Lecture 3f: Practice Problems

John McGready
Johns Hopkins University
1. Suppose you are interested in estimating the proportion of employed Baltimore residents who use public transportation to get to their workplace on a regular basis. You apriori hypothesize this proportion to be roughly 20%. Suppose this is the (unknown) truth, and you do a study to estimate this proportion. How precise (within what boundaries) will you be able to estimate a 95% confidence interval for this proportion if you take a single random sample based on each of the following sizes?

a) \( n = 120 \)

b) \( n = 600 \)

c) \( n = 1,200 \)
Estimating a 95% Confidence Interval

2. Suppose your hypothesized estimate of the proportion of residents taking public transportation to work was changed to 50%. How precise (within what boundaries) will you be able to estimate a 95% confidence interval for this proportion if you take a single random sample based on each of the following sizes?
   a) $n = 120$
   b) $n = 600$
   c) $n = 1,200$