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Kenneth C Millett* (millett@math.ucsb.edu), Department of Mathematics, UCSB, Santa Barbara, CA 93106. *Knots in proteins and their implications.*

Identifying the fine structure of knots and slipknots in proteins is a challenging but significant objective. One method of accomplishing this task leads to the identification of a knotting fingerprint for each structure. Its strict conservation within and between protein families despite large sequence divergence provides suggestions as to their functional role. We will discuss the method, its application to protein structures, and possible implications. This is joint work with Eric Rawdon, Andrzej Stasiak, Joanna Sulkowska, and Jose Onuchic. (Received September 09, 2012)