Zach Palmer
Dr. Nelson
STAT 1341 – Sports Analytics

<center>Midterm Proposal</center>

Research Question
What impact does aging have on an athlete in a given sport?

Relevance of the Question
I believe that the impact of aging on athletes in various sports is relevant as it offers valuable insights to coaches, GM's, managers, etc. in terms of roster decisions. Similar to how we discussed the impact of Moneyball, and the roster building strategies mentioned therein, being able to assess how much you can expect out of older players and having a better understanding of how they will potentially regress in their later years allows teams' management to make smarter, more informed decisions. Additionally, knowing a typical player's trajectory in terms of performance is vital in roster building because of the "championship window" that you will sometimes hear people colloquially refer to. Attempting to align the individual peaks of your key players is a crucial aspect of roster building and answering this question will likely offer useful in that department. Finally, I think that another interesting and valuable insight that researching this question can offer is how the effects of aging may differ amongst the various positions withing a given sport. For instance, does aging affect a striker in soccer more than defender? If it does not, then is this idea simply a false misconception, or could there be another cause in the difference between players' longevity—perhaps their particular playing style?

Sources of Data

NHL:
nhlscrape to build xG and GSAx models to evaluate performance
https://www.hockey-reference.com is another option

Soccer/Assoc. Football:
https://www.kaggle.com/hugomathien/soccer
Supposedly you can also get data from: https://www.transfermarkt.co.uk

Baseball:
baseballr package is a possibility, FanGraphs