1046-Z1-2056   **Csilla Szabo*** (`szaboc@rpi.edu`), 5 Ahern Ave, Apt 3, Troy, NY 12180, and **Donald Drew**. *Do the Ends Justify the Lengths? Actin Polymer Length Distribution.*

Actin polymers form the cytoskeleton of cells, giving cells structural support and allowing for cell motility. They are also instrumental in axon (nerve cell) growth, where they determine the directions taken by the axons as they grow. Models for the growth of actin polymers are based on adding and/or deleting actin monomers from the ends of the polymers. Consequently, it is straightforward to track the ends of these actin polymers. A natural question to ask is given the probabilistic distribution of the growing and decaying positions of the ends of the polymers, does one know the polymer lengths? Knowing the distribution of positions of ends does not give adequate information for finding the polymer length distribution. I will present a model for the length distribution of these polymers in 1-dimension, which will maximize the entropy or randomness in the system. This gives the least biased estimate for the length distribution given the limited amount of information. (Received September 16, 2008)