#### **Semester Incentive Awards**

Recipients receive a full semester release from teaching and service, plus funding support of up to \$12,000 each.

## Book project on Ecological Responsibility as a Collective Imperative and an Individual Virtue

Scott, Robert.H (Arts & Letters)

My proposal is to use the Presidential Semester Incentive Award to complete a book manuscript to submit for publication. Due to the limitations of standard rational-individualistic ethical theory in combination with increased power and transformed character of human action in the modern technological era, a new ethical theory—or, at least, corresponding developments in ethical theory—is needed. In response to this need, I propose a phenomenological theory of ecological responsibility according to which the latter is understood as both a collective imperative and an individual virtue.

#### **Proof Conceptions Research and Immersion**

Sinn, Robb (Science & Math)

An intensive learning community that develops mastery level proof conceptions during a critical phase of undergraduate mathematics development will be conducted and evaluated in Fall 2018. A cohort of twenty students will take the following bundle of courses, two of which are problemsolving courses, two of which are the key proof intensive courses for math and math secondary majors:

Intro to Proofs (MATH 2800) Linear Algebra (MATH 3650) Probability and Statistics (MATH 3350) Abstract Algebra (MATH 3600)

Alongside course grades, research notes and student journaling assignments, two key instruments will be used to measure student outcomes: a proof conceptions interview and a proof self-efficacy survey instrument. The Math Immersion study proposes to track development of both proof capabilities and improved attitudes and beliefs about mathematics. Outcomes are easily measured: Karen Briggs and Robb Sinn will launch and lead a research group at UNG that brings mathematicians and mathematics educators together and liaises with the Proof Conceptions Research Group at Rutgers University. An NSF grant proposal for a \$300,000 Math Immersion project over three years will be submitted in February, 2019. Multiple peer-reviewed papers addressing pedagogy, self-efficacy and proof conceptions development will be prepared and submitted in Spring 2019 along with at least four presentations including two at national meetings.

The Math Immersion and Proof Conceptions project is a promising approach that deserves careful consideration and scrutiny and which is quite likely to generate significant external funding.

# Effects of Delayed Muscle Soreness Inducing Exercise on Healthy Individuals Compared to Individuals with Type II Diabetes

Oesterle, Mary Ellen (Health Sciences)

This study seeks to examine whether the response to unaccustomed eccentric soreness inducing exercise is different between healthy individuals and individuals with Type II diabetes. We will further examine what happens when a subsequent soreness inducing bout is performed one month later.

These studies will give insight into how Type II Diabetics respond to unaccustomed exercise. Do they get more or less sore? Do they recover from soreness as quickly? Is their immune response to muscle inflammation similar to a normal person? Do the effects of the first bout last longer than a month as demonstrated by reduced soreness following the second bout? Is there a beneficial effect on cholesterol levels and insulin sensitivity from this one session of exercise? This information will be beneficial in designing exercise programs for healthy indivuduals and diabetics.

There are four faculty in the department of Physical Therapy that will be collaborating in this project. The department of nursing will assist with the blood draws and PT students will be involved with the exercise sessions. Future studies could involve the Exercise Science and Athletic Training programs at UNG.

# **Paraspinal Muscle Segmentation in CT and MR Images Using Interval Methods** Ying, Mengyi (Science & Math)

Paraspinal muscles support the spine and are the source of movement force. The size, shape, density and volume of the paraspinal muscles cross section area (CSA) are affected by many factors, such as age, health condition, exercise, and low back pain. It is invaluable to segment the paraspinal muscle regions in images in order to measure and study them. Manual measurements of paraspinal muscle CSA and volume in CT and MR images are inaccurate and time consuming.

In this proposed project, the Interval branch and bound methods (Interval methods) will be implemented by a mutual information-driven atlas-based image registration algorithm in order to segment the muscle regions in CT and MR images automatically. The Interval methods will be the add-on acceleration strategies to target a better solution, reduce the time consumed and the use of computer CPU memory. The optimal results can be used to evaluate tissue injury and post-operative back muscle atrophy of patients. Further applications of the algorithm obtained in the study can facilitate diagnosis of spine related problems of old patients and/or patients with low back pain.

#### **Presidential Summer Incentive Awards**

Projects receive up to \$10,000 each to support focused and meaningful research, or scholarship and creative activities during summer 2017.

# Parents, Politics, and Power: Examining Beliefs about Censorship, Intellectual Freedom, and Controversial Children's Literature

Hartsfield, Danielle (Education)

Self-censorship occurs when teachers avoid selecting books because they fear the controversy the books may create. However, self-censorship has unfortunate consequences including narrowing the curriculum, limiting students' exposure to diverse topics, and oppressing students' right to read, which is counter to the professional value of intellectual freedom. Research suggests that fear of parents' reactions is one of the primary reasons why teachers self-censor. However, to date, there is currently no research examining how parents of school age children feel about the topics and themes in contemporary children's literature and issues of intellectual freedom. This proposed project will investigate the following questions: What perceptions do parents of elementary and middle grades students have toward controversial literature for children? What are parents' beliefs regarding children's intellectual freedom and "right to read"? The project will be implemented through creation of a summer book club for parents who have children enrolled in grades K-8 in Forsyth County.

#### **Acting Pedagogy with a Master Teacher**

Pierce, Zechariah (Arts & Letters)

Acting techniques in the U.S. are rooted in one of several Master Teachers stemming from the Stanislavski method out of Moscow. Sanford Meisner was an early derivation along with Lee Strasberg and Stella Adler. Meisner's technique is most widely known for his focus on the "reality of doing," as apposed to the emotional recall of Strasberg or the imagination-focused technique of Adler.

As the Meisner Technique is one of the foundations of our performance-track curriculum, it is imperative that we maintain the most current and thorough qualification available. This technique is taught to all students passing through our department in pursuit of the Associate of Arts in Theatre or the Bachelor's of Fine Arts in Tech and Design. This proposal seeks funding support to participate in a two-part, four-week summer program through the Acting Institute hosted at The University of Richmond. My current rotation includes six different classes that revolve around acting and performance, all of which would greatly benefit from this certification. At the completion of this certification, I will hold a workshop for our department faculty, presenting the findings and training I obtained with the intention that they will be able to use it to enhance our already established Meisner base.

# **Identity at the Margins: U.S. National Parks in the Caribbean and the Pacific** Spike, Tamara (Arts & Letters)

Part of the mission of the United States National Park Service (NPS) is to protest and preserve the "cultural resources" of the nation and its lands: in other words, its history. In preserving, curating, and disseminating the history of the United States to the public in and through these parks, the NPS possesses an extremely important and even magnified, voice: in essence, the park visitors' centers, publicly displayed collections, and interpretative signage speaks on behalf of the government and the nation, and presents an "official" history to American and international visitors alike. This history includes, of course, not only the history of the fifty states and the nation since its foundation, but also the history of the territorial holdings of the U.S. and the pre-1776 history of the land and peoples that eventually comprise the United States. While there is an emerging historiography addressing how the National Park Service uses its parks to build and shape American history and American identity, the scholarship fails address regions and voices on the margins of American history. The proposed project will seek to fill this void through examination of the NPS holdings of the circum-Caribbean region, and the Pacific, two extremely fruitful points of investigation for the historical problem.

# Biomanufacturing High-Value Furan-Containing Compounds to Expedite the Biofuel and Biomaterial Production

Wang, Yu (Science & Math)

Many furan-containing compounds are on the U.S Department of Energy (DOE) "Top 10 + 4" list for platform chemicals due to their high potential for the production of high-value chemicals such as green polymers, pharmaceuticals, and biofuels. The complexities of the current processing steps involved, hazardous wastes generated and the difficulties of separation have prompted the development of alternative ways to produce furan-derived compounds. Engineering microorganisms to produce furan-containing compound from inexpensive sugars may be the most convenient and cost-effective approach to obtaining the necessary quantities. However, the development of microbial platforms for the production of furan-derived compounds directly from inexpensive sugars has never been established. This leads us to the overall goal of this project: develop a platform for installing the biosynthetic pathway in a microbial host to manufacture high-value furan compounds from glucose. This project will provide excellent training and research opportunities at UNG and greatly contribute to increasing the retention of students in STEM fields The multifaceted nature of this research span the core disciplines of chemistry, biology and engineering and is well suited to the engagement of STEM major undergraduate in applying class learning to real-world problems, gaining valuable hands-on experience and integrated perspectives. Importantly, working with a collaborator at Arizona State University will promote cross-school communication and summer student exchange options. Importantly, the results and data obtained from this project allow several undergraduate students attending regional and national meetings. This award will generously help PI's scholarly activities by financing the initial research that will be used to apply for a DOE grant in the Spring of 2018 and a National Science Foundation (NSF) grant in the Fall of 2018. The results will be published in tier 1 peer-reviewed journals; the microbial platform proposed in this research will be prepared to apply an invention patent.

#### Kantian citizenship and Confucian Citizenship

Deng, Yi (Arts & Letters)

My research project aims to offer a comparative study of Kantian citizenship and the illustrious virtue (明德) in the Great Learning 《大学》 in the context of food security and food sovereignty. I plan to explore whether the illustrious virtue (明德), as the root of regulating families and ordering states, can reveal a model of "relational citizenship" in a Confucian society, and whether such a type of Confucian citizenship could bridge divisions between Kantian liberal and republican accounts of citizenship. To synthesize theory and practice, I will apply the above comparative study to the case of global food insecurity, and further explore whether farmer cooperatives would be supported by Kantian citizenship and the illustrious virtue as a type of food sovereignty. Correspondingly, the project will include an observation of a cotton farmer cooperative in Hebei province, China. The outcomes of this project will include at least one philosophical article.

# Teaching Social Justice in Racially Divided Contexts: Exploring Strategies for the Decolonization of Schooling in South Africa

Johnson, Lauren (Education)

The proposed project seeks to investigate the integration of Indigenous Knowledge practices, social justice education, and multiculturalism in the South African education system, paying particular attention to three educational sites: K-12 schooling, teacher education programs, and non-traditional educational initiatives. The project will address aspects of schooling previously unexamined by UNG College of Education faculty, namely (a) schooling as social corrective in a time period after legal racial segregation; and (b) schooling as corrective in a social context of White socioeconomic dominance —and Black and Indigenous social and economic marginalization— both before and after legal racial segregation. This research will be conducted in at least two South African sites, with the research team conducting observations in K-16 schools, as well as interviews with K-12 teachers, teacher educators, education activists, non-profit educational organization staff members, and homeschoolers.

While South Africa's history with segregation is somewhat different than ours in multiple ways, our two countries share similarities when it comes to a long-standing history of racial separation and its enduring effects on our populations and schools. As UNG's Social Foundations of Education program encourages justice and equity for all students, initiatives to remedy historic and current injustices through education are especially significant for us to explore. Given the current social and political climate in the United States, and because the research team is comprised of two Black American women, it is particularly urgent that we engage in research whose findings will serve as more than just a metaphor for addressing the needs of Black and Indigenous students within the United States. We find that South African schooling initiatives to remedy the effects of racial separation, and to more equitably distribute educational resources and opportunities, could be easily transferable to the U.S. context.

We anticipate that this study will provide us with additional methods for addressing the effects of historical and current racial and ethnic segregation within the K-12 classroom, which we will then share with our students. As we intend to share our findings through on-campus workshops, updates to our Social Foundations of Education coursework, and academic presentations and publications, we expect that our research will encourage our colleagues, our students, and other education students to more effectively address the needs of students with ever-evolving understandings of race and ethnicity.

# Morphostratigraphic Framework of Sapelo Island, GA: The Link Between Pleistocene and Holocene-Aged Barrier Island Evolution Seminack, Christopher (IESA)

The proposed project will investigate the evolutionary history of Sapelo Island, GA. During the most recent oceanic transgression (10,000 years ago to present day), Sapelo Island has migrated landward and subsequently welded onto a Pleistocene-aged (2.6-0.01 million years ago) barrier island. This geologic setting allows for a unique comparison of barrier-island evolution. Additionally, it allows the opportunity to compare preserved intense storm signatures (i.e., erosional truncations) within the ancient and modern geologic record. A ground-penetrating radar survey will be conducted along the barrier island to image subsurface features. Four 6-m sediment cores will be collected to ground truth the ground-penetrating radar data, in addition to supplying sediment samples for grain-size analysis. Sediment samples will be used to correlate the barrier island stratigraphy. Data collected from this study will ultimately be used to develop a past and future evolutionary model of Sapelo Island. Land-use managers can utilize findings from this study to create proactive strategies for future intense storms and the continued effects of accelerated sea-level rise. The proposed project will be used to collect preliminary data to be included in future proposals for external funding, and will assist in helping achieve the current UNG strategic plan by promoting academic excellence and innovation. Furthermore, undergraduate students will be incorporated into the study to promote a unique, outside-the-classroom learning experience. Finally, results from the proposed study will be presented as an oral presentation at a future Geological Society of America meeting and within future peer-reviewed publications.

# Mentally Healthy Schools: Association Between County Level Mental Health Indicators and School Performance in Georgia

Jordan, Adam (Education)

Close to 11,000 public alternative schools or programs are believed to exist in the United States (Foley & Pang, 2006) and as many as one million students attend alternative learning programs in the United States (Lehr, Tan, & Ysseldyke, 2009). These settings are often considered a school system's frontline defense against school dropout (Souza, 1999). As a result, these settings contain a dense population of students with mental health, academic, and behavioral concerns common to students at a high probability for school dropout.

In order to begin to better understand both the state of mental health promotion in high needs school settings as well as to better understand the perspectives of the professionals, families, and students in these settings I, along with colleagues, have conducted a series of exploratory studies over the past two years in Georgia's alternative schools. In these studies, we have explored the perspectives of professionals, families, and students in regards to their beliefs regarding school variables that contribute to mentally healthy school spaces. Our previous qualitative findings suggested that professionals feel as if engaging in mental health promotion has a positive impact and is an important part of preparing students to be college and career ready. In other words, they perceive a relationship between mental health and school outcomes. The study funded by this presidential grant will explore whether or not those perceptions can be supported quantitatively by using two publicly available data sets, the County Health Rankings (CHR) and the College and Career Readiness Performance Index (CCRPI).

# Voices on the Air: Sing-Along Radio, Imagined Community, and the Production of American Culture in the 1930s

Morgan-Ellis, Esther (Arts & Letters)

Community singing played a prominent role in American life throughout the first half of the twentieth century. In 1913, music educators launched the community singing movement as a tool to increase public interest in music, encourage literacy, foster the habit of participatory music making, and promote white, middle-class, Protestant values. The Great War transformed the community singing movement from a niche project into a national imperative. Civilian song leaders were installed in all of the Army and Navy training camps, and vast throngs of Americans began to engage in patriotic community singing as part of the war effort. By the time the war had come to a close, most Americans had developed a taste for sing-alongs, and the practice quickly entered the sphere of popular entertainment. Throughout the 1920s, theater organists led community signing as part of the motion picture program. When sound technology and the Great Depression drove organists from their posts in 1929, live song leaders were quickly replaced by sing-along films, which were widespread until World War II again transformed the landscape of popular entertainment.

I have documented and discussed the various components of this narrative in my work. I now propose to continue this research in a new direction by examining the sing-along radio programs of the 1930s. Although radio sing-alongs joined a rich tradition of participatory entertainment, they were unique in one important way: for the first time, the participants joined in from thousands of separate locations and were unable to hear or engage directly with one another. This research project will draw on a variety of sources to document the characteristics of 1930s sing-along radio programs, reach conclusions about the audiences for those programs, and link sing-along radio to a contemporary rise in nostalgia, nationalism, and cultural homogenization. My research will result in a full-length article for the Journal of the Society for American Music, a conference presentation at the Annual Meeting of the American Musicological Society, a presentation at UNG's annual Symposium on Innovation, Research, and Engagement (SOIRE), and a public lecture-recital on the Dahlonega campus intended for an audience of faculty, students, and community members.

#### **Developing Global Citizens - Is it Enough?**

Barding, Erin (Science & Math)

Increasingly within higher education, the call for an internationalized curriculum that fosters the development of global citizens who are able to embrace multicultural concepts, interact within a global community, and have the capacity for an awareness of their own identity within a global construct is finding its way into university mission statements around the world, including here at UNG. These mission statements serve to guide all aspects of decision making for the institution, but the implementation of the concepts within is little more than a theoretical framework. The emphasis on creating a globally conscious curriculum has gained new ground as students increasingly need to develop the ability to interact with a variety of cultures, ethnicities, and nationalities throughout the course of their chosen careers. Our world has become inseparably interconnected, and simply providing students with awareness without the motivation to act ethically, become a catalyst for change, or who lack empathy does little more than prepare educated bystanders. In other words, when we simply create global citizens, we are failing our students. In order to meet the needs and challenges of our current and future world, we must create activists who have the analytical skills to both identify and pose solutions to our

most difficult and complex problems. We must begin developing this and future generations as global stewards. The shift from global citizen to global steward is not simply a vocabulary shift, but a culture shift in how we prepare students to take their place as global leaders. As educators, we have a responsibility to our society and our world to prepare our students to be leaders, not simply global citizens, but rather global stewards.

The primary goal of this project is to assess the impact of study abroad programs on students who participate in a variety of structures, focuses, and curricular international programs abroad. We aim to measure the dispositional shift of students participating in three dynamically different study abroad programs at UNG to determine if these factors have any impact on the overall experience of the development of students into global stewards.

The potential impact of this study could be far reaching within the curricular design of study abroad programs at UNG, but also at the national level. The multidisciplinary focus of the study and potential demographic differences in target populations will be highly informative should we find that dispositional shift in the variable population is greater than the control population. This project will directly impact the preparation of both civilian and military students for programs abroad in future years, as well as potentially impact the body of literature for the field. Not only will the impacts of this study impact the practice of teaching and learning related to creating global stewards and preparing our student body to be global leaders, it will offer insight into the critical elements of the transformative nature of programs abroad. This study will also inform the manner in which the Center for Global Engagement prepares faculty members and students for their programs abroad. Additionally, the explicit instruction in social justice concepts and preparation of students to engage in meaningful, critical self-reflection while abroad will lead to the development of a skill set that will be beneficial to the student both in the remainder of their academic career, as well as the initiation of their chosen career path postgraduation. This additional instruction and skill set development will allow students to emerge from their programs as critical thinkers who are able to apply their knowledge base in real world settings.

# Factors impacting youth entrepreneurship in a less developed country: A case study of youth in the town of Linden, Guyana

Danns, Donna (Business, Arts & Letters)

This study seeks to determine the factors impacting the development of entrepreneurship among youths in the town of Linden, Guyana. In Guyana and the wider Caribbean, entrepreneurship is being promoted by policy makers as a key strategy to generate youth employment, reduce individual poverty and to give youths a stake and say in the development of their communities. Linden, with a population of approximately 30,000 people, is the second largest town in Guyana after the capital of Georgetown. For many young people, in what was once a thriving mining town, the path to success in life consisted of graduating from high school and acquiring a "good job" invariably in the diminishing bauxite industry. The current reality is that bauxite mining has diminished considerably and now employs only 506 people from an earlier high in excess of 6,500. Becoming an entrepreneur was not on the career radars of youths in Linden. Unemployment and the lack of job prospects, however, are constraining youths to either leave the town or resort to the possibilities of entrepreneurship.

The importance of this study is that it seeks to provide both theoretical perspectives and empirical grist for understanding the dispositions and/or actions of youths to become involved in entrepreneurial ventures for purposes of employment and poverty alleviation. Additionally, it seeks to ascertain whether existing programs and incentives to promote youth entrepreneurship

are impacting. Further this study will provide insights into efforts to promote entrepreneurship as a development strategy in a poor community.

The main outcomes of this study are anticipated to be three peer-reviewed journal articles; two presentations at faculty seminars; and presentations at three professional conferences. The collaboration with the University of Guyana is a further outcome.

# New insights into the global extinction of late Pleistocene mammals through renewed explorations in coastal Georgia

Patterson, David (Science & Math)

The history of earth is demarcated by five major periods in which entire groups of species went extinct over a short period of time, often as a result of unknown factors. Likely the most well known of these events occurred during the late Pleistocene (approximately 10,000 years ago) and witnessed the extinction of many charismatic mammals like the saber tooth tiger and mammoth. Although we know what types of animals went extinct during this period, we understand little regarding the combination of factors that contributed to their demise. Much of this uncertainty is related to lack of fossils dating to this period. Intriguingly, the coast of Georgia has several fossil sites that can provide some insights into the dynamics of this extinction; however, these localities have been underutilized relative to those from other regions of the United States. The primary objective of this project is to use newly collected and existing mammal fossils from coastal Georgia to better understand the environmental dynamics of the region during the late-Pleistocene extinction event. I plan to apply the cutting edge methodology I developed during my dissertation work in eastern and southern Africa to fossil assemblages from coastal Georgia to provide novel insights into a long-standing question in the natural sciences. Funding for this project will greatly enhance my ability to mentor undergraduates and provide a much-needed avenue of research for UNG. This project will be completed in four primary phases: 1) the excavation and description of new fossil material from already-identified fossil localities on the Georgia coast, 2) the creation of a new Coastal Georgia Fossil Database that includes new and existing fossil collections, 3) the application of stable isotope geochemistry and mammal community structure analyses to these collections, and 4) the dissemination of our findings to local, regional and international audiences (both academic and non-academic). This project will directly integrate undergraduates in each of these stages and will undoubtedly contribute to their success at UNG as well as their future scientific endeavors.

#### North Georgia Wine Industry Documentary Film

Garner, Benjamin (Business)

This proposal aims to produce a documentary short film on the North Georgia Wine Industry. This project is a creative activity that is interdisciplinary approach, combing an analysis of the regional economic impact of this growing industry from a marketing and business perspective, in addition to using a humanities-based medium of documentary film. Because the North Georgia Wineries have been growing popular in recent years, it is important for UNG to form connections with businesses in this industry. This award will provide the funding necessary to take the extensive time required to film and produce this short film. This project will further my role as a scholar by helping create an innovative and creative Intellectual Contribution (IC), and it will also assist me in forming connections with business owners in this region. Those connections may lead to further opportunities for research and collaboration.

#### Perceptions of Sexual Assault & Intimate Partner Violence: Preparing Counselors-In-Training to Work with Survivors

Rogers, Tiffany (Health Sciences)

Sexual assault and intimate partner violence (IPV) are extremely prevalent public health issues in the United States. According to the Center for Disease Control (2014), more than 19% of women and approximately 2% of men report being survivors of rape, while nearly 44% of women and more than 23% of men report having experienced other forms of sexual violence. Intimate partner violence shows similarly high statistics, with lifetime prevalence rates of 32% for women and 28% for men. Given these occurrence rates, it is critical that counselors be prepared to work with survivors of sexual assault and IPV, as it is reported as an issue that counselors frequently encounter with their clients (McLindon & Harms, 2011). While the issues of sexual assault and IPV may be addressed in coursework, counseling programs may not be providing students with the space to address and to challenge their misconceptions and acceptance of myths related to sexual assault, IPV, and survivors.

Without reflecting on misconceptions about survivors and the issues of sexual assault and IPV, counselors are at risk of imposing their inaccurate views and beliefs on their work with clients who have experienced such acts of violence (Postmus, McMahon, & Warrener, 2011; Kassing & Prieto, 2003). This is especially important to address, as research has shown that receiving positive mental health support helps to decrease negative psychological symptoms that may develop for survivors following their assault (Campbell el al., 1999). Starzynski, Ullman, and Vasquez (2017) also found that the nature of a counselor's reaction (positive or negative) to survivors disclosing sexual assault influenced clients' overall recovery and perceptions of mental health counselors, which could significantly impact how likely a client would be to seek mental health services in the future. Further, Starzynski and colleagues noted that the counselor's negative reactions to disclosure were often relayed in the form of victim-blaming (i.e., blaming the survivor/client for the assault) or overall negative judgments of the client, which are related to a counselor's potential level of myth support about survivors.

This study would (a) explore the perceptions that counselors-in-training (CITs) have about survivors of sexual assault and IPV by measuring CITs' support of common myths associated with sexual assault, IPV, and individuals who have experienced such violence; (b) assess CITs level of self-efficacy as it relates to their perceived effectiveness to work with survivors; and (c) use results to create a training program to increase CITs knowledge and counseling self-efficacy related to working with issues of sexual assault, intimate partner violence, and survivors.

# Documenting the Undocumented: An In-depth Examination of the Geography of Undocumented Mexican Immigrants in the United States

Gove, Michael (Business)

Arguably the largest difficulty facing researchers across the social sciences in examining a variety of topics related to undocumented immigration is the very fact that these immigrants are undocumented. The resulting lack of quality data, the foundation for subsequent quality research, has limited the study of social, economic, and political effects related to the undocumented population. Many investigators interested in these issues have relied on census and survey data, but these sources generally do not have questions on legal status. In turn, researchers have developed various methods for approximating the undocumented population, all of which are not ideal for answering even such basic questions as number and location of undocumented immigrants.

The specific flow of immigration from Mexico to the United States is the largest immigration flow in the world, and is one that has been examined widely in the literature. When the undocumented population is the focus, researchers have relied on methods using Census data from the U.S. and Mexico, household survey data such as the Mexican Migration Project, or reported data from the U.S. Department of Homeland Security to create estimates for the undocumented population. However, the matrícula consular (consular card) data available through the Instituto de los Mexicanos en el Exterior (IME) presents an opportunity to more accurately portray the undocumented Mexican population in the U.S., connecting immigrants' Mexican states of origin with U.S. states of residence.

The central importance of this proposed project directly relates to the wider importance of quality of data, as rigorous, valid empirical analysis is not possible without first having quality data. Not only will my analysis depict the geography of the undocumented Mexican population in the U.S. more fully and accurately than the literature has previously achieved, it will set the table for subsequent research studying social, economic, and political effects related to this population. Included in the subsequent research that would be made possible by this data analysis is how the undocumented population connects to questions of labor market outcomes, immigration policy from individual U.S. states, and selection on education, among others.

#### **Ethics Diagnostic Initiative**

Black, William (Business)

Ethics are frequently discussed in academics and business, but how do we know that our attempts to teach ethics are effective? A collaborative interdisciplinary project examining the impact of teaching ethics supports the vision of the University of North Georgia. The proposed research explores students' perceptions of acceptable business practices in both a longitudinal and training context, by constructing an online diagnostic instrument presenting vignettes related to ethical issues and obtaining responses regarding those vignettes. The research is designed to facilitate exploring relationships within the responses and identify significant patterns in attitudes by respondent characteristics.

The online instrument will be hosted by the BB&T Center for Ethical Leadership in support of its mission to develop ethical leaders and to become a catalyst for ethical thought, analysis and engagement. It will be programmed in Qualtrics by UNG Psychological Science faculty experienced in the development, administration, and support of statistically and structurally valid survey instruments. While it will initially be made available to University of North Georgia faculty for classroom use, further plans are to make it available to other faculty and businesses as well, impacting the teaching of ethics throughout the United States.

Initial project outcomes include the development of the online instrument, online availability through the Center, and the development of an academic paper summarizing the project. Later outcomes could include research such as longitudinal analysis of patterns in responses, cross-sectional analysis, and identification of effective instructional practices. The research team expects that the ethics diagnostic initiative can also be helpful in strengthening connections to the business community.

#### How much are students willing to pay for online class and why

Han, Yongseung (Business, Science & Math)

Our project is to conduct a survey of students on UNG's five campuses to determine students' willingness to pay for online classes and analyze the determinants of the willingness to pay. This project will allow us to address important questions arising associated with online class offerings: a) how much a student is willing to pay for an online class, b) what factors play a role in the determination of the amount and how much each factor contributes to the amount, c) what factors make a student choose an online class over a face-to-face class, d) what demand for online class looks like and e) how tuition revenue changes as the tuition rate of online class changes. By addressing these questions, we hope to contribute to UNG's strategic goals to "increase educational opportunities for citizens in its region" and to provide valuable information on the differences across campuses so that the UNG administration "builds campus identity and institutional unity."

#### **Presidential Innovation Awards**

Projects receive up to \$5,000 each to support full-time faculty and staff members in interdisciplinary and/or cross-functional collaborations or individual pursuits focused on innovations and partnerships to promote implementation of best practice models.

# **Improving Learning Outcomes for Music Appreciation Students** Morgan-Ellis, Esther (Arts & Letters)

Every year, the UNG Music Department offers about forty sections of MUSC 1100: Music Appreciation, serving nearly 1,300 students. The course is available online and on the Dahlonega, Gainesville, Cumming, and Oconee campuses, and it fulfills the "Fine Arts or Philosophy" component of Area C in the Core Curriculum. Music Appreciation is currently the only music course incorporated into the Core, and it is the only academic music course available on the Cumming and Oconee campuses. For these reasons, Music Appreciation often constitutes a college student's only encounter with the academic study of music, and it can therefore play a disproportionate role in creating opportunities for lifelong engagement with music. This proposal seeks both to improve faculty impact in the music appreciation classroom and to create high-quality and equitable opportunities for music appreciation students to engage with a diversity of live concert music.

# **Summarizing the Results of Archaeological Investigations of Salemi, Sicily** Balco, William (Arts & Letters)

This research project compiles the results of archaeological excavation and laboratory analysis that took place in Salemi, Sicily, between 1998 and 2015. During this period, archaeological excavations were completed at numerous locations within the historic city center and the material culture recovered from these excavations was processed and preliminarily analyzed. The results of these investigations must be collated into a monograph summarizing the research project, methods employed, and the overall interpretation of the ancient site. This monograph

will present the data collected and contextualize the broader social, economic, and political landscapes that Salemi contributed to over the past 2500 years. As both a field supervisor and the supervisor of laboratory analysis, I played a key role in these previous archaeological investigations of ancient Salemi. My role with the project continues, as I am a co-editor of the monograph.

My role in the construction of the archaeological monograph is to compile detailed descriptions and technical illustrations of approximately 2000 diagnostic artifacts, identify bibliographic references to similar artifacts, compose several chapters interpreting various classes of artifacts, and coordinate with international partners composing other chapters. Due to Italian and European Union cultural heritage laws, the vast majority of artifacts recovered during our investigations cannot be removed from Italy. As a result, the description and analysis of artifacts must be completed in Sicily. Consequently, I am requesting funding to support transportation, lodging, and meals for myself in order to complete this final reporting stage. When the final description, analysis, interpretation, and contextualization is completed at the end of the summer of 2018, the manuscript will be ready for publication.

# **Cross-disciplinary Learning Communities: Teaching in a Connected World** Cabaniss, Dan (Arts & Letters)

For this project we propose creating an interdisciplinary Learning Community comprising two three-hour classes, CGLO 1503 (Contemporary Global Topics) and MDST 1110 (Film Appreciation), in which we examine the political-historical-cultural background of the American war in Vietnam alongside the way Hollywood and other U.S. filmmakers represented the war in contemporary and postwar cinema. In doing so we aim to engage our students in a deeper understanding of the proximate causes of the war, along with the political goals of the U.S. and both the North and South Vietnamese governments, while at the same time demonstrating how a specific artistic form — the Hollywood film — deploys its particular aesthetic and cultural methodologies (genre, narrative structure, cinematography, mise-en-scène, music, stardom, gender, race, nationalism) in varying ways as it seeks to profit from and explore the meaning of one of the most significant and divisive issues of late twentieth-century American life. For the two instructors proposing this project — Associate Professor of Political Science Lance Bardsley and Associate Professor of English and Journalism Dan Cabaniss — this work is a follow-up to an initial interdisciplinary project that received funding from a Presidential Innovation Award in 2016-17, in which we team-taught a single three-hour course that combined material from CGLO 1503 and MDST 1110 in examining how a number of 1950s/60s Hollywood films sought to exploit the topical importance of the Cold War.

# Journeys of Personal Transformation: Measuring the Impact of an Innovative Study Abroad Experience

Redding, Carly (Arts & Letters)

The University of North Georgia strives to provide engaging learning experiences and opportunities for students to take skills gained in the classroom and apply them in the field. To better prepare students for the challenges and opportunities of an increasingly globalized 21st century world, UNG employs a range of best practices such as service learning, study abroad programs and undergraduate/graduate research. What if, however, there was a way to roll all of

these practices into one interconnected innovative study abroad program? What, if any, change could such a program produce in students? How can these changes be explained? Finally, what are potential short-term effects of these changes for our students? These are precisely the questions that this proposed research project aims to answer.

# Developing a teaching and research herbarium for the Gainesville Campus of the University of North Georgia

Diggs, James (Science & Math)

An herbarium is a collection of dried and pressed plant specimens properly labeled with taxonomic information as well as contextual information about how and where that specimen was collected. Herbaria have a long history in the scientific community of being indispensable records of natural history as well as invaluable tools for teaching and research. They are repositories for dried biological tissue, have been used for taxonomic and ecological research, and are frequently used in undergraduate institutions to teach many of the principles of botany, plant physiology, plant morphology, secondary chemistry and plant defense, and many other subjects. The Biology department on the Gainesville Campus has been expanding its natural history museum over the past two years to include facilities for preserved bird, insect, fungal, and plant specimens. We seek to continue developing these resources for the University. We plan to properly mount and label existing high-quality specimens and provide for the continued preservation and maintenance of the collection. We also plan to photograph the collection and establish an accession database for the specimens, and make this resource available online for the use of the public at large.

## Biomanufacturing High-Value Furan-Containing Compounds to Expedite The Biofuel and Biomaterial Production

Wang, Yu (Science & Math)

Many furan-containing compounds are on the U.S Department of Energy (DOE) "Top 10 + 4" list for platform chemicals due to their high potential for the production of high-value chemicals such as green polymers, pharmaceuticals, and biofuels. The complexities of the current processing steps involved, hazardous wastes generated and the difficulties of separation have prompted the development of alternative ways to produce furan-derived compounds. Engineering microorganisms to produce furan-containing compound from inexpensive sugars may be the most convenient and cost-effective approach to obtaining the necessary quantities. However, the development of microbial platforms for the production of furan-derived compounds directly from inexpensive sugars has never been established. This leads us to the overall goal of this project: develop a platform for installing the biosynthetic pathway in a microbial host to manufacture high-value furan compounds from glucose. In order to accomplish the goal, we will study three novel enzymes. These three enzymes coupling with the first five enzymes in the glycolysis pathway will be implemented to assemble to an entire biosynthetic pathway, which produces high-value compounds hydroxymethylfurfural (HMF) and furandicarboxylic acid (FDCA) directly from inexpensive sugar, glucose. This study represents a revolutionary effort that constructs an environmentally friendly, costeffective and highly selective system for the first time in history. Compared to the traditional chemical process, the approach proposed in this proposal purely employs enzymes as the "assembly line", which will greatly reduce the environmental impact from chemical process. This

platform is designed to mass-produce precursors for biofuels and biomaterials. As one can imagine, industrial applications of such platform will usher in a new era for the synthesis of furan compounds to meet the needs of industrial biofuel and other biomaterial products via "green chemistry" with less environmental impacts.

This project will provide excellent training and research opportunities at UNG and greatly contribute to increasing the retention of students in STEM fields. The multifaceted nature of this research span the core disciplines of chemistry, biology and engineering and is well suited to the engagement of STEM major undergraduate in applying class learning to real-world problems, gaining valuable hands-on experience and integrated perspectives. Importantly, working with a collaborator at Arizona State University will promote cross-school communication and summer student exchange options. Importantly, the results and data obtained from this project allow several undergraduate students attending regional and national meetings. This award will generously help PI's scholarly activities by financing the initial research that will be used to apply for a DOE grant in the Spring of 2018 and a National Science Foundation (NSF) grant in the Fall of 2018. The results will be published in tier 1 peer-reviewed journals; the microbial platform proposed in this research will be prepared to apply an invention patents.

# Building Bridges, Not Walls: Developing Pathways for Latinx Educators in the United States

Hardee, Sheri (Education)

This proposal for a Presidential Innovation Award is intended to further develop a collaboration between the UNG College of Education (COE) and Hall County Schools. The program goal is to encourage heritage Spanish speaking graduates of Hall County to enroll in the COE's Teacher Education Preparation Program and concurrently work as paraprofessionals with English learners in Hall County elementary schools in classrooms. These UNG students will be hired by the county schools upon completion of the Bachelor's program through the College of Education. The Hall County Superintendent has committed to paying the tuition and fees of these students, in addition to providing job-share positions as paraprofessionals to gain experience and earn extra money in while at UNG. Our goal as faculty members leading this program in the COE is to provide adequate support for these students, including mentorship, supplies, and access to resources that ensure their academic success at UNG. While our first cohort of students is currently progressing through required courses, we are currently recruiting students for the next cohort to enroll in Fall 2018. We are viewing these first two years as pilot years, and this grant will assist significantly with funds needed to cover the material costs of this program that Hall County has not been able to cover. This includes events and orientations for the students and their mentors, costs associated with group trips, materials for the students, and materials to recruit future students for this innovative project. With this seed money, we hope to be able to help support the program while we apply for larger grants to ensure its continuance.

# **Enhancing the Acquisition of Critical and Collaborative Thinking through Interprofessional Training and Simulation**

DeSandre, Carolynn (Health Sciences)

The purpose of this project is to develop a program to help institutions of higher learning implement interprofessional education for healthcare profession students through traditional didactic training and simulation. The goal of this project is to develop a program toolkit which can then be successfully marketed to other institutions of higher learning to implement interprofessional learning for health profession students in conjunction with the IPEC Core Competencies for Interprofessional Collaborative Practice. The toolkit will be developed by an interprofessional team of faculty, administration, staff as we plan for the annual 2018 event. We will use knowledge and data collected from our past experiences and the upcoming 2018 CHSP interprofessional events to design a toolkit that will illustrate how to successfully plan and implement an interprofessional event including: designing an event, organizing a timeline for implementation, identifying key players and partners, engaging students, and program evaluation.

### Offering More Attractive Computer Science Classes in the new Era

Yan, Mingyuan (Business)

The popularity, high job vacancy and good salary motivate more and more students in college chose computer science as their major. The current population of students in computer science at UNG are more than three times as many students as what we have several years ago. I do see challenges of being an educator in computer science in the new era, when students may be distracted easily by social media or games and can easily obtain a lot of information from the Internet, including educational resources in computer science. In this project, I am interested in the investigation of how to offer more attractive in class teaching in computer science to our students in the new era. The objective of this proposal is to hopefully find out potential ways to offer more attractive computer science courses to our students and better support their learning success. In this project, I am planning to get the answer through a thoroughly study about our students real need. The study will focus on three aspects: learn from the past, from the current and from the outside world. The learning outcome will provide us with clearer ideas regarding how to offer more attractive computer science classes in the new era. The outcomes of this project may also bring insight to the department when make necessary adjustment to courses or the curriculum.

# Digital Marketing Strategy Certificate Program from Harvard University Professional Development Division

Menon, Mohan (Business)

The business world that awaits our graduating students is being rapidly shaped by digital technologies that challenge their competitive landscape. In order to develop students who are highly marketable in this ever changing digital space, faculty must master evolving concepts & tools first and then facilitate student learning. The Certificate program will help in developing knowledge relating to actionable digital marketing strategies in order to impart the wisdom on

to our students. Thus, the purpose of successfully completing the Certificate program is to train our students to be competitive in their career search.

#### Law Enforcement Spanish in Mexico

Combier, Elizabeth (Arts & Letters)

The goal of this project is to develop and to provide video interviews, documents, forms and relevant information from Mexican police in Matehuala, Mexico, about current law enforcement practice and criminal justice agencies there. Establishing a relationship with that police department, will also give rise to possible Skype interviews with students throughout the semester. The cultural differences and the specific jargon is needed in Spanish to understand the Latino community challenges in Lumpkin, Forsyth and Hall counties. This serves to assist our Spanish majors and minors in their ongoing pursuit of Spanish proficiency within the context of Spanish for the Professions courses.

#### **College Student Mental Health Awareness**

Davis, Harrison (Health Sciences)

This mental health awareness and service learning project will focus on providing valuable experience to graduates students while attempting to improve the lives of college students who are part of the UNG campus communities. The goal is to educate, raise awareness, and screen college students for common behavioral and mental health issues and suicide.

### Engaging the Public in Science: A UNG-Community Partnership

Childers, Gina (Education, Science & Math, Arts & Letters)

Science festivals are informal learning experiences intended to engage the public in science. They provide an opportunity for scientists and the public to connect and interact and are ideal for engaging the public in science by increasing interest, creating a dialogue between scientists and the public, and providing social context for science issues (Jensen & Buckley, 2014). The primary goals of the project are to design and execute an informal, community-based science festival event, named the Dahlonega Science Festival (DSF). The event will boost science literacy in the community, and promote a positive relationship between the university faculty and the public.

# Teaching Sustainability in the 21st Century Chinese Language Classroom: A Connection between Science and Humanity

He, Yunjuan (Arts & Letters)

The proposed project is to develop a content-based language course entitled "Sustainability: Examples from China," to teach intermediate-advanced Chinese to UNG students within global environmental and sustainability contexts. This interdisciplinary course will connect three

fundamental areas of the USG core curriculum: Area C: humanities/fine arts and ethics; Area D: natural sciences, mathematics, and technology; and Area E: social sciences. This course will allow students to develop their Chinese language competence, academic knowledge of environmental studies as well as critical thinking skills that relate to global issues of sustainability.

#### I can read Mathematics but I cannot write Mathematics

Kim, Minsu (Science & Math)

Developing educational technology improves the student learning environment and pedagogical methods. Online homework systems such as WebAssign, Mymathlab, and WeBWork help UNG students improve their learning in math because of prompt feedback, accessibility, supplemental explanations, and visual materials. Instructors can focus on student progress because of learning management systems on the online homework systems instead of grading homework. Yet most math instructors at UNG have concerns that students' writing in math is getting worse and intermediate students still struggle with learning mathematics. Even though writing in math is an essential component to develop conceptual understanding of content in the learning process, students have limited opportunities to improve their writing in math through the online homework systems, visual materials, and lecture-centered learning. The purpose of this project is to promote student conceptual understanding of mathematics content, engagement, achievement, and critical thinking through the intensive development of writing in mathematics in blended learning. The use of the educational applications, Google Classroom, Mathist, Mathematics, and GeoGebra, will encourage students to develop writing in math and collaborative learning inside and outside class.

#### **Captured Experiences**

Rice. Shawn (Health Sciences)

This project aims to capture and catalog experiences using two stereoscopic 360 degree 4k cameras. This content would later be viewed through head-mounted displays (HMDs) such as the Oculus Rift, HTC Vive, windows mixed reality headsets and others. I will then work with UNG IT to create policies and procedures that gives CHSP the chance to bring these high quality experiences to our students. This project could potentially interact with nearly all of CHSP in many different ways. Faculty could create compilations to compare and contrast healthcare discrepancies, such as allowing students to experience hospital waiting rooms in different countries. Students could sit in on surgeries or watch themselves in a simulation from the eyes and ears of the patient. We will be able to bring back experiences from global engagement trips, which could help with recruiting and general support for subsequent trips. We could livestream important events through various channels to increase visibility and allow participation for those who are unable to attend due to distance, injury or illness. Diversity training can bridge boundaries faster by immersing students in situations that they would otherwise have no way of experiencing on their own. We will primarily start by reaching out to faculty and staff for individual and course projects. Once we capture content and faculty are able to experience the effects of this new medium, I believe the demand for content and HMDs will increase dramatically. This will create a desire for research that demonstrates the medium's effectiveness and student feedback. While this is happening, the price of HMDs will be continually going

down to the point that it will soon be in students' homes and classrooms. I want to have the content and the process running strong so that we are ready to meet this demand and disseminate the appropriate material to faculty, students, and the public.

# **Chemistry of metal-siderophore complexes: A molecular modelling study.** Streit, Livia (Science & Math)

The goal of this research effort is to use computational methods to predict the metal-binding affinities of siderophores and to construct in silico models for use in studying other aspects of siderophore chemistry. Siderophores are specialized metabolites secreted by many bacteria to aid in the acquisition of iron and other metals. Siderophores are essential to the early stages of infection. We will use the DFT formalism to identify the structure of several siderophores complexes with transition metals. Our approach will be to start by studying the structure of yersiniabactin (Ybt) with iron and then extend that model to other metals such as copper, zinc, manganese, chromium, cobalt, gallium, and nickel. We will evaluate the performance of some of the most commonly used functionals with this model compound to establish how they reproduce experimental structures and predict the binding energies between metal and siderophore. Once the computational methods have been benchmarked we will then apply the same principles to several newly discovered yersiniabactin analogs.

# Improving Student Skills And Understanding Mathematics, Enhancing Effective Teaching Mathematical Courses With Maplets

Kieu, Thinh (Science & Math)

Teaching and learning using mathematics curricula at the University of North Georgia (UNG) without mathematical software can be a difficult and challenging task, especially for novices learning math. In this proposal, the principle investigators (PIs) develop a maplet package, which is an efficient teaching and learning tool to aid in teaching and learning mathematics, and serves as a private tutor for mathematics students at no cost, and with infinite patience. By using interactive worksheets and animated graphics in maplets, students can find the opportunity for numerous experiments that will provide them a good understanding of mathematical concepts. A maplet package will be designed at UNG to effectively provide for students' tutor concerns, and for the math instructors' useful pedagogical tools. The goal of this project is to offer the Mathematics Department's own free maplet package that will provide a complete package of tutoring resources for all math courses to all students at UNG.

# An Investigation of the Perceived Usability and Comprehensibility of Alternative Drug Fact Presentations in Reducing the Risks of OTC Medications among Older Adults

Abegaz, Tamirat (Business)

Research indicated that older adults (age 65 and over) accounted for more than 40% of all overthe counter (OTC) medications use. Moreover, older adults consume more OTC medications than any other age group, and are more likely to encounter adverse drug event than other

demographic groups. They are also hospitalized three times more than all age group combined. Most importantly, due to natural process of aging, they encounter difficulty in reading, understanding, and acting on drug fact information related to OTC medications. The purpose of this study is to examine the extent to which the problem of comprehension exists in drug fact labels and whether varying the media presentation type (from print text to voice) has an effect in reducing the risks of OTC medications among older adults. Overall, this research attempts to answer the following research question: What is the effect of alternative drug fact presentation type on the comprehensibility and better understandability of potential side effects of OTC medications.

#### Dead Winter: A Short Film Learning & Networking Experience

Hogue, Allison (Arts & Letters)

This short film production will serve as a unique learning and networking opportunity for University of North Georgia film students and recent graduates, who will work alongside industry professionals to produce the film. By fostering a collaboration between University of North Georgia film students, recent graduates, and film industry professionals, selected up-and-coming filmmakers from UNG will experience a truly unique learning opportunity where they can gain knowledge, connections, and portfolio samples that will prove invaluable to securing employment in the local industry. Once Dead Winter is complete, the film will be screened the University of North Georgia sponsored Georgia Film Festival in mid-May 2018. From there, the film will be submitted to film festivals around the world and will also be shopped to potential investors for series or feature development.

#### **Developing Global Ctizens – Is It Enough?**

Womack-Wynne, Carly (Global Engagement)

The primary goal of this project is to assess the impact of study abroad programs on students who participate in a variety of structures, focuses and curricular international programs abroad. The study will begin with the creation of a pre and post assessment which will be designed to measure the dispositional shift of students participating on study abroad programs at UNG in the summer of 2018. This instrument will be given to all students studying abroad in summer 2018. In addition to the instrument, three programs (European Council Paris, The India Project, and College of Science and Math Conservation of Biology in Africa) have been selected in conjunction with the approval of the program directors as experimental programs. Should one of these programs not run in summer 2018, we will shift to a curricular and demographically similar program in the same division that does run. These three programs will allow Dr. Wynne to include explicit instruction in diversity and social justice concepts prior to departure with the inclusion of methods of self-reflection to gain critical self-awareness prior to the experience abroad

Intended products are a published article, creation of a book length manuscript, and delivery of multi campus seminars for faculty and staff.

# Alliance@Work: Improving Communication and Presentation Skills for Business Students

Kronenberg, Steven (Business)

We all recognize the importance of effective communications and the ability to authentically relate to clients. As both the new Director and a current student in the Cottrell MBA program, I see young professionals struggle in this area and hear from them that they would like to have more opportunities that would support improvement in communication and presentation skills. This project focuses on training that merges the fundamentals of communication and collaboration with the process of creating powerful performance. Working with professional theatre directors and actors, graduate students will learn how to communicate in a focused and believable way to get results. Funding would be invested in training through Atlanta's Alliance Theatre to provide a professional development opportunity for Cottrell MBA students. Outcomes would include notably better communications from participants making them more effective in their careers and better representatives of the Mike Cottrell College of Business and UNG. Additionally, MBA students will be asked to utilize this experience and their new skills to create and deliver professional development workshops that support professional growth and improvement in communication skills for undergraduate students in the Mike Cottrell College of Business. These workshops would be delivered through the Personal Roadmap to On-Going Success (PROS) student professionalism program and provide an opportunity for MBA students to practice their communication and skills and enjoy a leadership experience. The Mike Cottrell College of Business has seen an increase in engagement with alumni who have been asked to share their time and talent through meaningful volunteer service. Other universities that involve students in volunteer service and fundraising have significantly higher percentages of alumni giving and we seek to mirror these results. In partnership with the MCCB development officer and alumni relations, another goal is to launch a Cottrell MBA Shared Interest Group enabling the College and UNG to remain connected with alumni to leverage their expertise and contacts with the hope of increasing their contributions of time and financial contributions.

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