1116-30-1888 **Thomas Craven*** (`tom@math.hawaii.edu`). *Recent progress on the question of whether rapidly decreasing sequences are complex zero decreasing sequences.* Preliminary report.

A sequence of nonnegative real numbers $\Gamma = \{\gamma_k\},\ k = 0, 1, 2, 3, \ldots$ is said to be a complex zero decreasing sequence if for any real polynomial $p(x) = \sum_{k=0}^{n} a_k x^k$, the polynomial $\Gamma[p(x)] = \sum_{k=0}^{n} \gamma_k a_k x^k$ has no more nonreal zeros than $p(x)$. These sequences have been completely characterized if they do not decrease more rapidly than can be interpolated by an entire function in the Laguerre-Pólya class. In particular, the sequences satisfying $\gamma_k^2 \geq 4\gamma_{k-1}\gamma_{k+1}$, know as rapidly decreasing sequences, still pose an open problem. They are known to work if $p(x)$ has only real zeros. We will discuss known results, experiments and a possible approach to a proof. (Received September 21, 2015)