1026-52-41 **Peter Pivovarov*** (ppivovarov@math.ualberta.ca), 632 Central Academic Building, University of Alberta, Edmonton, Alberta T6G 2G1, Canada. *Volume thresholds for Gaussian and spherical random polytopes.*

Let g be a Gaussian random vector in $\mathbb{R}^n$. Let $N = N(n)$ be a positive integer and denote by K_N the convex hull of N independent copies of g. Fix $R > 0$ and consider the ratio of volumes $V_N := \mathbb{E}\,\mathrm{vol}(K_N \cap RB_2^n)/\,\mathrm{vol}(RB_2^n)$. For a large range of $R = R(n)$, I will establish a sharp threshold for N, above which $V_N \to 1$ as $n \to \infty$, and below which $V_N \to 0$ as $n \to \infty$. I shall also discuss the case when K_N is generated by independent random vectors distributed uniformly on the Euclidean sphere. Analogous threshold results for both $R \in (0,1)$ and $R = 1$ will be presented. This work was motivated by recent results of Gatzouras and Giannopoulos and uses the method developed by Dyer, Füredi and McDiarmid. (Received January 24, 2007)