1132-54-316 **Elizabeth Denne**, **John M. Sullivan** and **Nancy C. Wrinkle*** (n-wrinkle@neiu.edu). *The ribbonlength of knot diagrams.* Preliminary report.

The ropelength problem asks to minimize the length of a knotted space curve such that a unit tube around the curve remains embedded. A two-dimensional analog has a much more combinatorial flavor: we require a unit-width ribbon around a knot diagram to be immersed with consistent crossing information. The ribbonlength is the length of the diagram divided by its width. Attempting to characterize critical points for ribbonlength leads us to new results about the medial axis of an immersed disk in the plane, including a certain topological stability for thin disks. This is joint work with Elizabeth Denne and John M. Sullivan. (Received July 25, 2017)