Title: The Association of Incarceration and Demographic Variables with the Acquisition of HIV and Sexually Transmitted Diseases

Objectives: The goal of this Bachelor’s Essay is to research the association of demographic variables and black male incarceration with the acquisition of HIV and sexually transmitted diseases in South Carolina counties. This course not only seeks to develop skills in data collection from a real life example, but also to advance data analysis skills such as statistical linear regression. This project will be very beneficial to the student for her undergraduate studies and learning to perform research and different types of statistical analysis.

The general timeline of this project begins in the Fall 2016 semester with a focus on data collection. The student will perform a literature review to assess the relevance of the research topic in the Public Health field. The raw data will come from the Census Bureau, South Carolina Department of Health and Environmental Control, and the South Carolina Department of Corrections. The student will take the raw data and organize it in a manner for statistical analysis. The demographic variables to be gathered for all South Carolina counties are: the percent below the poverty line, distribution of blacks, distribution of whites, age, and the age and race specific community sex ratios (ratio of men to women). The sexually transmitted diseases studied will be HIV, Chlamydia, Gonorrhea, and Syphilis. Data on male incarceration will be obtained from the South Carolina Department of Corrections about the race, age at sentencing, and county of residence of inmates.

In the Spring 2017 semester, linear regression methods will be used to scrutinize the data for relationships between the variables. The student will be familiarized with statistical software, such as R and SAS, to analyze data sets as well as reviewing linear regression methods. The supervisor and student will work together to produce and interpret results obtained by statistical software, such as SAS and R. Finally, the project will conclude by developing overreaching themes and deductions concerning the data analyses. The course grading is based upon how well the student has written the required report, especially dependent upon a real data analysis.

Supervisor: Dr. Jin-Hong Park
Ph.D. in Statistics from the University of Georgia
The research interests include Dimension Reduction Methods, Applied Time Series Modeling, Nonparametric Methods, Intervention Analysis, and Financial/Econometric Applications in Statistics.

Phone: 953-4838
E-mail: parkji@cofc.edu

Requirement: two reports
1. Review of the statistical methods. (30%)
2. Final real data analysis. (70%)