Innovation Incentive Award

Dr. Winnifred Namatovu

Assistant Professor, Middle, Secondary, and Science Education, College of Education

This project seeks to examine current approaches of education reform policies in the Ugandan education system. In particular, this project will explore the Universal Primary Education (UPE) and Universal Secondary Education (USE) policies and their impact on the teacher preparation program at Makerere University. In order to address the goals of the project, I will conduct interviews with teacher educators and administrators at Makerere university.

Although Uganda and the United States have some differences in their histories, both countries have experienced an issue with ensuring equitable access to education for all children. While both countries continue to explore education reform efforts to address the issue, there is also a need to examine the implications of the reform efforts on teacher training programs. Since the College of Education at the University of North Georgia (UNG) emphasizes the preparation of teacher candidates who create

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Dr. Ninglobal Views

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Dr. Brooks Peters

Assistant Professor, Teacher Education Department, College of Education

Preparing effective, innovative preservice teachers that are equipped to enter the field of education is the fundamental mission of all teacher preparation programs. However, teacher preparation is more complex than providing preservice teachers with an inventory of strategies and instructional techniques that they can choose from as they instruct the students within their own classrooms. Rather, the focus of teacher preparation should be on providing them the knowledge-base a

Combining our current programming with innovative instructional tools like TLE TeachLive (Diekers et. al, 2014) that provide our students with multiple opportunities to perform EBP and receive feedback upon their performance within a simulated environment has the ability to improve the competencies of the future educators that we aim to release to the profession. TLE TeachLive is a mixed-reality, avatar-based simulation environment to prepare teacher candidates in implementing EBP with fidelity. This technology allows participants the opportunities to hone their instructional methods without putting "real" students at risk, while incorporating the critical components of personalized learning, suspension of disbelief, and a cyclical process (Deikers et al., 2014).

The objective of the proposed project is to conduct a pilot study in collaboration with the University of

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Dr. Jerry Allison

Professor of Chemistry, Chemistry and Biochemistry, College of Science and Mathematics

Co-Applicants - Dr. Katayoun Mobasher, Professor of Geology, Institute for Environmental & Spatial Analysis

The goal of this project is to provide the first detailed investigation of the relationship between granitic rocks within the Georgia Piedmont region such as those exposed in Stone Mountain, Elberton, Panola, and several rock quarries with a similar rock types. We will analyze the collected rock samples from different locations in Georgia for their elemental composition, mineral content, and their texture in an attempt to discern relationships between them. Then we will classify the samples based on their origin, formation, tectonic settings, and possible evolution from one rock type to another using petrological and geochemical diagrams.

After serving our state for over 150 years, the Georgia Geologic Survey, the primary state agency charged with investigating the geology of our state, was abolished in 2004 due to the absence of a legislative mandate that would afford reliable funding (ArcNews, 2018). The loss of Georgia Geologic Survey has created a real gap in the knowledge our state's geology. To try to narrow this gap, we have begun to study different regions in Georgia and add new information to a state geological geodatabase developed by one of the authors in 2014. The information and knowledge in this geodatabase can be widely shared among geoscientists, geology educators and students.

One of the topics in Georgia that needs more investigation is related to the crystalline rocks in Georgia where there are a few misconceptions. For example many believe that the Stone Mountain granite underlies half of Georgia, all of Georgia, three states, seven states, or even that Elberton and many other granites in Georgia are part of Stone Mountain. In order to clear this misconception and also investigate the relationship between these crystalline rocks (exposed by erosion or through quarryingM(ven)6(, a0ly e)11(r)-4(osio)4(

1. Students, faculty and community participants will find common ground in discussions of challenging topics on race and gender;

2. Participants will understand the social, political, historical, and scientific contexts for the novel;

3. Participants will be able to articulate the forces shaping the experiences of the novel's protagonists;

4. Participants will understand the power of narrative to address complex and controversial issues;

5. Participants will be able to articulate the importance of slavery as a force in shaping American history.

6. Participants will demonstrate understanding of the experience of slaves through examples of narrative, music, and art.

Innovation Incentive Award

Dr. Ping Ye

Assistant Professor, Mathematics, College of Science & Mathematics

Data analysis is all about inspection, cleansing, transformation and modeling of data in order to achieve information that further suggests conclusions and assists with decision making. [1] It is a rapidly booming field of study for college students, and companies are always on the hunt to find people who are masters at this procedure to increase their growth. For any research, data analysis is critical as it provides an explanation of various concepts, theories, frameworks and methods used. It eventually helps in arriving at conclusions and proving the hypothesis.

R is the most widely used tool for statistical programming. It is powerful, versatile and easy to use. It is the first choice for thousands of data analysts working in both companies and academia. [2] R is open source so that it is free for anyone to download, use, and modify. Because R is open-source and free to modify, over 10,000 free packages, or add-ons, exist to do any possible statistical technique, from complex visualizations to models. [3] Almost any new statistical technique developed comes with a new package in R. This flexibility and power is why graduate programs in many fields are increasingly teaching in R. However, there is no training program of learning R at the University of North Georgia. This limits the opportunity for our students to apply for graduate programs, especially in the Statistics field.

In order to improve our students' competence in applying jobs and graduate schools, the author proposes two approaches in this project: One is providing R labs and instructional handouts for our students to learn R language, of which the goal is to equip our students who are interested in data analysis with appropriate tools. The second is to seek support from the local community such as local business/nonprofit organizations/government agencies to get " real-world problems" so that students can do undergraduate research to solve open-end problems with analyzing the real data. The UNG engagement value " Promoting active involvement, intellectual inquiry and creativity, collaboration, and community partnership" [5] is also a project goal. Some of our students are first-generation college students and are unaware of career opportunities and benefits of studying math. This project opens a window to help expose them to these items. It develops community partnerships to connect our students to the outside world.

Innovation Incentive Award

Mrs. Ashley Bruce Lecturer, Kinesiology, College of Education

The proposed project in this narrative is written for the 2020-2021 Presidential Innovation Award at the University of North Georgia (UNG) and includes measuring physical activity and fitness levels in college students with use of new wearable technology. The wearable technology described in this proposal, called the ActiGraph GT9X-BT, is a Bluetooth-capable accelerometer which provides the researcher time intervals spent in sedentary, low, moderate, and vigorous physical activity levels of the wearer. Moreover, this specific device has been validated in numerous physical activity-related research studies. Previously, the Department of Kinesiology has not been able to study physical activity time intervals to this level of detail as we do not currently own ActiGraph GT9X-BTs. By purchasing these devices, our students, faculty, and staff would be able to measure this significant information to improve our knowledge and practice of exercise intervention implementation.

The plans for this proposed project are to embed it into the following Kinesiology undergraduate course:

Finally, the first outcome for this project includes providing KINS 4430/L students the ability to create a case study project from data collected with use of new wearable technology. Because of this, students and faculty would learn skills in how to utilize this technology with the application to an exercise intervention. In addition, students and faculty can develop related research questions from the data

Innovation Incentive Award

Dr. Ramneet Kaur

Lecturer of Biology, Biology, College of Science and Mathematics

Cancer is a devastating disease which is taking the lives of millions of people worldwide and affecting almost every family. Prostate cancer is the most common malignancy found in men. There are 2 stages of prostate cancer, androgen dependent and androgen independent. The only treatment available to treat androgen independent prostate cancer is FDA approved chemotherapy drug docetaxel. Patients initially respond

Innovation Incentive Award

Ms. Marie Graham

Limited Term Professor of Music Education, Music, College of Arts & Letters

Contra Flow is a project in which music, community, dance, and culture are fused together through the experience of contra dancing. This project will support the objectives of UNG's chapter of the Collegiate National Association for Music Education (CNAfME). This project is important because of the Best Practices that will be modeled for movement, cultural, and historical contexts of dance to music education students. Three central focus areas of the National Core Arts standards include 1) The Arts as Culture, History, and Connectors 2) Arts as Means to Wellbeing and 3) The Arts as Community Engagement. Contra dance is a social dance form that is based in community, music history, and culture. Participants in this project will perform in various ways. Music education students will apprentice with expert instrumentalists who specialize in fiddle tunes, Appalachian, Celtic and Jazz genres and perform in live contra Dance bands. Music Education students will attend workshops on contra dance formations, dance patterns, and at Caller's Workshops. In dance and caller workshops, students will identify and demonstrate movement and dance strategies applicable to the general music classroom. This project will hold five Contra Flow events available to all UNG students for free admission. Contra dances are also available to auticipants for a minimal entrance fee of \$8.00. All proceeds from contra events will be designated to a UNG Music Education Merit Scholarship for the next Academic year.

Innovation Incentive Award

Dr. Ramjee Sharma

Associate Professor, Mathematics, College of Science and Mathematics

Co-Applicants - Dr. Dipendra Regmi, Assistant Professor, Mathematics, College of Science and Mathematics

Research shows that learning is a continuous process and there is a positive correlation between the level of engagement and grade performance. If students are aware of the topics before coming to the class, they can perform better in the course [1]. Engagement prior to in-class study helps students develop foundational skills and prepares them better to grasp the subject content and practice during class leading to better retention of the learned skills. While there are several existing methods for student engagement outside the classroom, new and innovative methods need to be constantly developed and implemented to meet the growing needs of our students who have mostly grown up in the digital age. While fully online and hybrid teaching methods are on the r

Innovation Incentive Award

Dr. Mingyuan Yan

Assistant Professor, Computer Science and Information Systems, Mike Cottrell College of Business

Co-Applicants - Dr. Janjun Yang, Associative Professor, Computer Science and Information Systems, College of Business

In this proposal, the applicants propose to integrate Internet of Things (IoT) based project learning to promote undergraduate research and integrate IoT into our major courses to implement the best learning practice, including the design, analysis and implantation of IoT projects and the development for a learning module on IoT.

IoT is an emerging technology and it is essential in networking, communications, big data and many other fields in Computer Science. Projects over IoT are the best choice for undergraduate research. In pa

Innovation Incentive Award

Dr. Rosi Gunasinghe

Assistant Professor, Chemistry and Biochemistry, Science and Mathematics

DNA encodes genetic instructions relevant to the development and functioning of living organisms and viruses. One of the primary regulators of gene transcription is DNA methylation.1 DNA methylation occurs at specific sites in DNA, referred to as genetic hot spots or CpG islands. However, aberrant DNA methylation patterns such as hypermethylation and hypomethylation have been recognized in variety of human1.04 TW*12 Oant§ Afræ result, the process has become one of the most thoroughly investigated epigenetic .04 Todifications iram.04 TW*1s. Experimental evidence shows ca**spec**ific differential DNA-methylated regions correspond to the loss of sharply defined methylation boundaries at CpG islands.9 Developing effective cancer therapeutic requires a proper understanding of gene silencing and gene expression associated with methylation and demethylation. However, the relevance of methylation or demethylation to cancer is far from being well explained. There exists a pau(ty ofnety of s)-4(yste)8(matic)3()9(st)-3(u)3(

