

1102-05-242

**Megan Martinez\*** ([megan.a.martinez.gr@dartmouth.edu](mailto:megan.a.martinez.gr@dartmouth.edu)). *Patterns in Random Walks*.

In this talk, we explore patterns in one-dimensional random walks on the real number line. A set of  $n$  consecutive values in the random walk is associated to a permutation in  $S_n$  using relative ordering. With this setup, it is clear that patterns will not occur with equal probability; however, there are some instances where two patterns will occur with equal probability given any probability distribution. A permutation and its reverse complement will always have the same probability, but this is not the only case. The permutations 612435 and 354612 are a nontrivial example of this phenomenon.

We are interested in permutations  $\pi, \tau \in S_n$  such that the probability  $\pi$  occurs in a random walk is equal to the probability  $\tau$  occurs in a walk, regardless of probability distribution. Our goal is to completely characterize the classes of permutations with equal probabilities. This is joint work with Sergi Elizalde. (Received July 29, 2014)