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Emily K. Vecchia* (vecc2404@stthomas.edu). *To what extent does the knotting of open subarcs of a closed knot configuration predict the knot type of the configuration?* Preliminary report.

In traditional knot theory, researchers study entanglement predominately in closed curves. In nature, however, there are many materials which are entangled but form open curves, such as DNA and proteins. To understand the knotting in these physical systems, a rigorous mathematical definition of knotting for open curves is needed. Several such definitions have been proposed, each with their own advantages and disadvantages. In this talk, we analyze to what extent the different definitions of open knotting “converge” to traditional knot theory. In particular, given an open subarc of a closed polygonal knot, we analyze to what extent the classification of the knotting in the subarc coincides with the knot type of the closed knot as a function of length for these different open knotting definitions. (Received September 19, 2016)