**Why do we study a sample when we want to learn about the population?** Back in my undergraduate econometrics course; my professor had the best analogy between our population and our sample population...  This goes back to our regression formulas; so bear with me as I speak about how this applies to our standard linear regression formula (as shown below) the beta is the population, and beta hat would be our sample population; so the way professor Jin Man Lee at DePaul/University of Illinois Chicago said the difference between the population and the sample population - is the Beta (left formula)  vs. Beta Hat (right formula) - is kind of like the difference that some religions hat's represent - so some Jewish people wear the Kippah - and he said that this separates us from our God.  This analogy always sticks with me when were talking population versus sample population.  We will never be able to model the population, its too vast - its like "God". So our sample population, our beta hat - is the way that we can help model the world with our limited means using statistical methods.

**What is your favorite tools/methods in statistical inference?** When it comes to any statistical analyses I tend to rely on R; there are so many packages that you can leverage to produce and test results; and with R-Markdown you can create clean reports with text and live script that you can PDF or create HTML to post online.  In terms of tools for analysis; I'm a big fan of ANOVA our analysis of variance, it incorporates our degrees of freedom, sum of squares, our mean of squares and p-value; providing a strong analysis of our models and its functionality is available through devtools.

**List some of the goals of statistical inference:**At the very highest level the goal of statistical inference is to develop a hypothesis about a given population using statistical tools from a sample population.

<https://www.sciencedirect.com/topics/neuroscience/statistical-inference>

**Give some examples in statistical inference in everyday life**

**Describe the difference between a parameter and a statistic**