

National Mathematics Awareness Month Seminar:

“Splitting the Rent, Keeping the Peace: Fairness Problems and Fixed Points”



Presented By:

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3:40 PM, April 24, 2008

PSA 106

ABSTRACT. How do you divide the rent among roommates fairly? My friend's dilemma was a question that mathematics could answer, both elegantly and constructively. We show how it and other "fair division" questions --- the most famous of which is the problem of Steinhaus: how do you cut a cake fairly? --- motivate a host of "combinatorial fixed point theorems" and problems about polytopes. They provide excellent examples of how mathematics can address an old class of problems in new ways, and conversely, how problems in the social sciences can motivate new mathematics--- where topology, geometry, and combinatorics meet social applications, and where research by undergraduates has played a big role.

Hosted by the Department of Mathematics and Statistics