Name:_____KEY_____ Dr. Reichler's Bio 325 Fall 2007 pre-exam 1 mini-quiz
(This quiz will not count for bonus points, but is for you to check your knowledge of this information)

1) Why are twins useful in studying the possible inheritance of behaviors, and what are the caveats of using twin studies?

Identical twins have the same DNA while fraternal twins are genetically no more or less similar than other siblings; yet fraternal twins share a very similar developmental environment. One of the caveats about twin studies are the concerns about how different the environments were for twins growing up in different families.

2) Why might the results of the twin studies be different if the twins who grew up in different families were adopted into both rich and poor families?

When environments are different, these differences may mask genetic effects. As an example, if you wanted to study genetic effects on height, and some of the participants were developing with insufficient nutrition, your results would show the eefects of good nutrition on height, not the effects of genes.

3) Is human behavior regarding eating inherited genetically? Why or why not?

There is a genetic component to eating behaviors. When identical twins grew up in different families, they had a high correlation in BMI.

4) Based on the studies in voles, why would injecting extra oxytocin into your significant other not help in keeping them monogamous? What would you need to do to increase the chance that your significant other would be monogamous?

The difference in vole monogamy was based in different receptor levels. So more hormone in someone with low receptor levels won't change their behavior. Based on the vole study, you would need to increase receptor levels in the brain.

5) Would introducing sterile male voles be an effective population control in either prairie or montane voles? Why or why not?

Montane voles are not monogamous, so introducing sterile males would not decrease reproduction rates. But in the monogamous prairie voles, the females mated to the sterile males will have fewer or no offspring.