# CSSS 567 Homework 2

Jess Kunke, due 11/05/2021

## Instructions

Short homework this week! Happy Halloween!

Please submit either

1. a knitted R Markdown file (html or pdf) that shows your final code and results, or
2. a pdf of your report and a separate R file with your code.

Please title all files you submit with "HW1\_" and your last name. For example, I would submit my homework as HW1\_Kunke.pdf (and HW1\_Kunke.R if I had a separate R file with my code).

Your code should be neatly organized and commented, and I should be able to run it from start to finish to reproduce your results.

## Spillover (continuing from Lab 4)

Let's revisit the simple four-person graph from lab in which we were choosing two people to be in the treatment group and all the edges were mutual:
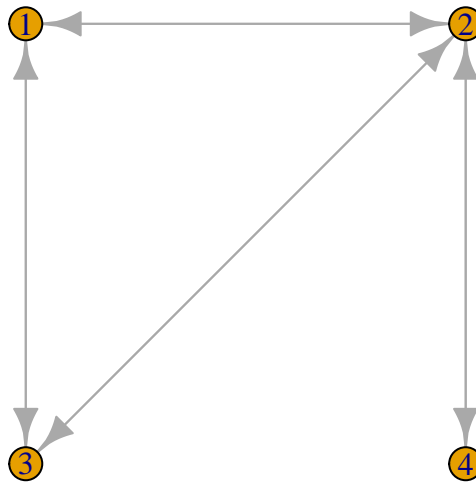


1. Adapting the code from Lab 4, plot the graphs of all six possible samples (the six possible assignments of which two people are in the treatment group) with labels T for those in the treatment group and C for those in the control group. Beside or below each graph, in some concise and clear format, report how many people have (a) no exposure, (b) indirect exposure, (c) direct exposure, and (d) full exposure.

2. In just a few sentences, if you don't observe an edge of the graph or you observe an extra edge that isn't there, how does this introduce bias into the Horvitz-Thompson estimators for the population mean outcomes for the exposure groups? What assumption does it violate, and how?