1040-92-22 **Julie C Mitchell*** (mitchell@math.wisc.edu), 480 Lincoln Dr., Madison, WI 53706. *Cluster Optimization in Protein Docking.*

Recent progress in obtaining docked protein complexes will be discussed. The combination of exhaustive search, clustering and localized global optimization can reliably find energy minima to highly nonconvex biomolecular energy functions. Using an energy function that adds desolvation and screened electrostatics to classical molecular mechanics potentials, the global minimum is found very near to the observed native state. This is demonstrated across a large number of benchmark examples. (Received January 02, 2008)