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Merry Deranging: Math and Gerrymandering

Abstract for the Combinatorics Seminar and Colloquium 2019 April 9

A partisan gerrymander occurs when electoral districts are illicitly drawn so as to benefit one party. Traditionally, gerrymanders have been identified by the contorted boundaries of districts. In recent years, more focus has been given to two non-geometric approaches: measures that look for asymmetries in how votes are distributed and computer simulations that provide a "fair" baseline to which other district plans can be compared.

This talk will cover three main themes. First will be my work looking at measures of vote-distribution asymmetries, including one of my own, the declination. Second will be my thoughts and experiences as a mathematician observing the opportunities and pitfalls that arise when applying mathematics to an issue steeped in legal and political constraints. Third will be an exploration of some of the interesting abstract mathematical questions, combinatorial and otherwise, that are suggested by this field.

No particular mathematical knowledge is presupposed.

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