1125-05-1672 **Eric Stucky*** (stuck127@umn.edu), **Garner Cochran**, **Andrew W. Herring**, **Ranjan Rohatgi** and **Corbin Groothuis**. *Polynomial Chebyshev Quotients, Combinatorially.* Preliminary report.

For any graph G we may construct an associated polynomial called the matching polynomial, which is a variant on a generating function for matchings of G. When G is a cycle or path graph with n vertices, the resulting polynomials are essentially the Chebyshev polynomials $T_n(x)$ and $U_n(x)$ respectively. It is known that the only divisibility relations among the U_n have the form $\frac{U_{mn-1}}{U_{n-1}} = U_{m-1} \circ T_n$; we interpret this equality combinatorially. In particular we show the right-hand side is an object with combinatorial meaning, called the d-matching polynomial by Hall, Pruder and Sawin (2015). (Received September 18, 2016)