How to Fix an Antimatroid

Abstract for the Combinatorics and Number Theory Seminar 2002 April 24

When the elements of an antimatroid (examples I'll consider include rooted graphs, posets, and finite point sets) are subject to failure, the rank of the antimatroid may drop. The expected rank is a polynomial in p, the probability an element does not fail, and this gives some interesting information about the object in question. The polynomial has a deletion-contraction recursion and a probabilistic expansion. The coefficients of the polynomial are related to Crapo's beta invariant.

I'll conclude by using the polynomial to give new proofs of some results on posets and finite point sets.