Meeting: 1003, Atlanta, Georgia, SS 20A, AMS Special Session on Commutative Algebra, I

1003-13-941 **Christine K. Cumming*** (ccumming@math.purdue.edu), 150 N. University St., West Lafayette, IN 47906. *Residual intersections in Cohen-Macaulay rings.* Preliminary report.

Residual intersections generalize the notion of linkage. Let I be an ideal of a Noetherian ring R and s be an integer. An R-ideal K is an s-residual intersection of I if there exists an s-generated ideal $a \subset I$ such that $K = a : I$ and ht $K \geq s$. Some central questions in residual intersection theory are: when is a residual intersection K Cohen-Macaulay and what is the canonical module for R/K.

Artin and Nagata introduced the concept of residual intersections in 1972. Huneke and Ulrich studied residual intersection theory when R is Gorenstein. I will present my answers to the above questions in the case where R is Cohen-Macaulay. Also, I will discuss some applications of residual intersection theory to the study of cores of ideals. (Received October 01, 2004)