2014 Celebration of Scholarship Poster Presentations
(Alphabetical by title)

Brady Evans, Isaac Burton, Hejress Alshammari, & Matt Malone
Mentor: Kurt Shoemaker
The Blue Ridge Province in Great Smoky Mountain National Park

The Alleghenian Mountain building sequence began during the middle Mississippian period. This mountain building event was caused by the collision of Gondwana and Laurasia which formed the supercontinent Pangaea. This collision created a long belt of thrusting known as the Blue Ridge thrust belt. A thrust is a fault where older strata, or rock layers, are thrust over top of younger rock layers, which is particularly interesting for us as it gives us a chance to study Precambrian rock layers in Appalachia. This is where the majority of our study will be centralized.

Michelle Stephens, Kim Waggoner, Ian Kelley, & Wes Bailey
Mentor: Ryan Walker
Does massage or PNF relieve symptoms of CTS?

In patients with Carpal Tunnel Syndrome (CTS), the question has been raised as to which techniques are better for relieving symptoms. Massage and PNF technique are just a few techniques that can be used to relieve symptoms. Relieving symptoms and pressure within the tunnel may reduce the need for surgical intervention. With each patient the treatment may need to be different depending on what symptoms they may be having, therefore raising the question, "Does massage or PNF relieve symptoms of CTS?"

Cyle Pool, Kyle Strong, & Kayla Schoettle
Mentor: Kurt Shoemaker
Field Studies in Appalachian Geology, Part 1: The Cumberland Plateau, Mountain Front, Craters & Lagerstatten

The intent of this research is to provide an understanding of how some the major geological features in the Southern Appalachians affect and influence the total geology of the region. The four key features to be discussed include the Cumberland Plateau, the Pine Mountain and Cumberland Mountain Thrusts, the structure and timing of the Middlesboro Basin, and the Gray Fossil Site. Through this research and subsequent presentation, a better understanding of these four regions, their history, and how they influence the environment around them will become evident.

Zack Bishop, Ray Swanson, & Adam Madden
Mentor: Kurt Shoemaker
Field Studies in Appalachian Geology, Part 4: The Blue Ridge to Piedmont Transition

The Blue Ridge to Piedmont Transition (BRPT) demonstrates a major physiographic and geologic feature of the Appalachian Mountains in southern North Carolina. The Brevard fault zone (BFZ) is characterized as the defining boundary between the BRPT. The metamorphic and structural complexity in this area is the result of thrust faulting associated with the collision of the North American and African tectonic plates leading to the formation of the BRPT. Transecting the BRPT from northwest to southeast the metamorphic grade of this area ranges from low to high grade metamorphism with the BFZ being the driving mechanism for the deformation within the BRPT. Intrusive igneous units located within the Blue Ridge are identified as a source of contact metamorphism in the northeastern section of the BRPT. The BRPT provides an excellent opportunity to understand the complex deformation occurring within a dynamic convergent plate boundary in eastern North America’s ancient geologic past.
John Ridgeway  
Mentor: Kyle Vick  
**High-Definition vs. Standard-definition: A Comparison of How We See**

High-definition and Standard-definition are common image displays and resolutions that we see daily. However, it is yet to be determined whether we see the high-definition images more clearly because we are told they are. This poster demonstrates an experiment using a t-test to determine if we do see the resolution clearer or if we are tricked into it.

John Ridgeway  
Mentor: Kyle Vick  
**High-definition vs. Standard-definition Facial Recognition**

This poster exhibits a study conducted under the question of whether or not humans are able to detect a distinct difference in high-definition or standard-definition facial photos. Otto, K. M. (2001) found that we initially perceive the higher resolution as better. The study utilized an EEG and carefully selected pictures to find the answer. This will show whether or not high-definition is more noticeable than the lower quality standard-definition.

Lynzee Murray, Sara Dummitt, Nick Burkhart  
Mentor: Brian Richards  
"I Love His Laugh": Effect of Humor Appreciation on Initial Romantic Attraction

Previous research has shown that a good sense of humor is an attractive and highly valued trait when considering mate selection (Li et al., 2009). A good sense of humor can also make someone be perceived as more attractive (McGee & Shevlin, 2008). Laughter has also been proven to be a way in which individuals signal interest in a partner (Grammar, 1990). Our study investigates how a target’s laughter affects the perceived attractiveness of this target. We are also interested in discovering if there is a difference in perceived attraction if one is smiling versus laughing. Are these universal expressions of positive emotion equally attractive or is there something special about laughter and sense of humor?

Ray Swanson  
Mentor: Jeff Bauer  
**Micro-fossil Research**

This presentation focuses on the collection and identification of conodont species in upper Ordovician rocks near Maysville, KY. Conodonts are some of the earliest chordates and offer an interesting look at biological evolution early in the Earth's history and have been used as index fossils. Samples were collected from the Bull Fork Formation, an upper Ordovician limestone and shale unit. Research will describe a basic stratigraphic column at an exposure along the AA Highway and samples collected at roughly one meter intervals. The samples were brought back to the lab where they were processed in acetic acid to free the fossils from the carbonate rock matrix. After processing, the rock residues will be examined under magnification in order to determine if there are microfossils in the samples. Conodonts and other microfossils will be separated from the residue, counted and classified in order to determine the age of the formation.

Tammy Short, Judy Breeze, Megan Conn, Ashley Leonard, & Brooke Baker  
Mentor: Barbara Conn  
**Nurses as a Political Advocates**

This poster will show the evolution of nursing and politics.
**Alison Staggs, Tracy Rawlins, & Matt Sainopulos**  
Mentor: Ryan Walker  
**Plantar Fasciitis**

This poster presents a study proposed to determine if a correlation exists between people who possess excessive navicular drop and the development of Plantar Fasciitis. The study would include 400 participants over a twenty year span who all have excessive navicular drop to determine if there is a correlation to the diagnosis of Plantar Fasciitis.

**Madison Pitzer, Bethany Evans, Eric McClintic, & Wes Loop**  
Mentor: Ryan Walker  
**PNF vs. MWM in Shoulder ROM**

This poster presents a study proposed to compare proprioceptive neuromuscular facilitation (PNF) stretching and mobilization with movement (MWM) to increase shoulder range of motion (ROM) in subjects with shoulder pain.

**Julie Contos, Lauren Donovan, Abigail Donahoe, & McKenzie Irwin**  
Mentor: Ryan Walker  
**PNF vs. Static Stretching Effects on Lateral Epicondylitis**

This poster compares proprioceptive neuromuscular facilitation (PNF) contract-relax and static stretching techniques to improve function among male tennis athletes with acute lateral epicondylitis, to prevent the reoccurrence of injury that could lead to chronic lateral epicondylitis.

**Matthew McJoynt-Griffith, James Britt, Brennan Ridout, & Gavin Dillow**  
Mentor: Ryan Walker  
**Predictors of Patellofemoral Pain Syndrome in Women**

Patellofemoral pain syndrome (PFPS) is defined as anterior or retropellar pain in the absence of other pathology. Twenty five percent of knee complications are related to PFPS, which is more prevalent in active adults, runners and young people, especially females. One of the most commonly accepted etiologies is abnormal tracking of the patella within the femoral trochlea, which can be caused by improper recruitment of the quadriceps or iliotibial (IT) band tightness. Our study analyzed whether IT band tightness or improper quadriceps recruitment was a better predictor of PFPS in females.

**Travis Bailey, Justin Thompson, & Cora Essman**  
Mentor: Kurt Shoemaker  
**The Southern Valley and Ridge Province**

In the early Paleozoic the Taconic and Acadian orogenies created sediments that were deposited into the Appalachian Basin. During the Alleghenian Orogeny, when the supercontinent known as Pangea was formed, the African and North American Plates collided, closing the Iapetus Ocean, and compressing the lithosphere and deforming the Paleozoic sediments forming the Appalachian Mountains. In what is now known as the Valley and Ridge province, the lithosphere was folded into multiple anticline and syncline structures. Over time the crests of these anticlines were eroded away forming small valleys exposing the Clinch Sandstone on the ridges and the Chattanooga Shale in broad valleys. The modern elongated parallel valleys and ridges of the Valley and Ridge physiographic province reflect the Paleozoic history of the region.
Nicole Adkins  
Mentor: Karen Crummie  
**Tort Liability**

My presentation will point out potential tort liability for home owners. People can be held liable for many different types of torts, for example if someone is injured on their property. I find the subject matter very fascinating. Until I started college I had never heard of these liabilities, so I want to share them with others.

Kasey Roth, Emily Dearfield, Kayla Woodfork, Mandy Webb, & Allison Cox  
Mentor: Ryan Walker  
**Trochanteric Bursitis**

This poster discusses the disease of trochanteric bursitis and if using proprioceptive neuromuscular techniques are more effective at improving range of motion if performed before or after exercise in middle aged women with lateral hip pain.