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Erica Flapan* (eflapan@pomona.edu), 610 N. College Ave., Department of Mathematics,
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report.

For DNA molecules, topological complexity occurs exclusively as the result of knotting or linking of the polynucleotide backbone. By contrast, while a few knots and links have been found within the polypeptide backbones of some protein structures, non-planarity can also result from the connectivity between a polypeptide chain and inter- and intra-chain linking via cofactors and disulfide bonds. In this talk, we survey the known types of knots, links, and non-planar graphs in protein structures with and without including such bonds and cofactors. Then we present a model which could explain why certain non-planar configurations are more likely to occur than others. (Received September 05, 2016)