

Senior Math/Statistics Presentations

Friday, April 24, 12:00pm in WS131

Speaker: Colton Schoelkopf

Title: *The Pitching-Offense-Defense Rating:
Determining the best Major League Baseball team*

Abstract: Hot dogs, beer, summer, and friends; all things you think of when going to a baseball game. And of course, everyone likes to see their team win when going to the ballpark. But which team is better? Which team has had the best season? Which are the best teams in history? In this talk we address these questions using statistical analysis together with a personal knowledge of the game. In particular, a new team rating called the Pitching-Offense-Defense (POD) Rating is proposed. The POD Rating formula combines a selection of box-scores that were determined to be significant by using logistic regression. We will discuss the creation of the POD Rating formula, check it against actual MLB team records and compare the POD Rating with existing team ratings.

Speaker: Noelle De Puey

Title: *Seismic Exploration*

Abstract: In this day and age, many people rely on technology to get them through the day. Technology is everywhere and many people don't actually know or understand the mathematics that goes on behind it all. Seismic Exploration uses a tool called the 3-D digital recording device to help discover oil and gas deposits below the surface of the earth. Waves are transmitted into the earth and then refracted and reflected back to the surface. These refracted and reflected waves are modeled by a ray that is perpendicular to the wave front. In this talk we discuss the mathematics that governs the path of the ray as it moves through the subsurface including the angles at which the ray travels and the travel time of the ray as influenced by the depth and density of the layers.