

2024 McKnight Annual Fellows' Meeting and Research & Writing Conference

February 8-11, 2024
Tampa Airport Marriott Hotel
4200 George J. Bean Parkway
Tampa, FL 33607

The Scholar's Imperative: Effecting Positive Change in a Dynamic World

*Lawrence Morehouse, Ph.D., President and Chief Executive Officer
Florida Education Fund
Presiding*

THURSDAY, FEBRUARY 8, 2024

To assist you in finding meeting rooms, we include a map of the Tampa Airport Marriott on the inside cover.

12:00 p.m. ~ Grand Ballroom Foyer
Registration

1:00-2:20 p.m. ~ Pinellas Room

WORKSHOP I: Strategies for Effective Writing

Numerous students, faculty members and researchers struggle to transfer the ideas in their heads onto paper or to a computer. Recognizing that many scholars have not been taught effective research-based writing techniques, we strive in this session to provide proven approaches to producing polished academic writing. In addition to presenting various writing models, the workshop includes methods for personalizing the traditional writing process and questions to answer to clarify ideas. The information is designed to equip participants with a systematic approach to composing coherent scholarly writing.

• *Dr. Vernetta Mosley*, Writing Coach, Editor, Consultant, Chrysalis Consulting LLC

2:30-3:30 p.m. ~ Pinellas Room

WORKSHOP II: Seven Steps to Financial Fitness

Like any long-term worthwhile pursuit, taking the steps to financial fitness isn't easy. It takes energy, determination and the discipline to obtain and hone the necessary skills over time. This session will introduce the seven steps necessary to begin the journey toward a secure financial future. The best part of these seven steps is that they apply to anyone, regardless of how old you are, where you come from, or how much money you earn. These principles work because they are proven to help individuals optimize their savings, which can then be used to meet current financial needs and build long-term wealth.

• *Dr. Miranda Reiter, CFP*, Assistant Professor, School of Financial Planning, Texas Tech University

THURSDAY, FEBRUARY 8, 2024

CONCURRENT WORKSHOPS

3:45-5:15 p.m. ~ Pinellas Room

WORKSHOP III: The Role of Comprehensive Examinations: Strategies for Success

By examining the role of comprehensive examinations, this session will present students with strategies to prepare for “comps” while completing their doctoral coursework. It also will help students establish confidence in their ability to prepare for the examinations and pass them on the first attempt.

- *Dr. Iraida V. Carrion*, Associate Professor, School of Social Work, University of South Florida

Sarasota Room

WORKSHOP IV: Best Practices for Writing the Prospectus and Dissertation

This workshop is divided into two parts:

Part I focuses on connections between coursework, research interests, and development of the dissertation proposal; selection of dissertation committee chair and other committee members; the structure and format of the dissertation proposal; and strategies for successful development of the dissertation proposal.

Part II offers innovative strategies for preparing to conduct dissertation research; structure, format, and development of dissertation chapters; and dissertation defense.

- *Dr. Bernd Reiter*, Latin Americanist and Professor, Department of Classical and Modern Languages and Literatures, Texas Tech University, and Fulbright Distinguished Chair of Public Policy, Brazil, 2021-22

6:00-8:00 p.m. ~ Grand Ballroom

OPENING SESSION

- ♦ Dinner
- ♦ Introductions by MDF Graduate *Dr. Victor Kasper*
- ♦ Welcome & Purpose: *Dr. Lawrence Morehouse*, FEF President & CEO
- ♦ President’s Awards: *Dr. Lawrence Morehouse*
- ♦ Dr. Israel Tribble Award for Outstanding Alumni Support: *Dr. Lawrence Morehouse*
- ♦ Russell V. Ewald Award for Academic Excellence: *Lyra Logan, Esq.*, FEF Executive Vice President & General Counsel
- ♦ Dr. Carl Crawford Award for Outstanding Pre-College Support: *Lyra Logan, Esq.*
- ♦ Introduction of the new McKnight Fellows
- ♦ Introduction of the new NanoSTEM Fellows
- ♦ Introduction of Exhibitors
- ♦ Book signing by *Dr. Chalane Lechuga*

FRIDAY, FEBRUARY 9, 2024

7:30 a.m. ~ Grand Ballroom Foyer
CONTINENTAL BREAKFAST

8:30-8:50 a.m.

OPENING SESSION ~ Grand Ballroom

• *Dr. John M. Davis*, Senior Associate Dean for Research and Associate Director, Florida Agricultural Experiment Station, University of Florida

CONCURRENT RESEARCH PANELS

In the following panel discussions, MDF Fellows will present their research on issues important to their disciplines and receive professional public critique from discussants familiar with the work.

9:00-10:30 a.m. ~ Pasco Room

Panel 1 — Business

Navigating Dynamics: Exchange Rates, Social Entrepreneurship, and AI in the Creative Sphere

• *Andrew Bernal*, Panel Chair, FIU (2019), Economics, “*The Impact of Exchange Rate Volatility on International Trade: An End-Use Level Analysis*”

Much has been written regarding the relationship between exchange rate volatility and international trade. Using the gravity model, recent investigations suggest an insignificant impact of increased exchange rate risk on the volume of aggregate trade. These past approaches have ignored one major reality: while the effect of exchange rate volatility on aggregate trade may be statistically insignificant, this result may be driven by heterogeneity, as varied sectors of trade may respond differently to exchange rate shocks. Using an instrumental variable approach that is new to this literature, as well as disaggregating trade by end-use category, it is demonstrated that a one standard-deviation increase in exchange rate volatility may lead to a 20-35% decrease in bilateral trade, depending on the end-use category specified. Such an increase in exchange rate volatility is associated with a number of currency crises faced by numerous economies in recent history. This study uses end-use level data from 1996-2015, consisting of 1,431 country-pairs.

• *Michael Burrage II*, FSU (2023), Marketing, “*The Artificial Artist: Understanding How Consumers Perceive Artificially Creative Influencers*”

Continuously, industries once considered purely human endeavors are now being disrupted by Artificial Intelligence (AI), including creative endeavors such as writing music. Concurrently, computer-generated Virtual Influencers (VI) labeled as “musicians” have gained millions of followers on social media and music streaming platforms while promoting AI-composed music. While existing literature explores AI and VIs separately, this paper examines consumer perceptions of the interaction of AI-created music and its promoters. In an upcoming 200-participant study, individuals evaluate VI musicians, assessing their authenticity, trustworthiness, and perceived quality as mediators of buying intent, engagement, and sharing likelihood. This work contributes to the existing literature on consumer responses to social media, artificial intelligence, and virtual influencers.

FRIDAY, FEBRUARY 9, 2024

9:00-10:30 a.m. ~ Pasco Room

Panel 1 — Business (Cont.)

Navigating Dynamics: Exchange Rates, Social Entrepreneurship, and AI in the Creative Sphere

• *Andrea Hodge*, FSU (2020), Management, “*Symbolic Strategies for Social Change: How Entrepreneurs Challenge Inequality Through Meaning-Making*”

Social entrepreneurship combines profit and social objectives to address social issues through innovative solutions. This study examines how entrepreneurs employ social symbolic strategies to directly challenge inequality. The purpose of the study is to extend theory in the areas of social entrepreneurship and social symbolic work. Using qualitative content analysis, the study analyzes 160 interviews with contemporary visual artists from two podcasts. The sample contains predominantly minority women, Black, and queer artists openly engaged in addressing inequality. Coding draws on Lawrence and Phillips’ framework of social symbolic work. Preliminary social symbolic strategies identified include affirmative identity work, boundary work distinguishing appropriation, and emotion work motivating change. Further analysis will reveal other social symbolic techniques used by entrepreneurs to pursue collective empowerment. In addition to contributing to theory, identifying these strategies can be of practical value to social entrepreneurs leveraging social symbolic work for equality.

Discussants (15 minutes)

- *Dr. Daniel Acheampong*, Assistant Professor, Department of Accounting, Florida Gulf Coast University

- *Dr. Vivek Bhargava*, Associate Dean, Faculty and Administration and Professor of Finance, Lutgert College of Business, Florida Gulf Coast University

- *Dr. Mark C. Dawkins*, Professor of Accounting, University of North Florida Coggin College of Business, and President, American Accounting Association

Audience – Q&A (10 Minutes)

Sarasota Room

Panel 2 — Engineering

Innovations in Engineering: From Underwater Mapping Drones to Self-aware Mentoring and Semiconductor Workforce Development

• *Antonio Diaz*, Panel Chair, UF (2018), Mechanical Engineering, “*The Bathy-Drone: An Autonomous Uncrewed Drone-Tethered Sonar System*”

A unique drone-based system for underwater mapping (bathymetry) was developed at the University of Florida. The system called the “Bathy-drone,” is comprised of a drone that drags, via a tether, a small vessel on the water’s surface in a raster pattern. The vessel is equipped with COTS sonar and a computer that logs data onboard. The system provides georeferenced isobaths (underwater topography), bottom-hardness, and sonar imagery. Ground truth data was acquired with an RTK GPS unit to measure the location of a 5-acre pond bottom at over 300 locations. An assessment of the accuracy and resolution of the Bathy-drone was measured by comparison to the ground truth data. Advantages of the Bathy-drone include the ability to initiate surveys from the land without the need for a boat. The system is also inexpensive, small, and lightweight, making transport convenient. The Bathy-drone can raster 0-12mph, compensating for swift currents, and, without propellers underwater, the attached vessel does not snag on floating vegetation.

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9:00-10:30 a.m. ~ Sarasota Room

Panel 2 — Engineering (Cont.)

Innovations in Engineering: From Underwater Mapping Drones to Self-aware Mentoring and Semiconductor Workforce Development

• *Jasmine Smith*, UF (2019), Engineering Education, “*The State of STEMM Graduate Student Researchers’ Self-Awareness*”

Self-awareness is an umbrella term that encompasses concepts like self-reflection, insight, and self-efficacy, among others. These terms independently contribute to the overall self-awareness of an individual. For a graduate student researcher, their level of self-awareness can influence the manner in which they engage with their research and interact in their research relationships. For those in mentoring relationships, these interactions can be negatively impacted if there is a lack of self-awareness for one or more parties. To increase an individual’s self-awareness, practices in self-reflection provide the opportunity to gain insight, which leads to a deeper understanding of a circumstance or individual. However, there is limited research in the field of engineering education that considers self-awareness as an aspect of research mentoring relationships, where graduate students operate in the role of mentor, mentee, or both. The goal of this work was to assess the current state of STEMM graduate student researchers’ self-awareness and how their self-awareness might influence their mentoring relationships.

Discussants (15 minutes)

- *Dr. Md Shohel Rana*, Assistant Professor, Department of Computing & Software Engineering, Florida Gulf Coast University

- *Dr. Claude Villiers*, Professor, Whitaker College of Engineering, Florida Gulf Coast University

Audience – Q&A (10 Minutes)

Lee Room

Panel 3 — Environmental Science Engineering and Biological Sciences

Restoring Coastal Vitality: Insights from Bay Scallops and Oyster Reefs

• *Shelby Thomas*, Panel Chair, UF (2023), Environmental Science Engineering, “*Bay Scallop Restoration in Tampa Bay; Evaluating Larval Release and Parentage Analysis*”

Research suggests potential recruitment of Bay scallops (*Argopecten irradians*) limitations may exist within Tampa Bay, calling for more targeted restoration approaches. Previous restoration efforts included using caged adults and releasing settlement competent larvae. Scallop larvae were released on five occasions in Tampa Bay, each spawn was split to create a low (25% of the total spawn) and high (75%) density treatment. A third control site with no release was also monitored at each release location. Spat collectors were used to quantify bay scallop recruitment, and genetic parentage analysis was used to reveal the contribution of restoration to the overall population. This analysis was used to determine the number of spawning broodstock and whether spat (from recruitment collectors) or adults (from transect surveys) originated from hatchery broodstock. Scallops collected revealed no apparent difference between density treatments. Hatchery-identified scallops were identified at each release site. Further genetic analysis will aid in assessing scallop distribution, parental contribution, and effective spawning population size.

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9:00-10:30 a.m. ~ *Lee Room*

Panel 3 — Environmental Science Engineering and Biological Sciences (Cont.)

Restoring Coastal Vitality: Insights from Bay Scallops and Oyster Reefs

• *Albert Wynn*, FAMU (2023), Environmental Science Engineering, “*Oyster Reef Habitat Restoration – Quantifying the Effects of Nature Assisted Oyster Reef Restoration on Wave Attenuation, Seagrass Propagation, and Nutrient Level Removal in the Gulf of Mexico*”

With the acceleration of climate change, population growth, increase in agricultural production and other anthropogenic effects have impacted our coastal ecosystems. The Gulf of Mexico is home to a diverse biome that provides ecosystem services such as storm surge protection, erosion control, and habitat for numerous species. Oysters, being a keystone species, are center in the overall health of the fishery and provide these services which provide resilience to our coastal regions while at the same time removing nutrients from the water column as filter feeders. Part of this effort is to bring to the forefront just how much of a service oyster habitat restoration provides by quantifying water quality management, wave attenuation, and seagrass propagation as essential services they provide. This effort will allow us to evaluate the efficiency of successful oyster restoration with the use of a novel nature-assisted method in oyster reef dome technology.

Discussants (15 minutes)

- *Dr. Jorge Torres*, Associate Professor, Department of Bioengineering, Florida Gulf Coast University

- *Dr. Micheal Uduebor*, Visiting Assistant Professor, Department of Bio, Civil, and Environmental Engineering, Florida Gulf Coast University

Audience – Q&A (10 Minutes)

Pinellas Room

Panel 4 — Higher Education

Preparing Future Leaders: Critical Hope, Doctoral Journeys, and Change Initiatives

• *Darius Robinson*, Panel Chair, FSU (2023), Education, “*Undergraduate Black Men in Leadership Roles: A Critical Phenomenological Study in Understanding Leadership to Actionize Critical Hope*”

With the state of Black men having a tumultuous relationship with U.S. societal structures, strong leadership has been imperative to advocate for their communities. Black men leaders have shown “critical hope,” moving for direct and critical action that allows them and Black communities to envision a more just, equitable, and fair future. Due to regular “hope” being situated in privileged, hegemonic, and somatic norms, Black men must be active in creating this future and have enough power to do so through leadership. Through visions of communal, collectivist-based approaches, Black college men utilize leadership roles in clubs, fraternities, student organizations, and community service opportunities to create a future for those they serve. The theoretical basis of this study pulls from asset-based, critical theories, such as critical hope and culturally relevant leadership learning, to amplify the voices of Black college men. Using a critical phenomenological study design, the study will examine how leadership roles allow Black college men to actionize critical hope.

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9:00-10:30 a.m. ~ *Pinellas Room*

Panel 4 — Higher Education (Cont.)

Preparing Future Leaders: Critical Hope, Doctoral Journeys, and Change Initiatives

• *Camille Coffie*, Physics, “*Journey to a Ph.D. Through the Lens of Black Women in Physics*”

This study examines the experiences of Black women in physics graduate programs to identify priorities for departmental change initiatives to remove structures that keep out and/or push out Black women. Black women represent the lowest percentage of students in physics graduate programs and often contend with stressors like microaggressions, bias, and stereotype threats that impede their success and well-being. Employing the Photovoice research method, we collected photos from 13 participants that are either currently in or recently attended graduate physics programs at U.S. institutions. The photos represent their journey in their physics Ph.D. programs. We conducted both individual and focus group interviews to allow for elaboration and consolidation of common themes amongst the participants. Our goal is to offer the participants the opportunity to provide the strategies and recommendations they deem most effective in supporting Black women in physics programs from their own personal experiences and voices.

• *Gabrielle Haggins*, Education, “*Advising Black Doctoral Women: Using A Professional Development Program to Explore the Systemic Disadvantages in Doctoral Advising*”

The increasing presence of Black women in doctoral programs indicates a vested interest in pursuing advanced degrees, though many continue to be invited into doctoral spaces without critical support. Challenges with advising, a primary relationship within the doctoral process (Bertrand Jones et al., 2013), indicates the systemic disadvantages embedded into institutions and endured by Black women throughout academia. Our scholarship centers on the realities of Black women’s doctoral journeys with advising and the influence of feedback on their paths. Slay and colleagues (2019) noted the relevance of faculty-student engagement within the doctoral process. Evident in this work are practices that impede these individuals’ access to important advising functions as well as the opportunities that exist when approaches are culturally aligned for Black women (Bertrand Jones et al., 2013).

Discussants (15 minutes)

- *Dr. Terrance Burgess*, Assistant Professor, Department of Teacher Education, Michigan State University

- *Dr. Turhan Carroll*, Assistant Professor of Workforce Education, University of Georgia’s Mary Frances Early College of Education and Research Affiliate, University of Colorado Boulder’s JILA Physics Frontier Center

- *Dr. Christa Haverly*, Research Assistant Professor, Learning Sciences Department of the School of Education and Social Policy, Northwestern University

- *Dr. Stefani Marshall*, Assistant Professor of Science Education, Michigan State University

- *Dr. Clausell Mathis*, Assistant Professor, Lyman Briggs College and Department of Teacher Education, Michigan State University

Audience – Q&A (10 Minutes)

9:00-10:30 a.m. ~ Collier Room

Panel 5 — Public Administration, Musicology and Sociology

Resonating Voices: Soundscapes, Social Resilience, and Economic Responses in the Black Atlantic, Business, and Government Procurement

• *Jean-Claude Ndong*, Panel Chair, FAU (2019), Public Administration, “*COVID-19, Businesses Resilience, and Government Contracting: How did the Paycheck Protection Program’s (PPP) Loan Forgiveness Impact the Disaster Resilience of Small Businesses Engaged in Government Contracting in the United States?*”

Due to the COVID-19 pandemic, Congress passed the CARES Act with the Paycheck Protection Program (PPP), which provided forgivable loans to small businesses for payroll and other expenses. I examine how loan forgiveness has affected disaster resilience for small businesses contracting with the U.S. government. Using government spending data from USASpending.gov and PPP data from the U.S. Small Business Administration (SBA), I will analyze small businesses that were in operation before and after the pandemic, awarded contracts every year from 2015 to 2022, and recipients of up to \$150,000 in PPP loans in 2020 and 2021. This study is quantitative and quasi-experimental. I expect to find decreases in the dollar amounts of contracts awarded to small businesses, especially those owned by women, minorities, and veterans. This research addresses academics’ calls for more research on PPP loan approvals and forgiveness across industries, the efficacy of the laws governing those loans, and the effects of disaster loans on businesses.

• *Taylor Darks*, FSU (2023), Sociology, “*Localized Reparations in Evanston, Illinois: Economic Mobility, Housing Inequality, and Cannabis as a Unique Funding Source*”

Modern-day examples of reparations are appearing all over the country. For instance, California, Asheville, North Carolina, and Evanston, Illinois are all entities that have discussed and planned for reparations within the last year. Evanston, Illinois is a unique case, as it is considered the first reparations program for African Americans within the United States and plans to use cannabis sales to fund the program. However, having the first reparations program isn’t easy. The city has had to grapple with differing political opinions, budget complications, and disgruntled residents. This project seeks to understand the consensus building and development of the Evanston reparations program, The Restorative Housing Program, and the budget constraints surrounding the allocated \$10,000,000 in cannabis sales to the reparations fund. By interviewing 30 residents and analyzing the minutes of the Reparations Committee meetings, this project seeks to understand the residents’ viewpoints and the processes of the Committee.

• *Marjorie De la Cruz*, FIU (2021), Public Administration, “*Three Essays on Federal Procurement Amidst Global Disruptions*”

The systems sustaining our economic and democratic stability have encountered several threats in the last few years—from the COVID-19 supply chain disruptions to the war in Ukraine—requiring immediate responses at the federal level. Through the lenses of Resource Dependence Theory, these organizational reactions are based on the management of resources. While public bureaucracies are accustomed to routines, they struggle with rapid change, hence the need to increase responsiveness through contracting mechanisms that involve the private sector in delivery networks. Drawing on federal procurement data and using a mixed methods approach, all three essays illustrate responses to both negative and positive manifestations of chaos, as in the case of the Russo-Ukrainian War and the Infrastructure Investment and Jobs Act. Essentially, the main research question is: How do we deal with our internal and external problems as a society while addressing large-scale public matters? I find that social equity considerations play a significant role in increasing service capabilities and impact.

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9:00-10:30 a.m. ~ Collier Room

Panel 5 — Public Administration, Musicology and Sociology (Cont.)

Resonating Voices: Soundscapes, Social Resilience, and Economic Responses in the Black Atlantic, Business, and Government Procurement

• *Alaba Ilesanmi*, FSU (2021), Music, “‘Songs for Survival:’ A Case Study of Fela’s Reincarnation in the Black Atlantic Soundscape”

In 2016, Jay-Z (Shawn Carter) curated the “Songs for Survival” playlist, featuring twenty-two socially conscious anthems during the Black Lives Matter protests. In the playlist, Jay-Z included “Zombie” by Fela Kuti, the late Nigerian creator of the afrobeat genre. The deliberate inclusion of Fela Kuti, among other politically conscious musicians, shows his political relevance within the Global Black communities and speaks to the continued fascination with the dead Fela. Released in 1976, “Zombie” marks Fela’s burgeoning political consciousness and rebellion. Fela used the zombie as a metaphor to describe military hierarchies and processes and as semiotics for silence, ugliness, heedlessness, suppression, and oppression. This paper will discuss the inclusion of Fela in this playlist as a case study of his (re)incarnation within the Black Atlantic soundscape, bringing his song in conversation with other selected songs and highlighting the song’s articulations of global Black struggles and the Pan-African ethos that situates the Black American experience within the global Black affair.

Discussants (15 minutes)

- *Dr. Tony Barringer*, Associate Provost and Associate Vice President for Faculty Affairs, Florida Gulf Coast University
- *Dr. Marvin Dawkins*, Professor, Department of Sociology, University of Miami
- *Dr. Bernd Reiter*, Latin Americanist and Professor, Department of Classical and Modern Languages and Literatures, Texas Tech University, and Fulbright Distinguished Chair of Public Policy, Brazil, 2021-22

Audience – Q&A (10 Minutes)

CONCURRENT RESEARCH PANELS

10:40-11:55 a.m. ~ Sarasota Room

Panel 6 — Computer Science

Innovative Applications: Unraveling Deception in Therapy and Mathematical Marvels

• *William Sims*, Panel Chair, UF (2018), Computer Science, “*Triangulations and their Applications*”

Math is considered taboo subject in normal conversation! The goal of this talk is to change that, or at least to show that math is not as scary or confusing as it seems. To achieve this, we will explore new results regarding triangulations. A triangulation is a set of triangles that are glued together at their edges such that each edge is shared by at most two triangles. Although this mathematical object seems simple enough, it has been studied for over half a century. What’s more, triangulations have a plethora of applications, including in (i) computer graphics, to efficiently display 3D objects in movies, flight simulations, and virtual reality medical training; (ii) statistical physics, to model electron spin systems, and (iii) material science, to model cracks in crystals or to build strong 3D-printable microstructures. As we dive into some of these applications, we will show how they inspire new results in mathematics, and how those results often lead to new applications.

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10:40-11:55 a.m. ~ Sarasota Room

Panel 6 — Computer Science (Cont.)

Innovative Applications: Unraveling Deception in Therapy and Mathematical Marvels

- *Sayde King*, USF (2023), Computer Science, “*Qualitative and Experimental Analysis of Mental Health Clinician Experiences with Client Deception*”

Client deception during mental health therapy sessions can lead to adverse outcomes, profoundly affecting the care provided by clinicians and the well-being of their clients. In this study, we explore qualitative interview data from 20 mental health professionals to uncover their personal encounters with client deception in therapeutic contexts and elicit their perspectives on the potential deployment of Artificial Intelligence (AI) for real-time deception detection during therapeutic sessions. Results from our thematic analysis indicate that (1) instances of client deception are infrequent but can have significant detrimental effects, (2) clients may deceive due to fear or external motivation, and (3) certain clients with specific disorders exhibit deceptive tendencies more frequently than others. Further, we find certain demographics may predict the likelihood of a clinician’s acceptance to potentially leverage AI for deception detection. Understanding clinician perspectives of this technology provides a critical first step to developing a user-informed AI-enabled deception detection system.

Discussants (15 minutes)

- *Dr. Charles Davis*, Associate Professor of Engineering, Embry Riddle Aeronautical University

- *Dr. Md Shohel Rana*, Assistant Professor, Department of Computing & Software Engineering, Florida Gulf Coast University

Audience – Q&A (10 Minutes)

Lee Room

Panel 7 — Environmental Science Engineering and Geosciences

Hazards and Nitrogen: Research on Volcanic Dynamics and Saline Wastewater Treatment

- *Franco Villegas Garin*, Panel Chair, USF (2023), Geosciences, “*Revolutionizing Pyroclastic Density Current Deposit Data via Unoccupied Aircraft Systems (UAS) and High-Resolution Digital Microscopes*”

Traditional volcanological field practices to study pyroclastic density currents (PDCs), the deadliest of volcanic processes, primarily rely on deposit sampling. Unfortunately, this is commonly restricted by logistical and technological obstacles that result in incomplete granulometric deposit data. Acquiring this missing data may improve our understanding of PDC dynamics and subsequent volcanic hazard assessment efforts. To solve this, we developed a novel method aimed towards expanding common truncated grain-size distributions into datasets spanning the full-range of particle sizes. For this we use i) Unoccupied Aircraft Systems (UAS) to produce millimeter-scale Digital Outcrop Models (DOMs) for coarse granulometric data (centimeter to meter-sized clasts), and ii) a 4K digital microscope for the fine portion (micron-sized clasts) of the physical samples collected that are otherwise too small to be captured via particle sieving. The standardizing of this approach aims to modernize PDC deposit studies and enables the appropriate future application of discrete element methods (DEMs) to improve our understanding of PDC dynamics.

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10:40-11:55 a.m. ~ *Lee Room*

Panel 7 — Environmental Science Engineering and Geosciences (Cont.)

Hazards and Nitrogen: Research on Volcanic Dynamics and Saline Wastewater Treatment

• *Daniel Delgado*, USF (2023), Environmental Science Engineering, “*Biological Nitrogen Removal in Passive Onsite Wastewater Treatment Systems for Seawater-Flushing Toilets*”

Nitrogen pollution has several adverse effects on water quality, aquatic life, and people. One source of nitrogen pollution is incomplete wastewater treatment from onsite wastewater treatment systems (OWTS). Some coastal areas with limited freshwater use seawater for toilet flushing, creating saline wastewater. Saline wastewater introduces challenges to OWTS that are not well studied and interferes with microorganisms involved in biological nitrogen removal (BNR). To test the viability of BNR in saline OWTS, a laboratory scale OWTS using a two-stage nitrification and denitrification biofilter was constructed to treat real wastewater with salts added to mimic seawater chemistry. Wastewater dosing mimicked typical dosing in a home septic system. The stage-1 nitrification biofilter achieved 78% conversion of ammonia to oxidized nitrogen. For the stage-2 denitrification biofilter, agricultural waste products, sugarcane bagasse and banana stem, alongside conventional solid-phase electron donors, elemental sulfur and pine woodchips, were tested. Banana stem had the highest denitrification rate at 34 mg-N/L·day. BNR seems viable for saline OWTS.

Discussants (15 minutes)

- *Dr. Micheal Uduebor*, Visiting Assistant Professor, Department of Bio, Civil, and Environmental Engineering, Florida Gulf Coast University

- *Dr. Claude Villiers*, Professor, Whitaker College of Engineering, Florida Gulf Coast University

Audience – Q&A (10 Minutes)

Pinellas Room

Panel 8 — Education

Expanding Horizons: Reimagining Language Learning and Cultural Inclusivity in STEM

• *Kiana Hines*, Panel Chair, FSU (2023), Communication Sciences and Disorders, “*Verb Ventures: Conquering Grammar Gaps in Spanish English MLs - A Comparative Study on Implicit and Explicit Intervention Approaches*”

Spanish-English speaking multilinguals (MLs) with Language Learning Disorders (LLD) have difficulty with verb morphology compared to their typically developing peers. Patterns of error are observed in both monolinguals and MLs. However, there are more studies that have explored the effectiveness of grammar intervention targeting verb morphology for monolinguals compared to MLs. Moreover, there are even fewer studies that compare the effectiveness of implicit and explicit approaches used in grammar interventions. Therefore, the purpose of this study is to examine an adapted alternating treatment single case design to compare the (1) effectiveness of implicit and explicit approaches used in grammar interventions that target the inflectional past tense –ed and third person singular –s (3S) and (2) efficiency of the implicit and explicit approaches for acquiring the past tense –ed and 3S. The study includes third through fifth grade Spanish-English speaking MLs with and without LLD.

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10:40-11:55 a.m. ~ Pinellas Room

Panel 8 — Education (Cont.)

Expanding Horizons: Reimagining Language Learning and Cultural Inclusivity in STEM

• *Jasmine Jones, Education, “From Photovoltaic Circuits to Digital Conversational Networks: A Participatory Community-Based STEM Education Project”*

Dominant equity discourses in STEM education continue to prioritize increasing access to disciplinary knowledge without critically interrogating the ways in which traditional science and technology learning bounds its participants. This multiphase project contests the boundaries of STEM education by centering the discursive relationship emergent between participatory learning and community self-determination. In the contexts of both my science classroom and summer technology program, I propose a teacher research study to explore how teachers and students engage the structure-agency dialectic present within a participatory STEM project to address community issues at the intersections of canonical STEM knowledge, environmental justice, and digital technologies. By focusing on teacher, student, and community perspectives in school science and during out-of-school programming, I hope to articulate new possibilities for equity in physics and technology education by informing the development of future participatory and community-responsive STEM projects that position students as transformative intellectuals, who enact their agentic power to transform oppressive structures and help their communities to self-determine.

• *Andrea Wooley, Physics, “Student Use of Cultural Resources to Understand Physics”*

Physics education fails to serve students whose personal culture differentiates most from physics culture because physics education research has disproportionately studied learning at predominantly white institutions. This study aims to identify ways students at Historically Black Colleges and Universities (HBCUs) use their cultural resources to learn physics concepts. Student written responses to formative assessment materials are collected by faculty at three HBCUs throughout their introductory physics courses such that assessment materials align with content covered in their classrooms. These “culture-based formative assessments” are developed to engage students in a practice of crossing cultural boundaries between their personal culture and physics culture. Student responses are then analyzed to identify evidence of cultural resource use. Understanding the ways students use their cultural resources can inform culture-based classroom transformations. Culture-based formative assessment methods serve to complement existing methods of assessing student’s physics knowledge such that together they show that using cultural resources supports students to understand physics even in other contexts.

Discussants (15 minutes)

- *Dr. Terrance Burgess*, Assistant Professor, Department of Teacher Education, Michigan State University

- *Dr. Turhan Carroll*, Assistant Professor of Workforce Education, University of Georgia’s Mary Frances Early College of Education and Research Affiliate, University of Colorado Boulder’s JILA Physics Frontier Center

- *Dr. Christa Haverly*, Research Assistant Professor, Learning Sciences Department of the School of Education and Social Policy, Northwestern University

- *Dr. Stefani Marshall*, Assistant Professor of Science Education, Michigan State University

- *Dr. Clausell Mathis*, Assistant Professor, Lyman Briggs College and Department of Teacher Education, Michigan State University

Audience – Q&A (10 Minutes)

FRIDAY, FEBRUARY 9, 2024

10:40-11:55 a.m. ~ Collier Room

Panel 9 — Behavioral and Community Sciences, Political Science and Public Relations

Challenging Norms: Reimagining Reintegration, Protecting Victims and Addressing Misogynoir

• *Dr. Janae Thomas*, Panel Chair, USF (2018), Political Science, “*Standing Her Ground: Legal Constraints on Women Who have been Victims of Violence*”

Women who have been the victim of violence have always been at a disadvantage under the laws in the United States because these laws stem from a patriarchal, sexist, heteronormative, and racist ideology under which this country was founded. Self-defense laws have shown to be no different and serve as a constraint to women who attempt to protect themselves at the hands of an abuser. This research focuses on women who have been the victim of violence at the hands of an abuser to show that the law is not doing an adequate job of protecting them.

• *Allahon Bailey*, USF (2022), Behavioral and Community Sciences, “*Lessons Learned: A Program Evaluation of a Female Residential Facility*”

“She was about to be 18 and cried day and night because she did not know where she was gone go after here” is the common reality for girls who are committed to Department of Juvenile Justice residential facilities. The lack of preparedness to be reintegrated into communities is customary according to the girls who participated in our program evaluation of a Department of Juvenile Justice residential facility. To date, very few, if any, program evaluations have amplified the youth’s voice. Even fewer have incorporated the voice of staff and direct care professionals alike. This program evaluation presents data on the identified factors that will help promote change within the residential facility and beyond from the youth perspectives. The major implicit findings include the need for a trauma informed system that focuses on helping girls and the provision of opportunities to grow hope within youth.

• *Nikki Lyons*, UF (2022), Public Relations, “*Focusing on the Fellas: Stacey Abrams’ Social Media Campaign Addresses Misogynoir*”

After narrowly losing the Georgia gubernatorial election in 2018, Stacey Abrams adopted a novel approach to secure the Black male vote in 2022, staging a series of events known as “Stacey and the Fellas.” This study delves into discourse surrounding those events and their impact on misogynoir directed at Abrams. We employ a misogynoir framework to investigate the media narratives that Black women, particularly in politics, must redefine. Finding discourse on racialization, gendered masculinity, and prominent misogynoir, our research sheds light on the communication surrounding Black female candidates on Twitter and their efforts to court Black male voters. These insights hold implications for future campaign strategies and discourse-centered approaches to political engagement.

Discussants (15 minutes)

- *Dr. Tony Barringer*, Associate Provost and Associate Vice President for Faculty Affairs, Florida Gulf Coast University
- *Dr. Marvin Dawkins*, Professor, Department of Sociology, University of Miami
- *Dr. Rachel Grant*, Assistant Professor, Department of Journalism, University of Florida
- *Dr. Bernd Reiter*, Latin Americanist and Professor, Department of Classical and Modern Languages and Literatures, Texas Tech University, and Fulbright Distinguished Chair of Public Policy, Brazil, 2021-22

Audience – Q&A (10 Minutes)

FRIDAY, FEBRUARY 9, 2024

12:00-2:00 p.m. ~ Grand Ballroom

LUNCHEON

- Keynote Address: *Dr. Kathleen Loftin*, NASA EPSCoR Manager; Introduction by *Dr. Dawn Elliott Martin*
- Student Presentation: *Kworweinski Lafontant*, UCF (2023), Kinesiology, “*The Effects of Concurrent, Resistance, and Aerobic Training on Body Fat Loss: A Systematic Review and Meta-Analysis*”

The purpose of this systematic review and meta-analysis was to examine studies from 1980 through 2023 that directly compared the effects of resistance training (RT), aerobic training (AT), and concurrent training (CT) on changes in body fat and weight. All protocols were pre-registered in PROSPERO (CRD42023396530). PubMed, SPORTDiscus, and Web of Science databases were searched, yielding 12259 records. After screening, 31 reports were included in the meta-analysis. Results indicate greater weight loss with AT compared to RT and CT. There was no difference in relative fat loss between modalities, but greater absolute fat loss with AT compared to CT, and CT compared to RT. There was no difference in weight, body fat percentage, nor fat mass loss between modalities when interventions were ≤ 10 weeks in duration or the volume of exercise was equated between conditions. Findings show that the inclusion of aerobic exercise may provide greater weight loss due to greater caloric expenditure, while the inclusion of resistance exercise may provide greater fat-free mass retention.

2:00-2:30 p.m. ~ Grand Ballroom

NSF- NASA EPSCoR RII Research Fellowship Opportunity

This session will provide an overview of an NSF- NASA Research Fellowship opportunity that provides faculty/research investigators in EPSCoR jurisdictions with an opportunity to conduct research which is of significant interest to NASA and NSF at a host-site. The Fellowship offers an opportunity to further develop individual research potential through collaborations with investigators from the nation’s premier private, governmental, or academic research center.

- *Dr. Frank McDonald*, Integration Manager, Space Grant and EPSCoR, Office of STEM Engagement, NASA

CONCURRENT RESEARCH PANELS

2:30-4:00 p.m. ~ Pasco Room

Panel 10 — Anthropology

Identifying Inequities: Forensic Anthropology, Veterans’ Experiences, and Environmental Governance

- *Isis Dwyer*, Panel Chair, UF (2019), Anthropology, “*Evaluating Forensic Standards for the Identification of Undocumented Persons*”

As forensic anthropology confronts histories of racism and structural inequity, undocumented persons remain among those most likely to be underserved by the medicolegal death system. This presentation comprises a critical review and thematic analysis of forensic literature on global population-affinity and human variation towards demonstrating a marked lack of resources dedicated to the identification and return of undocumented persons, particularly Black undocumented persons. By evaluating the success of forensic efforts at the U.S.-Mexico Border, this presentation explores how to best adapt these methods to better serve undocumented decedents nationwide. A commitment to active partnerships with non-governmental organizations, alternative methods of population affinity estimation, post-hoc analyses, and engaged biocultural community practices not only improves forensic standards for identifying undocumented decedents but pushes the discipline towards a more equitable praxis.

FRIDAY, FEBRUARY 9, 2024

2:30-4:00 p.m. ~ Pasco Room

Panel 10 — Anthropology (Cont.)

Identifying Inequities: Forensic Anthropology, Veterans' Experiences, and Environmental Governance

• *Meya Hemphill-Hodges*, USF (2023), Anthropology, “*Uprooted: Black Women Veteran Identities & Place in the U.S. South*”

This paper explores Black women Veterans and their connections between place and identity. The purpose of this project highlights notions of citizenship and accessibility as experienced by Black women Veterans. By expanding our worldview of Veteran identity, this paper demonstrates issues of displacement, alienation, and longing that contribute to the dissonance Black women Veterans rooted in the U.S. South may experience. To forge belonging through the act of place-making, Black women Veterans may seek sisterhood by building sites of resistance in person or online. Findings are based on in-depth interviews with Black women Veterans and participant observation with community partners who service Veteran needs. Furthermore, the outcome of this project considers the possibility of identity and culture as it disrupts the myth of a single Veteran story.

• *Kris-An Hinds*, USF (2019), Anthropology, “*Environmental Decision-Making in Coastal Belize: Fi Who? Fi Mi or For-eigner Like You?*”

Human-induced environmental changes such as climate change, pollution, and development have significantly impacted coastal communities worldwide. In the face of these challenges, coastal management strategies are being developed and implemented to mitigate the loss of natural coastal resources. However, these strategies are not always inclusive, and some communities are experiencing unequal impacts from the implementation of management practices. Using policy analysis, stakeholder interviews, and case studies, this presentation highlights challenges and opportunities associated with promoting community-based approaches in environmental governance. It delves into the complex relationship between human-induced environmental changes and their impacts on coastal communities in Belize, with a particular focus on Garifuna and Creole Afro-Descendant communities. It also explores potential barriers and opportunities for achieving equitable representation and influence in decision-making processes. These findings underscore the necessity of empowering marginalized coastal communities to foster equitable and sustainable environmental outcomes.

• *Liotta Noche-Dowdy*, USF (2019), Anthropology, “*Collaborative Research of Forensic Anthropology and Geochemists to Assist Law Enforcement Agencies with Geoprofiling Unidentified Decedents Through Multi-Isotope Analysis*”

Forensic anthropologists continue to play a prominent role in the process of human identification with skeletal cases for unidentified decedents. They are collaborating with geochemists to perform isotopic analyses to estimate the geographic birthplace and migration patterns for unidentified decedents. Results for enamel (n=81) from donated teeth from individuals who were born in Florida or lived in Florida through their early childhood, along with others born in the US and South America as comparison samples will be presented. The isotope results include radiogenic strontium (^{87}Sr), lead ($^{206}\text{-}^{208}/^{204}\text{Pb}$) and stable isotopes oxygen and carbon ratios for Florida residents. Oxygen isotope values are more enriched compared to other regions of the US. Carbon values measured indicate a typical diet in the US, but some ratios were higher than expected. A major aim of these collaborations is to generate a multi-isotopic database for modern human populations with known origin to improve reference data and assist with cases of the unidentified.

Discussant (15 minutes)

- *Dr. Lisa K. Armstrong*, Applied Cultural Anthropologist, University of South Florida

Audience – Q&A (10 Minutes)

FRIDAY, FEBRUARY 9, 2024

2:30-4:00 p.m. ~ Sarasota Room

Panel 11 — Biomedical Engineering and Biomedical Sciences

Developing, Optimizing, and Deploying Sensors, Nanofibers, and Algorithms to Study and Treat Disease

• *Brandi Cook*, Panel Chair, USF (2018), Biomedical Engineering, “*Optimization of Nanofiber Production by Electrospinning and Analysis Methods*”

Electrospinning has been utilized by engineers for producing nanofiber charged layers for circuitry design. With the advent of biomedical technology, nanofiber production has taken on more biocompatible polymer contents for the transport and release of drugs. There are numerous parameters throughout the electrospinning process to obtain optimization for nanofiber production prior to any drug inclusion; these parameters will be described for the polymer, branched polyethyleneimine. To determine the effects of changing nanofiber production parameters and compare them to published data, electron microscopy analysis techniques were used, and the best methods for identifying and comparing nanofiber morphology qualities will be described.

• *Natalie Geigel*, UF (2021), Biomedical Engineering, “*Chronic At-Home Thalamocortical Recordings During Sleep in Patients with Essential Tremor*”

Essential Tremor (ET) is one of the most common movement disorders in the world. It afflicts over 7 million people in the US (2.2% of the population). It is a progressive neurodegenerative disease characterized by a 4-12 Hz shaking of the upper extremities. Deep brain stimulation (DBS) has emerged as an effective therapy for people suffering from medication refractory ET. Significant tremor suppression for patients can be achieved by targeting and stimulating the thalamic ventral intermediate nucleus. In clinical practice, DBS is delivered continuously, resulting in stimulation when not needed, particularly during sleep when tremor disappears. Although the feasibility of movement-based closed-loop algorithms for ET has been demonstrated, there has been a lack of research on their behavior during sleep. This proposal goes through the plan to recruit 5 subjects to investigate the modulations in the thalamocortical network during sleep and assess the performance of closed-loop algorithms overnight.

• *Michael Moraskie*, UM (2023), Biomedical Sciences, “*Illuminating Quorum: Engineering Quantitative Bioluminescent Biosensors for the Novel Quorum Sensing Molecule 3,5-dimethyl-pyrazine-2-ol (DPO) and Revelations from its Quantified Presence in Humans, Animals, and Bacteria*”

Investigations on the microbiome have seen remarkable growth in the past two decades. While important correlations between microbial community structure and host outcomes have been made, there is a growing need for mechanistic investigations on the molecular interactions between a host and its microbial tenants. The study of quorum sensing (QS), a form of microorganismal communication based on small chemical molecules to coordinate gene expression in a population-dependent manner, offers a unique window into the molecular underpinnings of microbial behavior and interactions. Recently, the novel quorum sensing molecule (QSM), 3,5-dimethylpyrazin-2-ol (DPO), was identified in *Vibrio cholerae* to regulate biofilm formation and virulence factor production. Herein, we report on the development, optimization, characterization, and deployment of a biosensor for the detection and study of DPO. With the developed biosensor, we identify for the first time the presence of DPO in rodent and human stool and further support the speculation that DPO is produced by other bacterial species beyond *Vibrio cholerae*.

Discussants (15 minutes)

- *Dr. Md Shohel Rana*, Assistant Professor, Department of Computing & Software Engineering, Florida Gulf Coast University

- *Dr. Jorge Torres*, Associate Professor, Department of Bioengineering, Florida Gulf Coast University

- *Dr. Claude Villiers*, Professor, Whitaker College of Engineering, Florida Gulf Coast University

Audience – Q&A (10 Minutes)

FRIDAY, FEBRUARY 9, 2024

2:30-4:00 p.m. ~ Lee Room

Panel 12 — Education / Teacher Preparation

Current Issues in Teacher Preparation: Enhancing Research Communication and Navigating Oppression

• *Camille Lewis*, Panel Chair, FSU (2020), Education, “*The Impact of Translational Visual Abstracts on Preservice Teachers’ Interest in Reading Research Articles*”

The purpose of this experimental study was to investigate the impact of translational visual abstracts on research communication, specifically their impact on preservice teachers’ interest to read a full research article. Using an online survey completed by 183 preservice teachers at a southeastern public university, I compared two types of abstracts—traditional and translational visual abstracts—to determine which led to the highest level of preservice teachers’ interest in reading the full peer-reviewed research paper. Using the chi-squared analysis, we found that modifying an abstract that was rated low in prior interest into a translational visual abstract significantly increased preservice teachers’ desire to read the full research article.

• *Dr. Victor Kasper*, FSU (2021), Education, “*‘It’s Like the Elephant in the Room:’ Centering Latina Voices in STEM Teacher Preparation*”

This study investigates how three Latina preservice teachers (PSTs) in a STEM-focused teacher education program at a historically white institution navigated oppressive structures and practices. Using Latina/Latino critical theory and transformational resistance, it examines how their intersectional Latina identities, including ethnicity, language, immigration status, and gender, shaped their experiences. The Latina PSTs faced ongoing racial and gender stereotyping, microaggressions, lack of representation, and unwelcoming environments confronting systemic oppression. While finding motivation in their Latinidad and lived experiences to teach diverse students and advocate for marginalized learners, they desired more preparation to challenge systemic inequities and enact socially just teaching. The study underscores the emotional toll of navigating predominately white spaces as women of color. It argues for centering experiences of PSTs of color in STEM teacher education through culturally and linguistic sustaining practices, relationship building, and mentoring to develop anti-racist perspectives. The study contributes to scholarship on preparing STEM teachers for equity and social justice by highlighting Latina PSTs experiences and resistance of systemic oppression.

Discussant (15 minutes)

- *Dr. O’Juan Edwards*, NSF FL-AGEP Postdoctoral Researcher, Division of Academic Affairs, Florida A&M University

Audience – Q&A (10 Minutes)

2:30-4:00 p.m. ~ Pinellas Room

Panel 13 — Physics

Contemporary Issues in Physics: Exploring Quantum Frontiers, Modeling Stellar Evolution, and Unraveling Fibrinogen Mysteries

• *Theo Richardson*, Panel Chair, UF (2019), Astronomy, “*A Framework for Modeling Young Stellar Objects*”

Observations of young stellar objects (YSOs) offer crucial insights into the formation of stars. Quantities like the luminosity or accretion rate of a protostar determine its future evolution. Measurements of YSO properties are typically made by comparing observed radiation to grids of template spectral energy distributions (SEDs). However, these grids are limited by construction: they assume specific accretion histories and apply to limited mass ranges. I present a framework for modeling YSOs regardless of the assumed theory. Using a formation-agnostic set of models, I model the spectra of evolving YSOs by selecting models consistent with protostellar evolutionary tracks and interpolating between their SEDs. I use these results to estimate the flux emitted by YSOs across a wide range of final stellar masses over their entire accretion time. This method may be applied to multiple theories while remaining within $\sim 10\%$ of the true value at long wavelengths. I show that different theories produce distinct predictions in the 100-micron/3-millimeter flux observational space.

• *Caela Flake*, Physics, “*Advancing Hemostatic Research: Engineering Recombinant Fibrinogen via a Novel Expression System*”

A novel fibrinogen expression system is being developed to synthesize recombinant fibrinogen, aimed at understanding the role of the alpha-C region during fibrin fiber formation. By utilizing a novel three-step transfection method, a stable CHO cell line will be established to express fibrinogen with a partially deleted alpha-C region. Comprehensive mechanical and biophysical analyses will be performed on the variant fibrinogen. Analytical tools such as Atomic Force Microscopy, Scanning Electron Microscopy, Laser Scanning Confocal Microscopy, and a suite of biochemical assays will provide a multifaceted view of the fibrinogen variant structure, function, and assembly. This research builds upon previously established methodologies while venturing into an underexplored dimension of protein engineering. The anticipated results from these diverse analytical techniques and novel expression systems are expected to illuminate the intricacies of fibrin fiber formation and further our understanding of the conventional methods used in protein engineering.

• *Clemente Guzman*, FSU (2023), Physics, “*Combining SQUID Devices and Microwave Resonators for Coherent Control and Detection of Quantum Spins*”

Large-scale, universal quantum computers are some of the most desired pieces of technology in both research and the private sector. However, current systems use superconducting qubits which are relatively large and hard to isolate from environmental noise. Given the number of qubits required for error-correction algorithms, the total number of qubits that are available for calculation is limited. One solution is to use spin systems such as Gd^{3+} and Mn^{2+} diluted within a crystal, which are much smaller than superconducting circuits and possess high spin degrees of freedom, leading to a rich energy level structure that can encode multi-qubit states. The transitions between energy levels are in the microwave range, allowing for the use of planar superconducting resonators to achieve spin manipulation. We explain the device fabrication techniques and experimental methods, and we present recent optimal SQUID data along with a proposal to combine both resonator and SQUID to sense quantum spin states.

FRIDAY, FEBRUARY 9, 2024

2:30-4:00 p.m. ~ Pinellas Room

Panel 13 — Physics (Cont.)

Contemporary Issues in Physics: Exploring Quantum Frontiers, Modeling Stellar Evolution, and Unraveling Fibrinogen Mysteries

• *Arezoo Nameny*, Biophysics, “*A New Role of Cholesterol in Blood Clotting*”

It is known that low density lipoprotein (LDL, often termed ‘bad cholesterol’) can lead to plaque formation in the arterial walls and atherosclerosis. We discovered a new role of LDL, in which it also binds to the fibrin fibers in a blood clot and alters its properties. We have developed an atomic force microscopy-based method to investigate the mechanical properties of nanoscopic fibers and applied it to fibrin fibers that were formed at different doses of LDL. We found that adding physiological amounts of LDL to fibrin fibers changes their properties in a dose-dependent fashion. It makes fibrin fibers softer and more extensible. Compared to control samples, fiber stretchability increased by 33% when exposed to 0.25 mg/mL LDL and by 80% when exposed to 0.5 mg/mL LDL. Similar increased extensibility was also seen in patients with heart disease, suggesting a possible connection between cholesterol-altered fibrin fiber properties and heart disease.

Discussants (15 minutes)

- *Dr. Turhan Carroll*, Assistant Professor of Workforce Education, University of Georgia’s Mary Frances Early College of Education and Research Affiliate, University of Colorado Boulder’s JILA Physics Frontier Center

- *Dr. Clausell Mathis*, Assistant Professor, Lyman Briggs College and Department of Teacher Education, Michigan State University

Audience – Q&A (10 Minutes)

Collier Room

Panel 14 — Psychology

Exploring Human Interaction and Performance: From Social Presence and Mindfulness to Smartphone Platforms and Cultural Barriers

• *Umelo Ugwoaba*, Panel Chair, UF (2018), Psychology, “*Behavioral Weight Loss Success: Android vs. iOS*”

The current study explored potential differences in demographic characteristics, engagement, and weight outcomes for Android and iOS users enrolled in a 16-week behavioral weight loss program with a provided smartphone application. Adults with obesity (N=320, M±SD age=50.0±11.4 years, 83.1% female, 74.1% White) completed the program. In comparisons between Android and iOS users, one-way ANOVAs were used for continuous variables, and chi-square tests were used for categorical variables. There was a significant association between operating system and household income, $p=.02$, such that there was a greater proportion of iOS users in higher household income categories. No significant differences were found between the two groups for engagement, weight change, or other demographic characteristics. Thus, special considerations based on smartphone operating systems may not be necessary during behavioral weight loss programs. Moreover, results suggest that the choice to implement an intervention using one smartphone operating system versus another may not meaningfully impact recruitment in relation to race, ethnicity, age, or education.

FRIDAY, FEBRUARY 9, 2024

2:30-4:00 p.m. ~ Collier Room

Panel 14 — Psychology (Cont.)

Exploring Human Interaction and Performance: From Social Presence and Mindfulness to Smartphone Platforms and Cultural Barriers

• *Allison Garibaldi, UCF (2023), Psychology, “Vigilance in Context: Effects of Social Presence on Vigilance Performance”*

Vigilance, or the ability to sustain attention while monitoring for critical signals, is an integral component of high-stakes tasks including medical screening, air-traffic control, and long-distance driving. Performance on vigilance tasks tends to decline overtime, which has led researchers to devote considerable attention toward understanding the psychological factors that contribute to the performance decrement. However, the effects of the social environment on vigilance have been critically under-researched, especially considering that vigilance tasks are often performed in the presence of others. This presentation will discuss initial findings from a dissertation examining the effects of social presence on performance in vigilance. 232 undergraduate participants were randomly assigned to complete a vigilance task either alone, in the presence of an observer, or in the presence of an independent co-actor. Data collection is ongoing, but results of this study are expected to inform theories of the interaction between social stimuli and attention, as well as best practices for performing vigilance tasks in the real-world.

• *Malena Price, UM (2020), Psychology, “Investigating the Protective Effects of Mindfulness-based Attention Training on Mind Wandering in Applied Settings”*

Prior research has found that mindfulness training (MT) improves attentional performance and decreases mind wandering (MW), but results have been inconsistent. To examine the strength and consistency of these results, meta-analysis was applied to synthesize the effects of a short-form MT program, Mindfulness-Based Attention Training (MBAT), on sustained attention and MW. Five community-based studies comparing the effects of MBAT to no-training controls (NTC) on self-reported MW in the Sustained Attention to Response Task were analyzed. These groups comprised firefighters (n= 76), teachers (n= 45), military spouses (n=81), community leaders (n= 55), and organizational employees (n=47). Random effects meta-analyses of these studies suggested that, over time, NTC participants demonstrated increased MW. MBAT participants, however, demonstrated no such increase in MW over time. Follow-up analyses in which time-on-task effects were examined will also be discussed. These results support prior evidence positioning short-form MT to protect against MW.

• *Elena Schiavone, FIU (2021), Psychology, “Professionalizing the Afterschool Workforce to Support Youth Development: Considerations of Culture and Context”*

The youth mental health crisis demands a public health approach. After-school programs (ASPs) offer socio-emotional-academic benefits, especially for youth from marginalized communities. Benefits require well-trained providers, but many report feeling under-prepared. Teach the Triangle (T3) is an online training prototype for providers that encourages using social-emotional skills in routine interactions. Providers (n=24, 71% female, 42% Black, 42% White/non-Hispanic, 29% Hispanic) and administrators (n=13, 100% female, 20% Black, 80% White/non-Hispanic) rated T3 favorably on product evaluation surveys. Interviews (n=18; 1-hour, Zoom) elaborated on T3’s usability, value, and relevance. We’ll report findings from surveys and interviews focused on considerations of culture and context. Coding (33% double-coded, 80%+ agreement) revealed the following themes and most endorsed codes: organization (workforce preparation), site (limited provider time), neighborhood (urbanicity), provider (role), youth (psychological/behavioral challenges), and provider-youth interactions (tailoring training). Takeaways include: 1) positive adult-youth partnerships in ASPs encourage youth to disclose serious, complex needs; and 2) ASP providers report contextual cultural barriers to meeting youth needs.

Discussants (15 minutes)

- *Dr. Rihana Mason*, Research Scientist, Urban Child Study Center, Georgia State University

- *Ms. Cynthia Norris*, Ph.D. Candidate in Psychology, Florida State University

Audience – Q&A (10 Minutes)

FRIDAY, FEBRUARY 9, 2024

4:00-4:30 p.m.

EXHIBITOR BREAK

6:00-8:00 p.m. ~ *Grand Ballroom*

DINNER & DIALOGUE WITH THE EXHIBITORS

- ♦ An Up Close and Personal Faculty Recruitment Experience
 - Dinner
 - Closing Remarks: *Dr. Lawrence Morehouse*
- ♦ Book signing by *Dr. Nigel Malcolm*

SATURDAY, FEBRUARY 10, 2024

7:30 a.m. ~ *Grand Ballroom Foyer*

CONTINENTAL BREAKFAST

OPENING PLENARIES ~ *Grand Ballroom*

8:00-8:30 a.m.

Nanotechnology: A Potential for Reducing Global Health Disparities

The COVID-19 pandemic devastated the world and became one of the most challenging global health threats in modern history. Advances in nanotechnology came to the rescue in the form of rapid diagnostic tests and swiftly developed vaccines against SAR-CoV-2. However, the equitable and efficient distribution of these tests and vaccines has been complicated by ethical, environmental, economic, legal, and cultural factors. This presentation will identify these challenges and suggest ways in which nanotechnology may be used to help our nation address these issues.

- *Dr. Diane Allen-Gipson*, Associate Professor, Department of Pharmaceutical Sciences, University of South Florida

8:30-9:30 a.m. ~ *Grand Ballroom*

Artificial Intelligence

Artificial intelligence (AI) involves the use of machine learning algorithms and other tools to process data. All industries and major organization are likely aware of AI today. The public, especially within the last couple of years, also has become quite aware of the application of AI and its capabilities. Indeed, a 2023 Pew Research survey study finds that almost 55% of Americans know common ways they might encounter AI in daily life, such as customer service chatbots and product recommendations based on previous purchases. Accompanying this heightened level of awareness, however, are moral, ethical, and legal questions about AI's expanding capabilities. Relatedly, as part of its AI strategy, the U.S. government issued an executive order late last year aimed at curbing the potential risks of AI. Both the growing widespread application of AI and concerns about it have motivated, and continue to inspire, research by scholars across possibly all disciplines. This research also is fueled by curiosity and the impulse to understand the application of AI, especially the new variant Generative AI (e.g., ChatGPT and DALL·E) that can create text, images, video, audio, or code. Opportunities abound for research without clear guidance on how to pursue them. This interactive session seeks to answer the following questions: What characterizes high quality research on AI thus far? What typical research questions are being investigated? Why are they important? What is the nature of research contributions to theory and practice? The discussion will be based on a critical assessment of three foundational research papers on AI drawn from multiple academic disciplines. At the end of the discussion, attendees will have a structured way to think about and conduct high quality research on AI.

SATURDAY, FEBRUARY 10, 2024

8:30-9:30 a.m. ~ Grand Ballroom

Artificial Intelligence (Cont.)

- *Dr. Norman Johnson*, Professor of Business Analytics, College of Business, University of Houston
- *Dr. Daphne Simmonds*, Associate Professor, Department of Computer Information Systems and Business Analytics, Metropolitan State University

9:40-10:10 a.m. ~ Grand Ballroom

KEYNOTE ADDRESS: A Conversation with Dr. Patrick Mason: Best Practices for Becoming a Prolific Scholar

Achieving success as a scholar requires not only earning your Ph.D. but also maintaining an active research agenda, leading to the production of knowledge shared via courses, lectures, and highly competitive reputable publications. Most scholars often begin their journey with little knowledge of these processes. In this interactive conversation between two distinguished professors, Dr. Marvin Dawkins leads Dr. Patrick Mason through a discussion detailing how he maintains his scholarly productivity. Having authored nearly 100 journal articles, book chapters, books and other professional publications, Mason will expound upon the importance of writing for your audience, releasing your work, impressing reviewers, dealing with criticism, and highlighting the significance of your research.

- *Dr. Patrick Mason*, Professor and Chair, Department of Economics, University of Massachusetts Amherst, facilitated by *Dr. Marvin Dawkins*

CONCURRENT SESSIONS

10:25-11:30 a.m. ~ Collier Room

The Economics of Structural Racism

Dr. Mason discusses his 2023 book, *The Economics of Structural Racism: Stratification Economics and US Labor Markets*, which tracks persistent racial disparities in the United States across multiple regimes of structural racism. The book begins with an examination of the economics of racial identity, mechanisms of stratification, and regimes of structural racism. It analyzes trends in racial inequality in education and changes in family structure since the demise of Jim Crow. The book also examines generational trends in income, wealth, and employment for families and individuals, by race, gender, and national region. It explores economic differences among African Americans, by region, ethnicity, nativity, gender, and racial identity. Finally, the book concludes with an investigation of instrumental discrimination, hate crimes, the criminal legal system, and the impact of mass incarceration on family structure and economic inequality.

Dr. Mason will sign copies of his book following his talk.

- *Dr. Patrick Mason*, Professor and Chair, Department of Economics, University of Massachusetts Amherst

SATURDAY, FEBRUARY 10, 2024

10:25-11:30 a.m. ~ *Citrus Room*

The Changing World of Publishing

Researchers now have more options to publish their research. The panelists will discuss their experiences using traditional, non-traditional and alternate publishing outlets including smaller publishers, self-publishing, documentaries and paid journals. They also will discuss advantages and disadvantages of traditional vs. non-traditional and alternate publishing outlets.

- *Dr. Bernd Reiter*, Latin Americanist and Professor, Department of Classical and Modern Languages and Literatures, Texas Tech University, and Fulbright Distinguished Chair of Public Policy, Brazil, 2021-22
- *Dr. Elizabeth Hordge-Freeman*, Associate Professor of Sociology and Interim Associate Vice Provost for Faculty Recruitment, Retention and Engagement at the University of South Florida

Lee Room

How to Secure a NASA or TRISH Post-Doctoral Fellowship in the Next Three Weeks - Part I

This multi-part presentation offers real-time information and small group guidance for accessing and applying for current post-doctoral opportunities. Today's workshop serves as an introduction and aims to support a 4-day workshop (a two-part in-person workshop today followed by three web-based sessions) designed to support participants in a step-by-step process to apply for post-doctoral opportunities at NASA centers around the United States as well as TRISH (Translational Research in Space Health) Post-doctoral Fellowships.

Guidance will include, but not be limited to, exploring opportunities in real-time; assessing alignment of selected opportunities to participants' current research; exploring and creating an account on the submission portal; and reviewing the checklist for preparing documents to apply. After today's workshops, participants must satisfy each web-based session's objective to participate in the next session's immersion tasks over the course of a week from February 21-27. Participants will be paired as near-peer mentors to work together during the sessions. A mock review process of prepared documents will be held during the final web-based session day.

- *Dr. Kristina Henry Collins*, Executive Director for Robinson Center for Young Scholars, University of Washington
- *Ms. Tericka Cesar*, Ph.D. Candidate in Nursing, University of Miami
- *Ms. Lisa Hanson*, Grant Specialist and Program Manager, Space Health Inclusion Partnership, LBJ Institute for STEM Education and Research, Texas State University

10:25-11:30 a.m. ~ *Pinellas Room*

Life and Opportunities After Graduate School

Earning a Ph.D. helps you develop skills transferable across disciplines and industries and prepares you for a variety of careers within and outside your specialization. This panel will explore the myriad opportunities available to Ph.D. graduates, including positions within the public and private sectors and the academy.

- *Dr. Alice Boone*, Founder and President, Smarten Sports Academy
- *Dr. Oshea Johnson*, Epidemic Intelligence Service Postdoc, Centers for Disease Control, Kentucky
- *Dr. Rhoda K. Moise*, Research Assistant Professor, Department of Psychiatry and Behavioral Medicine, University of Miami

SATURDAY, FEBRUARY 10, 2024

10:25-11:30 a.m. ~ Sarasota Room

Demystifying Faculty Diversity: Using Academic Pipeline Programs to Overcome Systemic Barriers to Recruitment and Retention

Academic pathways programs have a long history of supporting underrepresented minority (URM) students as they enter the professoriate and navigate the academy. The goal of this panel discussion is to extrapolate best practices for such initiatives by examining three highly effective national faculty diversity programs—the PhD Project, Sisters of the Academy, and the Rochester Institute of Technology Future Faculty Career Exploration Program. Representatives from each program will join the authors of the *Academic Pipeline Programs: Diversifying Pathways from the Bachelors to the Professoriate* book to analyze noted best practices and advise audience members how to participate in these and similar initiatives as they progress into the professoriate and beyond. Finally, the panel will discuss ways the McKnight Doctoral Fellowship Program can partner with pathways programs for the benefit of McKnight Fellows and alumni.

- *Dr. Curtis Byrd*, Facilitator, Co-Founder, Academic Pipeline Project, LLC, and Research Associate, HBCU Undergraduate Success Center, Morehouse College
- *Dr. Mark A. Lawson*, Director, President’s Postdoctoral Fellowship Program, Division of Equity & Inclusion, Professor, Department of OBGYN & Reproductive Sciences, University of California San Diego
- *Dr. Rihana Mason*, Research Scientist, Urban Child Study Center, Georgia State University
- *Dr. Devona F. Pierre*, Executive Director of the Office of Belonging at St. Petersburg College, and member of Sisters of the Academy
- *Dr. Taiese Bingham-Hickman*, Executive Director, the Leadership Alliance, Brown University

Pasco Room

Seed Funding – An Investment in Your Success

Job offers for faculty positions at research-focused universities are often accompanied by so-called “startup funding,” which is an investment by the university in support of recruitment efforts. Many universities also provide “seed funding,” which is an investment by the university in support of its current roster of faculty. Startup and seed funding are similar in that both are provided to faculty from the university, with startup negotiated before hire and seed funding negotiated after hire. This workshop will delve into strategies to consider as you construct budgets in your proposals for seed funding, with the goal of positioning yourself for success in tenure and promotion in your new position. We will also discuss results of our research suggesting how and why seed funding supports faculty career development, and suggest best practices for how you can invest in your own success.

- *Ms. Benita Bannis*, Director of Workforce Development, Office of Senior Vice President for Agriculture and Natural Resources, University of Florida
- *Dr. John Davis*, Assistant Professor, Department of Pharmacotherapeutics and Clinical Research, University of South Florida

SATURDAY, FEBRUARY 10, 2024

10:25-11:30 a.m. ~ Cafe Private Dining Room

Research Panel 1 — Public Health, Social Work, and Sociology

Exploring Wellness and Work Realities: Perspectives from Social Work, Sociology, and Public Health

• *Taylor Sumpter*, Panel Chair, UM (2021), Sociology, “*Teleworking, Stress, and Work Conditions Before COVID-19*”

This study investigates the potential links between teleworking and work stress, depression, and perceived condition of health in the US. A series of theory-driven hierarchical linear regression models were used to examine the associations among teleworking, work stress, work conditions, and health outcomes in the United States prior to the COVID-19 pandemic. Data was drawn from the NORC General Social Survey 2016, including Ballots A, B, and C. The analysis controlled for race, sex, class, occupational prestige, age, number of children, work status, degree, income, and hours worked last week. The relationship between teleworking and work stress is positively related. Preliminary findings further show that racial minorities experience lower work stress than whites, and females experience higher work stress than males. Also, class and income are negatively related to depression, while educational degree is positively related to higher depression scores. The results are presented in three models: Model A (Work Stress), Model B (Depression), and Model C (Perceived Condition of Health).

• *Katharine McNamara*, UF (2017), Public Health, “*Gender and Post-COVID Wellness Economy in Loja*”

COVID-19 has contributed to a severe social and economic crisis in Loja, a small city in southern Ecuador where unemployment, violent crime, and emigration are rising. Scarce or unstable jobs have led many in Loja to exchange traditional employment for entrepreneurial ventures and self-employment as their primary source of income. In this context, women have emerged as leaders in a burgeoning wellness economy that draws on diverse traditions and ideologies of health. In this article, I explore how women’s business decisions are entangled with changing values and understandings related to gender and health in the aftermath of the COVID-19 pandemic. My analysis draws on concepts from feminist political ecology to situate the experiences of women entrepreneurs and their patrons within efforts to foster gender identities and relations rooted in healing and solidarity.

• *Stephanie Rosado*, USF (2020), Social Work, “*Osteoarthritis, Social Role Participation, and Satisfaction with Life*”

Osteoarthritis (OA) is an incurable disease of musculoskeletal joints that affects more than 32.5 million U.S. adults ([CDC], 2020). The pain, mobility limitations, and comorbidity risks of OA make it the leading cause of work disability (Vina & Kwoh, 2018; Wittenauer et al., 2013; Xu & Wu, 2021). Recognizing that people are living longer lives, recent literature identified the need to study this disease’s impact across the entire adulthood spectrum since younger adult populations are given limited attention in OA research (Badley et al., 2021; Cameron et al., 2016; Cameron et al., 2011; Deshpande et al., 2016; Showery et al., 2016; Tveit et al., 2012). Thus, this study aims to use an adapted Social Identity model of Identity Change (SIMIC)(Haslam et al., 2019; Jetten et al., 2009; Jetten & Pachana, 2012) to explore the extent to which having OA relates to social role participation, identity change, and satisfaction with life in adults 18-79 years old.

Discussants (15 minutes)

- *Dr. Diane Allen-Gipson*, Associate Professor, Department of Pharmaceutical Sciences, University of South Florida

- *Dr. Shelby Gilbert*, Associate Professor, Marieb College of Health and Human Services, Florida Gulf Coast University

Audience – Q&A (10 Minutes)

SATURDAY, FEBRUARY 10, 2024

10:25-11:30 a.m. ~ Executive Boardroom

Research Panel 2 — Biomedical Sciences and Microbiology

Targeting Viruses and Unveiling Signaling Secrets: Novel Approaches in Antiviral Drugs and Bacterial Signaling Pathways

• *Christian McDonald*, Panel Chair, UM (2019), Biomedical Sciences, “*Sugar Analog Drugs Inhibit the Replication of the Oncogenic Virus Kaposi’s Sarcoma Herpesvirus (KSHV)*”

Kaposi’s sarcoma-associated herpesvirus (KSHV) is the causative agent for Kaposi’s sarcoma (KS), an AIDS-associated malignancy. The sugar analog 2-deoxy-d-glucose (2-DG) is an anticancer agent that is well-tolerated, safe in patients, and recently demonstrated to be a potent antiviral for viruses including KSHV and SARS-CoV-2. Because 2-DG inhibits glycolysis and N-glycosylation, identifying its molecular targets is challenging. Here, we compare the antiviral effect of 2-DG with 2-deoxy-fluoro-d-mannose (2-DFM), a specific N-glycosylation inhibitor. At doses clinically achievable with 2-DG, the drugs impair KSHV replication and virion production via downregulation of viral structural glycoprotein expression with 2-DFM being the most potent KSHV inhibitor. Consistent with the higher potency of 2-DFM, we found that d-mannose rescues KSHV glycoprotein synthesis and virus production, indicating that inhibition of N-glycosylation is the main antiviral target. Our work identifies inhibition of N-glycosylation leading to ER stress and UPR as an anti-enveloped virus target and the sugar analogs 2-DG and the newly identified 2-DFM as antiviral drugs.

• *Adriana Morales Rivera*, UF (2021), Microbiology, “*Into the c-di-AMP-verse: Identification and Characterization of a Unique Surface-Associated Phosphodiesterase in Enterococcus Faecalis*”

Cyclic di-AMP is a signaling nucleotide responsible for controlling physiological functions in bacteria. In the host, c-di-AMP stimulates signaling pathways to activate an immune response. In *Enterococcus faecalis*, intracellular levels of c-di-AMP are controlled by the diadenylate cyclase CdaA and the phosphodiesterases (PDEs) DhhP and GdpP. We recently showed that either complete loss or accumulation of c-di-AMP impaired fitness and virulence of *E. faecalis*. Here, we describe the initial characterization of a third, and unique to *E. faecalis*, extracellular phosphodiesterase termed EecP. We generated an eecP deletion strain $\delta eecP$ to investigate how loss of EecP affected c-di-AMP pools and physiological functions linked to c-di-AMP. When compared to the supernatant of the parent strain, $\delta eecP$ supernatants accumulated over 10-fold more c-di-AMP. In a systemic infection of murine peritonitis, loss of eecP led to increased bacterial burden in the heart, kidneys, and spleen but not in the liver or peritoneal wash, suggesting that EecP is involved in dissemination in a tissue-specific manner.

Discussants (15 minutes)

- *Dr. Kevin Astle*, Assistant Professor, Department of Pharmacotherapeutics and Clinical Research, University of South Florida
- *Dr. Sheeba Varghese Gupta*, Associate Professor, Department of Pharmaceutical Sciences, University of South Florida
- *Dr. Augustine Nkembo*, Assistant Professor, Department of Pharmaceutical Sciences, University of South Florida

11:30-12:00 p.m.

EXHIBITOR BREAK

12:00-1:30 p.m. ~ Grand Ballroom

LUNCHEON: The Scholar’s Imperative: Effecting Positive Change in a Dynamic World

• *Dr. Alex R. Piquero*, Professor, Department of Sociology & Criminology and Arts and Sciences Distinguished Scholar, University of Miami

CONCURRENT SESSIONS

1:45-3:15 p.m. ~ Pinellas Room

Strategically Planning Research to Maximize Career Opportunities

Achieving your career goals and securing employment in a highly competitive marketplace requires developing a strategic plan to complete the Ph.D. program and create an attractive portfolio that demonstrates your capacity to conduct timely and cutting-edge research, develop basic and innovative courses and produce dynamic lectures, while meeting expectations for publishing articles and books and securing grants.

This panel, comprised of experts in STEM, Social and Behavioral Sciences and Business, will address the following topics related to strategically planning for employment in these highly competitive times:

- Developing marketable research interests, topics, and questions that are timely, relate to problem-solving and create new insights;
- Preparing to conduct interdisciplinary research or working on interdisciplinary research teams in both academic and non-academic settings;
- Creating presentations tailored to different audiences (e.g., the dissertation defense, professional academic research conferences, job interviews for positions in academia or outside of academia);
- Setting a research agenda that maximizes chances for pursuing employment opportunities and career paths both inside and outside of academia; and
- Choosing modes of publishing and publication outlets that maximize opportunities for seeking positions at colleges and universities, private corporations (both for-profit and non-profit) and governmental agencies.

• *Dr. Daphne Simmonds*, Associate Professor, Department of Computer Information Systems and Business Analytics, Metropolitan State University

• *Dr. Anol Bhattacharjee*, Professor, School of Information Systems and Management and the Exide Professor of Business Ethics, University of South Florida

• *Dr. Norman Johnson*, Professor of Business Analytics, College of Business, University of Houston

• *Dr. Chalane E. Lechuga*, Professor and Interim Chair, Department of Chicana/o Studies and Director of Diverse Faculty Research and Development, Office of Diversity and Inclusion, Metropolitan State University of Denver

• *Dr. Onyi Nwafor*, Assistant Professor, Department of Information Systems and Supply Chain Management, Bryan School of Business and Economics, University of North Carolina at Greensboro, North Carolina

Grand Ballroom

Exploring Fellowships and Awards to Support Your Graduate Journey

There are many funding opportunities (fellowships, scholarships, grants, and awards) for doctoral students to consider during the doctoral experience. Many of these opportunities provide value added experiences and potentially offer clear cut paths to exciting careers inside and outside of academia. This session will provide participants with an overview of various funding opportunities, specifically from federal agencies, non-profits, and private organizations. Participants will learn about key elements that reviewers use in their evaluation criteria and obtain strategies for developing successful and competitive applications.

• *Dr. Tyisha Hathorn*, Moderator, Assistant Dean for Graduate Education, University of Virginia

• *Dr. Adrienne Stephenson*, Associate Dean of The Graduate School and Director of the Office of Graduate Fellowships and Awards, Florida State University

SATURDAY, FEBRUARY 10, 2024

1:45-3:15 p.m. ~ Lee Room

How to Secure a NASA or TRISH Post-Doctoral Fellowship in the Next Three Weeks - Part II

This multi-part presentation offers real-time information and small group guidance for accessing and applying for current post-doctoral opportunities. Today's workshop serves as an introduction and aims to support a 4-day workshop (a two-part in-person workshop today followed by three web-based sessions) designed to support participants in a step-by-step process to apply for post-doctoral opportunities at NASA centers around the United States as well as TRISH (Translational Research in Space Health) Post-doctoral Fellowships.

Guidance will include, but not be limited to, exploring opportunities in real-time; assessing alignment of selected opportunities to participants' current research; exploring and creating an account on the submission portal; and reviewing the checklist for preparing documents to apply. After today's workshops, participants must satisfy each web-based session's objective to participate in the next session's immersion tasks over the course of a week from February 21-27. Participants will be paired as near-peer mentors to work together during the sessions. A mock review process of prepared documents will be held during the final web-based session day.

- *Dr. Kristina Henry Collins*, Executive Director for Robinson Center for Young Scholars, University of Washington
- *Ms. Tericka Cesar*, Ph.D. Candidate in Nursing, University of Miami
- *Ms. Lisa Hanson*, Grant Specialist and Program Manager, Space Health Inclusion Partnership, LBJ Institute for STEM Education and Research, Texas State University

Collier Room

Finding Your Dream Post-Doctoral Position

Embarking on a postdoctoral journey is a pivotal moment in your academic career. This workshop will guide doctoral candidates through the process of identifying and securing their dream postdoctoral positions. Whether you're aiming for a prestigious research institution, industry collaboration, or a unique interdisciplinary opportunity, this workshop will equip you with the essential skills and insights to navigate the competitive landscape of postdoctoral placements, focusing on the following key topics:

- *Understanding Your Career Goals*: Reflect on your long-term career aspirations and identify the key skills or experience you want to take from your postdoctoral training;
- *Exploring Diverse Opportunities*: Gain insights into the wide array of postdoctoral positions available in academia, industry, and other sectors;
- *Crafting an Impactful Application*: Learn effective strategies for writing a compelling curriculum vitae (CV), cover letter, and research statement tailored to your desired postdoctoral position;
- *Preparing for Interviews*: Develop the skills to discuss your qualifications and articulate your vision during postdoctoral interviews;
- *Negotiating Offers and Ensuring a Successful Transition*: Understand the art of negotiation when it comes to postdoctoral offers and gain insights into the logistics of transitioning smoothly into your new position.

- *Dr. Brittany Hollister*, Director of Postdoctoral Affairs and Prestigious Awards, University of Florida
- *Dr. Jade A. Laderwarg*, Associate Director, Office of Postdoctoral Affairs, College of Graduate Studies, University of Central Florida

SATURDAY, FEBRUARY 10, 2024

1:45-3:15 p.m. ~ Citrus Room

Research Panel 3 — Nursing and Public Health

Navigating Global Health Crises: Research on Obesity, Diabetes and Veterans' Care

- *Tericka Cesar*, Panel Chair, UM (2022), Nursing, “*An Inductive Approach to Obesity: A Concept Analysis of Familial Obesity Within the Context of African American Families*”

There is an escalating global obesity crisis, notably impacting obese African Americans. While conceptual analyses on obesity remain limited, an inductive approach sheds light on this concept within modern diverse populations. Methods: A review of citations for the concept of familial obesity was performed resulting in over 1000 articles using PubMed, CIANNL, OVID and Google Scholar. This query was reduced to thirty-one articles with refined search terms and nonhuman exclusions. Findings Review of the literature demonstrated the intricate interplay of obesogenic environments, race, socioeconomic factors, metabolism, and nutritional behaviors. Notably, physiological attributes like genetics, microbiome, and physiology emerged as key contributors to obesity among African American families. Conclusions and Clinical Relevance As knowledge evolves, refining the obesity concept among African American families can yield valuable strategies for research and healthcare translation, impacting individuals and families profoundly. This research underscores the dynamic nature of concepts and their application, emphasizing the need to translate research insights into effective healthcare interventions.

- *Sandra Garcia-Davis*, UM (2023), Public Health, “*The Epidemiology of the Long-Term Care Needs and Unmet Needs of Older Veterans in the United States: An Analysis of the HERO CARE Survey (2021)*”

The epidemiology of long-term care (LTC) needs and unmet needs among Veterans, who differ in sociodemographic composition from non-Veterans, remains an important gap in the literature. We aimed to 1) characterize Veterans across levels of LTC needs, 2) estimate the proportion of Veterans reporting unmet LTC needs, and 3) describe the types and clustering patterns of LTC needs. Veterans ages 65+ participating in the HERO CARE survey were included (N=7,424). One-way ANOVA and chi-square tests were conducted to explore associations, significant results were followed up by posthoc pairwise comparisons. About 4.38% of Veterans reported having only activities of daily living (ADL) needs, 14.28% only instrumental ADL (IADL) needs, 49.30% ADL and IADL needs, and 32.04% neither ADL nor IADL needs. About 30% of all Veterans and 42% of those with LTC needs reported unmet LTC needs. Veterans with unmet needs were older, tended to be Hispanic, homebound, and more service-connected. Over half (60.55%) of Veterans had a cluster of bathing, dressing, and transferring needs.

- *Ericka Horne*, FAMU (2023), Public Health, “*The Role of Religiosity on Trauma and Type II Diabetes Management Among Black Adults in Florida: A Mixed-Methods Study*”

Type II Diabetes (T2D) is the most common type of diabetes that occurs in adults characterized by elevated blood glucose levels. Adverse Childhood Experiences (ACEs) are traumatic events that occur during between 0 and 17 years of age. There are a few studies that look at religiosity as a coping mechanism of those with history trauma and/or diabetes. This mixed-methods approach will quantitatively assess the association between ACEs and T2D in Florida. Qualitatively, the study aims to explore the role of intrinsic and extrinsic factors of religiosity on Type 2 Diabetes diagnosis and management in Black adults in Florida considering the ACEs they have experienced. Several tools will be adapted and modified to help explore the relationship.

Discussants (15 minutes)

- *Dr. Diane Allen-Gipson*, Associate Professor, Department of Pharmaceutical Sciences, University of South Florida
- *Dr. Angela Hill*, Associate Dean of Clinical Affairs and Professor, Taneja College of Pharmacy, University of South Florida
- *Dr. Sheeba Varghese Gupta*, Associate Professor, Department of Pharmaceutical Sciences, University of South Florida

Audience – Q&A (10 Minutes)

SATURDAY, FEBRUARY 10, 2024

1:45-3:15 p.m. ~ Pasco Room

Research Panel 4 — Public Health and Pharmaceutical Sciences

Equity in Healthcare Access and Outcomes: Examining Disparities in Breast Cancer Screening, Pancreatic Disease, and Maternal Health

• *Michelle Fedrick*, Panel Chair, FAMU (2023), Public Health, “*Examining Racial Disparities in Preventive Healthcare Utilization and Adherence to Breast Cancer Screening Guidelines Among Women in Florida: Implications for Health Equity*”

Breast cancer remains a significant public health concern, with early detection through adherence to screening guidelines being a critical factor in reducing mortality rates. However, disparities in access to and utilization of preventive healthcare services persist, potentially exacerbating existing health inequities. This study explores the intricate web of challenges and obstacles that affect access to routine check-ups and breast cancer screening, with a specific emphasis on the disparities faced by women from various racial and ethnic backgrounds. Using a mixed-methods approach, this study incorporates a quantitative analysis of healthcare utilization data and qualitative exploration of the experiences and perceptions of women in Florida. The aim of this project is to enhance health equity for Florida’s women while also attempting to provide a detailed knowledge of the mechanisms causing these disparities. By shedding light on these disparities, this research aims to inform policy initiatives and interventions that can promote equitable healthcare access and outcomes for all women in the State.

• *Dr. Corey Perkins*, UF (2019), Pharmaceutical Sciences, “*Race as a Predictive Confounder in the Molecular Events of Human Pancreatic Acinar Ductal Metaplasia and Drug Response*”

Pancreatic diseases disproportionately affect the Black/African American (AA) community in comparison to non-White Hispanics and Whites. Acinar to ductal metaplasia (ADM), the process by which pancreatic acinar cells transdifferentiate into ductal epithelial cells, is believed to be an initiating event of pancreatic ductal adenocarcinoma. Our lab has developed a 3D organoid assay to display ADM using primary, human pancreatic acinar cells to study the rate of transdifferentiation amongst these three different races. Preliminary data shows that the rate of ADM is occurring significantly faster ($p < 0.05$) in Blacks/AAs (White=16, Hispanic=11, Black/AA=5), which may explain the disproportionately behind the incidence and mortality rates for this race in pancreatic cancer. Furthermore, we have used a histone deacetylase (HDAC) inhibitor in reversing the process of ADM, which has consequently shown race-related outcomes, with Blacks/AAs displaying a significant chemoresistance ($p < 0.05$) to HDAC treatment (White=6, Hispanic=6, Black/AA=3) by utilizing an ADM reversal index (ADMRI).

• *Dr. Nikema St. Fleur*, FAMU (2018), Pharmaceutical Sciences, “*The Maternal Health Care Experience of Black Women Diagnosed with a Hypertensive Disorder of Pregnancy*”

Further research on factors associated with maternal mortality among Black women is necessary to aid in decreasing overall maternal mortality. This study intends to examine the patient experience of Black women diagnosed with a hypertensive disorder of pregnancy (HDP) in efforts to pinpoint possible areas of intervention to decrease adverse maternal health outcomes and maternal mortality. Descriptive/bivariate and multivariable analysis of PRAMS Phase 8 questionnaire data for states in the southern United States will be conducted using Statistical Analysis Software (SAS) to explore the extent to which social and clinical determinants of health, including income, education, and comorbidity, as well as the availability of health insurance impact the likelihood of HDP onset among black women in the southern United States. This work also will consider how the quality of prenatal care influences the maternal experience of Black women diagnosed with an HDP.

Discussants (15 minutes)

- *Dr. Kevin Astle*, Assistant Professor, Department of Pharmacotherapeutics and Clinical Research, University of South Florida

- *Dr. Jasmine Cutler*, Associate Dean, Faculty and Administration and Professor of Finance, University of South Florida

- *Dr. Augustine Nkembo*, Assistant Professor, Department of Pharmaceutical Sciences, University of South Florida

Audience – Q&A (10 Minutes)

CONCURRENT SESSIONS

3:30-5:00 p.m. ~ Pinellas Room

SMART Lab and McKnight Graduate NanoSTEM Fellows' Poster Session

Funded by a \$2.2 million career development and training grant from the National Institutes of Health and with support from FEF, USF Assistant Professor Micah Johnson's Substance Misuse and Addictions Research Traineeship (SMART) Lab recruits gifted underrepresented minority (URM) or disadvantaged students and trains them to become the next generation of elite substance misuse and addiction scientists. The SMART goal is to increase the number of highly skilled URM scholars who enter graduate degree programs focused on careers in substance misuse and addiction research.

The McKnight Graduate Nano-STEM Fellowship Program objective is to increase the number of underrepresented African American, Hispanic, and females who enroll in Ph.D. programs and/or enter the career sector by pursuing a career in research or industry. The program will enhance participation and services in STEM fields for underrepresented minority groups while bringing awareness to the field of nanotechnology as an emerging STEM field.

In this session, SMART Lab Trainees and McKnight NanoSTEM Fellows will present their research.

Collier Room

Careers in Extension: Opportunities for PhD Graduates at Land Grant Universities

Land Grant Universities (LGUs) were established to make education accessible to all. With a statewide reach and a three-fold mission of teaching, research, and Extension, LGUs often serve as the front door of universities across the state. State and County Extension Faculty translate science into educational programs that provide solutions for people's lives. This session will describe the mission of and the job opportunities within LGUs with a focus on Extension. Come hear the Directors of the UF/IFAS Extension and FAMU Extension systems describe how they navigated opportunities in Extension to ultimately serve in the highest level Extension positions within their systems. If you are hitting the job market, please bring your resumes and be prepared to discuss available opportunities with these leaders.

- *Dr. Karla P. Shelnut*, Professor and Associate Dean for Extension Engagement, Institute of Food and Agricultural Sciences, University of Florida
- *Ms. Vonda Richardson*, Director and Associate Administrator of Cooperative Extension, College of Agriculture and Food Science, Florida A&M University
- *Dr. Andra Johnson*, Dean for Extension Engagement, University of Florida

Sarasota Room

Welcome to NASA EPSCoR Solicitations: Crafting Your Proposal for Success

This session explores the intricacies of crafting a compelling research proposal tailored for success within NASA's Established Program to Stimulate Competitive Research (EPSCoR) framework. Throughout this presentation, we shall unravel the nuanced landscape of proposal development, navigating the contours of intellectual merit, broader impact, and methodological precision. The solicitation process within NASA's EPSCoR program represents a gateway to transformative research endeavors, beckoning scholars and innovators to elucidate the frontiers of scientific inquiry and technological innovation. This presentation discusses the intricate dance between intellectual merit and broader impact, weaving together a narrative of scholarly rigor and societal relevance. From the crystalline clarity of research objectives to the delineation of methodological frameworks, each facet of the proposal shall be honed to reflect the highest standards of academic excellence and visionary foresight.

- *Dr. Ali Shaykhian*, Bid and Proposal Lead, EPSCoR Technical Officer, EPSCoR & Space Grant, NASA

SATURDAY, FEBRUARY 10, 2024

3:30-5:00 p.m. ~ Lee Room

Innovations in Educational Research and Collaboration: Building Relationships, Designing Solutions and Enhancing Sustainability

Through an informal conversation, this Session offers an opportunity for McKnight Fellows to learn about the Comprehensive Center Network, 19 federally funded Regional Technical Assistance Centers providing collaborative, customized, adaptable support at no cost to state education agencies (SEAs) across the United States. The Region 14 Comprehensive Center designs and implements projects that build SEA capacity to carry-out evidence-based policies and programs that improve the quality of instruction, increase access to effective teachers and school leaders, and close education achievement gaps in Arkansas, Louisiana, and Texas. The specific research focus areas are as follows: College and Career Readiness, Educator Effectiveness, Effective Instruction, Organizational Effectiveness, and School and Community Health. If you are interested in becoming a part of the Region's work, we invite you to join Drs. Donna Elam, Stephanie Stewart and Kristin Nafsiger in this important discussion.

Citrus Room

Research Panel 5 — Biomedical Sciences and Neurosciences

Biomedical Causes and Cures: Potential Therapeutic Targets in Depression, Psychosis and Alzheimer's Disease

• *Nella Delva*, Panel Chair, FSU (2018), Biomedical Sciences, *"Loss of Dopamine D1 Receptors in Cerebral Cortical Interneurons Leads to Stress-Related Adaptations"*

Dopamine D1 receptors are expressed early in forebrain development in a variety of neuronal subtypes including future cerebral cortical inhibitory interneurons. These interneurons are specified in part by the transcription factor Nkx2.1, and these GABAergic neurons appear to regulate mood-related behaviors and circuits. We used Cre-loxP-induced recombination to delete D1 receptors from Nkx2.1-specified progenitor cells and characterized the cKO mice behaviorally and cellularly. Nkx2.1-Drd1-cKO mice developed normally and had normal phenotypes in a variety of behavioral assays measuring motor activity, anxiety, and different types of learning and memory. However, Nkx2.1-Drd1-cKO mice demonstrated reduced immobility in the forced swim test and reduced latency to consumption in an assay of novelty-induced hypophagia. These findings suggest an antidepressant-like effect in the Nkx2.1-Drd1-cKO mice. We next performed targeted analyses of select genes and signaling pathways in the medial frontal cortex and observed significant reductions in the neurotrophin receptor TrkB by immunoblotting, and in the neurexin contactin-associated protein-like 4 (Cntnap4) by in situ hybridization. Ongoing experiments are exploring basal and restraint stress-induced changes in blood corticosterone levels and stress-induced differences in depression-related behavior. We are also quantifying additional changes in gene expression patterns. Our studies to date suggest that D1 receptor loss within Nkx2.1-derived GABAergic neurons modulate brain circuits involved in mood regulation and perhaps in stress responses. These data may lead to the identification of new cellular mechanisms through which behavioral resiliency and antidepressant-like effects could be generated.

SATURDAY, FEBRUARY 10, 2024

3:30-5:00 p.m. ~ Citrus Room

Research Panel 5 — Biomedical Sciences and Neurosciences (Cont.)

Biomedical Causes and Cures: Potential Therapeutic Targets in Depression, Psychosis and Alzheimer's Disease

• *Tara Hawkinson*, UF (2023), Biomedical Sciences, “*In Situ Glycomic Analysis of Human Brains Throughout Alzheimer's Disease Progression*”

Glucose hypometabolism is considered a significant clinical feature of Alzheimer's Disease (AD). Protein N-glycosylation is downstream of central carbon metabolism and impacts several intracellular and extracellular processes from adhesion to neuronal signaling cascades. Our lab previously reported a detailed, spatially resolved N-glycan analysis within normal and AD, human frontal cortical brain regions suggesting protein hyperglycosylation in AD human brains. Here we expanded on this study with 19 additional human brain tissue samples in collaboration with the Neuromedicine Human Brain and Tissue Bank. Using published N-glycan workflows, we spatially interrogated N-glycan heterogeneity within the grey matter of human AD frontal cortex tissue slices throughout disease progression. We identified robust, regional-specific N-glycan changes associated with AD in humans. This was not specific to a single class of N-glycans, instead, all glycans were robustly increased as the disease progressed. These data suggest N-linked glycan dysregulation could be a metabolic underpinning of neuronal dysregulation in AD and warrant further mechanistic interrogations.

• *Meaghan Navarrete Mathews*, FSU (2023), Neuroscience, “*The dCA1-LS-VTA Pathway in 14-3-3 Deficiency Induced Hyperlocomotor Behavior and Overactive Dopamine Signaling*”

An estimated 3% of the population will experience psychosis at some point in their lifetime, yet we know little about the altered neural circuitry underlying psychosis. To address this gap in knowledge, our lab created a mouse model in which region-specific functional knockout (FKO) of the 14-3-3 protein family causes several phenotypes that correlate to symptoms of psychosis. The goal of this project is to further characterize the synaptic and functional connectivity of the dorsal hippocampus CA1 (dCA1) – lateral septum (LS) - ventral tegmental area (VTA) pathway. We hypothesize that the dCA1-LS-VTA pathway is composed of a dCA1(glutamate)– LS(GABA) – VTA(GABA) – VTA (dopamine) circuit by which 14-3-3 inhibition-induced CA1 hyperactivity ultimately leads to the dis-inhibition of VTA dopamine neurons. The proposed studies will allow for a deeper understanding of a novel neural circuit that correlates to key symptoms of psychosis, contributing valuable knowledge to the field that may be used in the development of more targeted treatments.

Discussants (15 minutes)

- *Dr. Diane Allen-Gipson*, Associate Professor, Department of Pharmaceutical Sciences, University of South Florida

- *Dr. Xavier Scott*, Post-Doctoral Fellow, Baylor College of Medicine

Audience – Q&A (10 Minutes)

SATURDAY, FEBRUARY 10, 2024

3:30-5:00 p.m. ~ Pasco Room

Research Panel 6 — Public Health

Traversing Mental and Emotional Health Landscapes: Issues in Child Welfare, Postpartum Depression, and Modulating Emotion

• *Kayla Nembhard*, Panel Chair, USF (2022), Public Health, “*Mental Health Outcomes of Black Children and Young People with a History of Out-of-Home Care: A Literature Review*”

Numerous negative health outcomes are linked to child welfare removals. However, there has been insufficient examination around how child removals and out-of-home placement impact mental health outcomes. Furthermore, a review of the literature centering mental health outcomes of Black youth in out-of-home care has not been completed. This literature review aimed to identify and critically evaluate the mental health outcomes of Black youth placed in out-of-home care. Embase, SCOPUS and Web of Science were utilized to conduct systematic literature searches of relevant articles published in 2022. Findings were organized into three categories: mental health symptoms; access to mental health services; and risky behaviors as a potential consequence of lack of access to mental health care. Reported mental health symptoms were broad. Access to services for Black youth remains a concern, especially as structural racism persists in perpetuating disparate outcomes, which are also linked to this population’s engagement in risky behaviors in efforts to cope with ruptured relational and environmental attachments.

• *James Brown*, FSU (2018), Neuroscience, “*Event-Related Potentials in a Cyberball Social Exclusion Paradigm*”

Alexithymia is the inability to detect physiological feelings and modulate emotion. Recent works show significant relationships between self-reports of alexithymia, positive-, and negative urgency (i.e., tendency to become impulsive when in positive or negative emotional states). This study used an ERP (event-related brain potentials) version of the Cyberball task, a ball tossing task between an experimental participant and two ostensible players that is used to induce both positive and negative emotional states. Given extensive evidence of the relationship between reduced P300 amplitude and trait impulsivity, we examined the P300 response to ball-passes in negative emotional state trials where the participant was excluded from play (84% of trials) and positive emotional state trials where other players passed the ball to the participant (16% of trials). Consistent with prior research, results show that individuals high in alexithymia showed a reduced P300 response to negative emotional state trials, suggesting enhanced impulsivity while in an induced negative emotional state (i.e., enhanced negative urgency).

• *Darneshia Williams*, FAMU (2023), Public Health, “*Suffering in Silence: The Association between Social Support and Postpartum Depression among Black Women in Florida*”

This study will explore the association between social support and Postpartum Depression (PPD) among Black women. Social support has been linked to positively influencing women’s childbearing experiences and has been shown to be a preventative factor in PPD. PPD is a significant mental health problem in mothers after giving birth, and maternal mental health is considered a major global health challenge that needs to be addressed. PPD affects new Black mothers at a higher rate, and Black women are less likely to seek help, causing them to suffer in silence. Identifying and understanding why Black women aren’t accessing mental health treatment is essential in improving the health outcomes for Black mothers. There is a lack of research on the relationship of social support and PPD among Black women; this research will assist with the gap in literature.

Discussants (15 minutes)

- *Dr. Angela Hill*, Associate Dean of Clinical Affairs and Professor, Taneja College of Pharmacy, University of South Florida
- *Dr. Shelby Gilbert*, Associate Professor, Marieb College of Health and Human Services, Florida Gulf Coast University

Audience – Q&A (10 Minutes)

SATURDAY, FEBRUARY 10, 2024

6:00-8:00 p.m. ~ Grand Ballroom

DINNER & DIALOGUE WITH THE EXHIBITORS

- ♦ An Up Close and Personal Faculty Recruitment Experience
 - Dinner
 - Closing Remarks: *Dr. Lawrence Morehouse*
- ♦ Book signing by *Dr. Elizabeth Hordge Freeman*

SUNDAY, FEBRUARY 11, 2024

10:00 a.m.-2:00 p.m. ~ Grand Ballroom

AWARDS AND JACKETING CEREMONY

- ♦ Brunch
- ♦ Introductions by MDF Graduates *Dr. Victor Kasper* and *Dr. Rhoda Moise*
- ♦ William R. Jones Most Valuable Mentor Awards
- ♦ New Graduates' Jacketing Ceremony
- ♦ Closing Remarks: *Dr. Lawrence Morehouse*