

**Research Initiation Program (RIP)**  
**Award Recipients**  
**2012-2013**

The Research Initiation Program received an outstanding response to the call for proposals. The quality and quantity of proposals for this year's competition were generally great! The RIP Committee would like to have had sufficient funds available to award everyone, but due to the lagging economy only the following proposals have been selected for FY 2012-2013 funding

**Dr. William Boone**  
**English and Foreign Languages**  
**College of Arts and Science**  
**Amount Awarded: \$10,000.00**

**Project Title: "The Routes: Exploring North Carolina"**

**Abstract:** Over the last 25 years, hip hop music and culture has gained much popularity. Since the 2000s, the field of hip hop studies has gained validity within academia. The history of North Carolina hip hop, though, has been largely overlooked. This project entitled "The Routes: Exploring North Carolina Hip Hop" is a 15-minute documentary film project about the history, origins, and key figures of the North Carolina hip hop scene. By utilizing archival materials (e.g. photos, album covers, et al) and interviews from across North Carolina, "The Routes: Exploring North Carolina Hip Hop" will examine the historical-cultural origins of "North Carolina Hip Hop" culture, identifying key figures, institutions and movements that have contributed to the formation of a distinct style of ("North Carolina") hip hop. The title of the documentary film project, "The Routes," samples from a name of the popular Philadelphia-based, avante-garde hip hop group The Roots. The title "The Routes" speaks directly to the trajectory of African American cultural production, in this case hip hop, and the ways in which it has been absorbed into North Carolina culture and reappropriated as it has traveled away from its origins in the South Bronx. The title also serves as double entendre, as the term "roots" has several meanings in African American Vernacular. Last, this documentary project will be used in the Hip-Hop and cultural history-based courses I teach at Winston-Salem State University.

**Dr. Christo Dichev**  
**Computer Science**  
**College Arts & Sciences**  
**Amount Awarded: \$10,000.00**

**Project Title: "Efficient Discovery and Sustainable Open Educational Resources"**

**Abstract:** Open educational Resources (OER) are learning materials that are freely available to use, adapt, and redistribute. The growing number of repositories providing open education resources requires effective resource discovery mechanisms to exploit the benefits of their openness. This RIP project is intended to jump start new research aimed at facilitating OER use. It was inspired by our belief that if repurposing and redistributing could become part of the educational practice. Understanding how users discover and access learning resources can have an impact on the OER repositories development. The overall goal of the proposed work is to study the role of OER repositories in comparison to other models and tools for open content and build a prototype for validating our ideas revolving around the insight that efficient navigational structure combined with high visibility on search engines can foster the global OER use. The initial phase of the proposed research includes study of the critical factors affecting OER utilization including users' search and discovery behavior. It is followed by

a proof-of-concept implementation and evaluation of a prototype OER repository based on the model selected at the end of the first phase. The realization of the proof-of-concept includes also:

- Populating the site with a critical mass of OER materials;
- Structuring the site to allow advanced local search and browsing;
- Utilizing standard metadata for enhancing external search;
- Using the prototype for comparative study of user preferences.

***Dr. Elizabeth Fain***  
***Occupational Therapy***  
***School of Health Science***  
***Amount Awarded: \$7,680.00***

***Project Title: “Does Human Simulation Promote Critical Thinking, Reflection, and Satisfaction in Occupational and Physical Therapy”***

**Abstract:** Critical thinking skills are an essential skill for competent practice in a complex and changing healthcare system. All students demonstrate different learning styles and levels of critical thinking skills. Students with decreased critical thinking skills are passive thinkers, (Facione, 2011) As occupational and physical therapy students’ progress through the curriculum; they acquire knowledge necessary for practice. However, it is unclear how their critical thinking, self-efficacy and reflective skills progress utilizing the human patient simulators. The usage of human patient simulators (HPS) as an instructional methodology is being utilized to teach students about complex clinical situations using realistic lifelike scenarios. HPS are perceived as an optimal preclinical experience to promote a “safe” learning experience for performing complex procedures. This educational method facilitates opportunities for the instructors to manage and control the clinical learning environment and to utilize various feedback modes. All of these variables are key to promoting learning for the level of the skills for the students engaged in the HPS learning environment. While students are engaged in the HPS environment, the instructional objectives are addressed and assessed; however it is unclear if the critical thinking, learner satisfaction, and reflective skills are impacted by this HPS learning model.-

***Dr. Mohammad Fuad***  
***Computer Science***  
***College Arts & Sciences***  
***Amount Awarded: \$9,840.00***

***Project Title: “ Mobile Application for Active learning and Student Participation in the Classroom”***

**Abstract:** Notebooks, netbooks, tablets and smartphones are bound in today’s cutting-edge classrooms. Allowing students to utilize computing devices and the Internet can facilitate the sharing of ideas and foster exciting discussion. However, what happens when students are not concentrating on the lecture rather busy browsing the Internet or playing games? They lose valuable lecture materials and develop holes in their knowledge so that later they fail to piece together components to solve a problem. Not allowing to use any computing devices during class time might be an option to overcome this problem; however, it’s not a practical solution because some students do use the computing devices to take notes, browse lecture slides and read electronics text book. One way we can utilize these devices and make students actively participate in class material is that we treat them as part of the lecture material. By asynchronously prompting students with questions and problems in their computing devices related to the class material, student will retain more focus on the course content being presented and will actively participate in discussions. Use of ‘clickers’ or such devices are well known to improve active learning and class participation; however, they have a list of drawbacks. In this project, we would like to create a prototype client-server system that will allow students to actively participate in lecture materials using

their mobile devices and other computing devices. We envision this to be even usable in a distance-learning environment. We plan to use Android based platform to develop and test the prototype.

**Dr. Racquel Ingram**  
**Nursing**  
**School of Health Science**  
**Amount Awarded: \$5,750.00**

**Project Title: “Health Literacy and Hypertension in African American Ages 25-49: Preliminary Data for Younger Adults Needing Assistance”**

**Abstract:** African Americans are disproportionately affected by hypertension (high blood pressure) and the complications of hypertension are also more severe in this population. Hypertension is a systolic blood pressure reading >140mmHg and a diastolic reading >90mmHg. The Agency for Healthcare Research and Quality has reported that person with low health literacy levels are 12 to 18 times more likely than other Americans to not adhere to their health care regimens. Several factors contribute to low literacy levels in adults, such as low levels of education and low paying jobs, i.e. low socioeconomics often have difficulty accessing information related to hypertension, which may influence their adherence to medication regimens. Despite numerous studies of interventions related to managing HTN in African Americans, effective treatment remains complex and difficult to achieve. Little is known about the relations between low health literacy and adherence to antihypertensive regimens in African Americans ages 25-49 years. It is particularly important to understand this relationship for this group, since many African Americans are diagnosed with hypertension before age 50 and failure to manage their hypertension leads to serious cardiovascular disease. There is limited information in the literature exploring the associations between hypertension management and low health literacy. This study will therefore explore these associations in African Americans age 25-49 in order to determine whether health literacy is a factor in hypertension management, and specifically adherence to medical regimens, among this group

**Dr. Melissa Mann**  
**Management and Marketing**  
**School of Business and Economics**  
**Amount Awarded: \$10,000.00**

**Project Title: “Developing and piloting a Training Program to Ameliorate Work ethic Espousal”**

**Abstract:** The money from this grant would be used to create and pilot a work ethic training program. We intent to create a program that has practical applications for at risk individuals, local and national welfare to work agencies, organizations such as the Urban League, as well as for –profit organizations looking to socialize their employees to desirable work ethic values. We also intend to address a gap in the current literature as we will investigate the causal relationship between training and work ethic. Practitioners and government agencies have already started implementing work either training programs although there is very limited empirical research on how training affects work ethic espousal. This study will be amount first attempts to show a causal relationship between training programs and changes in work ethic espousal using two multidimensional frameworks of work ethic (traditional work ethic and a modern management desired work ethic). An empirical longitudinal quasi-experimental training design will be used for the pilot training intervention. The study will involve and control for several other variables which could also affect work ethic values such as level of satisfaction with the training program, career aspirations, goal orientation, self-efficacy, locus of control, need for achievement, and economic trauma. There will be statistical controls for several demographic variables: age, ethnicity/race, gender, marital status, work experience, socio-economic status, and if the participant is the primary care taker of dependents.

**Dr. Audrey L. Millar**  
**Physical Therapy**  
**School of Health Sciences**  
**Amount Awarded: \$10,000.00**

**Project Title: “Effect of Assistive Device Use on Energy Cost and Pain in Individuals with Unilateral Osteoarthritis of the Knee”**

**Abstract:** Changes in walking (gait), even small ones, often result in an increased energy cost. Osteoarthritis is one disease that causes changes in gait. Osteoarthritis is a progressive disease of a joint, accompanied by stiffness, pain and loss of function. In the lower extremity these changes lead to altered pressures around a joint during walking. Commonly, there is an increase on the loading of the inner side of the knee (medial), which exacerbates the pain. Such biomechanical changes may cause in shortness of breath while doing activity, and a quicker time to fatigue. To help decrease the pain and disability associated with walking, individuals with arthritis may use canes. One facet of cane use that may affect the amount of energy used and the potential reduction in pain is the side of use. Traditionally physical therapy texts recommend that the cane should be placed on the side opposite the problem (i.e., an individual with right sided knee osteoarthritis would use the cane on the left side). However, there is limited research which has investigated the optimal use of a cane to decrease pain and reduce energy costs during walking for individuals with arthritis. Thus, the purpose of the study is to examine these variables (energy cost and pain) in individuals with unilateral knee osteoarthritis, while walking with a cane on either side.

**Dr. Leonard Muaka**  
**English and Foreign Languages**  
**College of Arts and Sciences**  
**Amount Awarded: \$10,000.00**

**Project Title: “Authentic Swahili Multimedia Material”**

**Abstract:** The focus of this research project is to identify and develop authentic multimedia material for the first year Swahili curriculum to be used in the newly formed Swahili consortium. Swahili language is the most widespread native African language spoken in east and central Africa. It is one of the four foreign languages offered at Winston-Salem State University and beginning fall 2012, WSSU will export it to UNC Pembroke, UNC Greensboro, NC Central, and UNC Charlotte via UNC-REN’s videoconferencing. However, unlike French, Portuguese, and Spanish, Swahili is a non-traditional critical language that is least taught. As a result of its marginal position, there is a dearth of authentic and suitable multimedia resources for both instructors and students. This makes it accessibility difficult warranting the present study.

I seek to do three things: First, I will travel to Kenya and Tanzania to identify culturally relevant material to be filmed professionally and developed into teaching activities. Second, I will identify native Swahili speakers who can role-play different aspects of Swahili daily life. Third, I will interview different experts on sociocultural, political, and economic aspects of Swahili people and transform them into short clips to enhance the learning of both language and culture.

The results of this project will provide Swahili resources and enhance the learning of the language and its culture. Finally, since WSSU has been selected to offer Swahili to other UNC schools, this project will enable WSSU to disseminate high quality multimedia teaching to students in the UNC consortium

**Dr. Tennille Presley**  
**Chemistry**  
**College of Arts and Science**  
**Amount Awarded: \$10,000.00**

**Project Title: “Heat Acclimation as a Therapeutic Benefit for Vascular Dysfunction”**

**Abstract:** Type II diabetes (T2DM) is progressively becoming a major health problem throughout the world. The main components of this disease are insulin resistance and hyperglycemia (excessive glucose levels). During early stages of type II diabetes, insulin is unable to move glucose into the body's cells; this results in a buildup of glucose in the blood. These detrimental effects lead to an imbalance of heat shock proteins (Hsps), nitric oxide (NO) and reactive oxygen species (ROS), which all contribute to the vascular dysfunction observed in T2DM. Both heat and exercise are known to improve the expression of Hsps and the bioavailability of NO. Detecting and managing this disease in a timely fashion is essential to reducing the progression of T2DM. The goal of the proposed work is to introduce a mechanism of heat treatment and exercise, known as heat acclimation, to diminish T2DM vascular dysfunction. Both heat shock and heat acclimation have been successfully used to achieve over expression of Hsps and augmentation of NO; however, the significance of these treatments remain unclear in high glucose environments such as diabetes. To investigate the potential of these heat-related interventions in ameliorating problems associated with these disease, T2DM rodents (Goto-Kakizaki rats) will be exercised on a treadmill at both room temperature and a higher temperature (~42 C). Hsp expression and NO measurements will be performed. The data gathered here will help with the feasibility study to further solidify the proposed treatment and extrapolation into human subjects necessary to compete for extramural funding.