# StatR 101: Fall 2012

Final Project Proposal

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# Final Project

For my final project, I propose to quantify home field advantage in Major League Soccer (MLS). In the 2012 season, of the 325 regular season matches played, the win-draw-loss record for the home side was 167 wins, 79 draws, and 77 losses. Locally, the Seattle Sounders had 11 wins, 2 draws, and 4 losses on at home, and had 4 wins, 9 draws, and 4 losses on the road. These data are available from www.goal.com.

My null hypothesis is that home field advantage is a myth, and that one should expect the results of the 325 matches played to be equally split between wins, draws, and losses. The observed results indicate otherwise, but to what level of significance? Other questions arise:

* Is there any observed difference between the effects of travel within the same time zone as opposed to across time zones?
* Does Seattle, in one corner of the country, enjoy a better home field advantage due to travel as opposed to a more centrally located team such as the Chicago Fire?
* Is the home field advantage less among teams in the same time zone? For example, in the MLS Eastern conference, D.C United, New York Red Bulls, Columbus Crew, Montreal Impact, Philadelphia Union, New England Revolution, and Toronto FC are all in the same time zone.

In addition, I have collected data available from [www.soundersfc.com](http://www.soundersfc.com) on a particular player of interest, Mauro Rosales. Rosales is a player who doesn’t score a lot of goals, but my qualitative observation is that his presence is a catalyst for improved team performance. I would like to quantify this. He is a somewhat frail player, injured about 1/3 of the time. These absences present an opportunity to compare team performance with and without him. This is just a curiosity – I would like to say with N percent confidence that the team plays better with him, if only to quantify how much I should panic whenever he is injured.