# CSU101
# Summer 2009
# Lab Assignment 1

To complete this assignment you must submit an electronic copy by the due date using Blackboard.

Download the file **MLBStats.xls** and save a copy of it. The file contains records on a number of major league baseball players separated by league (American and National). Our problem is to study the distribution of On Base Percentage for players in the population for which we have data that will allow us to compare the two groups.

**On Base Percentage (OBP)**
On base percentage, or OBP, in a statistic used in baseball, often considered better at determining the effectiveness of a hitter than the more commonly known batting average. A hitter's OBP is a function of the number of at bats (AB), hits (H), walks (BB), and sacrifice flies (SF). The formula for calculation is:

$$OBP = \frac{H + BB}{AB + BB + SF}$$

Our study proceeds in the following manner:

1. Define an expression to calculate each player's OBP. When you have the expression, copy it into F7:F206 for American League players, and M7:M233 for National League players. **Round** the values to 3 decimal places, and **format the cells** so that exactly 3 decimal places are always displayed. You have now calculated an OBP value for everyone in our population.

2. Assign names to ranges as follows:
   F7:F206          AL_OBP
   M7:M233          NL_OBP

3. In B237:D243 you will find an array of cells in which you are asked to place functions that answer the following questions. **Use the above range names in this process**:

- How many American Leaguers, National Leaguers, and total players are in our study? This is often called the *sample size*.
- What are the *average* and *standard deviation* of OBP for AL players, NL players, and for all players combined in our population?
- What is the *median* OBP for AL players, NL players, and for all players combined?
- What are the *minimum, maximum*, and *range* of OBP for AL players, NL players, and for all players combined?