

**Research Initiation Program  
Award Recipients  
2008-2009**

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 economy only the following proposals have been selected for FY 2008-2009 funding.

**Dr. Sharif Bey**  
**Fine Arts**  
**College of Arts and Science**  
**Award: \$9,300.00**

**Title:** *Welcome to My World: A Study of African-American Visual Culture in Winston Salem Child Art*

This project explores the impact of socio-economic factors on the artistic pursuits of inner-city African-American children through observations of local elementary art classes. I will teach, conduct surveys, observe, collect, code, and analyze drawings, testimonies and demographic data from children of various backgrounds and focus my investigation on the forms of popular visual culture that inspire and inform African-American children's art. Gender, culture, personality, and circumstance are major contributing factors to the interests children pursue through drawing and play. Recently scholars and educators began to consider the Visual Culture in which children live as an additional driving force in shaping their artistic expression and identities. Previous art educators encouraged children to explore the physical world but this world has changed significantly through information science and technological innovations. Now, children navigate a visually saturated world of television, animation, video games, virtual reality, advertisements, and search engines while simultaneously constructing their own identities.

Although there may be common experiences associated with childhood in a global society, it is more likely that socio-economic realities contribute to the values of children. Little relationship seems to exist between the content of art instruction that children find interesting and the aims and objectives of conventional art educators. My findings should suggest how to engage African American children through visual interpretations of their own lived narratives within the general curriculum. This research should also provide new, meaningful approaches to teaching art for area teachers as well inform the content of the art teacher education program at WSSU.

**Dr. Gina Bivins**  
**Physical Therapy**  
**School of Health Sciences**  
**Award: \$10,000.00**

**Title:** *Does Increased Weight Change Gait Dynamics in Young Children?*

Childhood obesity is a worldwide problem that is steadily increasing in America. It has been linked to many health problems that persist into adulthood. It has also been shown to have an affect on bones and growth of the legs.

**Purpose:** To analyze and compare walking in children at risk for overweight (85% - 95% body-mass-index for age percentiles) and typical weight (5% - 85% body-mass-index for age percent) children ages 7 - 9 years to determine the effects on the gait cycle.

**Methods:** Twenty children ages 7 – 9 who show no signs of puberty will be recruited for this study. Ten of these children will be at risk for overweight as determined by Center for Disease Control (CDC) guidelines (85% - 95% body mass index for age percentiles). Ten children of typical weight (5% - 85% body mass index for age percentile) will be age, race and gender matched to the at risk for overweight group. Gait analysis will be performed on all participants. The data collected will be used to evaluate the forces that are transmitted through the knee joint and to document the amount of knee movement while the child is walking. We will then compare the forces generated at the knee and knee joint movements of the children at risk for overweight (n=10) to those of typical weight (n=10).

**Data Analysis:** Statistical tests will be used to compare the forces generated at the knee, and the angle the knee joint moves through during gait.

**Dr. Naomi Hall**  
**Behavioral Science and Sports Sciences**  
**College of Arts & Sciences**

**Title:** *Exploring Sociocultural Correlates Of Responsible Sexual Behavior*

HIV/AIDS impacts young Black men and women under the age of 25 at disproportionate rates. For many students, the college environment provides a sense of new independence and peer pressure to engage in risky sexual behaviors. The purpose of this study is to examine the social and cultural factors associated with responsible sexual behaviors on the campus of WSSU in an effort to help guide the development of strategies and interventions to address the health disparities and curtail the spread and impact of sexually transmitted infections, unplanned pregnancies, and HIV. The aims are to: 1) use quantitative and qualitative methods to gather data on the relationship between contextual variables and sexual behavior; 2) develop a culturally relevant valid measurement instrument for future use with this population; and 3) utilize the empirical data to seek and obtain extramural funding. This project will take place in three stages. During Phase I, a literature review focused on the sexual behavior of Black college students will be examined. During Phase II, approximately 80 young Black men and women between the ages 18-25 inclusive, will be recruited to qualitatively and quantitatively examine their sexual knowledge, behaviors, perceived risk, attitudes and related factors (e.g., psychosocial measures). During Phase III, a tailored survey will be developed and validated with participants for use in future studies. Quantitative surveys, focus groups, and individual interviews will be the modes of data collection. Participants in all three stages will be recruited from the WSSU community via fliers, announcements, and word-of-mouth.

**Dr. Althea Harper-Harrison**  
**Division of Nursing**  
**School of Health Sciences**

**Title:** *The Effects of African American Mother's disclosure of their Breast Cancer Diagnosis to their Children*

The purpose of this study is to explore how the diagnosis of breast cancer impacts the activities of daily living and the parenting skills of African American mothers with children under 18 years old. The research questions that guide this study look at how African American mothers respond to a diagnosis of breast cancer and how the diagnosis affect their ability to care for themselves and their minor children. In-depth interviews with 10 African American women who have been diagnosed with breast cancer within the past 12 months will be used to gain insight into the lived experiences of the women. The women will be recruited from the Wake Forest University Medical Center's Breast

Care Center, support groups for African American women with breast cancer, and advertisements using church bulletins and flyers. The interviews will be tape-recorded, transcribed word for word, and analyzed using inductive analysis. Inductive analysis starts with large concepts and ends with very specific themes that answer the research questions. Ultimately, this research will be used to devise a more definitive study that will lead to interventions designed to increase the functioning and promote positive parenting skills of African American women who are dealing with a potentially life threatening illness such as breast cancer.

**Dr. Alican Kavaz**  
**Department of Business Administration and Economics**  
**School of Business and Economics**  
**Award: \$5,600.00**

**Title: *Needs Assessment Research for Promoting International Business Education Initiative at SBE***

Significance of the project:

We live in a global market place. An awareness and understanding of global opportunities and challenges are vital to the success of our students, faculty and business community. However, there is a wide gap between the requirements of a global business world and the knowledge imparted in a university classroom—this needs to be bridged. The purpose of submitting this grant is a first step, to obtain seed money which will eventually used to leverage an external grant from the *United States Department of Education–Business and International Education Program (BIE), Title VI-B*. The seed money is requested for buyout time for teaching, hiring a graduate assistant for the summer, and to cover survey expenses. The BIE grant (if funded) will be used to implement a comprehensive series of activities that would enable the SBE to integrate international business into its curriculum, internationalize faculty and expand outreach activity by providing assistance to facilitate the global efforts of businesses located in the Piedmont community.

Objectives:

The primary objective of this project is to complete the needs assessment portion for the BIE grant proposal. Completing a needs assessment is one of the most important parts of the BIE grant proposal. The needs assessment will attempt to identify the global needs of three important stakeholders-WSSU SBE students and faculty, and businesses in the Piedmont community.

Data collection methods and devices:

To realize the above objectives, both primary (mail surveys and personal interviews) and secondary data sources will be utilized.

Expected outcome

After the data collection and analysis, the findings will be incorporated into the external grant proposal and it will be submitted in November 2008.

**Dr. Ruth Muze**  
**Division of Nursing**  
**School of Health Sciences**  
**Award: \$7,900.00**

**Title: *Perceptions About Parenting And The Support Network Among Minority Mothers Living With HIV/AIDS***

This study will explore experiences of HIV positive African American and Hispanic mothers about parenting and their social support network to better understand the basis for parenting interventions among minority mothers.

Despite advancement in HIV interventions, women account for an increasing number of newly reported AIDS cases annually. According to the CDC (2005), African American women (66.0%) and Hispanic women (17.6 %) accounted for the highest proportion of estimated female AIDS cases compared to their Caucasian counterparts (16.6%). Similarly, North Carolina's rate of HIV infection for non-Hispanic blacks (58.9 per 100,000) was almost eight times greater than for non-Hispanic whites (7.6 per 100,000) in 2004, and is expected to increase annually. These numbers reflect increasing numbers of HIV infected minority mothers.

Being a parent is stressful, but parenting while HIV infected affects health and parenting outcomes (Bauman et al, 2002). Moreover, women of color face racial and gender discrimination which affects use of support needed in dealing with their illness. Studies have addressed parenting stress and social support among women with HIV (Semple et al, 2004) suggesting a negative impact on the quality of parent-child interaction. However, minority women's parenting experiences and their connectivity to a social support network are unclear.

Fifteen HIV positive minority mothers living with school age child/ren will be recruited from local community clinics. In depth qualitative interviews will be conducted (Geertz, 1973) to investigate the interaction between parenting stress and social support network. Study results will be used for initiating new NIH funding application.

**Dr. Jamie Robbins**  
**Behavioral Science and Social Work**  
**College of Arts and Sciences**

**Title: *Familial Factors and Health Behaviors in Adolescents At-Risk for Excess Weight***

Recent investigations have reported that among children ages 6-19, 31% were classified as at-risk-for-overweight, while 16% were already overweight (Hedley et al., 2004). Excess weight has been linked to variety of health problems (e.g., heart disease, hypertension, stroke, diabetes, cancer) as well as psychological troubles such as self-esteem difficulties, depression, and isolation (Zametkin, Zoon, Klein, & Munson, 2004). Furthermore, African-American and Latino females may be at particular risk for developing obesity. However, physical activity may protect against these negative biopsychosocial outcomes associated with excess weight.

Extant work has demonstrated that physical activity may offer psychosocial benefits (e.g. Alfermann & Stoll, 2005; Barbour & Blumenthal, 2005). According to the Theory of Planned Behavior, physical activity behavior is guided by social and cognitive factors. Accordingly, one potential source of influence is the family. Studies have also consistently demonstrated that parental health behaviors contribute to child health behaviors, including exercise adoption (e.g. Anderssen & Wold, 1992; Brustad, 1992). Thus, more research is warranted that examines at-risk children and adolescent females and the role that their families play in the adoption and maintenance of health behaviors.

The purpose of this study is to examine health behaviors in African-American and Latino families with female children and adolescents. The families will either be involved in a two-month exercise intervention and goal setting program or a focus group. The primary objective is to identify whether setting goals as a family versus setting goals individually leads to greater goal attainment at a two month, 5-month, and 12-month follow-up.

**Dr. Richard Walker**  
**Social Sciences**  
**College of Arts and Sciences**  
**Award: \$7,350.00**

**Title: *Understanding Emotional Resilience: Physiological Stress Triggered by the Recollection of Emotional Memories by Veterans and Civilians***

Much research investigating emotional experiences have focused on the inability of some people to cope with these experiences. However, research by the PI suggests that for most people, most of the time, emotions associated with negative experiences fades faster than emotions associated with positive experiences. This 'resilient' pattern of emotional fading has been found in many populations and has been linked to how people think and talk about their emotional experiences. The goal of this present research is to link this 'resilient' pattern of emotional fading to physiological measures of the human stress response by sampling the emotional experiences of military veterans and civilian controls. Military veterans often experience extremely emotional events in the line of duty and, although some veterans do suffer from maladies such as PTSD, many exhibit the necessary resilience to cope with the emotionality. One way to physiologically assess the stress response of an individual is to measure levels of stress hormones in response to potentially emotionally stimuli. In this study, veteran and civilian participants will recall positive and negative emotional experiences, provide psychological ratings for the events, and provide saliva samples that will allow stress, hormones triggered by the memories to be assessed. The results of this study will help provide a "resilient profile" for these individuals by revealing the linkage between physiological stress and the recollection of emotionally charged event memories.

**Dr. Mamudu Yakubu**  
**Chemistry**  
**College of Arts and Science**  
**Award: \$9,695.00**

**Title: *Synthesis and Characterization of an Acetaminophen Derived C-Nitroso Compound***

The long term goal of the proposed work is to develop new compounds capable of releasing nitroxyl (HNO), a biologically active compound. A number of reports have revealed important roles for nitroxyl in vasodilation and in the treatments of alcoholism and heart failure. The proposed work involves the synthesis, characterization and evaluation of C-nitroso compound derived from acetaminophen. The ability of the C-nitroso compound to release nitroxyl will be determined by identifying the intermediates and final products of their chemical oxidation. The *in vitro* mechanism by which the C-nitroso compounds release nitroxyl will be determined by identifying the intermediates and final reaction products of its interaction with a heme protein. The C-nitroso compounds will be synthesized by derivatization of the nonsteroidal anti-inflammatory drug acetaminophen. At each step of the synthesis the intermediates and final C-nitroso reaction product will be characterized by infrared (IR), nuclear magnetic resonance (NMR) and/or uv/visible

spectroscopy. Upon preparation, the C-nitroso compound will be evaluated for its ability to release nitroxyl via hydrolysis by monitoring nitrous oxide formation using gas chromatography (GC). The ability of HNO released from the C-nitroso compounds to react with methemoglobin will be studied by uv/visible and electron paramagnetic resonance (EPR) spectroscopy.

**Dr. Jinhua Zhang**  
**Computer Science**  
**College of Arts and Science**  
**Award: \$9,695.00**

**Title: *Developing a System for 3D Movie Compression***

3D graphics are rapidly achieving mainstream success, both in motion pictures and computer gaming. The confluence of fast real-time hardware and advanced modeling and rendering capabilities opening the door to a world where the animated films of the future will be rendered and viewed on the desktop with varying viewpoints and high resolutions. But, as these models grown more complex and more detailed, it becomes essential that these huge 3D models can be compressed efficiently, adaptively and progressively for real time delivery on networks of various bandwidths. The goal of this project is to add progressive capability to the octree approach and use it to implement a frame0based geometry system with particular emphasis on support for practical playback requirements including stream joining, playback controls, and error correction. The project will provide a basic software system that allows 3D movies to be compressed in real time and delivered on client-server networking environment to the users. Well-known 3D animation sequences in the literature will be used to evaluate the performance of newly developed system.