Meeting: 1004, Bowling Green, Kentucky, SS 4A, Special Session on Knot Theory and Its Applications

1004-57-11 **Dennis Roseman*** (roseman@math.uiowa.edu), Department of Mathematics, University of Iowa, Iowa City, IA 52242. *On lattice knots and links in dimensions 3 and higher.* Preliminary report.

We present a method of constructing n-dimensional knots and links in R^{n+2} whose vertices are on the integer lattice Z^{n+2} and whose n-faces are unit lattice n-cubes. We discuss mathematical aspects of such knots and also computational methods and results.

Let C_s^n be an n-dimensional integer lattice cube in Z^n with sides of length s. This construction allows us to define, study and calculate in a very concrete way a "random" lattice 1-link in C_s^3, as well as "random" knotted lattice surfaces in C_s^4. (Received November 15, 2004)