1086-05-1304 **Yan Zhuang*** (yazhu001@mail.goucher.edu), Goucher College Post Office, 1021 Dulaney Valley Road, Baltimore, MD 21204. *The VC Dimension of Random Set Systems, Word Sets, and Permutation Sets.* Preliminary report.

Given a random set system R, we say that R *shatters* a subset S of $\{1, 2, ..., n\}$ if $\forall T \subseteq S$, $\exists A \in R$ such that $A \cap S = T$. Furthermore, the *VC dimension* of a random set system R is defined as the cardinality of the smallest subset of $\{1, 2, ..., n\}$ that cannot be shattered by R. Since a subset is simply a word on two characters, we examine random word sets, which encompass the theory of random set systems. We generate a random t-set of n-words (where t is a function of n) by picking each character of each word with uniform probability, and present a series of threshold functions for t that determine the VC dimension of the random word set with high probability as $n \to \infty$. We then extend our work to permutations. This is a joint project with Anant Godbole and Samantha Pinella. (Received September 21, 2012)