

Department of Mathematics and Statistics Colloquium

Proportional representation and fairness in two-party legislative elections

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Abstract: Suppose there are two parties in the fictional state Utopia who are competing for that state's 100 legislative seats. If one party wins 60% of the statewide vote, how many of the 100 seats should the party expect to win? The principle of proportional representation asserts that the winning party should attain 60 of the 100 seats. A more recent standard, the efficiency gap proposes to quantify the presence of gerrymandering in an electoral map. It asserts that 70 of the 100 seats is fair. Our work posits that both of these fairness criteria - even in the absence of political geography - are unreasonable.

This work is ongoing under the supervision of Dr. Edwin O'Shea and is an outgrowth of the Spring 2020 research seminar on Voting Theory.

Monday, December 7 at 3:10 pm via Zoom