MATH B398
Senior conference (Bergdall)
Seminar on mathematics and democracy
Fall 2020
Tuesday & Thursday
11:25 AM until 12:45 PM

Some hands, voting
Source: https://cfmbloguw.wordpress.com

Our seminar, this fall, will focus on mathematical aspects of representative democracy. The topics we discuss will broadly lead us through understanding and describing the many mechanisms society constructs to attempt to make decisions, carry out elections, quantify power, and distribute resources. We will look at all of this through a mathematical lens, meaning will be ask tough questions like “Can we prove ____ is possible? Not possible?” or “How do we determine how much power someone wields?” or “How wildly does the arrangement of our voting systems impact the outcomes?”

On the mathematical front, studying voting theory and social choice relies on a diversity of sub-fields of mathematics: probability, graph theory, number theory, combinatorics, linear algebra, and more! Background will not be assumed, but it will be introduced through the student presentations.

Beyond the material, the second purpose of our senior seminar is to provide experience for the mathematics major in preparing, delivering, listening, and improving upon presentations of a mathematical nature. You will be asked to apply the logic and reasoning you have developed within the mathematics major to substantive, and honest, discussions led by peers. You will further have the opportunity to pursue a significant research project on a topic of your choosing and the chance to present your findings to our class.