Senior Capstone Colloquium
Thursday, April 10th
11:30–1:00
Science Center Room 300

Who’s Got the Power?
An Introduction to Power Indices
Courtney Cox
Have you ever wondered if your vote really matters? Does having twice as many votes as someone else give you twice their power? How does an indirect voting system influence your power over the ultimate decision? This talk will examine voting power in these situations, using the Banzhaf and Shapley–Shubik power indices to calculate individual power based on swing votes in winning coalitions.

Classifying Compact Connected Surfaces
Wes Galbraith
Surfaces are two dimensional objects that reside in three dimensional space. Many examples of surfaces may already be familiar to you. The mug that you drink coffee (or other hot beverage) from would be called a torus by a topologist. The same topologist would also consider the outer edge of the doughnut that you may eat with your coffee a torus. The coffee cup and doughnut are thought of as the same surface because, if we imagine that both are made out of an innately stretchy, moldable substance, then we can deform one into the other without introducing any rips or tears as part of the process. Imposing topological equivalence on surfaces is of mathematical utility because it allows us to classify them. In this talk, I will demonstrate this by showing that any surface can be placed in precisely one of three families.

Lunch will be available during the presentations.