ABSTRACT: In the United States, each state must periodically carry out **redistricting**: redrawing electoral district boundaries to account for population changes. District boundaries can be drawn to give a political advantage to one party, demographic, or other group, a practice known as **gerrymandering**. The problem of determining whether district boundaries have been gerrymandered has significant political and legal ramifications; it is also an active area of mathematical research.

We'll take a look at the legal constraints on redistricting and some real-world examples. Key questions we'll discuss are: What makes district boundaries fair or unfair? What proportion of seats should a party winning 60% of the popular vote get? What mathematically precise criteria can detect gerrymandered district boundaries? What properties does a "typical" map have?