1086-VM-1587 **S. Eastman*** (sean.eastman@armstrong.edu), 11935 Abercorn ext., Department of Mathematics, Armstrong Atlantic State University, Savannah, GA 31419. *The probability of choosing a valid correlation matrix.* Preliminary report.

Given a matrix $A \in Sym_n$ with 1's on the diagonal and the remaining entries chosen randomly from $(-1, 1)$, the probability that a valid correlation matrix is constructed decreases dramatically as n increases. In the 3×3 case, the subset of the unit cube consisting of valid correlation matrices can be visualized geometrically as a peculiar shape with volume $\pi^2/2$. In this talk, we propose a formula for volumes (and thus probabilities) of correlation matrices in higher dimensions. (Received September 23, 2012)