1125-AF-2068 **Christine Soteros*** (soteros@math.usask.ca). *Entanglement complexity in lattice polygon models of polymers under confinement.* Preliminary report.

We use self-avoiding polygons in a tubular sublattice of the simple cubic lattice (the 3-dimensional integer lattice $\mathbb{Z}^3$) to model polymers under confinement. Such lattice tube models have potential applications for modelling single DNA molecules in nanochannels, DNA under tight confinement, or protein configurations. In all three of these cases, there are interesting open questions about the effects of confinement on the nature and frequency of "entanglements" (knotting and linking) in the relevant biopolymer. To address these questions, we have used lattice tube models to study knotting probabilities and knot-distributions as a function of tube dimensions, as well as questions about knot-localization. In this talk, I will give an introduction to lattice models of polymers and then present recent theoretical and numerical results, obtained in collaboration with Nick Beaton and Jeremy Eng, about knotting in tubes. The numerical results are for small tube sizes and involve exact and Monte Carlo generation of polygons using transfer matrix methods. (Received September 19, 2016)