

2024 McKnight Annual Fellows' Meeting and Research & Writing Conference

November 22-24, 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*

FRIDAY, NOVEMBER 22, 2024

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

12:00-7:00 p.m. ~ Grand Ballroom Foyer
REGISTRATION

12:00-2:00 p.m. ~ Grand Ballroom East
INAGURAL NASA LUNCHEON (invitation only)

Introductions by *Dr. Dawn Elliott Martin*, Flight Structures Engineer and Flight Crew Equipment Subsystem Manager, NASA
• *Dr. Kathleen Loftin*, Established Program to Stimulate Competitive Research (EPSCoR) Project Manager, NASA
• *Dr. John A. Cavolowsky*, Director, Transformative Aeronautics Concepts Program, NASA Aeronautics Research Mission Directorate

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

FRIDAY, NOVEMBER 22, 2024

2:00-3:00 p.m. ~ Duval Room

NAVIGATING THROUGH NASA'S DATA SYSTEMS

This session will explore NASA's upcoming funding priorities, with a specific focus on Earth Science, Planetary Science, and Human Research. You'll gain valuable insights into the agency's future direction and key areas of emphasis. In addition, we'll provide an in-depth look at NASA's diverse programs that foster innovation, collaboration, and growth across research, education, and outreach. The session will focus on navigating NASA's data systems to access key opportunities, including:

- **Internships and Fellowships:** Engage in hands-on, immersive experiences with NASA's cutting-edge missions, gaining invaluable real-world exposure.
- **Research Funding Programs:** Learn about key funding opportunities such as EPSCoR (Experimental Program to Stimulate Competitive Research) and MUREP (Minority University Research and Education Program), which support a broad range of research initiatives and help expand STEM access at underrepresented institutions.
- **STEM Outreach Initiatives:** Discover programs like Space Grant, NextGen STEM, and challenges such as the App Development Challenge, NASA Minds, and RASC-AL, all designed to inspire and engage the next generation of innovators and space explorers.
- **Educational Opportunities:** Explore how NASA's resources can be integrated into academic curricula through initiatives like the Faculty Fellowship Program and Research Funding, enriching learning experiences across educational levels.

- *Dr. Kathleen Loftin*, Established Program to Stimulate Competitive Research (EPSCoR) Project Manager, NASA
- *Dr. Ali Shaykhian*, Bid and Proposal Lead, EPSCoR; and Customer Relationship Manager, IT Technical Integration Office, NASA

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

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; and Affiliated Faculty, Department of Anthropology, University of South Florida
- *Dr. Sylvia Thomas*, Vice President for Research and Innovation, President and CEO of the USF Research Foundation, Inc., and Professor, University of South Florida

FRIDAY, NOVEMBER 22, 2024

3:45-5:15 p.m. ~ Duval 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. 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

6:30-8:30 p.m. ~ Grand Ballroom

OPENING SESSION

- ♦ Dinner
- ♦ 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*
- ♦ Dr. William R. Jones Award for Outstanding Mentor 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 Exhibitors
- ♦ Book signing by *Dr. Stephanie Y. Evans*

SATURDAY, NOVEMBER 23, 2024

7:00-8:00 a.m. ~ Garden Terrace (Outside area by the Cafe Restaurant)

YOGA SESSION

Please pick up a yoga mat from the Conference registration desk when you register, while supplies last.

7:30 a.m. ~ Grand Ballroom Foyer

CONTINENTAL BREAKFAST

OPENING PLENARIES ~ Grand Ballroom

9:00-9:15 a.m.

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

9:15-10:15 a.m.

Navigating the Journey: Exploring Career Pathways in the Professoriate, Department Leadership, and Senior Higher Education Roles

This session will take the form of a fireside chat and will explore career trajectories in academia and higher education leadership. The discussion will focus on the three main pathways—faculty, department leadership, and senior administrative roles—and offer insights for emerging scholars on how to utilize their doctoral degrees in these spaces.

- *Dr. Liana C. Mentor*, Moderator. Senior Director, Success Coaching and Advising, Johns Hopkins University
- *Dr. Tahirah Abdullah*, Clinical Psychologist and Associate Professor, University of Massachusetts Boston
- *Dr. Tony Barringer*, Interim Provost and Associate Provost/Associate Vice President for Academic Affairs, Florida Gulf Coast University
- *Dr. Sofia Pertuz*, Founder, Lead Strategist and Executive Career Coach, Mainstream Insight, LLC
- *Dr. Laura Kohn Wood*, Dean, School of Education and Human Development, and Professor, Department of Educational and Psychological Studies, University of Miami

10:25-11:15 a.m.

Write Like You're Running Out of Time: Building An Approach to Academic Publishing

With timelines for peer review and publication often stretching out for months or years, and the pressure to build a reputation before you complete the Ph.D., approaching publishing strategically is critical. Publications establish scholarly identity, and ultimately play a major role in the academic job search regardless of your field. However, publishing is only occasionally part of the actual curriculum of graduate programs, and thus you may be finding yourself trying to fit your writing in the margins of the already-overscheduled academic day. In this talk, Dr. Salter will discuss both the possibilities of different types of academic publishing (from journals and conference proceedings to digital projects and books) and strategies for developing your voice and approach as a scholar.

- *Dr. Anastasia Salter*, Director of Graduate Programs, and Professor of English, University of Central Florida

11:15-11:30 a.m.

EXHIBITOR BREAK

SATURDAY, NOVEMBER 23, 2024

CONCURRENT SESSIONS

11:30 a.m.-12:45 p.m. ~ Pinellas Room

Real Talk: Things I wish I Knew Before I Took my First Tenure Track Job

This session will provide insights on best practices for negotiating terms and conditions of employment at public and private universities. These terms include negotiating salary, workload, travel and research budgets, tenure and promotion requirements, teaching assistance, and spousal or partner hiring. Dr. Gayles' advice will help secure an employment agreement that maximizes your ability to meet the tenure and promotion requirements at your university.

- *Dr. Jonathan Gayles*, Professor and Chair, Africana Studies, Georgia State University

Sarasota Room

Maintaining Academic Mental Health During Stressful Times: A Practical Guide to Research and Publishing, Despite Complex Challenges

Writing scholarly books, articles, theses, and dissertations is stressful, and academic publishing can be intimidating. In this session, Dr. Stephanie Y. Evans shows scholars how to prioritize their mental health while completing a manuscript, especially in work that addresses areas that are constantly under attack, like race and gender studies. Drawing on Black women's longstanding life-writing traditions, as well as her own experience as the author and editor of nine books, Dr. Evans gives scholars tools to sustain the important work of academic writing in ways that emphasize a balance of self-care and commitment to the ongoing struggle for universal human rights. Attendees will locate five major areas of stress and identify practices for personal, professional, publishing, public, and political health.

- *Dr. Stephanie Y. Evans*, Professor of Black Women's Studies, Georgia State University

Collier Room

Careers in Extension: Opportunities for Ph.D. 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. You are invited to attend Dean Karla Shelnett's session, which will offer information on the mission of LGUs, and how to navigate the opportunities there, with a focus on Extension.

- *Dr. Karla P. Shelnett*, Professor and Associate Dean for Extension Engagement, Institute of Food and Agricultural Sciences, University of Florida

SATURDAY, NOVEMBER 23, 2024

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.

11:30 a.m.-12:45 p.m. ~ Lee Room

Research Panel 1 - Biomedical Engineering/Electrical Engineering

Innovations in Robotics, Neuromodulation, and Neural Networks: Bridging Interactions Across Human and Machine Systems

• *Devin Hunter*, Panel Chair, UCF (2021), Electrical Engineering, “*Data-Driven State Estimation of Quadrotor Dynamics Using Neural Processes*”

Traditional methods for modeling dynamical systems in robotics rely on intricate physics-based models. However, when utilized in real-world scenarios, these models often fail to accurately capture the stochastic and nonlinear components inherent in robot dynamics, including external environmental perturbations, complex sensor noise, and high-order dynamical effects. While hybrid estimation methods that are both data-driven and model-based in their approaches have recently been shown to provide proficient estimation in low-to-moderate noise/perturbation settings, they often underperform with high levels of environmental uncertainty. This paper proposes a generative, data-driven approach that utilizes the neural process as a viable solution towards state estimation under unknown external disturbances. Specifically, we utilized this model in the task of black-box state estimation of a simulated six-degree-of-freedom quadrotor with multimodal Gaussian sensor noise and several external perturbations typically faced by quadrotors during flight (i.e. wind disturbance, rotor actuation failure, etc.). Comparisons are presented with two state-of-the-art hybrid methods (deep Kalman filter and physics-informed networks).

• *Natalie Geigel*, UF (2021), Biomedical Engineering, “*Tolerability of Closed-Loop Stimulation of the Ventralis Intermedia Nucleus in Essential Tremor*”

Closed-Loop Deep Brain Stimulation (CL-DBS) of the ventralis intermedia nucleus of the thalamus is an effective therapy for medication refractory Essential Tremor (ET) that stimulates during tremor as opposed to continuously. In a retrospective study, four subjects (3 male, 1 female) were analyzed to understand their tolerance to CL-DBS therapy. With CL-DBS, we aimed to maximize the slope of the ramping rate to reach the therapeutic amplitude while minimizing stimulation-induced side effects. However, not all patients may tolerate the rapid change in stimulation amplitude. Two subjects tolerated the stimulation state changes with varying ramping rates and stimulation parameters, while two experienced paresthesias with each change. We hypothesized that lead location and relative distances to adjacent neuroanatomy may play a role in the tolerance of closed-loop paradigms. The subjects with more ventrally located stimulation contacts had lower tolerance of therapy than those with more dorsal contacts. These factors may be critically relevant when determining if a candidate is well-suited for CL-DBS.

• *David Johnson*, UF (2024), Biomedical Engineering, “*Organization of Semantic Memory in Epilepsy*”

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.

SATURDAY, NOVEMBER 23, 2024

11:30 a.m.-12:45 p.m. ~ Lee Room

Research Panel 1 - Biomedical Engineering/Electrical Engineering (Cont.)

Innovations in Robotics, Neuromodulation, and Neural Networks: Bridging Interactions Across Human and Machine Systems

Discussants (15 minutes)

- *Dr. Brandon Applewhite*, Postdoctoral Scholar, Department of Biomedical Engineering, Northwestern University
- *Dr. Charles Davis*, Associate Professor of Engineering, Embry-Riddle Aeronautical University
- *Dr. Fernando Gonzalez*, Associate Professor, Department of Software Engineering, Florida Gulf Coast University
- *Dr. Jorge Torres*, Associate Professor, Department of Bioengineering, Florida Gulf Coast University

Audience – Q&A (10 Minutes)

Citrus Room

Research Panel 2 - Nursing/Nutritional Sciences/Kinesiology

Exploring Health, Nutrition, and Body Composition: Insights into Family Dynamics, Acculturation, and Bioimpedance in Diverse Populations

- *Tericka Cesar*, Panel Chair, UM (2022), Nursing, “*Family Matters: Comprehensive Analysis of the Family Health Scale: Factor Structure, Invariance, and BMI Relationships in a Subpopulation of African Americans*”

Minority populations, especially African Americans (AA) families, are significantly affected by obesity. Crandall’s (2020) Family Health Scale (FHS) offers a valuable tool for assessing family health, focusing on relational, function, socioeconomic status, social support, and structural aspects. The purpose of this research is to explore the factor structure with exploratory and confirmatory factor analysis (EFA and CFA) using Crandall’s FHS in AA families. Additional aims are to understand the relationships between the FHS and obesity. This secondary analysis utilized EFA on a subpopulation of 176 AA participants with SPSS & Mplus version 8.10. CFA performed used fit indices criteria of CFI > .80 & RMSEA ≤ .08. Latent regression assessed the relationship between family health factors and BMI. Multigroup CFA found preliminary findings from this analysis demonstrate overall-scale equivalence. Regression analysis reveals an inverse relationship between FHS and BMI. This research could assist with gaining insight into salient targets for further research for familial obesity.

- *Ariana Bolivar*, FIU (2024), Nutritional Sciences, “*Examining the Relationship between Acculturation, Eating Behavior, Diet Quality, and Body Satisfaction Among Hispanic Millennial and Gen X Women Using a Mixed-methods Approach*”

Obesity in midlife Hispanic women may be attributed to multiple external and internal factors such as aging, hormonal changes, acculturation, and body satisfaction which can contribute to eating behaviors. This study intends to use a mixed-methods approach to investigate the relationship between acculturation, eating behavior, diet quality, and body satisfaction in Hispanic Millennial and Gen X Women. Participants who self-identify as Hispanic/Latino(a/x) women born between 1965-1996 will be recruited using convenient/snowball sampling methods. Four Semi-structured interviews (n=40) will be conducted virtually to qualitatively examine generational variations in acculturation, body satisfaction, and eating styles. Two independent researchers will analyze and code transcripts for themes using inductive a-priori line-by-line coding. For the quantitative portion of the study, participants (n=180) will complete a survey and provide a 24-hour recall to collect diet quality. A sub-sample of 20% (n=36) will be recruited to collect anthropometric measurements in-person to validate self-reported responses. Statistical analysis will include descriptive statistics, SEM mediation/moderation analysis using AMOS/SPSS.

SATURDAY, NOVEMBER 23, 2024

11:30 a.m.-12:45 p.m. ~ Citrus Room

Research Panel 2 - Nursing/Nutritional Sciences/Kinesiology (Cont.)

Exploring Health, Nutrition, and Body Composition: Insights into Family Dynamics, Acculturation, and Bioimpedance in Diverse Populations

• *Kworweinski Lafontant, UCF (2023), Kinesiology, “Bioimpedance Differences Between BMI Classifications Among Community-Dwelling Older Women: A Cross-Sectional Study”*

Bioimpedance vector analysis (BIVA) offers a non-invasive method for assessing body composition and cellular health, yet little is known about how BMI categories differ in BIVA. We cross-sectionally compared bioimpedance and adiposity between BMI classifications among 112 community-dwelling older women (age: 74.3±6.8years; BMI: 30.4±6.0kg/m²) using a one-way ANOVA and BIVA software. Normal-weight, overweight, and obese BMI categories differed in body fat percentage (F=26.01, P<0.001, $\eta^2=0.32$) and resistance/height (F=16.58, P<0.001, $\eta^2=0.23$), but not reactance/height (F=1.63, P=0.20, $\eta^2=0.03$) nor phase angle (F=3.09, P=0.05, $\eta^2=0.05$). When plotted with 95% confidence ellipses, BIVA plots showed distinct positions for each BMI category (T₂=8.5–29.9, D=0.71–1.3, P<0.05). Within tolerance ellipses, overweight and obese categories were in the “obese” quadrant, while the normal-weight category was in the “athletic” quadrant. However, individual participants were scattered throughout quadrants regardless of BMI. BMI may be suitable for assessing population averages but not individual body composition. Future research should investigate the utility of bioelectrical resistance as a marker of obesity.

Discussants (15 minutes)

- *Dr. Jose Bastida*, Dietetic Intern, Florida International University
- *Dr. Max Rony François*, Service Chief, Bay Pines VA Healthcare System
- *Dr. Xavier Scott*, CEO, PulseLink Communications and Analytics

Audience – Q&A (10 Minutes)

Hernando Room

Research Panel 3 - Public Affairs/International Relations/Public Relations

Gender, Power, and Representation: Exploring Leadership, Feminist Movements, and Media Narratives

• *Marjorie De la Cruz*, Panel Chair, FIU (2021), Public Affairs, “*Women’s Leadership and Adoption of Gender Budgeting*”

Gender disparities result from economic, structural, and social constraints rather than individual decisions. According to the New Public Service framework, governments must serve public interests and advance public values. Yet, women’s representation in leadership and managerial positions in governments and public institutions worldwide is still disproportionately low. This paper seeks to assess the role of women’s leadership in adopting gender-responsive budgeting, which acknowledges the different fiscal contexts surrounding men and women. We hypothesize that countries with more extensive women’s representation in leadership and management are more likely to adopt gender-responsive budgeting. We use data from the Organization for Economic Co-operation and Development (OECD) and other sources to test this expectation. Results show that, even when controlling for factors such as egalitarianism, female life expectancy, political participation, and freedom of expression, women’s representation has a positive and significant effect on gender budgeting adoption and development. Finally, the study contributes to Pitkin’s (1972) and Mansbridge’s (1999) academic tradition by linking representative democracy and the creation of public values.

SATURDAY, NOVEMBER 23, 2024

11:30 a.m.-12:45 p.m. ~ *Hernando Room*

Research Panel 3 - Public Affairs/International Relations/Public Relations (Cont.)

Gender, Power, and Representation: Exploring Leadership, Feminist Movements, and Media Narratives

• *Dr. Vierelina Fernández*, FIU (2021), International Relations, “*War as Process? Examining Contrasting Feminist Attitudes Between Guerrilla Fighters and Civilians in the Global South*”

This dissertation chapter will provide an analysis of thirty-five (35) in-depth, semi-structured interviews and twenty-eight (28) surveys collected principally with excombatants of the Revolutionary Armed Forces of Colombia (FARC) and Kurdish PKK-YPG, but also with non-combatant experts on the subject or other civilian (non-combatant) activists intimately involved with their cause. Using independently collected quantitative survey responses and qualitative interview data, this chapter’s analysis finds that both guerrillas can be considered gender-progressive forces within their respective societies. The specific mechanisms by which this has come about include a combination of bottom-up and top-down factors such as: communal lifestyle, birth control and abortions, and women in non-traditional roles (bottom-up) or a strict culture of discipline, pink-washing, and formal education classes (top-down) within the guerrillas. The three (3) main questions driving this research study are the following: 1) are these guerrilla groups feminist? 2) what caused them to become feminist? and 3) how do these two armed groups (the Colombian FARC and Kurdish PKK-YPG) compare?

• *Nikki Lyons*, UF (2022), Public Relations, “*From Victim to Villain: Misogynoir Aimed at Megan Thee Stallion*”

Hostility towards Black women is evident in multiple contexts, from the majority and other minority groups, and within the Black community. This study investigates the presence of misogynoir within mainstream media and highlights how the intersection of anti-Blackness and misogyny maligns Black women. This study evaluates news coverage of Megan Thee Stallion between July and December 2022, the months surrounding Tory Lanez being charged and convicted of committing a violent act against her. Critical Discourse Analysis was used to examine the language and imagery used in media reporting about Megan, the victim of the crime. Research reveals instances of misogynoir in media coverage, impacting public perception and discourse, furthering the marginalization of a well-known Black woman. The study underscores the role of the media in challenging or reinforcing stereotypes and biases against Black women and contributes to a deeper understanding of how media influences societal perceptions and impacts marginalized communities.

Discussants (15 minutes)

- *Dr. Liotta Dowdy-Noche*, Forensic Anthropology Lab Supervisor, Florida Institute for Forensic Anthropology & Applied Science, University of South Florida

- *Dr. Vierelina Fernández*, Postdoctoral Scholar and Instructor, Center for Latin American Studies, Rutgers University

- *Dr. Bernd Reiter*, Latin Americanist and Professor, Department of Classical and Modern Languages and Literatures, Texas Tech University

Audience – Q&A (10 Minutes)

SATURDAY, NOVEMBER 23, 2024

11:30 a.m.-12:45 p.m. ~ *Executive Board Room*

Research Panel 4 - New Models/Technologies: Physics/Computer Science/Communication Sciences

Frontiers in Spectroscopy, Biometrics, and Cochlear Implants: Innovations in Detection, Perception, and Optimization

• *Lexter Savio Rodriguez*, Panel Chair, FIU (2020), Physics, “*Optical Two-Dimensional Coherent Spectroscopy of Cold Atoms*”

Optical Two-Dimensional Coherent Spectroscopy (2DCS) provides sensitive and background-free detection of many-body interactions and correlations in atomic vapors. Since cold atoms are an ideal system with a well-controlled environment, applying optical 2DCS in cold atoms will be useful. In this presentation, we report an experimental demonstration of optical 2DCS in cold atoms. The experiment combines a collinear 2DCS setup with a magneto-optical trap (MOT), in which cold rubidium (Rb) atoms are prepared at a temperature of about 200 μK and a number density of 10^{10} cm^{-3} . We measured the second and fourth-order nonlinear signals in one dimension. Then we acquired one-quantum and zero-quantum 2D spectra. The experiment demonstrates that our 2DCS technique has sufficient sensitivity to obtain a 2D spectrum from cold atoms. The results of this experiment represent an important first step toward optical 2DCS applications in ultracold systems, opening the possibility of performing a 2DCS study in an atom array with a deterministic.

• *Sayde King*, USF (2023), Computer Science, “*An Analysis of Intra- and Inter-Domain Biometric Features for Cross-Domain Deception Detection*”

In this paper, we consider the saliency of visual features (i.e., facial, affective, eye gaze, and body gesture features) and audio features (e.g., acoustic and prosodic features) for deception detection across four distinct domains: biography, academics, mental health, gaming, and crime/forensics. We aim to identify key indicators of deception within these domains and assess which indicators persist across different contexts. Our local dataset, the Cross-Domain Deception Dataset (CD3) features the biography, academics, and mental health domains. We use publicly available datasets, the Real-Life Trial dataset and the Box-of-Lies datasets, to represent crime/forensic and gaming scenarios, respectively. Through feature selection, feature analysis, and feature ablation experiments, we present a unique focus on the importance of deceptive cues within and across domains. We leverage machine learning to detect deception, uncovering insights leading to generalizable deception detection systems, examining the representation of deceptive risk across domains expressed via audio and video, yielding implications for diverse fields such as border security and mental health.

• *Diane Martinez*, USF (2024), Communication Sciences and Disorders, “*Developing Evidence-Based Practice in Optimizing Cochlear Implant Programming for Adults*”

Cochlear implant (CI) users often experience poor outcomes due to a lack of evidence-based clinical standards for device programming. This project aims to develop an evidence-based protocol for adult CI programming, emphasizing best practices identified through high-quality literature, expert opinion, and patient needs. We convened a panel of CI audiologists to develop a pilot evidence-based standardized programming protocol based on the evidence and panelists' expertise for clinical application and implement the protocol to demonstrate the impact on participants' stimulation levels, speech perception outcomes, sound quality, and hearing-related quality of life. The expert panel recommended incorporating more objective measurements in the standardized protocol's initial phase. This, along with clinicians' reliance on subjective approaches, suggests that adult CI users may see improvements in programming levels, speech perception, and hearing-related quality of life. Results will lead to CI audiology standardization and better objective and subjective patient outcomes.

SATURDAY, NOVEMBER 23, 2024

11:30 a.m.-12:45 p.m. ~ Executive Board Room

Research Panel 4 - New Models/Technologies: Physics/Computer Science/Communication Sciences (Cont.)

Frontiers in Spectroscopy, Biometrics, and Cochlear Implants: Innovations in Detection, Perception, and Optimization

- *Cristian Vazquez, FSU (2023), Psychology, “Modeling the Effects of Letter Frequency on Naming Times”*

Rapid Automatized Naming (RAN) matrices use different letters depending on the publisher and form. It is unclear whether these different letters impact naming time. 108 college participants were asked to name out loud a letter that appeared in the middle of the screen. All 26 letters in the English language were presented in lowercase form to be named in isolation. Voice onset latencies were collected through E-Prime 3.0 and a microphone that was connected to a serial response device known as Chronos. An unconditional cross-classified random effects model was used to examine whether there was variance at both the person and letter level, and then a conditional cross-classified random effects model included frequency as a predictor to explore whether letter frequency could explain the variance at the letter level. Results showed that reaction times varied by both the person and letter. However, single letter frequency did not account for this variance. Insights from this study ultimately will be used to help improve early literacy instruction to help struggling readers and minorities learn to read.

Discussants (15 minutes)

- *Dr. Logan Fields, AI Solutions Specialist, Ruffalo Noel Levitz*

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

- *Dr. Francisco Ortega, Associate Professor and Director of the Natural User Interaction Lab, Colorado State University*

Audience – Q&A (10 Minutes)

Pasco Room

Research Panel 5 - Social and Behavioral Sciences/Public Health

Intersections of Health, Behavior, and Environment: Exploring Family Relationships, Food Safety, and Faith in Public Health Outcomes

- *Dr. Skye Bristol, Panel Chair, USF (2023), Social and Behavioral Science, “Racial Differences in Family Conflict and Alcohol Expectancy: Insights from the ABCD Study”*

Alcohol expectancies predict subsequent alcohol use and related problems among adolescents, although predictors of alcohol expectancies remain unclear. This study examined the longitudinal impact of family conflict on alcohol expectancies among adolescents of diverse racial/ethnic backgrounds. Data were from the Adolescent Brain Cognitive Development Study (4.0 release; N = 6,231; baseline age 9–10). Linear mixed-effects regression, with interactions between race/ethnicity and family conflict, assessed the association between family conflict and alcohol expectancies for Black, White, Asian, Hispanic, and Other adolescents. Significant interactions were found for Black and White adolescents but not for other groups. Family conflict predicted lower negative alcohol expectancy for Black adolescents ($B = \pm 166$, $p = 0.033$) and higher positive alcohol expectancy for White adolescents ($B = 0.71$, $p = 0.023$) at year 3 follow-up. The results indicate that family conflict may be a risk factor for problematic alcohol expectancies among Black and White adolescents. Interventions targeting family conflict could be tailored to address these racial differences.

SATURDAY, NOVEMBER 23, 2024

11:30 a.m.-12:45 p.m. ~ Pasco Room

Research Panel 5 - Social and Behavioral Sciences/Public Health (Cont.)

Intersections of Health, Behavior, and Environment: Exploring Family Relationships, Food Safety, and Faith in Public Health Outcomes

• *Veronica Bruton, FAMU (2024), Public Health, “Understanding the Interplay of Demographic Factors and Spatial Dynamics in Foodborne Illness Occurrences and Restaurants Distribution: Implications for Health Equity and Food Safety”*

This study aims to explore the social determinants of health by analyzing the relationship between demographic data and the spatial distribution of foodborne illness occurrences relative to restaurant locations. Using data from the Foodborne Disease Outbreak Surveillance System (FDOSS) for outbreaks in Florida from 2018-2021, the research will focus on illnesses caused by Salmonella, Norovirus genogroup II, Cyclospora Cayetanensis, and STEC. Geographic and demographic factors will be mapped using GIS to identify hot spots of foodborne illness. SAS software will be employed for statistical analysis to uncover patterns, relationships, and test hypotheses related to foodborne illness and restaurant dynamics, ultimately guiding evidence-based interventions to promote health equity and food safety.

• *Ericka Horne, FAMU (2023), Public Health, “Got Faith? The Role of Religiosity on Trauma-Associated Type II Diabetes Management Among Black Adults in Florida”*

Type II Diabetes (T2DM) is the most common type of diabetes that occurs commonly in adults, affecting approximately 422 million people, disproportionately affecting Black people. There are many risks associated with the development of T2DM, such as obesity, elevated blood glucose levels, physical inactivity, and unhealthy eating. Among those risks are Adverse Childhood Experiences (ACEs), which are traumatic events that can occur between birth and 17 years of age. To date, no extensive research has investigated the link between ACEs and T2DM, while several studies have explored the association between religion and health. This two-part quantitative study will focus on the relationship between Black adults in Florida with trauma-associated T2DM and religion by first analyzing the Florida Behavioral Risk Factor Surveillance System (BRFSS) and then reviewing results of a questionnaire assessment adapted from three other tools. Through analysis, the role of religiosity will be discussed and specific interventions can be designed to address self-management of T2DM.

Discussants (15 minutes)

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

- *Dr. Donna Williams*, Public Health Educator, Health Education and Communication Branch, Immunization Division, U.S. Center for Disease Control and Prevention

Audience – Q&A (10 Minutes)

SATURDAY, NOVEMBER 23, 2024

11:30 a.m.-12:45 p.m. ~ *Presenter Arc*

Undergraduate Research Poster Session

This session highlights research conducted by undergraduates considering graduate studies. Participants will present their research projects through engaging posters, showcasing innovative ideas and methodologies. Explore their work and engage in meaningful discussions to support the following next generation scholars:

- *Rosario Barraza*, FSU, Political Science, “*Navigating Peer Influence: Social Bonds and Barriers in the Sociopolitical Development of Immigrant-Origin Latinx Youth*”
- *Bianca Beliard*, FSU, Psychology, “*Effects of Racial Representation in Advertisements for Mental Health Studies*”
- *Jahbari Bowen*, FSU, Biology, “*Optimizing Capping Methods for the Moloney Murine Leukemia Virus*”
- *Angie Cordova*, UF, Psychology, “*The Effects of Stress on Memory Performance in Latinx Populations*”
- *John Garza, Jr.*, FSU, Physics, “*Physics of SNe Ia from Differential Analysis and Implications for Cosmology*”
- *Aliya Hutley*, FSU, Engineering, “*Design and Development of a Haptic Interface for STEM Educational Outreach*”
- *Aliza Hutley*, FSU, Engineering, “*The Development of Thermal and UV Stable Poly(arylene Ethers) Polymers for 3D-Manufacturing*”
- *Matheus Kunzler Maldaner*, UF, Computer Science, “*MIRAGE: Multi-model Interface for Reviewing and Auditing Generative Text-to-Image AI*”
- *Malik Lewis*, FAMU, Engineering, “*Acoustics Sensor Arrays for Fault Detection in 3D Printing*”
- *Kelly Llanas*, FGCU, Engineering, “*Development of Standardized Non-Destructive Impact Test for Prostheses*”
- *Lesly Nazaire*, FSU, Engineering, “*Drone Stabilizer Project*”
- *Casidhe Pierre*, FAMU, Computer Science, “*Development of a Machine Learning Framework for Accurate Diabetes Detection and Clinical Decision Support*”
- *Ricardo Roure*, UF, Biology, “*Quantifying Host and Viral Protein Remodeling during HIV Reactivation from Latency*”
- *Jorge Vasquez and Chiyle Briggins*, FAMU, Computer Science, “*Non-Invasive Alzheimer’s Detection via MRI Imaging and Convolutional Neural Networks*”
- *Alexander Villiers*, FGCU, Engineering
- *Nicholas Villiers*, FGCU, Computer Science, “*Carla Simulation Demonstration*”
- *Isaac Washington*, USF, Engineering, “*Finding the Impact of Moringa Farming on Smallholder Well-being in Ghana Using Endogenous Switching Regression*”

SATURDAY, NOVEMBER 23, 2024

12:45-2:15 p.m. ~ Grand Ballroom

LUNCHEON: The Future of Ph.D.'s in an AI-Dominated World: Are Educators, Researchers, and Reviewers Becoming Obsolete?

Is the instructor's job over? With AI transforming classrooms through adaptive learning systems and automated grading, are human educators at risk of becoming irrelevant? Are researchers and reviewers, once critical to academia, facing extinction as AI algorithms now handle data analysis, literature reviews, and even peer assessments with unprecedented efficiency? For graduating Ph.D.s, does the future lie in the tech-driven private sector, or is that path also under threat? As automation rapidly disrupts industries, could AI eliminate the very jobs Ph.D.s are seeking as an escape from academia? This panel brings together leading voices to explore the sweeping impact of AI on the academic and professional trajectories of Ph.D. graduates. From reshaping how we teach and conduct research to driving many scholars out of academia, AI is redefining the role of Ph.D.s in unexpected ways. But what does this mean for the future? Is industry truly a refuge, or is it equally susceptible to the automation wave?

Join us as we tackle these urgent questions head-on. Are Ph.D.s entering a golden age of AI collaboration, or are they being replaced by the very technologies they helped create? The panel will offer a deep dive into these issues, providing fresh perspectives on how Ph.D.s can navigate—and thrive in—this rapidly changing landscape. Find out what the experts are saying and prepare for a glimpse into the uncertain yet fascinating future of academia.

- *Dr. Daphne Simmonds*, Moderator, Associate Professor, CIS and Business Analytics, College of Business, Metropolitan State University of Denver
- *Dr. Daniel Acheampong*, Assistant Professor, Department of Accounting, Florida Gulf Coast University
- *Dr. Anol Bhattacharjee*, Professor, School of Information Systems and Management and the Exide Professor of Business Ethics, University of South Florida
- *Dr. Lina Bouayad*, Associate Professor, Information Systems and Business Analytics; and Director, MBA in Business Analytics Program, Florida International University

CONCURRENT SESSIONS

2:30-3:45 p.m. ~ Pinellas Room

Using AI to Strategically Plan and Maximize Career Opportunities

As artificial intelligence transforms academia, industry, and research, how can Ph.D. graduates be equipped to thrive in this rapidly evolving landscape? We present strategies that answer such questions and then move into breakout sessions that allow hands-on focus on these. These focused breakout sessions will offer tailored strategies to prepare students from diverse fields -- psychology, sociology, engineering, criminology, or beyond -- for the challenges and opportunities introduced by AI ahead. Each session will explore how AI is reshaping disciplines and provide actionable insights on staying competitive in the AI-driven world.

- *Dr. Daphne Simmonds*, Moderator, Associate Professor, CIS and Business Analytics, College of Business, Metropolitan State University of Denver
- *Dr. Anol Bhattacharjee*, Professor, School of Information Systems and Management and the Exide Professor of Business Ethics, University of South Florida
- *Dr. Lina Bouayad*, Associate Professor, Information Systems and Business Analytics; and Director, MBA in Business Analytics Program, Florida International University
- *Dr. Lacreteria Dye*, Associate Professor; JUMP Coordinator, Western Kentucky University
- *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

SATURDAY, NOVEMBER 23, 2024

2:30-3:45 p.m. ~ Sarasota Room

Presumed Incompetent: Black Women's Survival Strategies in Predominantly White Institutions

Black women face negative stereotypes about their competence throughout society. In academia, being presumed incompetent structures the experiences of Black women faculty and students with students, faculty, and administrators. While deemed incompetent, many Black women in academia are also asked to take on many tasks deemed “for minorities,” such as committee membership in DEI, anti-discrimination, or similar, justice-related tasks, adding to their service load and potentially overburdening and distracting them from producing research. The three Black women on this panel have faced the situations, sometimes for decades, and in doing so have learned some lessons that are worth sharing with Black women graduate students about to start their professional careers.

- *Dr. Miranda Reiter*, CFP, Moderator, Assistant Professor, School of Financial Planning, Texas Tech University
- *Dr. Fenda A. Akiwumi*, Professor, School of Geosciences, College of Arts and Sciences, University of South Florida
- *Dr. Elizabeth Hordge-Freeman*, Associate Professor of Sociology, Center of African and African American Studies, Rice University

Lee Room

Mentoring Up: Proactive Strategies for Successful Mentorship

This interactive workshop empowers graduate students and postdocs to take an active role in their mentoring relationships. Participants will learn to leverage mentor networks, communicate needs effectively, and build mutually beneficial dynamics. By developing “mentor up” skills, attendees will gain practical tools to enhance their training experience and foster a supportive environment for professional growth, equipping them to shape their own mentorship journeys.

- *Dr. Brittany Hollister*, Director of Postdoctoral Affairs and Prestigious Awards, University of Florida

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.

Hernando Room

Research Panel 6 - Pharmaceutical Science/Chemistry/Chemical Engineering

Novel Approaches in in Biomimetics, Molecular Interactions, and Advanced Imaging Techniques

- *Brian Molina Diaz*, Panel Chair, UF (2023), Pharmaceutical Sciences, “*Leveraging 3D Stimuli-Responsive Biosystems for Advancing the Next Generation Biomimetics*”

In the recent FDA modernization act 2.0, microphysiological systems (biosystems) were recognized as viable methods for preclinical drug investigation in addition to animal testing, which highlights the important role of biomimetic tissues. However, biomimicking tissue motions, such as lung breathing, is still a significant engineering challenge, which is not attainable currently. To address this issue, we developed a 3D porous ferromagnetic biosystem that enables fast, tunable actuation via magnetic fields. This study hypothesizes that leveraging 3D responsive biosystems will aptly recapitulate human tissue microenvironment and mechanics for drug screening and development. Herein, we focus on lung biomimetic tissue construction and translation into a controllable biosystem by using A549 epithelial cancer cells and MRC-5 lung fibroblasts as our cell culture model for mimicking the micro-vibration frequency aligned with lung respiratory strain. Preliminary results show that the magnetic stimulation at a normal breathing frequency of 0.25 Hz, with ~5% strain over 1-hour intervals, differentially affects A549 and MRC-5.

2:30-3:45 p.m. ~ *Hernando Room*

Research Panel 6 - Pharmaceutical Science/Chemistry/Chemical Engineering (Cont.)

Novel Approaches in in Biomimetics, Molecular Interactions, and Advanced Imaging Techniques

• *Tashmay Jones*, UM (2024), Chemistry, “*Tail Wags Dog: Influence of ‘Solubilizing’ Tails on the Binding Affinities of Photoswitchable Kinase Inhibitors*”

The human genome encodes 500+ protein kinases that phosphorylate and thus, modulate the activity, localization, and binding partners of target substrates. Kinase inhibitors were developed to regulate kinases implicated in cancerous cells. Still, these inhibitors are challenged with recognizing suitable treatment regimen and targeting validated signaling pathways due to mutations, drug resistance, and off-target binding events. To solve this, we’ve developed a new generation of optical reporters: fluorescent analogs of EGFR/ErbB-targeted kinase inhibitors providing identification and analyses of kinase activation sites. In their development, however, another challenge arises: colloidal aggregation, which eliminates successful inhibition. To address this, solubilizing groups were inserted in the fluorophore arm, which isn’t directly involved in binding. Unexpectedly, inclusion of solubilizing groups affects binding by increasing the binding affinity of the probe. In response, we’ve created a photoisomerizable prototype to assess the effect of charge, hydrogen bonding, and hydrophobicity in trans/cis conformations to determine what, if any, external interactions help drive binding to the ATP pocket.

• *Jonathan Cedeno Lugo*, FIU (2024), Chemistry, “*Investigating the Interactions of PFOA with Human Cytochrome and its Possible Implications in Health*”

Since their discovery in the 1940’s Perfluorooctanoic acid (PFOA) and other per- and polyfluoroalkyl substances (PFAS) compounds have been widely used in industry due to their remarkable stability and inert nature. The very same features that make PFOA and PFAS compounds so useful make them persistent organic pollutants that can bioaccumulate in organisms and have been linked to various pathologies such as tumorigenesis although not much is known about the mechanism of toxicity. In this study we investigate the interactions of PFOA with human cytochrome, a globin protein that has been previously demonstrated to possess tumor suppression properties, in an attempt to determine molecular targets for the observed biotoxicity of PFOA and other PFAS compounds using UV-vis spectroscopy, CD spectroscopy, Photo-acoustic calorimetry, and various computational methods. The data presented here indicates a sub-micromolar binding affinity of cytochrome for PFOA along with changes in secondary structure upon PFOA binding. The data presented here may point to cytochrome being a potential target for the toxicity of PFOA.

• *Ambar Velazquez-Albino*, UF (2024), Chemical Engineering, “*Enhancing Magnetic Particle Imaging (MPI) Performance: Probing Post-Synthesis Oxidation and Correlations to Nanoparticle Properties*”

Tailoring magnetic nanoparticle tracers for MPI, a novel imaging modality with tremendous potential in diagnostic imaging and theranostics, requires control of nanoparticle properties. This study investigates the impact of post-synthesis oxidation on superparamagnetic iron oxide nanoparticles (SPIONs) synthesized via thermal decomposition of iron oleate. A platform was designed to carry out eight simultaneous reactions as replicates per synthesis condition to apply statistical analysis. MPI performance is gauged via signal intensity and resolution using a MOMENTUM™ scanner and is correlated to nanoparticle properties. Post-synthesis oxidation significantly enhanced magnetic properties without altering physical properties. Saturation magnetization increased from 52% to 93% of the bulk value for magnetite. Deviations from the Langevin model predictions elucidate the need for considering factors like the discrepancy between physical and magnetic diameters (D_p - D_m), and shape anisotropy, here gauged as aspect ratio (AR). The findings underscore the potential to improve MPI performance, while highlighting MPI’s sensitivity to the tracer’s properties and additional challenges of increasing relaxation effects.

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2:30-3:45 p.m. ~ Hernando Room

Research Panel 6 - Pharmaceutical Science/Chemistry/Chemical Engineering (Cont.)

Novel Approaches in Tumor Microenvironments, Kinase Inhibition, and Imaging: Bridging Biochemistry and Biophysics

Discussants (15 minutes)

- *Dr. Albert Kim*, Assistant Professor of Medical Engineering, University of South Florida

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

- *Dr. Q. Stephanie Zhou*, Associate Professor, Department of Pharmaceutical Sciences, University of South Florida

Audience – Q&A (10 Minutes)

Pasco Room

Research Panel 7 - Education: Culturally Relevant Pedagogy

Empowering Diverse Learners: Pedagogy, Representation, and Leadership in STEM and Beyond

• *Domonique Caro-Rora*, Panel Chair, USF (2024), Math Education, “*Mathematizing Our World: A Proposed Learning Trajectory for Interpreting and Writing Numerical Expressions in Black-Centered Learning Spaces*”

Written mathematics is crucial for children’s mathematical development. A weak command of written mathematics is likely to pose a barrier to advanced mathematics such as algebra, calculus, and physics (Bardini & Pierce, 2015). This research uses a design-based approach (Gravemeijer & Cobb, 2006) to develop a proposed instructional theory for interpreting and writing numerical expressions to represent multi-operational real-world problems, informed by teaching experiments that test and revise a hypothetical learning trajectory. Video of the teaching experiments will be analyzed for evidence of collective mathematical practices (Stephan & Rasmussen, 2002), the taken-as-shared ways of reasoning and doing mathematics. The participants will be Black children (ages 9 – 11) attending non-school educational settings (e.g., after-school or Summer camps). This work aims to contribute to conceptualizing culturally relevant pedagogy in elementary mathematics, using students’ personal and cultural experiences as the context for mathematics while offering counter narratives in contrast to the deficit narratives about the mathematical abilities of Black children in educational research.

• *Destinee Cooper*, Engineering and Science Education, “*Exploring College Chemistry Instructor’s Understanding of Culturally Relevant Pedagogy*”

To achieve equitable and effective chemistry instruction, it’s essential to employ student-centered pedagogical practices. Culturally relevant pedagogy (CRP) is an asset-based approach that helps instructors draw on students’ strengths and backgrounds to shape classroom practices and norms. We believe integrating CRP in chemistry education enhances students’ comprehension of core disciplinary concepts and boosts engagement in scientific practices. However, college chemistry instructors’ familiarity with and use of CRP remains insufficiently explored. This research investigates how six college chemistry instructors describe and implement CRP in undergraduate courses. Thematic analysis of interviews reveals that these instructors adapt their teaching, foster collaboration and belonging, and reinforce that all students can succeed in chemistry. These practices align with CRP but need to be paired with cultural awareness and an understanding of sociopolitical factors affecting students. A proposed framework addresses chemistry instruction in associate- and bachelor-granting institutions, aiming to enhance faculty development toward culturally relevant teaching.

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2:30-3:45 p.m. ~ Pasco Room

Research Panel 7 - Education: Culturally Relevant Pedagogy (Cont.)

Empowering Diverse Learners: Pedagogy, Representation, and Leadership in STEM and Beyond

- *Iggy Monsalve*, FIU (2024), Education, “*Investigating High School Factors Influencing Culturally and Linguistically Diverse Students with Disabilities to Pursue Computer Science*”

Computer science (CS) is a field that’s quickly evolving while also expanding in its societal impact. The importance of CS education extends beyond the tech industry. Computer science skills are becoming fundamental across various sectors, driving innovation and offering well-paying career opportunities. Yet not everyone is equally positioned to benefit from these opportunities. This disparity is at the core of this study. Whether it’s teachers’ support, inclusive practices, or the pervasive currents of societal biases, it’s important to understand how the barriers and supports in secondary CS classrooms influence the decisions of culturally and linguistically diverse (CLD) students with disabilities (SWD) to pursue CS in higher education. Using quantitative methods, this proposed study will examine the relationship between SWDs’ perceived support in secondary CS classrooms and their decision of whether or not to major in CS. Insights gained will seek to inform policy and practice that may enhance the representation of CLD SWDs throughout the CS pipeline.

- *David Riera*, FIU (2017), Education, “*Nuestra Lengua es Poder y Querer: Self-Identified Spanish-Speaking Early Childhood Educators Abriendo Puertas for Bilingualism Through a Care-Based Linguistic Stewardship of Spanish*”

Have you ever thought yourself, “¡Coño! No entiendo ni papa, pero this might be important?” If you did not understand the preceding sentence completely, this presentation is for you. Alternatively, eres un inmigrante, or first-generation Americano/a/e and/or graduate student asking yourself, “Why am I writing/reading my graduate work in English si yo a veces pienso en otra lengua? I hear myself thinking in another language... how can my maternal/paternal lenguaje be a superpower?” This study focuses on self-identified Spanish-speaking early childhood educators’ experiences with and views of bilingüismo as they learned about translanguaje. Encontramos que la cultivación de an education of care in the form of linguistic stewardship forged a fierce práctica personal through which children and families could grow their bilingualism.

- *Darius Robinson*, FSU (2023), Higher Education, “*Critical Hope: A Phenomenological Study in Understanding Black College Men in Leadership Roles*”

This study examines how Black male undergraduate leaders actionize Critical Hope through their leadership roles. Given the historically tumultuous relationship between Black men and societal structures in the United States, Black men have long pursued leadership positions to advocate for their communities. This pattern continues within higher education, where Black men often serve as vocal leaders, creating spaces of belonging for themselves and those they represent. Grounded in Critical Hope and research on Black men in college and asset-based, culturally relevant leadership, this study uses a critical phenomenological approach to understand how positional roles shape Black male student leaders’ expression of Critical Hope.

Discussants (15 minutes)

- *Dr. Azaria Cunningham*, Recent Graduate in Curriculum and Instruction, The Pennsylvania State University
- *Dr. Jennifer Jackson*, Evaluation Postdoctoral Research Associate, Oak Ridge Institute for Science and Education
- *Dr. Clausell Mathis*, Assistant Professor, Lyman Briggs College and Department of Teacher Education, Michigan State University
- *Dr. Jami Valentine Miller*, Founder, African American Women in Physics (AAWIP), Inc.

Audience – Q&A (10 Minutes)

2:30-3:45 p.m. ~ *Executive Board Room*

Research Panel 8 - Environmental Engineering/Geology/Computational Science

Engineering Ethics, Environmental Challenges, and Advanced Modeling: Addressing Justice, Pollution, and Natural Hazards

• *Adrian Brown*, Panel Chair, UF (2021), Environmental Engineering, “*The Ethics and Environmental (In)Justice at a Hazardous Waste Site in Florida*”

While engineering education scholars have called for teaching environmental justice (EJ) to engineering students to increase awareness about the social aspects of engineering, there is limited research focused on the ethical behavior of practicing engineers. This qualitative research study examined engineers’ beliefs, behaviors, and actions about their code of ethics as professionals and how these compare to the beliefs about their role from a community perspective. Using critical environmental justice (CEJ) as the theoretical framework, this case study explored the relationship between EJ, engineering ethics, and environmental remediation in a historically African American community in Jacksonville, Florida, where the most hazardous waste site in Florida is undergoing cleanup. Semi-structured interviews were conducted to capture the lived experiences of engineers, community leaders, and residents who live or work within a three-mile radius of the site. Preliminary findings indicate a difference in the perceived relationship between EJ and engineering ethics among the engineers and residents.

• *Daniel Delgado*, USF (2023), Environmental 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, such as interfering with microorganisms involved in biological nitrogen removal (BNR). To test the viability of BNR in saline OWTS, a laboratory scale system 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 was tested with and without the ion exchange media zeolite. The nitrification column with and without zeolite achieved an average of 99% and 93% conversion of ammonia to oxidized nitrogen respectively. Stage-2 denitrification biofilters using lava rock and pine wood media achieved an average of 99% removal of total inorganic nitrogen from the wastewater.

• *Franco Villegas Garin*, USF (2023), Geology, “*Best Fit Assessment for Numerical Models: An Open-Source and Modular Python-Based Tool Designed to Benchmark and Calibrate Numerical Models for Volcanic Mass Flows*”

Volcanic mass flows (e.g., pyroclastic density currents, lava flows, debris avalanches, and lahars) are dangerous and destructive hazards brought forth by volcanic activity. Volcanologists frequently utilize numerical models to facilitate research on volcanic hazards. Yet, simulating real-world processes synthetically warrants continual scrutinization of the outputs. With this aim, we developed the Best fit Assessment for numerical Models (BAM), a Python-based tool designed to benchmark and calibrate volcanic hazard models. BAM evaluates the similarity between different model outputs and/or empirical data via “best fit” statistical metrics based on spatial congruence and area overlap. Moreover, BAM features the penalization of over- and under simulated areas through mathematical functions, augmenting robustness and interpretability. BAM is open source, modular, and employable as a standalone tool or incorporable into workflows. Withal, the simple prerequisite of binarized or segmented raster dataset pairs enables the inter-disciplinary application of BAM to geomorphology, geophysics, tectonics, and seismology – ultimately contributing towards the standardization of model assessments in geology.

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2:30-3:45 p.m. ~ Executive Board Room

Research Panel 8 - Environmental Engineering/Geology/Computational Science (Cont.)

Engineering Ethics, Environmental Challenges, and Advanced Modeling: Addressing Justice, Pollution, and Natural Hazards

• *Jhamieka Greenwood, FSU (2022), Computational Science, “Predictive Insights: Applying wSINDy to Noisy Observational Data in Wildfire Researchs”*

Wildfires are dynamic and complex systems influenced by many factors, including topography, weather conditions, and fuel characteristics. Traditional modeling techniques often struggle with the inherent noise and turbulent nature of wildfire data, leading to inaccuracies in prediction and management strategies. This paper introduces a novel approach to wildfire modeling using the weak Sparse Identification of Nonlinear Dynamical Systems (wSINDy) method, which promises to enhance the predictive accuracy of wildfire models by discovering governing equations from noisy observational data. This research will specifically focus on identifying critical parameters affecting fire spread and behavior, using data collected from controlled burn experiments involving varying slope angles and fuel loads. By integrating wSINDy with extensive field data, this study aims to bridge gaps in current modeling techniques and contribute robust models for fire dynamics. The implications of this research extend beyond academic curiosity, offering practical solutions for fire management and mitigation strategies.

Discussants (15 minutes)

- *Dr. Nosa O. Egiebor*, Provost and Professor Emeritus, SUNY-College of Environmental Science and Forestry, Syracuse, NY

- *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)

Citrus Room

Research Panel 9 - Neuroscience/Medical Sciences/Gerontology

Neurobiology, Metabolism, and Aging: Investigating Mechanisms and Interventions Across Diverse Models

• *Gianna Cannestro*, Panel Chair, FAU (2021), Neuroscience, “*Functional Characterization of iPSC-Derived Neurons from Patients with Huntington’s Disease Using Multi-Electrode Array*”

Huntington’s disease (HD) is a hereditary, neurodegenerative disease affecting the individual’s cognitive, motor, and affective processes. Understanding the pathogenesis of HD and developing effective therapies requires models that can recapitulate the intricacies of the human nervous system. Here we aim to characterize the spontaneous activities of induced pluripotent stem cells-derived (iPSCs) neurons from patients with HD using a multi-electrode array (MEA). The healthy and HD iPSCs were derived from age and sex-matched donors. Under our differentiation protocol, both healthy and HD induced neurons display comparable spiking activities (healthy: 1.0 ± 0.2 Hz vs HD: 0.7 ± 0.1 Hz, $p = 0.06$). However, healthy iNs exhibit significantly more bursting activities within 5 min of recording (healthy: 17.2 ± 5.5 vs HD: 4.3 ± 1.8 , $p = 0.01$) with longer durations in ms (healthy: 152.0 ± 3.1 vs HD: 127 ± 7.7 , $p = 0.013$). Given that burst duration strongly depends on synaptic properties, these preliminary results suggest an impairment of synaptic activities in HD at basal levels.

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2:30-3:45 p.m. ~ *Citrus Room*

Research Panel 9 - Neuroscience/Medical Sciences/Gerontology (Cont.)

Neurobiology, Metabolism, and Aging: Investigating Mechanisms and Interventions Across Diverse Models

- *Savoya Joyner*, FSU (2024), Medical Sciences, “*Loss of Estradiol Promotes Greater Body Weight Dysregulation Than Exposure to High Fat Diet in Female Rats*”

Diet-induced obesity research often focuses on male rodents, despite clear sex differences in energy balance regulation. Limited evidence suggests females are less prone to obesity due to estradiol’s (E2) neuroprotective and anti-inflammatory properties. This study examined how E2 loss impacts caloric intake, weight gain, and hedonic eating in ovariectomized (OVX) rats with or without E2 replacement (OVX-veh, OVX-EB) compared to intact controls (INT) on standard chow or a 45% high-fat diet (HFD). OVX-veh rats consumed more food, gained more weight, and ate more during a chocolate Ensure “dessert” test than OVX-EB or INT-HFD rats. Notably, OVX-veh rats on chow gained more weight than INT-HFD rats. HFD temporarily increased intake in INT-HFD rats. These findings highlight that E2 loss drives greater weight dysregulation than an obesogenic diet. Ongoing studies are investigating whether E2’s anti-inflammatory properties mediate this effect.

- *Meaghan Navarrete Mathews*, FSU (2023), Neuroscience, “*Behavioral Analyses of a Forebrain Glutamatergic Neuron Specific Ywhae Conditional Knockout Mouse Model*”

Human and animal studies have linked mutations in Ywhae and 14-3-3ε expression changes to certain neurodevelopmental and psychiatric diseases. In this study, we conditionally knocked out 14-3-3ε from forebrain glutamatergic neurons by crossing Ywhaeflox/flox mice with CaMKIIα-Cre mice. Ywhaeflox/flox Cre+ (CKO) mice and their Ywhaeflox/flox Cre- (dFIC) littermates were put through a battery of behavioral tests to assess their behavioral endophenotypes. Ywhae CKO mice exhibited no significant differences in locomotor activity, spatial learning and memory, contextual fear learning and memory, social preferences, or sensory processing behaviors. We did, however, find significant sex differences in locomotor activity and spatial learning and memory within our model. Furthermore, we compared two viral 14-3-3 knockout methods and found that CaMKIIα promotor driven difopein expression in wildtype mice is more efficient than Cre/loxP driven difopein expression in CaMKIIα mice. Collectively our results indicate that knocking out 14-3-3ε in glutamatergic forebrain neurons via this strategy is not sufficient to induce schizophrenia-like behavioral alterations.

- *Rio Tate*, USF (2024), Aging Studies/Gerontology, “*The Association of Physical Activity to Cognitive Performance in African American Older Adults*”

Physical inactivity is a contributor to cognitive decline and dementia in older adults. Less is known about the influence of physical activity in African American older adults. Using the Health and Retirement Study, I aim to longitudinally examine the association between physical activity at three different intensities and five different frequencies and cognitive performance (episodic memory, working memory, total mental status, and total cognition). I will examine exclusively African American older adults in order to gain more insight into factors (age, gender) within this population that may moderate the association between physical activity and cognitive performance utilizing the individuals differences approach. This work will elucidate more information about the association between different intensities and frequencies of physical activity and cognitive performance in African American older adults.

Discussants (15 minutes)

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

Audience – Q&A (10 Minutes)

2:30-3:45 p.m. ~ Collier Room

Research Panel 10 - Public Health/Anthropology/Pharmaceutical Sciences

Addressing Disparities in Women's Health: Exploring Social Vulnerability, Reproductive Access, and Maternal Outcomes

• *Michelle Fedrick*, Panel Chair, FAMU (2023), Public Health, “*Comparative Risk Perception and Preventive Health Behaviors in High-Risk Women: Race and Age Disparities in Mammography and Genetic Testing*”

Breast cancer is the leading cause of cancer-related deaths among women globally (Seely & Alhassan, 2018) and the second most common cause in the U.S., following lung cancer (Giaquinto et al., 2022). It is also the leading cause of cancer death for Black and Hispanic women (Giaquinto et al., 2022). The American Cancer Society reports that breast cancer makes up about 30% of all new cancer diagnoses in women each year (2024). Early screening is crucial for improving outcomes, yet the combined impact of social vulnerability and risk behaviors on screening is not well understood, especially in Florida. This research aims to investigate how risk perception and preventive health behaviors, specifically mammography uptake and genetic testing vary by race and age among high-risk women with a familial history of breast cancer. Examining both younger (under 50) and older (50+) age groups across different racial backgrounds, identifies disparities in screening adherence and genetic testing uptake.

• *Deloria Jackson*, FAMU (2024), Public Health, “*Integrating Perspectives: A Mixed-Methods Inquiry into the Intersection of Fibroid Education, Awareness, and the Lived Experiences of Black Women in Higher Education in the Southern United States*”

Uterine fibroids are a common health issue affecting women, but the burden disproportionately impacts Black women in the United States. Black women are two to three times more likely to develop fibroids than their White and Hispanic counterparts. This disparity can be attributed to several factors, including genetic predisposition, environmental influences, and disparities in healthcare access. Studies have revealed that Black women are more prone to experience bias and discrimination, regardless of age or educational attainment, from healthcare providers, resulting in mistrust, delayed diagnosis and treatment, and reluctance to seek medical care. Given this background, Black women need to gain knowledge and awareness of fibroids and their health implications. This research will address the knowledge gap concerning fibroid education, awareness, and its impact on the lived experiences of Black collegiate women in the southern United States. The findings from this dissertation research will provide valuable insights for improving health education, care delivery, and policy implementation.

• *Trinity Johnson*, UCF (2019), Anthropology, “*A Forgotten Population: Understanding Access to Reproductive Healthcare for Black Rural Women and Girls*”

This study investigates perinatal healthcare access for Black women in Alabama's Black Belt, marked by significant disparities. Using a multidisciplinary approach combining anthropology, public health, and medicine, the research employs ethnography, GIS, and the Barriers to Access Scale to examine the impact of historical, social, and cultural factors. Ethnographic methods include in-depth interviews and participant observation, while GIS maps healthcare facilities and transportation networks. The Barriers to Access Scale measures obstacles such as financial constraints, transportation issues, and availability of culturally competent providers. Preliminary findings highlight significant disparities in access, exacerbated by socioeconomic and cultural barriers, leading to adverse health outcomes like preeclampsia and maternal hypertension. The study emphasizes culturally sensitive practices and community-based health education tailored to Black rural women, aiming to inform policy and improve perinatal healthcare access and quality for this marginalized population.

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2:30-3:45 p.m. ~ Collier Room

Research Panel 10 - Public Health/Anthropology/Pharmaceutical Sciences (Cont.)

Addressing Disparities in Women's Health: Exploring Social Vulnerability, Reproductive Access, and Maternal Outcomes

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

While there is substantial research on racial disparities in maternal health outcomes and hypertensive disorders, targeted research on the specific experiences of women in the southern United States, particularly Black women, with these conditions is limited. This study used SAS 9.4 to examine the maternal healthcare experience of black women diagnosed with a hypertensive disorder of pregnancy (HDP) with 2016 -2021 CDC Pregnancy Risk Assessment and Monitoring System data. In the southern United States, twice as many Black pregnant women had a hypertension diagnosis before pregnancy compared to white women. Women with higher education levels were more likely to be diagnosed with an HDP. Black women diagnosed with an HDP in Medicaid expansion states accessed fewer total prenatal visits compared to those in non-expansion states. This study highlights the complex interplay of predictors for HDPs among women living in the southern United States. Further clinical analysis specific to women diagnosed with a hypertensive disorder of pregnancy is necessary.

Discussants (15 minutes)

- *Dr. Diane S. 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)

Presenter Arc

Undergraduate Research Poster Session (Cont.)

This session highlights research conducted by undergraduates considering graduate studies. Participants will present their research projects through engaging posters, showcasing innovative ideas and methodologies. Explore their work and engage in meaningful discussions to support these next generation scholars.

3:45-4:00 p.m.

EXHIBITOR BREAK

SATURDAY, NOVEMBER 23, 2024

CONCURRENT SESSIONS

4:00-5:15 p.m. ~ Pinellas Room

Careers Beyond the Ph.D.

Join us for an engaging panel discussion on navigating the Ph.D. journey and beyond. Panelists will share insights on completing your program, thriving in a competitive job market, networking, and preparing for postdoc and career opportunities. They'll also discuss the importance of adaptability, perseverance, and knowing who you are beyond your job.

- *Dr. Taylor Rodman*, Moderator, CodeMasters Program Manager, Florida Education Fund
- *Dr. Oshea Johnson*, Regional Behavioral Health Advisor, Substance Abuse and Mental Health Services Administration
- *Dr. Rodney Ndum*, Assistant Professor of Finance, Pepperdine University
- *Dr. Mariyah Pressley*, Portfolio Rotation Program Fellow, Genentech
- *Dr. Shamaria Rivers*, Research Engineer, Georgia Tech Research Institute
- *Dr. Troi Williams*, President's Postdoctoral Fellow, University of Maryland at College Park

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*, Moderator, Co-Founder, Academic Pipeline Project, LLC, and Research Associate, HBCU Undergraduate Success Center, Morehouse College
- *Dr. Stephanie Y. Evans*, Professor of Black Women's Studies, Georgia State University
- *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. Devona F. Pierre*, Founder, Strategic Empowerment Solutions; and member of Sisters of the Academy
- *Dr. Torrence Sparkman*, Assistant Provost and Assistant Vice President for Faculty Diversity and Recruitment, Rochester Institute of Technology

SATURDAY, NOVEMBER 23, 2024

4:00-5:15 p.m. ~ *Lee Room*

Graduate Admissions and Student Experiences: Preparing for Your Future

Learn how to prepare for graduate school in this workshop featuring:

- **Admissions Advice:** Dr. Gammons, a graduate school director, will share insider tips on crafting a compelling application, understanding the admissions process, and positioning yourself for success. A member of the McKnight Doctoral Fellowship (MDF) Selection Committee, Dr. Gammons also will offer suggestions for submitting a winning MDF application.
- **Student Insights:** Current graduate students will provide an authentic look at life in graduate school, sharing their experiences, challenges, and advice on navigating this academic path.

Join us to gain valuable insights, ask your questions, and take the first steps toward shaping your future in graduate education.

Graduate Student Panel:

- Sayde King, USF, Computer Science and Engineering
- Kworweinski Lafontant, UCF, Kinesiology
- Paola Sullivan, UF, Youth Development & Family Sciences

- *Dr. Murielle Gammons*, Director, Office of Graduate Student Support and Engagement, University of Florida

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.

Citrus Room

Research Panel 11 - Environmental Health/Biology/Oceanography/Ecology

Conservation Challenges and Species Interactions: Multidisciplinary Insights on Ecosystem Dynamics and Management

- *Dr. Katharine McNamara*, Panel Chair, UF (2017), Environmental and Global Health, “*Multispecies Resistance to Zero-Tolerance Conservation*”

On June 15th, 2020, the campaign La Cascarilla NO Cura el Coronavirus! (Cascarilla Does NOT Cure Coronavirus! (CNC)) launched on social media. It spread rapidly through Facebook and Instagram, urging people in Loja, Ecuador, to stop consuming cascarilla, the medicinal bark of the endangered quina tree. But, as CNC took on an increasingly zero-tolerance narrative against cascarilla consumption and harvest, resistance against the campaign intensified. In this presentation, I draw on participant observation and interviews with cascarilla consumers, harvesters, vendors, and conservation researchers and practitioners to explore how both people and quina trees took up arms against the CNC campaign. The findings of this study reveal new insights into why zero-tolerance conservation strategies so often fail to achieve their goals and open creative spaces for imagining pandemic-resilient approaches to medicinal plant conservation.

SATURDAY, NOVEMBER 23, 2024

4:00-5:15 p.m. ~ *Citrus Room*

Research Panel 11 - Environmental Health/Biology/Oceanography/Ecology (Cont.)

Conservation Challenges and Species Interactions: Multidisciplinary Insights on Ecosystem Dynamics and Management

- *Taylor Hill, UCF (2023), Biology, "Applying Genomics to Reef Fisheries Management: A Multi-Species Approach to Unraveling Fish Connectivity in the Greater Caribbean"*

Coral reef fish populations face increasing threats from human activities in the Greater Caribbean. A persistent challenge in fisheries science is understanding population connectivity across varying geographic scales and resilience to environmental changes. This project leverages innovative methods to improve our understanding of coral reef fish connectivity and resilience using advanced genomics and modeling techniques. We will employ RADseq (Restriction-site Associated DNA Sequencing), a high-throughput genomic technique, to study reef fish species with varying functional roles. This comparative approach will enhance our understanding of biogeographic mechanisms. Standard genetic analyses will evaluate genetic variation and connectivity among fish whose larvae disperse over extensive distances. We will use seascape genomics, a powerful tool that combines molecular and spatial data to reveal how populations are uniquely adapted to their environments and predict how they respond to climate change. Understanding population structure, genetic diversity patterns, and adaptive resilience is vital for obtaining a baseline genetic diversity assessment for reef fish in the Greater Caribbean.

- *Natalia Lopez-Figueroa, USF (2024), Biological Oceanography, "Jellyfish Invasion: Understanding *Cassiopea xamachana* Population Dynamics in and Their Impact on Coastal Communities at Jobos Bay National Estuarine Research Reserve, Puerto Rico"*

Estuaries are vital to coastal ecosystems and communities, but tropical estuaries like Jobos Bay National Estuarine Research Reserve (JBNERR) are increasingly impacted by invasive species such as the upside-down jellyfish *Cassiopea* spp and Mediterranean seagrass *Halophila stipulacea*. The jellyfish *Cassiopea xamachana* is expanding its range with rising ocean temperatures, yet its distribution patterns remain poorly understood. This study is the first to describe *Cassiopea* distributions in JBNERR, providing crucial insights for managing these ecosystems. Bimonthly videographic surveys from October 2022 to April 2024 used random quadrat tosses to estimate percentage coverage at 16 sites. *Cassiopea* densities varied dramatically, with benthic coverage fluctuating from 100% to under 20%. The invasive *Halophila stipulacea* was the most abundant macrophyte where *Cassiopea* was found. These results can contribute to a deeper understanding of *Cassiopea* population dynamics in estuarine environments and provide crucial data on invasive species within JBNERR, offering valuable data to help protect and manage estuarine ecosystems and the communities that rely on them.

- *Annais Muschett-Bonilla, FSU (2021), Ecology and Evolution, "Costs of Gestation in Intrauterine Milk Secreting Rays"*

The diverse reproductive strategies of elasmobranchs pose an unknown amount of risk to pregnant females from the distribution of nutrients from mother to embryos during embryonic development. This study aims to investigate the potential costs associated with matrotrophic lipid histotroph secreting species during gestation. While these species do not provide parental care post-parturition, they are assumed to invest greatly into the post-fertilization and pre-parturition period. *Hypanus sabinus* were collected shortly after ovulation and kept at 26.0 C throughout their 4 to 4.5 month gestational period. Every 2 to 3 weeks 24-hour respirometry trials were conducted to calculate standard metabolic rate at various gestation stages, including shortly following parturition and a month post parturition. Further studies hope to utilize this research to compare the potential costs of gestation between reproductive modes in elasmobranchs and assess the variation in costs and strategies that exists between individuals and closely related species utilizing the same mode of reproduction.

Discussants (15 minutes)

- *Dr. Trenton Aguilar*, Postdoctoral Research Scholar, University of South Florida

- *Dr. Adania Flemming*, Ichthyologist, Science Educator and Leader

Audience – Q&A (10 Minutes)

SATURDAY, NOVEMBER 23, 2024

4:00-5:15 p.m. ~ Executive Board Room

Research Panel 12 - Biomedical Sciences

Proteasomes and Pathways: Insights into Cellular Cleanup, Disease Mechanisms, and Therapeutic Targets

• *Daniel Betancourt*, Panel Chair, FSU (2021), Biomedical Sciences, “*Constructing the Cell’s Cleanup Crew: Piecing Together How our Cells Make New Proteasomes*”

The 26S proteasome is an unusually large adenosine triphosphate (ATP)-dependent protease responsible for most intracellular protein degradation in eukaryotes. As the terminal component of the ubiquitin proteasome system, it plays a pivotal role in regulating essential cellular processes, including cell cycle progression and gene expression. Formation of proteasomes requires the precise association of over 60 individual proteins which must occur rapidly and precisely in the dense cellular milieu. Despite its importance, our understanding of proteasome assembly lacks a clear temporal component due to a lack of time-resolved assembly assays. To address this, we are employing a novel non-radioactive pulse-chase system to dynamically track subunit incorporation and assembly in living cells. This approach will enable us to reconcile conflicting observations in the literature and generate a comprehensive kinetic model of proteasome biogenesis. By elucidating the assembly process, we aim to provide new insights into proteasome dysfunction in human diseases, including aging and proteasome-associated inflammatory syndromes to guide new proteolysis-targeted therapies.

• *Alana Chang*, FSU (2024), Biomedical Sciences, “*Evaluation of Human Proteasome Inhibitors Against the Proteasome of the Unusual Intracellular Parasite Encephalitozoon hellem*”

Microsporidia are spore-forming, obligate intracellular parasites causing human infections of particular danger to the immunocompromised and for which no broadly effective treatments currently exist. The 26S proteasome is a large ATP-dependent protease that degrades protein waste to maintain cell health. Treatment of insects with human proteasome inhibitors cleared microsporidial infections via unknown means, but implicate the microsporidial proteasome (m26S) as a drug target. We intend to establish whether proteasome inhibition of the m26S could be an effective treatment or prophylaxis of human microsporidiosis. We developed assays to measure m26S activity in extracts of the human microsporidial parasite *Encephalitozoon hellem*. Using these assays, we found peptidyl boronate inhibitors were more potent against the *E. hellem* m26S than other mechanistic classes of inhibitors. The inhibition constant for the most potent inhibitor, bortezomib, indicates it is approximately 100-fold less potent against the human proteasome. Thus, identification of more selective m26S inhibitors will be necessary to validate the m26S as an antimicrosporidial drug target.

• *Jonhoi Smith*, UCF (2024), Biomedical Sciences, “*Silencing NANOG in Glioblastoma Multiforme Cancer Stem Cells Improves Anticancer Drug Efficacy*”

Glioblastoma Multiforme (GBM) is a highly aggressive primary brain tumor, and the currently available treatments have limited effectiveness due to the presence of cancer stem cells (CSCs). These CSCs contribute to tumor initiation, metastasis, and cancer relapse, and effective therapy targeting these cells must be developed to improve patient prognosis. Our previous research identified the embryonic stemness gene, NANOG was highly expressed in CSCs. Stemness genes keeping stem cell properties may contribute to the therapeutic resistance of CSCs. Thus, NANOG may be a potential therapeutic target for CSCs. Our current study demonstrates that suppressing NANOG expression in CSCs via RNA interference (NANOG RNAi) increases the susceptibility of these cells to Temozolomide (TMZ), the primary chemotherapeutic for GBM. We found that NANOG RNAi treatment induced cell cycle arrest at the G0 phase in CSCs and reduced the expression of PDK1, a regulator in the PI3K/AKT pathway involved in cell proliferation and survival. These results suggest that NANOG RNAi increases the vulnerability.

Discussants (15 minutes)

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

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

- *Dr. Q. Stephanie Zhou*, Associate Professor, Department of Pharmaceutical Sciences, University of South Florida

Audience – Q&A (10 Minutes)

SATURDAY, NOVEMBER 23, 2024

4:00-5:15 p.m. ~ Pasco Room

Research Panel 13 - Education

Empowering Educators: Professional Development and Leadership Impact in Early Childhood and K-12 Settings

- *Camille Lewis*, Panel Chair, FSU (2020), Education, “*Exploring Early Childhood Teachers’ Experiences with Farm to a School Professional Development: A Case Study*”

The federal government recognizes the critical role schools play in combating obesity through nutritional education and policies. Integrating gardens into early childhood educational settings promotes hands-on learning and a better understanding of food origins (Parmer et al., 2009; van Dijk-Wesselius et al., 2020). However, challenges persist, particularly in teacher training and professional development. Studies have identified barriers such as inadequate curriculum, lack of gardening knowledge, and insufficient training for preschool settings. Despite these challenges, limited research examines the effectiveness of on-site professional development, with most programs focusing on K-12 educators and neglecting preschool teachers’ unique needs. This qualitative case study aims to fill this gap by evaluating the training’s impact on educators’ self-efficacy in teaching gardening, nutrition, and healthy eating through a farm-to-school program. The findings will provide insights into the transformative effects of professional development on educators’ foundational beliefs.

- *Danielle Jeannite*, UF, (2022), Education, “*Teacher Perceptions of Classroom Control in Relation to Principal Discipline Enforcement*”

The purpose of this study was to examine the extent to which school administrator enforcement of school discipline policies is associated with teacher ratings of the amount of control they have over behavior within their classrooms. The Schools and Staffing Survey (SASS) included a sample of 36,838 K-12 public teachers, various characteristics (i.e. race, gender, experience) and school demographics. Changes in teachers’ rating of their perceptions of classroom control was measured in relation to teachers’ agreement that their principal enforced school discipline. Using a two-level hierarchical linear model with teachers nested within schools, results showed that teachers who agreed their principal enforced discipline showed a 0.54 increase in their classroom control ratings ($p < .001$) compared to teachers who disagreed. Additional significant predictors included teacher gender, race, experience, and school-level factors such as the percentage of students eligible for free lunch. These findings suggest that principal leadership and enforcement of school discipline strongly predicts teachers’ perceptions of their own classroom management.

Discussants (15 minutes)

- *Dr. Lakesia Dupree*, Educational Consultant, DNA Mathematics, LLC, and Solution Tree

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

Audience – Q&A (10 Minutes)

SATURDAY, NOVEMBER 23, 2024

4:00-5:15 p.m. ~ *Hernando Room*

Research Panel 14 - English/History

Stories of Resistance and Identity: Diaspora, Activism, and Education Across Generations

• *Vince Omni*, Panel Chair, FSU (2020), English, “*The Diaspora Cafe*”

“The Diaspora Café,” winner of the 2024 Jesmyn Ward Fiction Prize (Michigan Quarterly Review) is a short story set in Five Points, a rampantly gentrifying community in Denver, Colorado. The only thing Army veteran Chidi Creek ever wanted was to get far away from her father, Pops, and his diner. Then he dies and Chidi returns home with husband Nico. They convert the diner into an upscale coffee shop. Now beverage giant SuperNova wants to buy them out, a deal with the kind of financial windfall that has Chidi once more dreaming of faraway places. Nico is not fully on board with the idea. Neither is D’Andra James, leader of the Real Five Points Coalition, whose activism threatens the deal. To sell or not to sell? The question makes Chidi’s head spin. So does Flag Man, the homeless vet whose artistry reminds Chidi that the only thing the dead require of the living is remembrance.

• *Brian Davis*, FSU (2024), History, “*No Taxation Without Representation: The NAACP and the Selective Service*”

In 1966, Frederick Douglas of the Chester NAACP demanded an investigation of the Chester local draft board on the grounds of an “anti-negro prejudice and discrimination on the part of the board.” Two years later, in Mississippi, Charles Evers and the Mississippi NAACP filed a lawsuit against Governor John Bell Williams over segregated Mississippi draft boards. Their main concern was the lack of Black representation on Selective Service draft boards. This paper will examine the role of the NAACP in national and state changes in the Selective Service and its draft boards throughout the American War in Vietnam. What was the local NAACP chapter’s strategy to address issues in the Selective Service? What was the response to the NAACP’s efforts to diversify draft boards? How did NAACP members protest in areas that fiercely resisted changes?

• *Giltrecia Head*, UM (2024), History, “*British West African Students and the Trajectory of Post-Secondary Education from 1925 to 1960: An Origins Story*”

This paper centralizes British West African students studying in the United States and Great Britain during the mid-1920s through the 1960s regarding the transnational challenges they encountered to attain the education many sought to support their families and their country. The history of British West African student studying abroad to attain Western and European education can be traced from early to mid-eighteenth century where Fanti boys and girls and members of royal African bloodlines were often sent to Britain to receive schooling. These histories are crucial for understanding the ways British West Africans sustained their intellectual presence on the global stage and thus reveal the trajectory of West Africa’s struggle for independence. While the work on African students’ involvement in the struggle for independence in Africa is gradually expanding, a study that closely frames and narrates British West African students’ political and social activity in Great Britain and the United States is a known, but newly presented history.

Discussant (15 minutes)

- *Dr. Francine Sutton*, Civic Designer, Bloomberg Center for Public Innovation, Johns Hopkins University

Audience – Q&A (10 Minutes)

SATURDAY, NOVEMBER 23, 2024

4:00-5:15 p.m. ~ Collier Room

Research Panel 15 - Mental Health: Public Health/Nursing/Psychology

Navigating Mental Health Challenges: Exploring Stress, Resilience, and Support Across Diverse Populations

• *LaToya Newby*, Panel Chair, FAMU (2020), Public Health, “*The Impact of Job-Related Noise Exposure on Mental Health: Examining the Pathway to Depression and Substance Misuse*”

Occupational Noise Stress, Depression and Substance Misuse. Occupational noise stress, a prevalent issue in various industries, has significant implications for mental health and substance use. The constant exposure to loud and disruptive noise in the workplace can lead to heightened stress levels, which may contribute to the development of depression and substance use disorders. This concept paper explores how occupational noise stress contributes to depression and substance misuse. Understanding these relationships is critical for developing effective workplace policies and interventions to improve overall employee well-being.

• *Christina Hersh*, USF (2023), Nursing, “*‘It was a Downward Spiral.’ A Qualitative Study of Young Adult Cancer Survivors’ Experiences with Mental and Cognitive Health*”

Up to 53% of young adult (YA) cancer survivors experience cancer-related cognitive impairment (CRCI), often tied to psychological distress rather than true cognitive deficits. Depression, a potential marker of early cognitive decline, shares neurobiological factors with CRCI. This study examines the interplay between mental and cognitive health in YA cancer survivors, proposing hypotheses about shared biopsychosocial mechanisms. Twenty participants (ages 18-30), reporting post-treatment cognitive impairments, completed semi-structured interviews and mental health questionnaires. Thematic analysis revealed key findings: 55% had hematologic and 45% solid tumors, with 85% completing treatment. Cancer-related anxiety and depression were found to hinder cognitive engagement, while frustration with cognitive impairments negatively impacted mood. Participants highlighted a lack of resources for managing CRCI. These results underscore the intertwined nature of mental and cognitive health in YA survivors, emphasizing the need for targeted interventions to address these dual challenges and improve survivorship care.

• *Enid Moreira*, FIU (2023), Psychology, “*Beyond Child Behavior: The Impact of Parenting Stress on Children’s Screen Time*”

Despite the well-documented association between parenting stress and child behavior no research to our knowledge has directly examined the impact of parenting stress on screen media parenting strategies independent of child behavior. This study aims to fill that gap. Participants included 822 parents of children aged 4 to 8 years, who completed the Parenting Stress Index-Short Form, Strengths and Difficulties Questionnaire, and Screen Media Use questionnaire. Parenting stress was assessed alongside two screen media practices: limit setting and using screens for behavior regulation. Linear regression analyses, controlling for child behavior, revealed that higher parenting stress predicted both lower screen media limit setting ($\beta = -.235, p < .001$) and increased use of screens for behavior regulation ($\beta = .219, p < .001$). These findings suggest that parenting stress directly impacts screen media practices, independent of child behavior. Interventions focusing on reducing parenting stress could promote healthier screen media habits, underscoring the importance of addressing parental well-being in screen time guidelines.

• *Guerdiana Thelomar*, UM (2024), Community Psychology, “*When They Read of This Moment’’: The Mental Well-Being of Black Women and Girls Navigating PWIs in a Post-COVID-19 Context*”

Research has shown that Black women and girls, in particular, experience troubling psychological, physiological, academic, and social challenges as they navigate predominantly white institution (PWIs). The social, physical, and mental effects of the past few years, due to the 2020 COVID-19 shutdowns, have begun to raise alarms among researchers who are reporting an uptick in the rates of mental distress among Black people, particularly Black youth and women. This constructivist, grounded theory study seeks to explore the modes of coping and sources of resilience for Black women and girls attending PWIs in a post-COVID-19 pandemic context. Utilizing a Black feminist methodology and a community psychology ecological systems framework, this study seeks to answer: What mental health resources and strategies are these students using to cope, persist, and thrive while navigating PWIs? The results of this inquiry will have implications for ways that institutions can better understand the perseverance of Black women and invest in their well-being and educational success.

SATURDAY, NOVEMBER 23, 2024

4:00-5:15 p.m. ~ Collier Room

Research Panel 15 - Mental Health: Public Health/Nursing/Psychology (Cont.)

Navigating Mental Health Challenges: Exploring Stress, Resilience, and Support Across Diverse Populations

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

Mental health is a crucial aspect of overall health and well-being. In the United States, more than one in five women has experienced a mental health condition within the past year, including depression and anxiety. Women are twice as likely as men to experience major depression, and Black women have higher rates of postpartum depression (PPD). Despite this, Black women are only half as likely as white women to seek mental health support and often encounter disparities in care quality. This study will examine the link between social support and PPD in Black women. Social support has been shown to positively impact women’s childbirth experiences and may act as a protective factor against PPD, yet research specifically focused on its effects on PPD among Black women remains limited.

Discussants (15 minutes)

- *Dr. Max Rony François*, Service Chief, Bay Pines VA Healthcare System

- *Dr. Jessica Gordon*, Nurse Practitioner, Tampa Bay

Audience – Q&A (10 Minutes)

5:15-5:30 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*

- Entertainment: Aron Ferrer

SUNDAY, NOVEMBER 24, 2024

8:00-9:00 a.m. ~ Pinellas Room

YOGA SESSION

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

AWARDS AND JACKETING CEREMONY

♦ Brunch

♦ William R. Jones Most Valuable Mentor Awards

♦ New Graduates’ Jacketing Ceremony

♦ Closing Remarks: *Dr. Lawrence Morehouse*