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**Daniel Glasscock\*** (d.glasscock@neu.edu), Boston, MA 02131. *A density polynomial Hales-Jewett theorem: improbable or ineluctable?*

The 1963 theorem of Alfred Hales and Robert Jewett (HJ) maintains to this day a central position in partition Ramsey Theory. Two outstanding generalizations of HJ – the density Hales-Jewett theorem (DHJ) of Furstenberg and Katznelson and the polynomial Hales-Jewett theorem (PHJ) of Bergelson and Leibman – now each have multiple distinct proofs and are well understood. Despite this, extremely little is known about the obvious common generalization between the two: a density polynomial Hales-Jewett (DPHJ) theorem. In this talk, I will briefly recount this history, state the putative DPHJ theorem, demonstrate how such a theorem would be used to quickly derive very strong forms of other combinatorial theorems, and make a call for progress on this beautiful open problem. (Received February 16, 2018)