Topic Selection

Due to difficulties in locating data for a previous project idea, I have decided to look into crime in the Portland, Oregon area, with an emphasis on how crime has changed as the city has seen substantial growth in the past decade. Open data is available for crime between the years 2004 and 2014, and I have found several journal articles that investigate several aspects of crime and its relationship to the growing city, including questions of gentrification and segregation, labor market markers (specifically, wages and unemployment), and Portland’s unusually low homicide rate.

The project will include gathering data, cleaning and sorting the data I am interested in, and creating graphics and summary statistics about how crime rates have changed during the time frame specified.

Some questions I hope to answer using the available data are:

* How has overall crime in Portland changed?
* Have property crime and violent crime changed at a comparable rate?
* What subcategories of property and violent crime have increased and decreased, and how has the overall composition of crime in Portland evolved?
* How have geographic factors impacted crime in Portland?
* Are there certain neighborhoods that account for more crime than others? How has this changed or not changed?
* If there are neighborhoods that experience more crime than others, are there economic markers that can help to explain that difference?
* Is it possible to determine how much crime was caused by repeat offenders vs. one-time offenses?
* Did Portland experience a spike in crimes following events in Ferguson, Missouri?
* What have other researchers said regarding crime in Portland, and is there a way to verify their statements with the data available through the city?

My methods will involve visualization of data in appropriate forms (scatter plots, bar plots, possibly map data). I will look for statistically significant changes in crime rates over the given time period, and use the Student’s T-test to test hypothesis regarding this significance. If I can find data regarding the changes in Portland’s demographics over the time period specified, it may be possible to construct a linear regression model that describes how crime has changed in Portland with the increased population.