

Presidential Incentive Awards

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1129 - Remaking Marriage, Remaking Men: Gender, Law, and Colonialism in Lima

Wisnoski, Alexander - History - Anthropology - Philosophy

This project, entitled Remaking Marriage, Remaking Men: Gender, Law, and Colonialism in Lima, examines legal contests over marriage and manhood in the Spanish empire from 1550-1650. I demonstrate how women and other marginalized members of colonial society used law to articulate the parameters of good husbandly conduct, what I call marital masculinity,[1] and hold husbands accountable to these standards.

Importance

This book contributes most significantly to two related scholarly conversations: 1) The nature and function of the law in the Spanish empire and 2) the legal agency of marginalized populations in colonial society. I identify the ways women sought legal recourse within patriarchal structures and enlisted legal allies from marginalized populations. Contextualizing this agency, I build on histories that show how marginalized colonial subjects enlisted courts to seek relief from particular instances of oppression, even if the end result was a more pervasive colonialism. Whereas other scholars emphasize women's appeals to paternal protectors, my work reveals a broader range of legal tactics. Through petitions and testimonies, colonial subjects engaged in a larger conversation on the scope of marital manhood. I contend that rather than reinforcing the colonial status quo, they reshaped a vital part of social and legal power dynamics. They refashioned the nature of patriarchy by defining marital manhood and simultaneously policed these expectations.

Design and Methodology

My book draws on extensive research I conducted at the Archbishop's archive of Lima, Peru. I identified over 200 marital cases from the ecclesiastical tribunal, which had jurisdiction over all marital issues. I have conducted some quantitative analyses, but qualitative analysis of cases, many of which are divorcio[2] (marital separation) suits, forms the heart of my book. Through a close reading of the words attributed to litigants, judges, and witnesses, I uncover legal and social articulations of expectations for proper masculine behavior and the societal judgments of those who fell short of these ideals.

Outcomes

The primary outcome of this project is a monograph by the same name. In addition to the final monograph, this research program will also produce a peer-reviewed article, multiple conference papers, and a number of UNG and community presentations.

This Presidential Semester Incentive Award will directly support the work of crafting a journal article that is drawn from a pivotal chapter of the book project. This article will be written and submitted for peer-reviewed publication during the award period.

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[1] My treatment of masculinity takes Matthew Guttman's Changing Men and Masculinities as a useful theoretical starting point.

[2] Divorcio in the Spanish empire dictated a permanent separation of the couple and a division of their property, but prohibited remarriage by either party.

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1152 - Leading Two Collaborative Book Projects

Morgan-Ellis, Esther - Music

As a committed pedagogue and experienced historical researcher, I have studied, presented, and published extensively in the fields of music history pedagogy and community singing in the United States. I am now requesting support to pursue the development and publication of two collaborative volumes: a music appreciation textbook and an Oxford Handbook on Community Singing. Each of these projects is founded in my years of experience and expertise in these fields, and each will have a transformative impact. These projects are already underway, but I will not have the time or resources to pursue them both without institutional support. With a Presidential Semester Scholar Award, I will be able to dedicate myself full-time to the completion of these volumes just as the two projects enter their most intensive phases during the Spring 2020 semester.

*The idea for a music appreciation textbook arose out of conversations that I facilitated with the entire music appreciation faculty during the Spring 2018 semester. We agreed that none of the textbooks currently available suited our requirements for content, structure, and affordability. I had conducted a retreat for music appreciation faculty earlier in the semester, and we spent a day reviewing the music appreciation learning outcomes. We determined that the ideal course would be organized topically, would engage with a wide variety of musical examples, and would focus on leading students to develop listening skills and the ability to understand music within its cultural context. I subsequently researched the available music appreciation textbooks and adopted Steven Cornelius and Mary Natvig's *Music: A Social Experience* for use in UNG music appreciation courses, but this volume is not entirely satisfactory. To begin with, it has a list price of \$125, which does not meet our expectations for affordability. In addition, this volume covers too many musical examples with too little depth. It is important to me that students engage deeply with the course material—an approach that has been demonstrated to produce better learning outcomes in the music appreciation class. I always choose to sacrifice coverage if I means I can lead my students to make profound personal connections with limited subject matter (an approach described by music history pedagogues as “uncoverage”).*

Following an enthusiastic response from the music appreciation faculty to my suggestion that we create our own textbook, I set up a meeting with UNG Press to explore the possibility of producing an Open Education Resource (OER) that would be free to our students. The Press offered enthusiastic support and will be assisting me as I apply for an Affordable Learning Georgia (ALG) Textbook Transformation Grant in January 2019. Although I have the resources to pursue this project without an ALG grant, the grant is necessary to facilitate the contributions from our adjunct music appreciation instructors. Eight of our adjunct faculty members have expressed interest in being deeply involved with this project, but they have also made it clear that they cannot work without compensation. It is very

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important to me that all of our faculty have the opportunity to contribute to this project. Only through collaboration can we produce a superlative book that will be ideally suited to the UNG music appreciation course and meet the needs of our instructors and students. To this end, I have also entered into discussion with Kendall Hunt Publishing, who have offered me a contract to publish a low-cost digital textbook. Although I prefer to publish an OER with UNG Press, my top priority is to maintain a high level of involvement from our faculty team.

I will be writing most of the textbook prose myself. My collaborators will help to determine the structure and contents of the book, complete research, obtain audio and visual materials, help to secure permissions, and write sections of text that pertain to their expertise. This textbook will be organized according to the roles that music plays in societies around the world. It will engage with a diverse array of musical examples drawn from the Western art music repertoire, from global popular music traditions, and from indigenous musical practices. The book will not seek to expose students to the entire history or diversity of music from around the world, but will instead lead them to experience meaningful encounters with the examples at hand. Each example will be used both to demonstrate the roles that music plays in society and to illustrate a specific theoretical concept.

The Oxford Handbook on Community Singing will be a volume in the Oxford Handbooks series, each of which brings together experts in a field to contribute essays driven by cutting-edge research. I have already discussed my proposal extensively with the Oxford music editor, Norm Hirschy, and he has exhibited enthusiastic support. We will be meeting in early November, soon after which I will submit a draft proposal. He has offered to help me develop and submit the proposal, which he expects to be accepted by the press. I have already contacted key contributors and put together a comprehensive list of scholars whom I will invite to submit essays. I will serve as the volume editor and I will contribute my own essay and an introduction.

I am ideally suited to oversee this project. My expertise is in the American community singing movement of the early 20th century, and I have already published a monograph and three peer-reviewed articles on the subject. However, I intend for the Oxford Handbook to transcend the bounds of my own work. This volume will bring together scholars from a variety of fields, including psychology, sociology, ethnomusicology, and history, to explore a single question: How does participatory singing create and define community? Interdisciplinary collaboration is very important to me, and I believe that knowledge should develop by means of thoughtful interdisciplinary exchange. To this end, I will commission essays that apply a variety of methodological approaches to the task of explaining how community singing activity impacts those who participate in it. These essays will fall under five categories: the theory and science behind community singing, community singing as entertainment, community singing as pedagogical tool, community singing as spiritual practice, and community singing as political activity.

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1076 - The History of Music in Macon, Georgia, 1820-1980

Wynne, Ben - History - Anthropology - Philosophy

The project is a 350 page socio-cultural study in book form tracing the history of music and musical performers in Macon, Georgia from the city's founding in the 1820s to 1980, chronicling a linear progression of events with significant attention paid to issues related to race, gender, and class. While the book focuses on music in the context of a single city, the project is also national and international in scope because a number of musical artists who had worldwide influence hailed from Macon, including "Little Richard" Penniman, Otis Redding and the Allman Brothers. While the work will provide a record of events and personalities, it will also serve as a significant case study related to music's place in the complicated, racially-charged culture of the American South before the Civil War, through the Jim Crow period, and into the modern era. The book, which is already under contract, will be published by Mercer University Press, whose editors are very enthusiastic about the work and originally solicited me to take on the project. This project also builds on work done for my previous book on the origins of blues and country music in the United States.

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1164 - Physics of Red-Dwarf Stars: Uncertainties in the Search for Extrasolar Planets

Feiden, Gregory - Physics

Red-dwarf stars are the dust mites of the Universe. They're small, difficult to see, but when you look hard enough, you find they're everywhere. Like the Sun, these stars are quite often found to host planets. Lots of planets. On average, every red-dwarf star hosts at least one planet. Given that red-dwarf stars make up 80% of all stars in the Galaxy, that translates to about 200 billion planets in the Milky Way. What's the lesson? If you want to find planets in the Galaxy, red-dwarf stars are attractive targets. For this reason, current and future planet finding endeavors, from the ground and space, are focusing on red-dwarf stars. Unfortunately, we only know planets as well as we know their parent star, and we don't know red-dwarf stars very well.

*Dr. Feiden was invited to write a literature review on the physics of red-dwarf stars in the context of searches for planets revolving around stars other than the Sun --- exoplanets --- especially Earth-sized planets in their star's habitable zone. This topic is of particular interest in the astronomical community as locating an Earth analog with atmospheric signatures of life has become a core objective in the strategic plans at NASA and the National Science Foundation. Editors at the *Annual Review of Astronomy and Astrophysics* (ARAA) selected the topic after recognizing how red-dwarf physics is limiting progress in finding exoplanets. From there, they identified Dr. Feiden as the expert qualified to lead this endeavor. The ARAA editorial board solicits only 10 -- 15 articles per year on topics that are deemed of sufficient importance and urgency given current trends in astrophysics. They look to only publish reviews that will have an immediate and lasting impact on the field.*

Reviewing the physics of red-dwarfs is timely because current and future investigations aimed at finding life-harboring, Earth-sized planets (e.g., Kepler/K2, TESS, CHEOPS, JWST) are focusing on red-dwarf stars --- the smallest stars. For a number of reasons, small planets around small stars are easier to find compared to small planets around stars like the Sun. However, knowing the properties of planets (e.g., size, composition, age) depends on knowing the properties of the star it orbits (e.g., size, temperature, brightness, age). Unfortunately, red-dwarf stars are some of the least understood stars. Measurements of red-dwarf star properties are often in tension with properties predicted using theoretical models, which use physics to predict the properties of stars. It is unclear whether theory or observations are at fault, but one thing remains clear: until we resolve this tension, one cannot claim to accurately know the properties of planets around red-dwarf stars.

The proposed project is guaranteed to produce a peer-reviewed, published literature review article in ARAA, the most prestigious journal in astronomy and astrophysics. Review papers published in ARAA often serve as a reference and science guide for the astronomical community for 10 -- 20 years. Well-

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written articles in ARAA can earn over 100 citations per year. In addition, we anticipate at least one original undergraduate-led peer-reviewed journal article resulting from the project.

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1146 - Reconstruction of the Former Fox Hills Inlet, Assateague Island, MD: Implications for Tidal Inlet Evolution

Seminack, Christopher - Institute for Environmental and Spatial Analysis

Barrier islands represent some of the most dynamic geologic environments on Earth. One single storm event can drastically alter a barrier island. The most severe signature of an intense storm is tidal inlet formation. Historically, many tidal inlets have been documented along Assateague Island National Seashore, MD, making it an excellent location to study these geomorphic features along barrier islands. The proposed study will investigate and reconstruct the former Fox Hills Inlet along Assateague Island. This former tidal inlet is uniquely preserved along Assateague Island, as it is the widest (> 2 km) former tidal inlet documented along this barrier island. A geologic investigation employing ground-penetrating radar, sediment coring, and age-dating techniques is proposed reconstruct the dynamics (e.g., subsurface extent, volume of water flowing through the inlet in a half tidal cycle, hydrodynamic conditions, etc.) of the former Fox Hills Inlet. Data collected from this study will ultimately be used to better understand the nature of barrier-island breaching and the barrier island response to intense storm events. 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 study 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, I will recruit undergraduate students to assist with laboratory analysis to promote a unique, outside-the-classroom learning experience. Finally, results from the proposed study will be presented as two oral presentations at professional conferences and within two future peer-reviewed publications in high-end academic journals.

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1135 - Teaching Social Justice in Racially Divided Contexts: Exploring Strategies for the Decolonization of Schooling in South Africa

Johnson, Lauren - Teacher Education

The proposed project is the continuation of a research study begun in 2018 along with Dr. Kelly Henderson and funded by a Presidential Summer Incentive Award. This study investigates the incorporation of social justice education, Indigenous Knowledge practices, and multiculturalism in the South African education system, with specific attention PK-16 schooling and teacher education programs. The project addresses aspects of schooling previously unexamined by UNG College of Education faculty, namely schooling in a social context of White socioeconomic dominance, and Black and Indigenous social and economic marginalization, both before and after legal racial segregation. Despite our differences, there are few other countries whose racial dynamics and segregationist history of schooling so closely align with those of the United States. As the Social Foundations of Education program encourages justice and equity for all students, initiatives to rectify historic and current injustices through education are especially important to us. Given the current social and political climate in the United States, it is particularly urgent that we engage in research whose findings will serve as more than just a metaphor for addressing the needs of students of color within the United States. Our visit to South Africa in the summer of 2018 served as an effective preliminary research trip from which to build this project with future site visits to South Africa, additional interviews with educators and scholars, observations in K-16 classrooms, and further review of relevant literature. While this grant proposal details travel and related expenses for just one of the initial researchers, this project remains a collaborative effort that will yield academic presentations and scholarly articles for both faculty members, and that will benefit the university overall through scholarly output and institutional partnerships.

In July through August of 2018, the preliminary research project funded by the UNG Presidential Summer Grant included travel to three South African sites in order to conduct school observations and interviews with PK-12 teachers, teacher educators, non-profit educational organization staff members, and homeschoolers. These scholars and educators were contacted in the months leading up to our 16-day trip to South Africa. Using purposive and snowball sampling, we emailed individuals from various academic institutions with educational expertise, we reached out to known contacts in South Africa who could provide further assistance in terms of making in-country connections, and we obtained information through university websites on programs that could provide support for our project purposes. While in South Africa, we conducted interviews in Johannesburg, Pretoria, and Cape Town with nine individuals and another two groups of faculty at distinct universities. We were able to visit four PK-12 schools and

interview one educator/administrator at each of those institutions. In addition, we conducted interviews with one homeschooler and the coordinator/founder of an unschooling program. These research activities provided a wealth of information on current issues in the South African education system,

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teacher education programs, and the impact of education policy in the wider society. We recorded the interviews and took extensive notes during each meeting that will be transcribed and compiled in order to analyze the data for our dissemination activities. As the final days of our trip coincided with the World Education Research Association (WERA) 2018 World Congress, we were fortunate to be able to attend the conference and engage with educators and scholars working on relevant issues in South Africa. In addition to supporting several of our new contacts, we established connections with education researchers in the country who are interested in sharing resources and communication on topics of social justice education and decolonization of schooling in the future.

During our time in South Africa, we learned that this study is merely the first of what would have to be numerous studies on this subject. As one of our participants averred, it is impossible to learn everything about a nation's education system based on a few weeks' visit. While discussing our current and future dissemination work, then, we are aware that our findings will represent one study in a wider collection of research that explores connections between U.S. and South African schooling and teacher education practices. We are currently in the first phase of dissemination, which includes on-campus discussions of our initial research observations. The second phase features regional, national and international dissemination of our research findings, primarily through academic presentations and publications. The data serves as preliminary research for this project extension that will include collaboration with faculty members in the Faculty of Education at the University of the Western Cape. During our meeting with education scholars at that institution, we discussed the development of a plan that would involve research and the production of academic publications and presentations. We intend to conduct additional online interviews with interested education scholars who were unavailable for in-person interviews during the research trip. At the local level, we will directly implement the relevant findings from the study in our Social Foundations of Education courses here at UNG. These findings will inform conversations in our courses around the role of diversity in society and education, the goals of multicultural and inclusive education, and the implementation of social justice pedagogy to address marginalization and oppression of minoritized groups in varied contexts. We are currently discussing our plan to host an informal brown bag lunch in the 2018-19 academic year for College of Education faculty and students during which we will share information from our research trip. Beyond UNG, we plan to extend this project for the purpose of developing research findings that we will present at the and the American Education Research Association (AERA) Conference, the Society for Applied Anthropology (SfAA) Annual Meeting, and the International Congress of Qualitative Inquiry (ICQI) Conference. We also plan to submit work stemming from this project to Anthropology and Education Quarterly. These dissemination activities will take place within the next several years upon completion of the collection and analysis of data.

This project would benefit greatly from a semester-long period that includes return travel to South Africa for up to six weeks, ample time to code and analyze data collected abroad, and opportunities for the applicant and to collaborate in person with faculty members in South Africa for the production of

scholarly work. This research will provide our faculty with additional methods for addressing the effects of historical and current racial and ethnic segregation within the K-12 classroom to impart to our pre-service education students. As we intend to share our findings through on-campus workshops, updates to

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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, ethnicity, cultural heritage, and education.

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1103 - Multimedia and Visual-logic Based Laboratory Activities for Students with Special Learning Disabilities and Visually-impaired Disabilities

Yang, Jianjun - Computer Science and Information Systems

In 2015–16, the number of students with ages 3–21 receiving special education services was 6.7 million, or 13 percent of all public school students. Among students receiving special education services, more than 1/3 had specific learning disabilities or visually-impaired disabilities. "Specific learning disability" means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell or to do mathematical calculations. "Visual impairment," also known as vision impairment or vision loss, is a decreased ability to see to a degree that causes problems not fixable by usual means, such as glasses. Some also include those who have a decreased ability to see because they do not have access to glasses or contact lenses .

When we are focused on colleges, there are about 770,000 students with disabilities (SWD) enrolled in 2- and 4-year institutions. No matter if their majors are Computer Science, STEM or other disciplines, most of them are enrolled in introductory Computer Science (CS) courses. The introductory CS course are critical not only because they are foundation for other Computer Science courses, but also because they are fundamental for students' other professional courses in their disciplines even for their future career. However, the current labs at the University of North Georgia (UNG) are not fully accessible for students who have disabilities. Providing multimedia based and visual logic block based activities and laboratory materials to our students with disabilities will allow them to enjoy and understand the subject and increase their interest in introductory CS course and further lead them into other courses offered in their disciplines. This project has the potential for improved recruitment and retention of SWD in these fields.

I propose two approaches to make our introductory CS courses more accessible to these students. One is to develop multimedia based lab activities to help students with special learning disabilities learn. The second is to design visual logic block based lab components to make lab practice accessible to students with visually-impaired disabilities.

The development needs students to be involved. I am the advisor and supervisor of the coding warriors club in Gainesville, which is the solo coding club in Gainesville. I would lead students in this club to work on relevant projects regarding this proposal.

The main content of this proposal will be to make accessible lab activities for students with the above disabilities and lead talent students in coding warriors club to work on the implementations. The main contributions includes two aspects. 1. Produce accessible lab materials to help students with special

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learning disabilities or visually-impaired disabilities succeed in learning introductory Computer Science courses. 2. Enhance programming abilities of the students in coding warriors club and make them more competitive for real implementations.

Summer Incentive Awards

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1142 - History or myth?: The legend of an African soldier who helped Sri Lankans resist British rule

Schindler, Melissa - English

Typically, the focus of research on the African Diaspora, or the historical spread of people of African descent outside of the continent, is the Atlantic region. My project, however, joins a robust group of scholars working to expand the notion of the diaspora to other parts of the world. I am requesting funding support to conduct research on the African diaspora in Sri Lanka, a scholarly endeavor that I began in 2013.

The proposed project will result in three, tangible products: two published articles and a public lecture. The first article will consist of a survey of the African diaspora in Sri Lanka. Whether one lives in Sri Lanka or not, research on the African diaspora in the region is complicated by the fact that relevant archival material is spread across eight countries and written in at least as many languages. Add to that the challenge of access to secondary scholarship, and new researchers to the field face a long learning curve. My first article intends to advance research by providing readers with an overview of primary materials, particularly in collections held by the Sri Lankan National Archives, as well as secondary materials. At present, this article has been partially drafted based on the results of archival work in Sri Lanka in 2013. A final research trip to Sri Lanka will allow me to complete the text and submit it for publication consideration by the end of August, 2019.

The proposed project will also produce a second article—a model of the kind of interdisciplinary scholarship I argue is both possible and necessary for gaining a comprehensive view of the African diaspora in South Asia. This research project will look at fictional and non-fictional narratives of Sri Lankan history that describe African military prowess. Interestingly, both Sri Lankans and European colonizers reportedly employed or conscripted Africans to fight on their behalf in battles for control of the island. To read these archival documents—which include newspaper articles, government correspondence, slave logs, interviews and memoir—I draw on training in literary critical, ethnographic and historical research practices. On the same follow-up research trip to Sri Lanka, during which I will complete research for the survey article, I will also work with several documents in the National Archives pertaining to this aspect of military history in the region. The second article will focus specifically on a remarkable incident during the Kandyan Wars, when an African named Joseph Fernando purportedly massacred over one hundred British soldiers in service to the Kandyan king. By December of 2019, I will have submitted the second article for publication consideration. Revision and/or resubmission will take place in the Spring 2020 semester.

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The last part of the project will be a public lecture at the Forsyth County Library. In October or November of 2019, I will give a talk about the African diaspora in the Indian Ocean world. At this time, I will also screen documentary footage from my previous research trip to Sri Lanka, where I interviewed Afro-Sri

Lankans and recorded a performance by one of their musical groups. My goal in offering a public lecture is to strengthen the relationship between UNG Cumming and the local community as well as to promote diversity and global perspectives. As described in my proposal, the project will also contribute in a number of ways to academics and co-curricular activities at UNG.

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1111 - Analyzing fossils in three dimensions: insights into the ancient environments of coastal Georgia

Patterson, David - Biology

Co-Applicants: Jessica Patterson (Biology)

Reconstructing major events in earth history is inherently a multidisciplinary exercise requiring the incorporation of a wide variety of data and analyses. This is particularly true for extinction events in which major groups of organisms vanished in a relatively short period of time. One such event is the late Pleistocene extinction event that occurred approximately 15 thousand years ago (Kya) in North America. Although it is clear that many groups of mammals went extinct (e.g., mammoths, mastodons, giant ground sloths), the ecological and anthropogenic factors that contributed to their extinction remain highly enigmatic. The key to this evolutionary puzzle lies in understanding the relationship between where fossils are excavated and ancient landscape features (e.g., bodies of water, vegetation patterns, local topography). An area of importance to this question lies along the Brunswick-Altamaha Canal (BAC) along the coast of Georgia, where our team has begun explorations. The primary objective of this proposal is to develop a three-dimensional reconstruction of the position of fossils on the ancient landscape around the Brunswick-Altamaha Canal. Our investigations have yielded many important insights, including: 1) fossils from this period date to ~20,000 years ago, 2) the ancient landscape consists of a complex network of different types of environments (e.g., beach, riverine, wooded, open grasslands), and 3) fossils occur in certain places, but are absent in others. These findings are particularly important because they provide a window into the ecosystem just prior to human arrival, which has been suggested as the primary driver of the late Pleistocene extinction event, both in the southeastern United States and globally. Although our team has already contributed to this important discussion, we currently lack the ability to place our finds within a highly resolved spatial framework. We therefore request funding to 1) purchase the equipment necessary to create a three dimensional reconstruction of the region and 2) continue our excavations in the summer of 2019. This project has been implemented through the UNG SCALE lab and will continue to integrate undergraduate researchers into every aspect of this project.

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1107 - Possibilities and Perceptions: Exploring Elementary Teachers' Beliefs about the "New" Nonfiction

Hartsfield, Danielle - Teacher Education

In the field of education and literacy, nonfiction books for children have received increased attention in recent years. More teachers and researchers are recognizing the importance of exposing children to nonfiction in the elementary grades, and the requirements of the Common Core State Standards, instructional guidelines adopted in Georgia and many other states, demand the inclusion of more nonfiction in the elementary school curriculum. At the same time, the genre of children's nonfiction has improved dramatically (Miller, 2013; Stewart & Young, 2018). While nonfiction once had a reputation for being "boring," this "new" nonfiction includes compelling visuals and layouts and engaging writing among other features (Gill, 2009). However, what teachers think about children's nonfiction, particularly the "new" nonfiction, is an understudied topic.

The purpose of this proposed project is to investigate elementary teachers' perceptions of the "new" nonfiction. What do teachers like and dislike about these books? What do teachers think these books can offer from an instructional standpoint? For what reasons would teachers select or reject these books for their classrooms? The project will occur within the context of a week-long professional development training for elementary teachers in Lumpkin County. Teachers will participate in a series of sessions about children's nonfiction in the elementary curriculum; each session will conclude with a written reflection produced by each participant, and these reflections will serve as the data for the study.

Studying what teachers think about nonfiction is important because research suggests that teachers' personal preferences influence their book selections (Jipson & Paley, 1991). Teachers' likes and dislikes can impact the range of authors, genres, and content to which their students are exposed. If teachers' perceptions of contemporary nonfiction books are known, then teacher educators are better equipped to educate both future and current teachers about the instructional and motivational value that nonfiction can offer, consequently encouraging teachers to place more nonfiction titles into the hands of children.

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1101 - Full Collapse: Leningraders and the End of the Soviet Union

Blackwell, Martin - History - Anthropology - Philosophy

My project examines the collapse of the Soviet Union—the greatest geo-political catastrophe of the twentieth century, according to the president of the Russian Federation, Vladimir Putin. The Soviet Union’s disappearance in 1991 handed the United States leadership of the world’s promise as well as its problems. How and why did the Russians present us with this devil’s bargain that we have struggled with now for a quarter century? What global role will today’s resurgent Russia play in the years to come? These are questions our young people need to understand as they grapple with the challenges of the early twenty-first century.

A summer away from teaching would allow me to begin extended archival research in St. Petersburg—known as Leningrad from 1924 to 1991—to examine the roots of the outcomes just mentioned. In the archives I will use my fluent Russian to search for reactions to the beginnings of Mikhail Gorbachev’s perestroika (restructuring) from 1985 to 1988. In particular, I will explore how various groups of young people—from young, upwardly mobile Communist functionaries to unofficial rock musicians inhabiting society’s fringes (all living then amid the USSR’s “window on the West”)—reacted to Gorbachev’s initial reforms.

During those years, Gorbachev began to transform a sixty-year-old totalitarian system into a partially capitalist regime. In mid-1986 he suddenly granted access to cash, loans, and foreign customers to business-minded members of the large and influential Communist Youth League. In mid-1987, he extended the same privileges to other entrepreneurs and their newly-legalized stand-alone cooperatives as well as to other new businesses operated by enterprises in the cashless state sector (which itself was presented with independence from planning in mid-1988). At the same time, Gorbachev began his glasnost (openness) campaign and thus gave young people the opportunity to question the monopolistic Communist Party and the direction it was taking their country. Did such youth seek to revitalize a world antithetical to that of Wall Street? Or did they wish to escape from the Communists’ rigid parameters, destroying in the process their civilization from within?

A Presidential Summer Incentive Award would allow for concentrated periods of work amid the files of St. Petersburg’s Central State Archive of Historical-Political Documents (the former archive of Leningrad’s branch of the all-Union Communist Party) to begin examining such suppositions. This archive holds the

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records of how those in charge of the Soviet Union's second most important city kept track of what its citizens were thinking. Working closely with their colleagues in the all-Union Committee of State Security (KGB)—the materials of which are also held by this archive—these leaders watched out for anything that might destabilize their hold on power while also trying to monitor the liberalizations of centralized control for their own purposes. (Documents from this time are available to researchers, so long as the information there is not considered to be dangerous to the physical security of those individuals mentioned in them). A close examination of the extensive surveillance documented in this archive should give me a sound understanding of what direction Leningrad's leaders saw their youth as well as their country heading in. Could the "second-world" have silently reformed itself, or was it—and the rest of us—headed for today's geo-political challenges from the start?

Supported by affiliation with my decades old-colleagues at St. Petersburg State University's Institute of History who have graciously agreed to sponsor my application for the multi-year, multi-entry "Scientific and Technical Ties" visa which will facilitate my work in the archives (as well as the city's famous Public Library containing the holdings of the glasnost-infused local newspapers from the mid to late 1980s), my summers-long project will provide the materials necessary to complete several articles for peer-review. In advance I will present my research to colleagues and students at UNG as well as to important international conferences like the November 2019 edition of the Association of Slavic, East European and Eurasian Studies of which I am a long-standing member. Ultimately, such efforts will form the backbone of a book proposal for a scholarly monograph on a period which is only now becoming the provenance of historians.

To prepare for this application I have over the past year conducted substantial background research into the period in question. I am ready now to continue meeting the research requirements for post-tenure review in the Department of History, Anthropology, and Philosophy. These involve the publication of at least two peer-reviewed articles (around 10,000 words each) every five years following tenure and/or promotion. I am UNG's only tenure-line specialist on Russia and to continue to fulfill that vital function I need this extended time away to travel and to research, analyze and begin writing up my findings.

A close, archival based understanding of how young Russians seized upon the reforms from above which quickly transformed a decades old socioeconomic structure in ways totally unforeseeable to those at the helm of the United States' main geo-political rival is a story all of us need to know to make sense of Russia's current attempts to recapture by hook or crook the position in the world it once held. An investigation into how these young people reacted to Gorbachev's liberalizations at their very beginning will also provide us with the vital insights into why the USSR collapsed entirely and thus presented today's young people of north Georgia and rest of the United States with the enviable task of managing their powerful yet still tenuous hold over the world's affairs.

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1110 - Trade Conflicts and Economic Development: A Study towards Chinese Firms? Production, Investment, and Exports under Globalization

Wu, Ruohan - Economics and Finance

My proposed research would focus on the dynamics of Chinese firms' production, investment, and exports, and examine the impact of trade conflicts on both firm- and aggregate-level growth. I have managed to acquire a large amount of unique data from the Chinese Industrial Enterprise Database, so that I can examine the longitudinal performance of observed firms between 2000 and 2007. To solve problems such as endogeneity and simultaneity effectively, I would use an innovative semi-parametric method to estimate firm-level productivity properly. I then would examine the impacts of firms' exporting, investments, and other potential factors on their production-development over time, and my panel dataset would allow me to track the long-term performance of the spotlighted Chinese firms under various circumstances. I expect to find the positive impacts of firms' research and development inputs, production innovations, and foreign capital inflows on their productivity growth.

Following my empirical findings, I would further analyze firms' joint decisions to export and invest using a theoretical model that incorporates the essential features of self-selection and learning-by-exporting theories in firm-level dynamics. I would calibrate this dynamic, heterogeneous model to replicate Chinese firm data and simulate it under different assumptions, then examine how each self-selection and learning-by-exporting mechanism would affect Chinese firms' growth. I expect to use a non-refundable entry cost into the export market to represent the self-selection effect, and another coefficient on firms' productivity growth to indicate the learning-by-exporting effect. I also would simulate the impacts of trade conflicts under different market scenarios using various industry ages, sizes, and conflict durations, then report contingent impacts from trade conflicts under these distinct conditions after determining which scenarios make the biggest and smallest impacts on the economy.

My project makes novel contributions to the field in several ways. First, I innovatively implement a semi-parametric method to estimate firms' productivity. This method corrects the simultaneity embedded in the choice of production inputs and unobservable productivity shocks. Considering the potential for idiosyncratic productivity shocks, which are contemporaneous with exports, a firm's knowledge of its own productivity would cause bias during estimation of input coefficients in the production function. Specifically, it would cause bias in the estimated coefficients of production inputs, along with inconsistent estimated coefficients of quasi-fixed inputs. This would lead to productivity estimations that lack

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precision. My innovative estimation method effectively can mitigate this problem and reveal the true status of firms' productivity.

The panel dataset I extracted provides unique information on Chinese firms' development status. It includes a broad sample of firms across multiple representative industries in China and effectively provides an overview of the Chinese economy. More specifically, the dataset allows me to track the longitudinal growth of the sampled firms. Unlike extant studies based only on cross-sectional datasets, I expect to use firms' longitudinal growth data to provide comprehensive insights into firms' long-term development under globalization, then calibrate my theoretical model.

My theoretical model would make a major contribution to extant self-selection and learning-by-exporting trade literature by allowing firm-level decisions to be continuous. Specifically, unlike current models (Aw et al. 2008; Bai et al. 2017), in which investments and exports are modelled as discrete, one-time choices, I allow a firm that has entered the export market to make investments that may vary over time and with firm size. Thus, investment is viewed as a continuous activity, the costs of which may depend explicitly on whether the firm is or is not an exporter. Furthermore, I can deliver in-depth studies on both self-selection and learning-by-exporting mechanisms. My model is expected not only to replicate stylized facts from my data, but also to provide interesting counterfactual analysis on how each mechanism affects firms' export-production dynamics.

Last, but not least, the industry-level model that I plan to develop, based on my firm-level analysis, would advance to the forefront of research on trade conflicts' impacts on dynamic economic development. The existing models on dynamic trade (Costantini and Melitz 2008; Burstein and Melitz 2011), which have studied productivity growth and redistribution after a variant of international trade, only consider changes that occur in stable industries. My model not only would consider the influence of trade conflicts in a stable industry, but also discuss how it would function in a developing industry. My study also would remain closely aligned with recent trade disputes between the US and China, as well as forecast the potential impacts of these disputes on both economies.

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1151 - Geochemical And Petrological Study Of Rock Outcrops At The Elachee Nature And Science Center

Allison, Jerry - Chemistry and Biochemistry

Co-Applicants: Katayoun Mobasher (Institute of Environmental and Spatial Analysis)

The goal of this project is to provide the first detailed investigation of the geology of the Elachee Nature and Science Center through geochemical and petrographic analyses of rock outcrops. Elachee Nature Center is a SACS/AdvancEd-accredited nature and science center located in Hall County, within a few miles of the UNG Gainesville campus. Elachee serves north Georgia students (preK-12) by providing environmental and nature programs arranged through their schools. Classes and programs are also provided for the general public. Elachee includes 1900 acres of woodland and aquatic areas. Dr. Mobasher participates annually in Elachee's Georgia Master Naturalist Series program where she teaches the participants about the geology of Georgia and conducts a field trip in the nature center. However, the geology of the center itself and its immediate vicinity have not been described in detail. Fieldwork is the basis for all geological investigations and although the rich and complex geology of the nature center is mostly covered with vegetation, there are several highly weathered outcrops within its boundaries. Samples collected at outcrops will be analyzed for elemental composition, mineral content, and texture.

Understanding the nature of the rocks at Elachee will add to our understanding of the geologic history of this region. The fieldwork and lab work associated with this project will provide an excellent opportunity for UNG student researchers to apply analysis techniques to rock samples that are heavily weathered and, unlike the ideal samples depicted in textbooks, are challenging to understand and interpret. Simply making students aware of this local geological investigation will help to foster interest in geology at UNG. The finished project will be disseminated among UNG colleagues and students as well as the educators and students at the Elachee Nature Center. The student researchers employed in this project will present results at a regional or national scientific meeting.

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1102 - Using Mutual Help Groups to Increase Feelings of Social Connectedness and Self-Efficacy in College Students in Recovery

Lamberson, Katie - Counseling

In recent years, substance use disorders (SUDs) and addiction have been recognized as a significant public health concern. According to the National Survey on Drug Use and Health (NSDUH) conducted annually by the Substance Abuse and Mental Health Services Administration (SAMHSA), approximately 49.5% of individuals aged 12 and older report some lifetime use of an illicit substance with 19% reporting use within the past year. Similarly, 24.5% of the same population reported binge alcohol use within the past month (SAMHSA, 2017). Despite these individual statistics, organizations recognize that individual use of alcohol and drugs affects individual, families, and communities at large (SAMHSA, 2018). Furthermore, amongst typical college-aged students (18-25), 57% report lifetime use of substances, 24.2% report use within the past month, and 36.9% reported binge alcohol use within the past month (SAMHSA, 2017). Although researchers have found that marijuana and prescription drug misuse is lower in college students than in their non-college peers, alcohol misuse is higher amongst college students than their non-college peers (NIDA, 2018). Each of these statistics provide evidence that substance misuse on college campuses is a concern and because SUDs impacts surrounding communities, continued misuse of drugs and alcohol can have deleterious effects on campus communities.

Mutual help groups are a cost-effective method of providing sober experiences and social support to those who are working towards obtaining and maintaining recovery (AA, 2008; CA, 2011; NA, 2010). Researchers have identified two main mechanisms of action impacting the efficacy of mutual help groups, including social and common processes. Amongst these, social processes seem to have a significant positive impact on individuals in recovery under the age of 30 (Donovan, et al., 2013). Since the advent of Alcoholics Anonymous (AA) in 1935, several types of mutual help groups have emerged. Currently, there are few supportive options for students in recovery, those supporting individuals in recovery, and those who desire recovery on UNG's campus. The purpose of this project is to conduct a needs assessment with UNG students to examine the number of students who report interest in recovery and recovery programs on campus, such as mutual help groups. The needs assessment will evaluate student perceptions of how to conduct these groups so as to ensure that they are tailored to the needs of the students. Following the needs assessment, the PI will create mutual help groups for students based on the results of the needs assessment. Following each group, attendees will complete anonymous surveys assessing some of the social processes found to have a positive impact on attendees. These surveys will assess (a) social connectedness (using The Social Connectedness Scale), (b) sober living activities (using a self-report of number), (c) craving (using the Brief Substance Craving Scale) and (d) self-efficacy (using the New General Self-Efficacy Scale). As a result of this project, I anticipate that those who attend the mutual help groups will develop stronger social connections that lead to feelings of

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belonging, which will lead to increased participation in non-drinking activities, and decreased reports of craving, leading to increased self-efficacy. These increased social connections and decreased cravings can have the potential to positively impact recovery efforts while attending UNG, which can in turn, positively impact social and academic experiences.

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1155 - Nighthawks SOAR: Early College Enrichment Program in Oconee

Womack-Wynne, Carly - Teacher Education

This project will consist of a three week program in June of 2019 that will reinforce English, Math and Science skills for students in middle grades (rising 7th through rising 9th). The curriculum will also include a class on study skills and college knowledge so that students begin to get in the frame of mind that they have the ability to attend college after high school. The purpose of the program is to provide awareness of our presence in Oconee County as many students from Clarke County do not know that the Oconee Campus is a resource to them in their post secondary career.

This program will provide a remediation of Math, Science and English to assist them with securing a firm foundation on which to build in high school by securing ESOL certified teachers to better enhance the curriculum for English Language Learners who may be in in the project population. The project will focus on middle grades and first generation college students in the Athens/Clarke County region. The program will target Clarke County Schools, but will not be limited to only Clarke County schools. The program will catch students at the most critical time of their lives for determination of curricular paths. Students in the program population will enjoy a three week summer program designed to provide early college awareness, college knowledge, knowledge of dual enrollment and state funded grant programs, as well as curricular and study skills reinforcement for participating students. The target of our recruitment will be students who are socio-economically depressed, non native speakers of English, and first year college students.

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1095 - Building A Framework For Critical Religious Literacy Of Islam & Muslim Civilizations In High School Social Studies Curriculum.

Merchant, Natasha - Teacher Education

This project proposal is spurred by years of qualitative research on how Islam is taught about in high school social studies courses. As a teacher educator, I find myself eloquently discussing the pitfalls to avoid in teaching about Islam (Merchant, 2017). However, I come up short when asked the natural follow-up question, "if not this, then what?". Shifting focus from critiquing current approaches in teaching about Islam, to building a framework and offering tools for educators to assist in teaching toward religious literacy, is the underlying objective of this project. This investigation seeks to build a robust framework for teaching about Islam and Muslim Civilizations in public high school social studies contexts. A three-pronged approach will structure this investigation: (1) a textual analysis of the most widely used textbooks covering the topic of Islam in high school social studies courses; (2) participation at the Critical Muslim Studies Conference in Granada, Spain; and (3) building a framework and accompanying toolkit for high school teachers teaching about Islam. In addition to scholarly publications discussing results of the textual analysis, as well as the teacher toolkit, the Presidential Summer Incentive Award would offer me the opportunity to build productive networks across disciplines, universities, and geographic contexts with scholars working toward critical religious literacy.

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1114 - Propelling Interprofessional Collaborative Learning Experiences

DeSandre,Carolynn - Nursing

Co-Applicants: Sharon Chalmers (Nursing); P. Clay Rowell (Counseling); Pamela Charney (Nursing); Rachael Walton-Mouw (Physical Therapy); Katie Parrish (Nursing)

Healthcare education today is experiencing a large shift in the traditional thoughts on discipline specific education based on the movement in the healthcare system to team-based collaboration to improve patient outcomes. Interprofessional education is at the forefront of higher education systems of learning, and research shows that students and faculty who actively engage in interprofessional systems of learning produce a better prepared, team oriented professional at graduation (IPEC, 2016). This project seeks Summer 2019 funding to elevate interprofessional education at the University of North Georgia by creating an IPE faculty development program and resource center designed to educate faculty on IPE core competencies; inspire faculty to incorporate IPE teaching strategies in health professions curriculum; and provide faculty with resources and mentors for IPE design, implementation and research to improve the education of health profession students at UNG and improve readiness for team-based collaborative professional care upon graduation from the University. Ultimately this will result in improved patient outcomes in the north Georgia region.

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1138 - Liberal Modernism - Book Chapter Revision

Afflerbach, Ian - English

In recent years, political scientists, historians, and literary critics have all devoted a great deal of attention to the problems facing American liberalism. My book project, Liberal Modernism, argues that American writers began to recognize these problems as early as the 1930s. The book examines how modern literature acted as a catalyst for change in American liberal culture, helping to sway liberalism from a politics of social reform during the Great Depression to a politics of stability and consensus during the Cold War. The project's structure mirrors these two phases. First, I show how modernist writers called attention to the struggle for gender and racial equality in the 1930s and 40s. In the project's second half, I track how these key issues in liberal thinking were obscured in the 1950s and early 60s, as postwar intellectuals drew upon modern literary culture to reimagine American liberalism as a politics of individual character.

Two chapters from my book project have been published by peer-reviewed journals: English Literary History and Modern Fiction Studies. I have also spoken to the editors at Bloomsbury Press and Johns Hopkins University Press, who have both expressed interest in the book. To prepare my manuscript for submission, however, I need to conduct extensive revisions of my final chapter, which examines the growing investment in political "style" among postwar American liberals by considering John F. Kennedy and Vladimir Nabokov as representative icons for political and literary liberalism.

By visiting the Nabokov Archives at the Library of Congress in Washington D.C. next summer, I could complete revisions to this chapter and finalize my book project. With that done, I could then rewrite my book proposal in order to follow up with interested university presses. Obtaining a book contract in the next calendar year would not only represent the culmination of seven years of work—it would also put me in a strong position with the Professional Development requirements for Promotion and Tenure. In addition, publishing this book with a first-rate press such as Johns Hopkins would allow me to contribute to UNG's Strategic Plan of promoting academic excellence among faculty.

Few Americans today recognize that "liberalism" only emerged as a keyword in American political discourse during the 1930s; my book explains why this word emerged and how it changed so quickly in meaning over the coming decades. My project captures liberalism's changing political culture through a wide and interdisciplinary archive of references, which includes legal case histories on reproductive reform and desegregation, Democratic Party campaign speeches, mass-market publications on social psychology, public criticism from the "little magazines," tracts on political economy, and government propaganda on moral character. Liberal Modernism expands our scholarly understanding of the politics of modern American literature, while also making midcentury American fiction an important archive for understanding liberal political theory and practice.

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1160 - Cross-border Acquisitions as a New-Normal Mechanism for Accelerating the Productivity Growth of Emerging-Market Multinationals

Guo, Wenxin - Management and Marketing

Description and Importance

This project is an interdisciplinary research at the intersection of Strategic Management and International Business. It aims to address an important question in International Management field: “What are the possible mechanisms which led to the contrasting economic and productivity growth rates between the developed- and emerging-market nations in the new-normal environment for global business in the post-financial-crisis era?”

The new-normal environment for global business has been characterized by constrained conditions for economic (Summers, 2015) and productivity growth (Gordon, 2015) in the developed-market nations, as the advanced economies have found it difficult to revert back to pre-2008 growth rates. While developed-market nations suffered from a ‘secular stagnation’ (Summers, 2014), the pace of advancement in the emerging-market nations in the post-2008 period illustrates the complexities involved with the new-normal global environment. As Mohamed El-Erian pointed out in his seminal lecture, the new-normal landscape is characterized by an “accelerated migration of growth and wealth dynamics to the emerging world” (El-Erian, 2010: 14). While the contrasting economic and productivity growth rates between the developed- and emerging-market nations is clear, the factors and mechanisms which contribute to such divergence represents an open question.

Hitt et al. (2016) provide one plausible mechanism behind these stark differences in growth when they consider the shifting focus from a multinational enterprise (MNE) that exploits parent ownership advantages to a world where MNEs explore for new capabilities in host countries. In particular, a number of observers (e.g., Uhlenbruck et al., 2003; Hitt et al., 2005; Mathews, 2006; Luo and Tung, 2007) have considered the investment activities undertaken by emerging-market firms to be largely driven by the need to engage in exploratory learning so as to upgrade their productivities and capabilities in order to effectively compete in their increasingly-contested home markets against both foreign and domestic rivals. Despite the importance of this issue, Hitt et al. (2005: 354) observe that “there is relatively little research on learning behaviors by local emerging market firms in the extant literature” and consequently call for future empirical testing. So as to bring some hard empirical evidence with respect to how emerging-market firms are able to upgrade their domestic productivities and capabilities in order to effectively compete in increasingly contentious domestic markets, our research will consider the impact on domestic productivity of different investment activities undertaken by emerging-market multinationals.

Within this need to accumulate foreign experiences to upgrade domestic capabilities and productivities, cross-border acquisitions have become the preferred vehicle for emerging-market firms’ outward FDI

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(Sauvant et al., 2009). Acquisitions can be an efficient instrument for enhancing firm competitiveness as they present learning opportunities where knowledge transfer can occur in order to achieve synergies (Greenberg et al., 2005; Maucher, 1998). Yet despite these ambitions, it is an open question as to whether and how emerging-market firms have the requisite technological knowledge and managerial processes to both learn from their foreign experiences, transfer and adjust such knowledge to their domestic context, and ultimately upgrade the productivity of their domestic operations due to the disadvantages of these firms in terms of advanced knowledge and management practices (e.g., McKinsey, 2017) and the complexities involved in cross-border business activities (e.g., Hitt et al., 2001).

Therefore in this study we will examine the mechanisms via which emerging-market firms are able to successfully learn from cross-border acquisition experiences and upgrade the productivity of their home operations in the years subsequent to acquisition activities. Building on the perspectives of asset exploration, absorptive capacity, and knowledge transfer in multinationals, we contend that emerging-market acquirers are able to assimilate the learning from foreign acquisitions so as to upgrade their domestic productivities. Employing data compiled from four different sources (Thomson SDC Platinum database, Compustat Global database, CSMAR database, and China RESSET database), we will first answer the question of “Are emerging-market MNEs generally able to successfully learn from their outward cross-border acquisition activities and upgrade their domestic-productivity as a result?” Next we will seek to explain what are important factors leading to emerging-market MNEs' higher level of learning via the cross-border acquisition activities. Namely:

(1) Do emerging-market MNEs learn more from acquiring high-tech target firms than from acquiring low-tech target firms?

(2) Do emerging-market MNEs learn more from conducting majority acquisitions than conducting minority and portfolio acquisitions?

(3) Do emerging-market MNEs learn more from acquiring developed-nation targets than acquiring other emerging-market targets?

(4) How emerging-market MNEs perform after cross-border acquisitions as compared to international alliances, domestic alliances, and domestic alliances?

The empirical findings from this study will highlight, accordingly, the mechanisms via which cross-border acquisitions undertaken by emerging-market multinationals have contributed to the complexities that were characteristic of the new-normal environment: i.e., the presence of increasing productivity and economic growth in emerging markets in contrast to evident stagnation in developed markets over the last decade.

Anticipated outcomes

I envision the outcomes specifically related to this project proposal are one or two A-level peer reviewed journal publication(s), two presentations at Academy of Management annual conference (the major international academic conference for Management discipline) and Academy of International

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Business annual conference (the major international academic conference for International Business discipline)), and a faculty seminar/conference presentation at UNG.

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1088 - Windows Operating Systems Hibernation File Forensics

Ghafarian, Ahmad - Computer Science and Information Systems

Computer forensics is the application of computer science to the identification, collection, examination, and analysis of forensics artifacts and preserve evidence from a particular computing device in a way that is suitable for presentation in a court of law. The goal of computer forensics is to perform a structured investigation while maintaining a documented chain of evidence to find out exactly what happened on a computing device and who was responsible for it. Generally, computer forensic techniques can be used for investigating crimes, policy violations, or reconstructing data. The first step in any computer forensics investigation is to decide on potential sources of data for acquisition. Generally, there are two sources of data on a machine namely, static media such as hard drive and dynamic media such as random access memory (RAM). The data stored on static media are permanent in nature and the techniques and tools for static media forensics are fairly established. The physical memory is volatile and its content is lost when the machine is powered down. Because not all data needed exists in static media, RAM forensics have become popular in recent years.

In RAM forensics, the live memory is captured or dumped as a raw image file and then memory analysis tools is used to examine and analyze the captured image file. This technique enables us to retrieve most evidential data related to an incident response. However, the problem with this approach is that the content of physical memory may not be accessible if the machine powered down after the suspicious activities. Under these circumstances, we can use the most recent development in volatile memory analysis by using hibernation file (hiberfile.sys)

Starting with Windows 2000, Microsoft introduced a power management system called “hibernation” to its operating system. This service allows the system to save the contents of its main memory and the content of CPU’s cache to disk in a file called hiberfile.sys prior to shut down. Practically, this allows the system to save the content of its RAM to the hard drive before the system is powered down. When the computer is again powered on the hiberfile.sys is restored and the system continues from the saved state. Hibernation files are good source of information for computer forensic investigators, because they can examine and analyze the content of main memory from a file while the system is down and without the need to run specialized tools on the target machine.

The importance of this project includes

To produce new knowledge or deepen understanding of the hibernation forensics.

To develop state of the art guidelines to the computer forensics investigators,

To engage our undergraduate students in meaningful research in computer forensics.

The goal of this research is forensics investigation of volatile data artifacts from hibernation file. We will specifically focus on the data related to the possible misuse of online social networking such as Facebook, Twitter, WhatsApp, etc. We will be looking at logins credentials, audio/video sharing, contacts, transferred files, email, etc. The reason for the focus of this research is that online social network

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technology is increasingly becoming popular among individuals and businesses, including criminals. Therefore, research developments in this area will arm the forensics investigators with better tools and technology in the investigation process.

In this work, we analyze some of the common online social media networking by using correlation techniques to obtain data about misuse activities related to a particular user and/or account. The analysis focuses on the cache of the targeted app and its local information from the corresponding file on hard drive. We do that by examining hibernation file that is saved on the hard drive but it is invisible and it is compressed. We will use specific tools to convert the hiberfile.sys to a memory dump format. Once it is converted, we will use tools and technologies such as Volatility to examine the content of the file.

The anticipated outcome of this research include:

Providing a systematic process on the use of tools and technologies for retrieving traces of social networking (Facebook, Twitter, etc.) activities from the windows operating systems hibernation file.

Establishing the necessary links between the retrieved forensics artifacts and possible suspect for presenting to the court of law.

Arming the practitioners with better methodologies in their digital forensics investigation.

Engaging our undergraduate students in meaningful research.

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1159 - Live, Learn, Lead Community

Winsor, Kyle - Residence Life

Co-Applicants: Victoria McDowell (Residence Life); Grant Felty (Residence Life); Candis Hill (Student Disability Services); Bryan Dawson (Psychological Sciences); Kathryn Narciso (Psychological Sciences); Darcy Hayes (Orientation & Transition Programs)

This proposal seeks an innovation grant to offset the first-time cost developing and implementing the learning community: "Live, Learn, Lead Community (3LC)". This cross-functional collaboration between the Department of Psychology, Office of Residence Life, and Student Leadership will provide an additional leadership development opportunity for students at the University of North Georgia, a state leadership institution. Geared toward first-year students, learning communities are considered a best practice for student retention, and the leadership component fits into the mission of UNG.

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1127 - Improving Learning Outcomes for Music Appreciation Students, Part II

Morgan-Ellis, Esther - Music

Within the UNG Music Department, MUSC 1100: Music Appreciation enrolls the largest number of students. In the current calendar year, 1,332 students have taken or are taking music appreciation. This course constitutes the only encounter with the academic study of music that most of these students will ever experience, and the music faculty therefore consider it to be very important. We want this course to transform the way that students listen to music and elevate their understanding of the role that music plays in their lives and in society as a whole. However, we at UNG face a significant challenge in crafting a highly effective music appreciation curriculum: the course is taught by over a dozen faculty members spread across four campuses, and most of the instructors are part-time faculty who do not often participate in faculty meetings or visit other campuses. This makes it difficult for us to have meaningful conversations about the music appreciation curriculum and our learning goals for the course. To this end, I applied for and received a Presidential Innovation Award last year that allowed me to host a day-long retreat for music appreciation faculty in February and to accompany three other instructors to the 2018 Teaching Music History Conference in Terre Haute, IN. I also facilitated online conversations throughout the year, collected and distributed course materials, and cultivated an online library of pedagogical resources.

All of these activities turned out to be highly valuable, as demonstrated by formal feedback from the instructors and by the conversations themselves. Two new ideas arose out of our months-long dialog and training experiences, and the purpose of this Innovation Award proposal is to pursue those ideas. First, our discussion about textbooks, curricular components, and learning outcomes led to a consensus that no adequate textbook exists and that we should collaborate on producing our own low- or no-cost textbook. Second, our experience at the Teaching Music History Conference left us convinced that our students would benefit greatly from active music-making in the classroom—namely, by learning to play the ukulele.

In pursuance of the former project, I have assembled a team of twelve faculty members, myself included, who will be developing a textbook over the next three semesters. I will be the project leader and write most of the prose myself, but the other eleven contributors will help to determine the structure and contents of the volume, complete research, obtain audio and visual materials, secure permissions, and write sections of the text that fall under their expertise. The primary purpose of this textbook will be to serve the students who enroll in music appreciation classes at UNG. It will be ideally suited to their needs because it will be developed with the input of their instructors and with our desired learning outcomes in mind. I will also be developing an online course in conjunction with the textbook, which will expand our ability to offer a unified music appreciation experience to off-site students. Finally, if we are

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able to publish an Open Educational Resource (OER) through UNG Press, which is our desired route, we will request that eCore consider our text and course during their next round of course revisions.

It is very important to us that this textbook cost students little or nothing. The current official music appreciation text that I have adopted on behalf of the Music Department, Stephen Cornelius and Mary Natvig's Music: A Social Experience, satisfies many of our learning objectives but costs \$125. I have been in conversation with UNG Press for several months about the possibility of publishing an OER textbook, and they have expressed enthusiastic support. However, our ability to pursue this route is based on the receipt of an Affordable Learning Georgia (ALG) Textbook Transformation Grant, for which I will be applying in January. The ALG grant will provide stipends for up to six team members, which will allow me to compensate the adjunct faculty who are most deeply involved but will not extend to all those interested in contributing. I will therefore require additional funds to support the other faculty members, for they have made it clear that they cannot work without compensation. If the grant cannot be secured, I have already been offered a contract for a low-cost music appreciation textbook by Kendall Hunt Publishing. They have assured me that they can make the book available to students for under \$40, which will satisfy our concern that the course materials be affordable. In this case, the funds provided by this Innovation Award will still be used to support adjunct faculty who will be giving up teaching opportunities in order to contribute, while royalties will be equitably distributed amongst all contributors. Whichever publishing route we take, I will require funds to compensate adjunct faculty who commit significant time to this project.

The second component of this proposal concerns the acquisition of forty ukuleles for use in music appreciation classrooms across campuses. Recent pedagogical research has highlighted the importance of leading students in general education music classes to actively make music. Ukuleles are inexpensive and a student can learn to play the instrument in minutes. Having an instrument for students to examine and experiment with will also simplify the task of communicating elementary concepts such as meter, melody, harmony, chords, and instrument construction. These concepts are simple, but can be opaque to students who do not have any background in music. We seek to make the music appreciation experience meaningful and accessible to all students, not only those who bring previous musical experience to the class. I have worked out a plan to get the ukuleles into the hands of every music appreciation student in the first two weeks of the semester. After that, they can be reintroduced as the instructor sees fit to complement the curriculum throughout the course.

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Funded

1123 - Creative Science Teaching Totes: Engaging Resources that Reinforce the Georgia Science Standards for K-8 Teachers, Designed by UNG Instructors and Students

Brantley, Susan - Biology

Co-Applicants: Julie Glenn (Biology); Alyssa Myers (Biology)

The Science Georgia Standards of Excellence guide the content for the science curriculum in Georgia public education. Teachers must come up with creative and innovative ways to teach these required topics. The process can be both time-consuming and expensive for teachers who are limited in both. To address this issue, we propose to engage with local Oconee County teachers and students by constructing "Creative Science Teaching Totes." We will design the Teaching Totes to address specific Science Standards for K-8 classrooms. The contents of the Totes will be resources and activities that aid in the understanding of a particular science topic. We plan to develop seven Totes with the following titles: Animal Adaptations; Bug Box; Coastal Connections; Criminal Detectives; Here's to Your Health; Pollution Problems; and Science Rocks. Local K-8 teachers will have the option of borrowing the boxes or requesting to have us come and teach the lessons. Activities in these Totes will be designed by us, the grant applicants, and by our students in UNG classrooms. Students in Biology 1101 and Biology 1260, non-majors' Biology courses that we, the applicants, teach, will be involved in Tote design and presentation. Biology 1101 students will create activities for elementary students to learn how to graph data, and 1260 students may teach an activity as part of a service-learning requirement for the class. Students in ISCI 2001 (Integrated Life/Earth Science), taught by Dr. Joel Aquino, will develop and may present a Geology activity for the "Science Rocks" Tote at local K-8 schools. This opportunity will allow our ISCI students to practice instructional techniques emphasized in their curriculum. The hands-on process of designing the Totes' contents, along with the potential to teach these lessons in a K-8 classroom, will deepen our UNG students' understanding of science and strengthen UNG-Oconee's connection to the community.

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Innovation Incentive Awards

Funded

1131 - Public Health Investigation of Cigarette Smoking Epidemiology in Georgia Communities and Cessation Program Outreach

Kispert, Shannon - Biology

Co-Applicants: Yu Sun (Institute for Environmental and Spatial Analysis)

Cigarette smoking continues to be the leading cause of preventable death and disease in the United States¹. According to the Centers for Disease Control, smoking leads to nearly half a million premature deaths and the loss of over 5 million years of potential life². Despite declines during the past three decades, cigarette smoking among adults in the United States remains widespread with 38 million smokers in the U.S.¹, 3 Year-to-year decreases in prevalence have been seen only intermittently recently.³ In comparison, tobacco consumption is rising in the developing world, with the greatest amount of smokers in the western pacific region.¹ There are approximately 1.1 billion smokers worldwide and 80% of these smokers live in low and middle-income countries.¹ Smoking leads to nearly 6 million deaths a year and alarmingly, over 600,000 of those deaths are attributed to second hand smoke.¹ Georgia is no exception with approximately 18% of adults partaking in tobacco consumption.⁴ We seek to perform public health studies to assess geographical tobacco use leading to identifiable socioeconomic and demographic risk factors within the state of Georgia.

Many studies focus on the biomedical research behind cigarette smoke induced pathologies, yet this only addresses half of our nation's problem. The other half of the problem remains in why. Smoking is most prevalent among American Indians and Caucasians, however this can differ by region and state.⁵ Cigarette smoking is least prevalent in persons with graduate degrees and highest among those individuals with GEDs.⁵ Poverty status is closely tied to education status, thus it is not surprising that cigarette smoke is usually highest individuals living below the poverty line.

Despite this generalized knowledge, we are still left with the question why are certain demographics more likely to smoke and how does this differ across regions? Is Georgia different from the rest of the United States or do we closely adhere to these risk factors? In addition, we know disparities exist in access to medical attention and treatment among certain groups. In order to better approach therapeutics, we must understand who these high risk group are that are more likely to smoke and less likely to be involved in routine physical health care.

Our studies will help to elucidate the answers to these questions in Georgia. We intend to use public health databases to create geospatial maps in order to identify high risk regions and demographic and socioeconomic groups in Georgia. We will use the results to perform surveys regarding tobacco use within our communities, particularly near our UNG campuses to assess our mapping results. This work will not only provide important answers as we continue to develop biomedical therapeutics for smokers but it will also provide us target demographics and communities in which to implement smoking

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information and cessation programs. We expect our results to foster state public health collaborations, strengthen UNG ties to the community, and assist in the health and education of our most at risk Georgia communities.

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1165 - Best Practice for Nursing Preceptor Training and Certification

McCraney, Paige - Nursing

Clinical nursing education relies on community partners to assist with clinical experience training by providing physical space as well as preceptors which allows the student to put didactic learning into practice. These community partners are collectively referred to as preceptors. Preceptors are practicing clinicians who agree to train students in real world clinical practices. Preceptors face challenges with their ability and willingness to precept including time constraints, lack of teaching/learning knowledge, and lack of financial incentives. At the same time, accrediting standards require that universities provide training to preceptors. The content and structure of this training is not dictated by the accrediting bodies. However, the literature does suggest that teaching/learning strategies, competency-based evaluations, and dealing with the difficult student. The literature shows a variety of ways to provide training but there are no studies that show the best practice.

The proposal for this Presidential Incentive Award is to develop a Preceptor Training and Certification program. The goals of the program are

Meet expectations of providing preceptor orientation

Assess preceptor knowledge of adult pedagogy strategies, competency-based training and evaluation, evaluation processes, and dealing with difficult students.

Provide continuing education units which participants can use for re-licensing/re-certification to enhance the preceptor incentive package

Outcomes measurements, initially, will be an analysis of learning from participants pre- and post-testing and satisfaction ratings with the time needed, content, and delivery formats. Ultimately, the hope is to increase recruitment and retention of preceptors to the program and for UNG's preceptor program to become a tool for any professional nurse desiring to become a preceptor.

The entity of the Preceptor Training and Certification program will be conducted in two phases. The first phase, for this year's Presidential Incentive Award, will focus on creating the modules and content including assessments of learning and pre- and post-testing, securing approval as a continuing education provider, and developing the on-line teaching environment that is available to non-faculty participants. The second phase, next year's application for award, will focus on implementation of the training with current preceptors, analysis of learning from pre and post-testing, and making the certification available for continuing education hours through the UNG's Professional and Continuing Education site for a fee that will sustain and support the project.

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1141 - Casper Drive Mobile Literacy Clinic

Jackson, Annmarie - Teacher Education

Co-Applicants: Cristina Washell (Teacher Education); Max Vazquez-Dominguez (Teacher Education)

Abstract

Importance:

The Casper Drive Mobile Literacy Clinic is a community-based project which was developed in order to support the literacy needs of K-5 English Learners (ELs) in an after-school setting. The project serves students who attend Riverbend Elementary in Gainesville, GA, who are living in the Casper Drive mobile park community. The overarching goal of the project is to provide additional educational support as well as help close the academic gap outside of the school setting for this population of students who typically lag behind their peers academically, based on language and vocabulary challenges. The Project Coordinator, Dr. Annmarie Jackson, supported by University of North Georgia (UNG) faculty, UNG students, and community volunteers assist with the program.

What Will be Done:

The Mobile Literacy Clinic will meet weekly on Tuesdays in the Baker & Glover Community Center, situated in the Casper Drive community, from 3:00-5:30 p.m. in fall 2019.

Along with trained UNG students and other community volunteers, UNG faculty members will offer intervention literacy support for K-5 students.

With the help of the community center coordinator, the faculty will identify students living in the community, needing academic literacy support. The faculty will share the nature of the program and ascertain parent approval for assessing and working with students. In order to ascertain the reading levels and needs of the students, the UNG faculty will individually assess the students who are participating in the project using a research-based reading benchmark.

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Using the results of the assessments, faculty and UNG students will create individualized instructional lessons based on the needs of each student. The lessons will be created using the leveled readers and additional literacy resources. Online as well as printed texts will be used to provide guided instruction in vocabulary, background knowledge, comprehension and writing. In keeping with the vision of the school system, special attention will be placed in choosing texts that appeal to the students' culture and that are related to Science, Technology, Engineering and Math (STEM).

For students identified with two or more below grade level, they will receive further screening to provide more targeted and specialized reading intervention. Shaywitz, Morris, and Shaywitz (2007) emphasize the importance of providing intervention for students who are struggling before 2nd grade. Shaywitz et al. (2007) further highlight that specific intervention in phonemic awareness, phonics, and text meaning can significantly reduce challenges for students considered 'at risk' for reading disabilities.

Student progress will be monitored throughout the program to ensure students are making systematic academic gains towards reaching or surpassing their grade level in reading.

In an effort to keep track of students' individual progress as well as the progress of the program, students' reading data will be monitored online.

Anticipated Outcome:

The goal is that through the program, the academic gap will close for these students. That is, through the systematic reading intervention, students will eventually read and write close to grade level or ultimately achieve grade level proficiency or beyond. The hope is also that students will develop a love for reading and writing and become life-long readers and writers.

With the systematic effort of the program, the hope is to also support the overall goal of Riverbend Elementary in having all their students meet their academic potential. In partnering with the school and community leaders, we can help to make a difference in the lives of these students.

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1132 - Enhancing Student and Community Engagement in a Commuter Campus Library

Rose, Rebecca - Libraries

Co-Applicants: Teresa Nesbitt (Libraries)

The project proposes to host an art exhibit in the Cumming campus library in November 2019. This show will request art from all UNG students, faculty, and high school students of Forsyth County, Georgia. A reception held during the exhibit will give the artists a chance to talk about their art with attendees. A pilot art show featuring artwork of UNG Cumming campus students, faculty, and staff is scheduled for November 2018 in the Cumming campus library. Lessons learned from hosting the pilot art show will inform the 2019 event and will then expand to include students from area high schools in Forsyth County.

The outcomes for the 2019 art exhibit are two-fold. First, a survey tool will attempt to measure the event's impact on the exhibit attendees' perceptions of the Cumming campus library. We want to see if an increased awareness of library services occurs as a result of the exhibit. In addition, we want to know if perceptions of the library become more positive with the presence of art created by the faculty, staff, and students from UNG and area high schools.

Second, the project leads will monitor increased involvement of UNG students in their scholarly activities of presenting and publishing outside of the classroom. Encouragement and information will be given to participating students about submitting their artwork for publication to Papers & Publications, a regional peer reviewed undergraduate journal, and the Chestatee Review, UNG's student literary magazine. The call for submissions will include a release for exhibited works to be posted on NOIR, the digital repository of UNG where they can be viewed virtually. Additionally, the Annual Research Conference (ARC) and the Georgia Undergraduate Research Collective (GURC) both accept student visual work. Participants in the exhibit will be encouraged to submit for all of those venues. Submitting artwork after exhibit concludes syncs up with all of the venues except for GURC, which releases their calls for submissions in early fall. We will reach out at that time to suggest to 2019 participants that they enter their artwork for GURC at the beginning of the fall 2020 semester.

Third, the students who undergo the process of submitting their art will be required to digitize their project so it can be uploaded to NOIR. This requires they identify key words and write a description of their art which serves as metadata. Students will learn that metadata greatly assists with finding their art within the digital repository. This creation of written material is a useful critical thinking exercise that will be underscored when participants talk about and answer their pieces during the art reception.

This project will benefit the Cumming campus, the library, and Forsyth County community in several ways. First, the art exhibit will raise awareness of the Cumming campus library and services it offers to students, faculty, and staff. Due to the design of the Cumming campus library, it lacks visual clues of its purpose with a noticeable absence of physical books. This appearance of the library's space masks its

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function as a place to receive research guidance and pursue scholarly activities which has created challenges in outreach to students and faculty. To encourage and inform students on the nature of services available in the library, the librarians at the Cumming campus promote the library via hosting numerous events and workshops. These events have created opportunities to strengthen on-campus relationships, initiate conversations, and generate awareness of the services provided by the librarians. Hosting an art exhibit that includes art from the Cumming campus and local communities will extend the outreach more broadly and will generate additional opportunities for learning (Lotts, M., 2016; Mullins, L. & Watkins, A., 2008; Oliver, A., 2012; Sherman, A., Watson, E., & Hervochon, G., 2017). Students from the local high schools will benefit from their inclusion in a college event and their participation will introduce them to the Cumming campus community.

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1106 - Design advanced algebra courses with significant learning experiences: Using SageMath to enhance Project-based learning activities

Ngo, Nham - Mathematics

Co-Applicants: Irfan Bagci (Mathematics)

In advanced algebra classes, the transition from problem-solving to proof-based writing creates challenges for students. The students are not motivated to excel in these courses because they do not see how the materials can be applied to their real life or other classes. In this proposed project, we aim to create project-based learning activities that provide significant learning experiences for students in these high level classes. In particular, we design mini-projects, including applications of materials from the current classes to topics from some other classes or real life experience. These mini-projects require both the understanding of abstract concepts and the ability to conduct multiple computational steps. To help students complete the mini-projects effectively, we teach students to use SageMath, a free open-source mathematics software system with capabilities of abstract and symbolic computation, as a powerful calculator to complete their mini-projects. This new form of learning also serves as a preparatory step for students in their Senior projects. A pilot study is to implement this project in the Linear Algebra and Discrete Mathematics courses at UNG.

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Funded

1136 - Defining the health care needs of Lumpkin County from a multi-stakeholder perspective using an inter-professional approach

Conner-Kerr, Teresa - College of Health Sciences and Professions

Health care in Lumpkin County is in a state of flux with the recent closing of Chestatee Regional hospital. The closing of the hospital leaves the Lumpkin County community without a centralized medical center and access to a coordinated approach to health care. The closest hospital to Dahlonega, the only incorporated town in Lumpkin County, is Northeast Georgia Health System (NGHS) which is 30 minutes or 21 miles due east. Currently, Lumpkin residents have one of the highest resident-to-physician ratios in GA (881 persons per physician compared to 489 persons per physician in Georgia overall) which further exacerbates lack of access to health care services.

Lumpkin county residents also experience a higher rate of health inequity and disparity. The number of deaths per year (adjusted per 100,000 population) in Lumpkin County (945.6) is one-fifth higher than GA as a whole (782.0) (oasis.state.ga.us/oasis/oasis/qryMorbMort.aspx). Both males and females in the county experiencing higher death rates than age-matched peers across Georgia.

During this time of transition, the College of Health Sciences and Professions (CHSP) will be working with NGHS to determine the type of health care services required to meet the needs of Lumpkin County citizens. A robust and comprehensive assessment of the health care needs from the perspective of Lumpkin County citizens is integral to this process. It is essential to involve Lumpkin County citizens so that their voices are heard and buy-in can be achieved to ensure success for a new health care system.

The proposed project will provide a mechanism to ascertain the health care needs and desired services as defined by Lumpkin County residents. Input will be solicited through a standardized survey and focus group meetings. The survey will be administered to community residents that seek care in the free community clinics provided by CHSP disciplines (Physical therapy STAR clinic and the counseling clinic). Surveys will be collected both in-person and through social media. Data from surveys will be used to design questions that will be subsequently asked in focus groups. These focus groups will include local government entities, non-profits, local businesses, churches and community members.

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Data captured through the above described mechanisms will be analyzed by an inter-professional team of faculty and students from the CHSP as an engaged learning project. Both demographic data and themes that merge from the data will be used to construct a picture of community-desired essential health care services. A citizen-centered community action plan will be developed from this data analysis that will inform the planning for a new health care system in Lumpkin County. This data will also influence future educational program development in the college. Faculty presentation and publication of collected data will be pursued to further develop a comprehensive needs assessment of the county and region. Inter-professional educational and research experiences for students in the CHSP will be integrated into this project. The impact of this project on faculty and student knowledge/perception of roles and responsibilities in other health care disciplines will be assessed.

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Funded

1097 - Evolution of the oakworms, genus *Anisota*

Diggs, Tom - Biology

Co-Applicants: Evan Lampert (Biology)

*Anisota is a genus of moths native to Georgia, with four known species occurring within the state. These insects have a significant economic and aesthetic impact to the region, especially in the summer, because they are significant defoliators of oak trees. The biodiversity of these moths was last described using physical characteristics. We propose to update the phylogeny of these important insects using modern molecular techniques. Along with UNG undergraduate researchers, we plan to collect local specimens of *Anisota* species during the summer of 2019 and obtain further specimens from museum collections. We will extract their DNA and analyze their genetic sequences. Statistical analysis of these gene sequences will allow us to build a phylogenetic tree of evolutionary relationships among these species. Because molecular analysis provides greater insight into these evolutionary relationships than analysis of physical characteristics only, we should be able to contribute significant new information about the evolution and biodiversity of these insects in the Southeastern United States.*

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Funded

1168 - Mobile Application To Measure Infant Head Motion

Castle, Kimberly - Physical Therapy

Pediatric physical therapists have faced a dramatic increase in numbers of infants with congenital muscular torticollis (CMT) since the “Back-to-Sleep” campaign was initiated in 1992.¹ Congenital muscular torticollis is a condition present in infants at or shortly after birth in which the sternocleidomastoid (SCM) muscle is tight causing neck lateral tilt to the tight side and rotation to the opposite side. Improvement of active and passive range of neck motion in lateral flexion (tilt) and rotation are some of the primary indicators of successful intervention.² In contrast to robust passive range of motion measures, pediatric physical therapists typically visually estimate the infant’s active rotation and lateral flexion range of motion in response to the therapist tilting the infant’s body away from vertical. While experts’ estimates of active neck rotation were good in infants with torticollis, neck active lateral flexion estimates did not correlate well with motion analysis measures possibly due to differences in the angle being assessed.³ The three-dimensional motion measured the orientation of the head with respect to the sternum. Due to the attachments of the SCM muscle, tightness can cause shoulder elevation to diminish the stretch between the head and clavicle in addition to the SCM muscle’s primary actions of neck lateral flexion and head rotation. Infants with limited range of motion in lateral flexion compensate at the end range with neck rotation. These motions contribute to difficulty and variability of visual analysis of isolated active neck lateral flexion.

Although measurements taken with three-dimensional motion analysis can be taken prior to compensations, pediatric physical therapists typically evaluate children with CMT as part of the Early Intervention (Birth-to-Three or Babies Can’t Wait) program in the child’s natural environment. A cost-effective, portable, valid and reliable method of measuring active neck motions and muscle length is needed to accurately assess infants with CMT. While many goniometer applications currently exist on smart phones, none have the capability to accurately measure the motion of one infant body part with respect to another infant body segment in real time as the infant is being held by an adult. In two years, the proposed project will produce a mobile app capable of measuring active infant neck motion and sternocleidomastoid muscle length for use with congenital muscular torticollis. Reliability and validity of this mobile app will be evaluated in infants with congenital muscular torticollis to characterize isolated neck active motion and muscle length. The ability to differentiate among the contributions of each factor will improve objectivity and accurate evaluation.

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Funded

1126 - Renewable Plastics: The polymerization of alkenes derived from plants, animals and fungus.

Cooper, Jeremy - Chemistry and Biochemistry

Co-Applicants: Eric Huddleston (Chemistry and Biochemistry); Jim Konzelman (Chemistry and Biochemistry); Clarke Miller (Chemistry and Biochemistry); Carl Ohrenburg (Chemistry and Biochemistry)

Abstract:

Derived primarily from oil, polymers are essential to maintaining the high standard of living enjoyed by many. With rising concern over the long term supply of petroleum, alternative sources of raw materials are being sought for the synthesis of polymers. Renewable resources are necessary to sustain the relentless demand for polymers.

This project proposes to employ metal carbene catalysts to polymerize alkenes from natural sources.

Terpenes contain double bonded carbon atoms, known as olefins and alkenes, which makes them excellent candidates for the synthesis of polymers, and thus sustainable replacements for hydrocarbon monomers currently obtained from petroleum.

Olefin metathesis chemistry provides the mechanism by which the natural terpenes containing multiple double bonded carbon atoms will be polymerized. Metathesis of alkenes results in an exchange of the carbon atoms on two alkenes while preserving the double bond. (Figure 1)

Figure 1. The Olefin Metathesis Reaction

Intense study and refinement of the metathesis catalyst led to the synthesis of highly defined catalysts systems containing metal carbenes, carbon atoms double bonded to metals, for which Schrock, Grubbs and Chauvin were awarded the Nobel Prize in Chemistry in 2005. The new catalysts no longer contained lewis acids and eliminated the competing addition reactions, allowing for high yields in the metathesis of acyclic alkenes.

The acyclic diene metathesis (ADMET) polymerization is an equilibrium step condensation reaction driven by the removal of a small molecule, such as ethylene. As such, the reaction must be at or near 100% conversion to produce a high molecular weight polymer.

Figure 2. Acyclic Diene Metathesis (ADMET) Polymerization

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The chemical and physical properties of these catalysts can be varied by modifications to the ligands. The reaction of acyclic alkenes has been limited sterically by the number of substituents on the double bond. Recently, Grubbs' second generation metathesis catalyst has been shown to successfully metathesize tri- and tetra-substituted alkenes, making it the ideal choice for the metathesis of naturally occurring terpenes and fatty acid esters.

Proposed Research:

This proposal focusses on the investigation of successfully producing polymers from renewable sources of alkenes via metathesis chemistry. There are three areas open for investigation: 1) the monomers, 2) the catalyst, and 3) the biochemistry, with the results offering several opportunities to generate new teaching laboratories for several chemistry courses- organic, inorganic, and biochemistry.

The initial research will evaluate different sources of naturally occurring alkenes from plant, animal, and a genetically modified fungus. We have identified several sources of naturally occurring alkenes for the initial investigations. Each meet the criteria for an acyclic alkene that can undergo metathesis via ADMET chemistry, and will be studied with commercially available catalysts, specifically Grubb's second and third generation catalysts for the production of polymers. Once the process is optimized, it can be used as the foundation for additional research into other natural products as monomers.

1. Monomers:

Plant based alkenes including: unsaturated fatty acids, ocimene from fruits, isoprene from plants, and b-carotene from carrots. Future work: Identifying additional natural sources of monomers, specifically those requiring only minimal modification is an additional goal associated with the future work of this project.

Animal sources of alkenes include shark liver oil, omega-3 and omega-6 fatty acids, and vitamin A.

Fungal source of alkenes from a genetically modified yeast: trans-B-Farnesene.

2. Catalysts:

The synthesis and modification of derivatives of Grubb's second and third generation catalysts will provide an opportunity to tailor the catalysts to meet the needs of various monomers, solvents, and

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temperatures. Focusing on improvements that are functional group, solvent and temperature tolerant by exchanging ligands and testing for activity.

3. Biochemistry:

Demonstrating the viability of producing useful chemicals from renewable sources has already resulted in genetic modification of organisms to produce the desired products; trans-B-farnesene is a new product that is produced commercially from modified yeast through the fermentation of sugars. Investigations into genetically modifying algae to produce useful hydrocarbons from photosynthesis is another opportunity for investigation associated with this chemistry.

4. Education:

Another goal of this project is to incorporate the results into teaching labs. There is great potential to have laboratory experiments for Organic and Polymer Chemistry courses based upon this research that are focused on the isolation, synthesis, and modification of the organic monomers, followed by the metathesis polymerization. In addition, the synthesis of the organometallic carbene catalysts is a good fit with an Inorganic chemistry lab.

Recent developments in olefin metathesis catalysts has provided an opportunity to polymerize sterically encumbered alkenes that would not have been possible with the prior art. Among these olefins are several naturally occurring and renewable monomers, opening the possibility to synthesize polymers from renewable sources. This area of research will provide opportunities for students in organic, inorganic, and biochemistry; studying sources of renewable monomers, generating new organometallic catalysts, and potentially genetically modifying algae to produce desired compounds from carbon dioxide via photosynthesis.

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1093 - #OneUNG Crowdfund Platform

Perez, Alberto - Alumni Relations

The #ONEUNG Crowdfund project intends to create an online platform that will promote fundraising efforts from any constituent affiliated with the University of North Georgia (UNG) – faculty, staff, students, parents and alumni. The platform will be managed by the UNG Foundation’s Advancement Staff and will provide a channel for collaboration University-wide - promoting valuable initiatives from various UNG departments, colleges and organizations. Receiving this award will allow the UNG Foundation to purchase a crowdfund platform service that will allow us to implement crowdfunding initiatives throughout the year and at scale – crowdfunding is a best practice in fundraising that is executed by a majority of higher education institutions worldwide.

The messaging behind #ONEUNG is one of unity in diversity. Promoting a message of togetherness while highlighting diverse causes through fundraising campaigns, will have a positive impact on UNG’s branding, overall. The sense of pride of being recognized, achieving a goal and fully funding a project will go a long way as this newly consolidated University finds its identity.

The #ONEUNG Crowdfund platform's main goals are to:

- 1. Leverage the enthusiasm of UNG's constituency by highlighting and supporting diverse university-wide causes through streamlined online fundraising efforts.*
- 2. Increase UNG's circle of donors by providing online tools to project managers so they can promote their fundraisers through peer-to-peer solicitations.*
- 3. Provide UNG with relevant and timely data on what traditions and programs are important to the UNG community, which will, ultimately, help us frame UNG's new identity.*

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Funded

1089 - Saving the snakes: a regional investigation of environmental variables influencing the spread of Snake Fungal Disease

Patterson, Jessica - Biology

*An emerging threat to free-ranging snake populations in the eastern United States is becoming increasingly more severe and fatal. Snake Fungal Disease (SFD) is caused by a naturally-occurring fungal pathogen, *Ophidiomyces ophiodiicola*, that acts as an opportunistic invader and results in a high death rate (Allender et al., 2018). Although this disease has been noted in populations in the southeastern US, no surveys have been completed in northeast Georgia (Lorch et al., 2016). This has created a gap in the data for occurrence of SFD in the southeast, and more information is needed to understand if the disease is truly absent from northeast Georgia or if the area maintains an environment that inhibits the spread of this pathogen. There are two primary objectives of this proposal: 1) survey local snake populations for the occurrence of Snake Fungal Disease in order to determine if management and conservation efforts need to be focused in this region, and 2) sample environmental variables to investigate the types of local environments that harbor, or do not harbor, this disease. Several research sites have been selected in Hall County and Lumpkin County, Georgia as relatively undisturbed areas that represent the ideal place to investigate snake species in northeast Georgia. This will provide vital data on the potential occurrence of SFD in these populations, as well as environmental factors that could potentially be related to the presence or absence of this disease. Data associated with this project will be combined with that collected by the Georgia Department of Natural Resources (GADNR), U.S. Fish and Wildlife Service (USFWS), and The Orianne Society (a nonprofit organization that is dedicated to conserving amphibians and reptiles) to create management and conservation plans in the eastern United States. Funding for this project will greatly enhance my ability to mentor undergraduates and provide an opportunistic avenue of research for UNG. This project will be completed in five primary phases: 1) the collaboration of students and faculty in the biology department, the Institute for Environmental and Spatial Analysis (IESA), and the Environmental Leadership Center (ELC) to create and publish maps used for data collection, 2) the methodology period where I will disseminate information to students and faculty regarding snake identification, field surveys, and techniques for swabbing snakes for SFD, 3) the sampling period for SFD, 4) the SFD sample analyses and mapping of SFD occurrences throughout the region, and 5) 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 both at UNG and their future scientific endeavors.*

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Funded

1096 - Trauma Competency Workshop for Counselors-in-training

Land, Laura - Counseling

In order to improve first year counseling master's student performance, as well as to enhance training in the Department of Counseling to better serve the needs of our counselors and the community, this project will implement an intensive training curriculum during the Summer of 2019, prior to counseling student's internship experience in their third year where they are working in various mental health counseling sites providing counseling services to the public. The training intensive will span two consecutive weekends. Student's levels of self-efficacy, trauma competence, emotional regulation, and knowledge will be assessed.

Trauma is ubiquitous (Beck & Sloan, 2012; Kilpatrick et al., 2013). Approximately 89.7% of U.S. residents reported experiencing at least one post-traumatic stress level event (Kilpatrick et al., 2013) as defined by the Diagnostic and Statistical Manual of Mental Disorder (5th ed.). Furthermore, trauma exposure has been recognized as a high priority public health risk (Beck & Sloan, 2012; Cook & Newman, 2014; U.S. Department of Health and Human Services, 2003). Events including war, devastating natural disasters, and the terrorist attacks of September 11th have increased societal awareness of trauma and the potentially adverse psychological and physical consequences of exposure. This heightened awareness is expected to increase the number of trauma survivors recognizing the effects of trauma, and in turn, increase the proportion of individuals seeking mental health services. Since counselors working in various mental health settings will most likely be working with survivors of trauma, it is imperative that their education include the necessary information leading to a foundation of competence (Layne et al., 2014). Although not all counselors who encounter trauma-related issues are expected to have a specialty in trauma work, there is an increased need for trauma-informed care as counselors-in-training encounter trauma-exposed populations in their pre-service training. Additionally, knowing the statistics, we know that we will most likely have trauma survivors sitting in our classrooms. Using the model of a trauma-informed approach (McCann & Pearlman, 1990) to shape this course is unique and groundbreaking. The study of traumatic events often elicits strong emotional reactions in both students who have experienced traumatic events, and those who have not. As counselors-in-training it is imperative that students learn how to tolerate and work with this intense affective reaction and to deal with their own. The trauma-informed approach will provide a means for students to privately and publicly explore their own emotional responses to evocative material in ways that are neither pathologizing nor shaming. A trauma-informed approach provides a holistic, person-centered approach, incorporating the biological, psychological, cultural, and social impact of trauma on an individual (Substance Abuse and Mental Health Services Administration [SAMHSA], 2014b). Trauma competence requires students to possess unique knowledge, skills, and attitudes. Counselor educators must also consider the unique nature of the

topic of trauma and the pedagogical approaches they use to effectively facilitate student learning as there are unique pedagogical challenges.

Presidential Incentive Awards

The need for the proposed study arose out of the belief system of counseling professionals and outcomes assessing counselor self-efficacy/competence, emotional regulation, and knowledge, may serve as an initial framework to support the professional development and training of counselors by providing empirically derived information to improve pedagogy. Findings may in turn aid in the further refinement and implementation of trauma training and curriculum.

Presidential Incentive Awards

Innovation Incentive Awards

Funded

1134 - Investigation and characterization of *Lavandula angustifolia* essential oil

Quarles, Brynna - Chemistry and Biochemistry

Co-Applicants: Nicole Hollabaugh (Chemistry and Biochemistry)

As the use of essential oils for natural home remedies becomes increasingly ubiquitous, it is of interest to better understand both the quality and potential hazards of these oils, which may be applied topically and/or ingested. Lavender oil, reportedly one of the most popular oils¹⁻³, will be the focus of this research. Although it is comprised of over 100 organic compounds, some of the major constituents in lavender essential oil include linalool, linalyl acetate, camphor, α -pinene, camphene limonene, among others, which contribute in various ways to properties of lavender oil. Percent composition of lavender oil can vary from sample to sample and those compositions can be analyzed using various methods (Figure 1, see proposal).⁴⁻⁶

In this research, we will analyze 25 – 30 brands/samples of lavender essential oil using FTIR spectroscopy, GC-MS, ICP-MS, and refractometry. After data collection, we will use a chemometrics statistics approach to evaluate the data sets. The oil samples chosen for analysis will vary in price, brand and source of availability, and growth region of the lavender plant from which it was obtained. The variation in samples will allow for comparisons of the oils from several perspectives, both of chemical and consumer interest. The project will culminate with a manuscript for submission to a peer-reviewed journal and student presentations at a chemistry conference.

Presidential Incentive Awards

Innovation Incentive Awards

Funded

1105 - Providing Students with Disabilities Access to the Lab Activities in Introductory Computer Science Courses

Yang, Jianjun - Computer Science and Information Systems

When students are taking introductory Computer Science courses, the lab activities are critical. Tradition text based labs are accessible for average students. However, the traditional labs are difficult to be accessible for students with disabilities. According to the statistics over 2015 and 2016, the number of students with ages 3–21 receiving special education services was 6.7 million, or 13 percent of all public school students. Among students receiving special education services, more than 1/3 had specific learning disabilities or visually-impaired disabilities. "Specific learning disability" means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell or to do mathematical calculations. "Visual impairment," also known as vision impairment or vision loss, is a decreased ability to see to a degree that causes problems not fixable by usual means, such as glasses. Some also include those who have a decreased ability to see because they do not have access to glasses or contact lenses.

When we are focused on colleges, there are about 770,000 students with disabilities (SWD) enrolled in 2- and 4-year institutions [2]. No matter if their majors are Computer Science, STEM or other disciplines, most of them are enrolled in introductory Computer Science (CS) courses. The introductory CS course are critical not only because they are foundation for other Computer Science courses, but also because they are fundamental for students' other professional courses in their disciplines even for their future career. However, the current labs at the University of North Georgia (UNG) are not fully accessible for students who have disabilities. Providing multimedia based and visual logic block based activities and laboratory materials to our students with disabilities will allow them to enjoy and understand the subject and increase their interest in introductory CS course and further lead them into other courses offered in their disciplines. This project has the potential for improved recruitment and retention of SWD in these fields.

I propose two approaches to make our introductory CS courses more accessible to these students. One is to develop multimedia based lab activities to help students with special learning disabilities learn. The second is to design visual logic block based lab components to make lab practice accessible to students with visually-impaired disabilities.

The development needs students to be involved. I am the advisor and supervisor of the coding warriors club in Gainesville, which is the solo coding club in Gainesville. I would lead students in this club to work on relevant projects regarding this proposal.

Presidential Incentive Awards

The main content of this proposal will be to make accessible lab activities for students with the above disabilities and lead talent students in coding warriors club to work on the implementations. The main contributions includes two aspects. 1. Produce accessible lab materials to help students with special learning disabilities or visually-impaired disabilities succeed in learning introductory Computer Science courses. 2. Enhance programming abilities of the students in coding warriors club and make them more competitive for real implementations.

Presidential Incentive Awards

Innovation Incentive Awards

Funded

1163 - SIVRA-35 training for the Threat Assessment Team

Paul, Alyson - Dean of Students

Co-Applicants: Simon Cordery (Student Counseling); Justin Gaines (Public Safety); Ron Graves (Human Resources); Chaudron Gille (Academic Affairs)

UNG maintains a Behavior Intervention Team (BIT) to intervene with students in crisis or experiencing difficulties and assist with accommodations or resources to help the student be successful. However, there is a need to compose a separate Threat Assessment Team (TAT) to review and assess potential threats to the campus community and to make recommendations based on validated, objective assessment. The TAT strategy will require multiple members of the UNG staff community to be trained to facilitate the Structured Interview for Violence Risk (SIVRA-35) with students, faculty, or staff who may have exhibited behavior or communication that is concerning or potentially threatening. Having SIVRA-trained members of the TAT will allow persons of concern to be interviewed by a trained campus professional. This campus-based assessment will improve the efficiency of the evaluation process and the credibility of the decision-making process for the University.

This Presidential Innovation Grant will be used to pay up to half of the cost to host a SIVRA-35 training on a UNG campus in order to maximize the number of staff that can be trained. To send one per to a SIVRA training, it costs approximately \$4000 plus travel costs. UNG Police, the Division of Student Affairs, and the Human Resources Department will assume the remaining cost for the training.