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Justin From* (FROMJ1@central.edu) and **Samuel Kolins**. *The Root Squeezing Theorem*. Preliminary report.

The span of a polynomial function with all real roots is the distance between its least and greatest root, and the span of a polynomial's derivatives is completely determined by the position of the polynomial's roots. In this talk I will present an innovative technique, dubbed the root squeezing theorem, which allows us to show that among polynomials of the same degree and fixed span there is a unique polynomial whose derivatives have minimal span. (This research was carried out at the Grand Valley State University REU program.) (Received August 30, 2005)