Political Science 104 Homework #3
Due Monday, May 18th, at the end of lecture

To complete this homework you'll need to use SPSS. You will need to work in the computer lab, unless you have access to SPSS somewhere else. This data is the same data you saw in section. It consists of 11 variables observed in all 50 US states and the District of Columbia just before the 2004 Presidential election. The variables are (1) the name of the state, (2) the number of soldiers from that state killed in the Iraq War up to that point, (3) the state population, (4) the state's median family income, (5) the percentage of people in the state with a college education, (6) the unemployment rate in the state, (7) the per capita amount of federal aid distributed to the state, (8) the percentage of the state population that is white, (9) the percentage of people in the state that own their own homes, (10) the per capita energy consumption rate (in British Thermal Units), and (11) the percentage of voters in the state who voted for George W. Bush.

Question 1: Suppose you were interested in testing the hypothesis "States that receive more money from the federal government will support the incumbent president at higher rates"?

- What variable in the data should you use for your dependent variable? What variable should you use for your independent variable?
- Using a histogram, examine your dependent and independent variables. Which observation or observations are outliers in your dependent variable? Which observation or observations are outliers in your independent variable?
- Calculate the correlation between your dependent and independent variables. What is this correlation? Based on this correlation, does it appear there is support for the hypothesis?
- Run a regression to examine the relationship between the dependent and independent variables. What is the intercept of the regression line, and what does it tell you in this case? What is the slope of the regression line, and what does it tell you in this case? Based on this regression line, does there appear to be support for the hypothesis?
- Generate a scatterplot with a regression line showing the relationship between your dependent and independent variables (make sure your dependent variable is on the vertical axis). Print out this graph and attach it to your homework.

Question 2: Now generate your own original hypothesis about a relationship between two variables in this data. Make sure this isn't a hypothesis we've already examined in section or in Question 1.

- State your hypothesis. In a sentence or two, explain why you expect to see this relationship.
- What is the dependent variable in your hypothesis? What is the independent variable?
- Using a histogram, examine your dependent and independent variables. Which observation or observations are outliers in your dependent variable (if any)? Which observation or observations are outliers in your independent variable (if any)?
- Calculate the correlation between your dependent and independent variables. What is this correlation? Based on this correlation, does it appear there is support for your hypothesis?
- Run a regression to examine the relationship between the dependent and independent variables. What is the intercept of the regression line, and what does it tell you in this case? What is the slope of the regression line, and what does it tell you in this case? Based on this regression line, does there appear to be support for your hypothesis?
- Generate a scatterplot with a regression line showing the relationship between your dependent and independent variables. Print out this graph and attach it to your homework.