The Department of
Mathematical Sciences
Welcomes

2019 Taft Lecturer

Dr. Christopher K. Wikle

Curators Distinguished Professor
Department Chair
Department of Statistics
University of Missouri

Thursday October 17 , 2019

Room 3220, Rec Center

4:00 – 5:00 pm

More Than A Mascot: What Animals Can Teach Us About Sports

We are in the midst of an individual data revolution! Increasingly, we have the potential to measure at high frequency physical variables describing an individual's location and acceleration, as well as biometric information such as heart rate. Not only does this information tell us quite a bit about an individual's condition or behavior, but it can also tell us how an individual interacts with others (i.e., collective behavior). The challenge for statisticians is how to use these data to make such inferences and predictions in the presence of various uncertainties. One of the first disciplines to systematically use these types of data is animal ecology, where GPS tracking data and acceleration data have been combined with habitat data to learn about behavior, both individual (e.g., movement preferences, time-activity budgets) and collective (e.g., flocking, schooling, etc.). Perhaps surprisingly, another area where such data are increasingly prevalent is in sports. For example, team sports like soccer, basketball, football, hockey, and baseball have seen a dramatic increase in data collection and monitoring. Exciting new data include GPS tracking on ball movement and player locations, as well as biophysical data of athletes that measure player fitness and fatigue. Together, these data can be used to inform individual and team strategy and to drive tactical decisions and player development. In this introductory talk, I will describe some interesting connections between methods for animal movement data and sports analytics, and the opportunities and challenges for applying modern statistical and machine learning data analysis tools such as Gaussian processes and deep learning.

Refreshments will be served 3:00– 3:30 pm in the Math Faculty &

Graduate Student Lounge Room 4118 French Hall West