While general forms of Hilbert's Irreducibility Theorem give a power savings of (about)  $1/2$  compared to the total number of polynomials, Masser and Vaaler used an argument originating (I think) from W. M. Schmidt to get a full power savings. Counting other types of algebraic numbers (as in recent joint work with J. Gunther) leads to issues of counting reducible polynomials with various coefficients specified. In this talk, we'll explore how far we can push Schmidt's argument to get a full power savings for these other cases. This leads to an improvement in many cases of an old result of S. D. Cohen on Hilbert's Irreducibility Theorem, although, unlike Cohen, we can say nothing about the Galois Group. (Received September 25, 2017)