OFFICE OF GEOGRAPHIC INFORMATION SYSTEMS & REMOTE SENSING

STUDENT GIS AND REMOTE SENSING POSTER COMPETITION

APRIL 8, 2016 | 1:00 - 5:00 PM
VIRGINIA TECH, NEWMAN LIBRARY MULTIPURPOSE ROOM (FIRST FLOOR)

Undergraduate Poster Session

1.

Spatial Analysis of efficient Transportation Choices in Blacksburg

Josh Hammes and Callie Lambert

Sustainability **T**ools for **A**ssessing & **R**ating (STAR) Communities is the nation's first framework and certification program used to measure cities, towns and counties across social, economic and environmental performance areas. The rating system measures community-scale sustainability on seven goal areas and 44 sustainability objectives with 526 different quantitative and qualitative measurements. These are used to present a vision that is specific to each locality. Localities can use the vocabulary outlined by the STAR rating system to effectively strategize and define their planning efforts related to sustainability to earn points toward a 3, 4 or 5 star level. The Town of Blacksburg joined the STAR Community network in June 2013 and is pursuing its initial rating of 3 stars achieved by earning 200 points. Points may be earned by creating research models at the temporal and spatial scale using geographic information system applications (GIS) to show excellence in certain areas based on numerous indicators. This project outlines transportation choices within the Built Environment goal area by identifying and modeling efficient transportation choices available for the population within the town's limits. These transportation choices counter single occupancy vehicles for the commute to school or work which include walking, biking and bus transit. The intent is to model convenient access to these points, outlined by the STAR framework based on a particular distance. This model will determine if 75% of the population of the town has access to systems such as bike paths, walk paths and bus stops that connect them to their destination.

2.

Understanding Where Dragon Folklore Comes From

Nathaniel S. Johnson

This poster is looking into the geography of dragon folklore through a cultural and spatial analysis. I will be working with the Dragon Research Collaborative on this project. What I will be doing is looking at where lycopod fossils, which is a type of plant fossils, are found in relation to the type of dragon folklore and stories in the same areas across the globe. The reason I am looking at lycopod fossils is because it resemble dragon skin, so believe this fossil is what people might of thought where dragons. Using this thought we started to piece together types of lycopod fossils with different types of dragon folklore. I will be taking the data and mapping out the common areas as well as applying a cultural lens to better understand why each dragon legend formed where it did.

3.

Monitoring Potential Sustainable Energy at Sweet Briar College

D. J. Bitters, A.N. Cassell, and C. N. Fox,

Renewable energy (RE) is steadily increasing in economic importance. Before an investment to install RE technologies can be made for a location, the potential at the location must be monitored. Sweet Briar College (SBC), a liberal arts and sciences college near Lynchburg, Virginia, hosts a climate research station, the Land-Atmosphere Research Station (LARS), which collects RE-related variables. The goal of our project is to develop a dashboard using LARS data to display real time solar and wind availability, as well as current market value for the energy produced at SBC. The dashboard aims to obtain incoming solar radiation, wind speed, and air temperature to determine RE capacity on site to inform potential return on solar panel and wind turbine investments. We will use up-to-the-minute data from LARS, pulled and processed through R into graphics that represent current solar and wind energy as compared to historical patterns. These graphics, in conjunction with near real time images of the LARS site, provide an at-a-glance insight into the potential economic utility of the site for renewable energy sources. This dashboard can be adapted for other locations to portray the RE capacity associated with those locations. By displaying the dashboard around SBC, we hope to increase the awareness and stimulate discussion of RE among students and faculty.