1125-AF-902 **Kenneth C Millett*** (millett@math.ucsb.edu), Department of Mathematics, UCSB, Santa Barbara, CA 93106. *Entanglement of Confined Random Polygonal Chains.*

Consider a collection of long pipes of varying diameter and containing a flowing fluid. One can ask about the spatial nature of the flow vortices as they relate to the character of the fluid's motion. If this fluid contains linear molecular chains, varying is size and character from macromolecules to linguini, is their structure knotted or linked or otherwise entangled. In order to understand the physical or biological properties of the system, one must understand the consequences of their presence. A course grained model of such systems consists of linear polygons confined to tubes with a circular cross-section of varying diameter and subjected to an axial alignment bias such as a physical force. We will describe how one might model such systems and as well as how one might quantify the extent to which the presence of knotting and linking can be measured. In addition, we will see how the diameter and alignment influence the presence of such forms of entanglement. (Received September 13, 2016)