The SUMO Speaker Series for Undergraduates
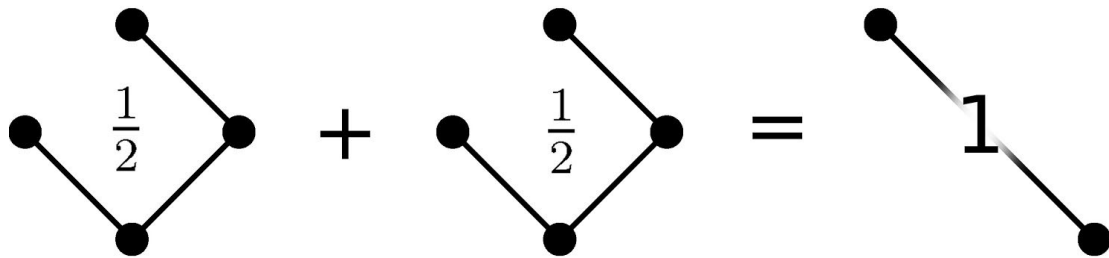## Thursday, January 16th
4:15-5:05, room 380C
(Food Provided)

Combinatorial Games
Professor Daniel Bump

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$$\frac{1}{2} \quad + \quad \frac{1}{2} \quad = \quad 1$$

Abstract:

Combinatorial Game Theory was not invented by Conway, but his influential book *On Numbers and Games* (1976) develops an elegant theory of impartial games sufficient for analysis of real games such as Go endgames, NIM, and the many clever games invented by Conway, Berlekamp, and Guy. Just as Zermelo built all sets from the empty set, all games are built up from the trivial game where the first person loses. Surprisingly this theory contains a full-featured number system with fractions and transfinite numbers.

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