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**Laura Plunkett\*** (plunkett@hnu.edu), Holy Names University, Department of Math and Science, 3500 Mountain Blvd., Oakland, CA 94619. *Knots in thick, self avoiding random walks in 3-space*. Preliminary report.

We describe a new algorithm to generate random walks of an arbitrarily large, specified thickness in  $\mathbb{R}^3$ , and will outline the proof that this method is transitive on the space of all such thick walks. We will then use the data resulting from our implementation of this method to describe the relationship between the presence and nature of knotting and length, thickness and shape of the random walk. Our simulations will show that modest increases in thickness have a substantial effect on the probability of knot formation, with applications to our understanding of synthetic and biological polymers. (Received August 19, 2014)