

Meeting: 1000, Albuquerque, New Mexico, STANFORD, Invited Address

1000-57-222 **Theodore Stanford*** (stanford@nmsu.edu), Department of Mathematical Sciences, 3MB
NMSU, Las Cruces, NM 88003. *Knots modulo braids.*

Knots and braids are two important objects of study in low-dimensional topology. The set of braids with a fixed number of strands forms a group which doesn't really have a counterpart in the set of knots. The theme of this talk is that if we view braids as local pieces of knots, then algebraic relations that arise from the group structures on braids can generate interesting relations on the set of knots. Three specific examples will be addressed. The first is the discovery of the Jones polynomial 20 years ago via quotient algebras of the braid groups. The second is the characterization of Vassiliev invariants of knots via the lower central series of the pure braid groups. The third is an approach to finite quotients of knot groups (ie, fundamental groups of the complements of individual knots) using certain finite quotients of the braid groups. (Received August 25, 2004)