3 Mini-talks in applied math, statistics, and pure math

**Professor Amy Ekanayake - WIU Department of Mathematics**

**Applied mathematics**

Applied mathematics is an integral part of life, with many deep and rich applications to "the real world"; however, insufficient knowledge can lead to disastrous results. I will give a few historical examples of life-saving applications and casualty-causing errors due to incorrect application of mathematical tools.

**Professor Beth Hansen - WIU Department of Mathematics**

**On the rate of recidivism in Atlantic City (Do not pass GO, do not collect $200..)**

Monopoly has enthralled millions while at the same time ruined countless family gatherings since 1935. The game is highly driven by chance by way of die rolls and card draws. Thus, moves around the game board can be modeled with a stochastic process called a Markov chain. In this talk, we will briefly introduce Markov chains, show how they can be used in the game of Monopoly, and give a short computer simulation using the statistical software R.

**Professor Doug LaFountain - WIU Department of Mathematics**

**Groups and the mathematics of symmetry**

Symmetry is everywhere, and has profound effects wherever it occurs, including in biology, chemistry, physics and engineering. One of the triumphs of modern-day mathematics is to provide a language in which all symmetries can be analyzed, namely the notion of a group of symmetries. This mini-talk will introduce the mathematical notion of a group, give examples of groups in other disciplines outside of math, and point you to places where you can learn more about them.