FOURTH ANNUAL ORGANICK MEMORIAL LECTURES

UNIVERSITY OF UTAH

DEPARTMENT OF COMPUTER SCIENCE

COLLOQUIUM

THURSDAY, JANUARY 18, 1990

ROOM - 104 ENGINEERING AND MINES CLASSROOM BUILDING

LECTURE - 3:30 PM

DONALD E. KNUTH

FLETCHER JONES PROFESSOR OF COMPUTER SCIENCE

STANFORD UNIVERSITY

"STABLE HUSBANDS"

ABSTRACT

Suppose n boys and n girls rank each other at random. We show that any particular girl has at least $(\frac{1}{2} - \epsilon)n$ n and at most $(1 + \epsilon)n$ n different husbands in the set of all Gale/Shapley stable matchings defined by these rankings, with probability approaching 1 as $n \to \infty$, if ϵ is any positive constant. The proof emphasizes general methods that appear to be useful for the analysis of many other combinatorial problems.

REFRESHMENTS WILL BE PROVIDED IN ROOM 3159 MEB AFTER THE LECTURE.