

1135-VU-1937      **Isaac Vraspir\*** (vras0001@stthomas.edu) and **Zach Sorenson**. *Knots in tight confinement*. Preliminary report.

Knots in nature, e.g. in DNA or proteins, are typically formed under some sort of spatial confinement. Recent research has provided insights into how confinement affects the knotting of random chains. Unfortunately, the chain generation algorithms have bounds on their confinement: the confining spheres must have a diameter of twice the edge length. Our goal is to study knots in extreme confinement, where the sphere diameter is only slightly larger than the edge lengths.

We model this situation using cylinders with very large height-to-radius ratios (i.e. long skinny cylinders). We create a roughly equilateral knot by choosing points on the opposite disk ends of the cylinders in an alternating fashion. In this talk, we explore how knotting changes as the confinement becomes more and more extreme. (Received September 25, 2017)