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**Alan Durfee\*** ([adurfee@mtholyoke.edu](mailto:adurfee@mtholyoke.edu)), Department of Mathematics and Statistics, Mount Holyoke College, South Hadley, MA 01075. *Polynomial knots*. Preliminary report.

(Joint work with Donal O'Shea) A polynomial knot is a smooth embedding  $\kappa : \mathbb{R} \rightarrow \mathbb{R}^n$  whose components are polynomials. The case  $n = 3$  is usual knot theory. A polynomial knot is both an object of real algebraic geometry as well as being an open ended topological knot. Thus results from the former, for example Bezout's theorem, have applications to the latter, in this case the crossing number. This talk will describe basic results for these knots, including various types of equivalence, bounds on the degree, and spaces of these knots, as well as giving many examples. (Received September 25, 2006)