Four Students from LU’s Honors to Present at the VCHC Conference
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Emily Boyles, Matthew Dalton, Ellie Karle, and Lauren Spahr will present papers or posters at the Virginias’ Collegiate Honors Spring 2016 Conference to be held at Lynchburg College on April 15 and 16. Their abstracts are below.

**Ambivalent Sexism, Religiosity, and Perceptions of College Majors in Christian College Students**  
*Paper Presentation for VCHC Conference, April 16, 2016*  
*By Emily Boyles*

This study seeks to determine if college students view certain majors as masculine or feminine and if gender perceptions influence their choice of major and subsequent vocation. The methodology will include analysis of predictive relationship between scores on the Ambivalent Sexism Inventory, the Ambivalence Toward Men Inventory, the Revised Religiosity Inventory, and a scale measuring perceptions of majors as masculine or feminine. A total of 492 Christian college students from a large east coast university have participated in this study by completing an online survey. Based on the university’s degree offerings, 24 college majors were selected, and students were asked to rate them as masculine or feminine. The three that were rated the most masculine by the study participants and the three that were rated the most feminine were analyzed, using linear regression to determine if statistical relationships exist between scores on the ambivalent sexism inventory and benevolence toward men inventory and rating the majors as gendered.

**Gene Expression Profiling in an Alzheimer’s Disease Mouse Model**  
*Paper Presentation for VCHC Conference, April 16, 2016*  
*By Matthew Dalton*

Explaining precisely how Alzheimer’s disease (AD)—the world’s most common form of dementia—materializes in the human brain has proven to be one of the most elusive telos in modern medicine. Progressive memory loss, neurodegeneration, and the presence of abnormal protein aggregates of amyloid-beta (Aβ) and neurofibrillary tangles (NFT) characterize this disease. Intimate interactions between tissues have been observed in many diseases, particularly between the brain and blood. This analysis seeks to employ RNA sequencing techniques in the brain in order to identify potential drivers, molecular passengers, and significant contributors to AD, while overlaying this data with that of the blood to identify candidate genes to be used as disease biomarkers. Ppia, Ercc2, Grn and miR-17 were revealed to be dysregulated in the AD brain. Hmgn1 was discovered to be dysregulated in both the AD brain and blood, highlighting its candidacy as a predictive biomarker for AD.

**Self-efficacy as a Moderator Between Goal Orientation and Academic Achievement**  
*Paper Presentation for VCHC Conference, April 16, 2016*  
*By Ellie Karle*

Much research has focused on the variables associated with student academic outcomes indicated by class grades. This study explored the influence of student goal orientation on academic achievement based on a trichotomous model: mastery goals (motivated by a desire to master a task or subject), performance-approach goals (motivated by a desire to perform well compared to others), and performance-avoidant goals (motivated by a fear of failure). As the literature demonstrates, a myriad of personal factors may influence the connection between goal orientation
and academic achievement—variables such as intrinsic motivation, commitment to goals, perceived competence, and affect. The hypothesis of this study was that the construct of self-efficacy, which encompasses several of these variables, moderates the relationship between goal orientation and academic achievement. Based on the results of the study, implications were discussed regarding the importance of parent and teacher involvement in promoting student self-efficacy and appropriate assignment related goal setting, particularly during high school for those planning to attend college.

Population Stability and Conservation of the Timber Rattlesnake (*Crotalus horridus*)
Poster Presentation for VCHC Conference, April 16, 2016
By Lauren Spahr, Norman Reichenbach, PhD

Timber rattlesnakes (*Crotalus horridus*) have become extinct in several states and are a species of concern in others. The Leslie matrix provides a method to model populations and assesses the impact of losing different age classes and different numbers of animals on long-term population stability. The method requires obtaining survival rates and fecundity values for each age class, and an initial population vector. We estimated population size, survival rates, and fecundity using the Jolly-Seber method and our mark-recapture data on adult females, collected over the last eleven years along the Blue Ridge Parkway. What-if projections using the matrix showed both populations incapable of sustaining losses of more than one adult yearly, and losses of adults had a greater impact on the population stability and size than losses of juveniles. Thus these populations are sensitive to extirpation from adult losses and gestation sites in particular, and therefore should be monitored.