

First Place Winners - Oral	Name
Natural Sciences/Engineering	Colton Turner
<p align="center">PEDESTRIAN DETECTION IN A NIGHT TIME DRIVING AND TEXTING TASK Faculty Mentor: Alex Chaparro Fairmount College of Liberal Arts & Sciences</p> <p>The dangers of texting and driving have become the focal point of driving research in recent years. Most of this research has been directed at examining the dangers distracted drivers present to other motorists. However, roadside pedestrians are also endangered by distracted drivers. According to the National Highway Traffic Safety Administration nearly 76,000 pedestrians were injured in traffic accidents in 2012. An additional 5,000 accidents resulted in pedestrian deaths.</p> <p>Current research tends to focus on daytime driving despite the fact that distracted night time driving is far more dangerous for motorists and pedestrians alike. Nearly 70% of all pedestrian/automobile fatalities in 2012 occurred at night. These numbers are projected to continue over the coming years. Despite this projection surprisingly little research has been done on preventing pedestrian/vehicle collisions. Even less research has been done on night time prevention.</p> <p>The goal of this research study was to examine the effects texting while driving at night has on a driver's ability to detect roadside pedestrians as well as examining the effects the pedestrian's clothing has on their visibility. To do this participants were driven through a closed road course at night and given a texting task to complete when prompted. The participants were also asked to report anytime they saw a roadside pedestrian. The pedestrians were wearing one of three possible clothing options.</p> <p>The results of this study indicate that the presence of texting is not the determining factor of if a pedestrian will be detected, but instead it is the pedestrian's clothing choice that determines detection and the distance of detection.</p>	
Social Sciences/Humanities	Gage Webb
<p align="center">MANUFACTURING'S RELATIONSHIP TO ECONOMIC GROWTH IN WICHITA Faculty Mentor: Jen-Chi Cheng Barton School of Business</p> <p>When the Great Recession hit Wichita, KS it hit hard. Jobs disappeared overnight, unemployment rates rose, and things changed in a bad way for the average Wichita citizen. Since then, however, the city has seen a resurgence of growth that has helped get things back on track. My question when analyzing this situation is simple: What caused this new growth? Was it manufacturing and aerospace coming</p>	

closely with those found in the Wichita manufacturing sector specifically.

Second Place Winners-Oral	Name
Natural Sciences/Engineering	Christopher Thacker

spectral peaks were found in the finger print region of the spectra using a paired t-test. Fishers Linear Discriminant analysis on the first principal component was able to correctly classify the ischemic and control muscle tissue with 100% accuracy. The Raman spectral profiles showed a consistent difference between the ischemic and non-ischemic muscle tissue. Raman micro-spectroscopy may provide a novel method of label-free tissue analysis and has the potential to aid in diagnosis and treatment monitoring of PAD patients.

Social Sciences/Humanities	Kelly Ha
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SPORTS PLAYING TO

Peripheral artery disease (PAD), characterized by blockages of the arteries to the legs, affects approximately 8 million lives in the United States. This injury includes altered metabolic processes, damaged organelles, and compromised bioenergetics in the affected muscle. In this study, we evaluated the hypothesis that Fourier Transform Infrared (FTIR) spectroscopy of human biopsy samples (gastrocnemius muscle) can be used to identify biochemical alterations in PAD muscle and characterize severity of muscle damage. When comparing spectral peaks between controls and patients with PAD, significant differences were found in the fingerprint region. FTIR spectroscopy was able to characterize the secondary effect of PAD on the gastrocnemius by identifying unique biochemical signatures of diseased PAD skeletal muscle.

Natural Sciences and Engineering

Jennifer Smith

**EFFECTS OF FIRE ON FORB GERMINATION AND SURVIVAL IN A
SOUTH-CENTRAL KANSAS TALLGRASS PRAIRIE**

Faculty Mentor: Gregory Houseman
Fairmount College of Liberal Arts & Sciences

Prescribed burning is an important tool for the conservation, restoration, and management of prairies, but, how fire impacts seeds in the year of the fire is poorly understood. For example, prairie burns can result in litter removal and increased nutrient availability, however it is unclear whether fire causes high seed mortality,

