

1046-N1-53

**Stanley Rothman\*** (Stanley.rothman@quinnipiac.edu), Stanley Rothman , Ph.D, 15 Stacy Ct., Cheshire, CT 06410. *Mission Impossible - Hitting .400 for a Season.*

From 1876 until today, the batting average has been considered the "gold standard" for judging a player's performance as a batter. Attaining a batting average of at least .400 is considered one of the great batting feats in baseball. This paper will look at the following four statistics: Batting Average =  $\frac{\# \text{Hits}}{\# \text{at bats}}$ ; In-Play Batting Average =  $\frac{\# \text{Hits}}{(\# \text{at bats} - \# \text{strike outs})}$ ; Strike-Out Average =  $\frac{\# \text{strike outs}}{\# \text{at bats}}$ ; In-Play Home Run Average =  $\frac{\# \text{home runs}}{(\# \text{at bats} - \# \text{strike outs})}$ . This paper will explore relationships between these four statistics, compare these four statistics for the years 1913-2007, compare the .400 hitters since 1913, define a true .400 hitter and discuss what it takes to bat .400 today. These issues and questions will be analyzed through the use of both descriptive statistics and inferential statistics. Summary measures and graphs will be used for comparisons. Linear regression and correlation will be used to show relationships. The two techniques of confidence intervals and hypothesis testing will be used to estimate a player's true batting average and evaluate whether a player is a true .400 hitter. Simulations will be done using a spinner on a disk. (Received July 11, 2008)