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Jason Cantarella* (jason.cantarella@gmail.com) and **Clayton Shonkwiler**. *The Symplectic Geometry of Random Polygonal Knots*.

In this talk, we are interested in the problem of understanding the distribution of topology and geometry in random curves. We apply the Millson/Kapovich symplectic structure on the space of polygons (in 3-space) with fixed edgelengths to the theory of closed random walks. Using the symplectic structure allows us to reduce natural probabilistic questions about the geometry of a closed random walk to corresponding questions on convex polytopes. In this setting, they can be handled by appealing to the theory of the distribution of mass in high-dimensional convex bodies. We will present new results and new numerical methods obtained from this point of view. (Received February 10, 2014)