1139-92-584 **Eleni Panagiotou***, Department of Mathematics, South Hall, University of California Santa Barbara, Santa Barbara, CA 93106, and **Kevin Plaxco**. *A topological model for protein folding.*

Our aim is to introduce a new model of protein folding kinetics that supports the prediction of a protein's folding rate from the topological and geometrical structure of its native state. Focusing on a small set of proteins that i) fold in a concerted, "all-or-none" fashion and ii) do not contain knots or slipknots, we show that the Gauss linking integral, the torsion and the "contact order" (a measure of the mean sequence-localness of interacting parts of the chain) provide information regarding the folding rate. We next use the topomer search model as our basis, to study a topological model for protein folding. (Received February 20, 2018)