# MDF NEW FELLOWS' PROFILES: CLASS OF 2017-2018

## *Nataly Abrams*

Neuroscience, Florida State University

B.S., Biology, Florida Gulf Coast University

**Research Interest**

Nataly researches the developmental basis for neurological disorders. She aspires to advance understanding of the importance of genetics and neurochemicals and their effects on the brain. She hopes her research will improve quality of life for those who suffer from neurological ailments, while allowing a healthier dialogue on mental disorders.

## *Brianna Almeida*

Biological Sciences, University of Miami

B.S., Biology, Florida International University

**Research Interest**

Brianna studies how endophytes determine vegetative community structures and seeks to understand the impact of mutualisms on species distributions in the Everglades. She also plans to study interactions between multiple mutualisms within the same plant and how they alter the plant's range. This research will reveal how biotic interactions within the soil may alter biodiversity in certain ecosystems.

## *Lara Baez*

Clinical Psychology, University of Miami

B.A., Behavioral Biology, Johns Hopkins University

**Research Interest**

Lara plans to improve the lives of people afflicted with mental illness by enhancing our understanding of the etiology and pathophysiology of mental disorders. She will focus on integrating neuroimaging and ecological momentary assessment to discover how changes in the brain affect real-time emotional fluctuations in individuals with mood disorders.

## *Mabel Baez*

Forest Resources and Conservation, University of Florida

B.A., Biology and Environmental Studies, Colgate University

**Research Interest**

Mabel's research focuses on the drivers of ecological degradation in the Indio Maiz Biological Reserve, Nicaragua. Through an interdisciplinary approach, she intends to promote conservation and sustainable development in one of the largest protected lowland rainforests in the Caribbean. Her research will identify the human drivers of ecosystem degradation to ultimately decouple the erosion of natural capital from economic development.

## *Lamar Burton*

Electrical Engineering, Florida International University

B.S., Agriculture, Southern University A&M College

M.S., Electrical Engineering, Florida International University

**Research Interest**

Lamar plans to design and fabricate novel soil nitrate and phosphate sensing devices to monitor and prevent environmental pollution caused by nutrient runoff and leaching. His research will help prevent algal blooms, eutrophication and fish kills caused by over fertilization, thus protecting the environment and reinforcing agricultural sustainability and economics.

## *Evelyn Castillo*

Veterinary Medical Sciences, University of Florida

B.S., Chemistry, University of Florida

**Research Interest**

Evelyn's research focuses on the pathophysiology of osteonecrosis of the jaw (ONJ), a side effect event resulting from anticancer and anti-osteoporosis therapies. She will utilize the rice rat *(Oryzomys palustris)* as the animal model for her research, since the species is prone to developing spontaneous periodontitis, a condition known to be an important predisposing factor for ONJ in humans.

## *Matthew Castillo*

I/O Psychology, University of Central Florida

B.S., Psychology, University of Texas at Arlington

M.S., Industrial/Organizational Psychology, Lamar University

**Research Interest**

Matthew studies the detection of stress using wearable device data and plans to develop and refine empirically-based interventions for reducing stress in full-time workers. His research will help decrease adverse symptoms associated with stress along with its organizational burden (e.g., ineffective job performance, turnover, hiring costs).

## *Anthony Colas*

Computer Science, University of Florida

B.S., Computer Engineering, University of Florida

**Research Interest**

Anthony researches data science, particularly knowledge extraction and prediction relating to biomedical, physiological, and clinical data. He plans to develop and improve systems that help predict potential symptoms or causes of illness. His research will reveal new insights into biomedical data to improve treatment of various diseases and prevent patient loss.

## *Rosa Cromartie*

Chemistry with Forensic Track
Florida International University

B.S., Biochemistry and Molecular Biology, University of Georgia

**Research Interest**

Rosa's research focuses on forensic chemistry applications for identifying body fluids. Her goal is to develop rapid and reliable analytical methods to determine unknown body fluids found during criminal investigations. This research addresses the need to develop and improve validation systems in forensic science.

## *Erica Dasi*

Environmental Engineering, University of South Florida

B.S., Biological Sciences, Univ. of Maryland

M.S., Biological Sciences, Univ. of Maryland

**Research Interest**

Erica's research involves using principles of biology, environmental science, and engineering to eliminate specific contaminants in water, reduce nutrients in wastewater, and enhance renewable energies. Her interests extend to exploring the biological and chemical nature of new contaminants with a goal of developing treatment strategies. Research in these areas will help provide potable drinking water to communities worldwide and promote sustainable treatment methods.

## *Elizabeth Delgado*

Genetics and Genomics, University of Florida

B.S., Biology, University of Nevada

**Research Interest**

Elizabeth researches genetic engineering and personalized medicine and plans to specialize in genetic therapy, protein therapy, or pharmacogenomics in her doctoral studies. Her research will help provide novel therapies for treating genetic disorders by targeting the source of disease as opposed to treating the symptoms.

## *Agenia Delouche*

School Psychology, University of Florida

B.A., Psychology, University of Miami

**Research Interest**

Agenia researches early childhood development and learning difficulties in students from low socioeconomic households as she seeks to better understand impediments to learning both inside and outside of the classroom. Her research will help administrators create and implement plans to improve multiple levels of support for students experiencing challenges in school.

## *Erin Ferguson*

Clinical Psychology, University of Florida

B.A., Psychology, Spelman College

**Research Interest**

Erin researches HIV and risky health behavior prevention. She intends to develop and implement culturally tailored interventions to address the role of individual and sociocultural factors in risky health behaviors, particularly for women of color. Her research will help decrease the incidence of HIV, reduce health inequities, and improve health outcomes for women of color.

## *David Gonzalez Martinez*

Microbiology and Cell Science, University of Florida

B.S., Biochemistry, Florida State University

**Research Interest**

David will study the metabolism and physiology of model bacteria. He aims to engineer and implement synthetic biology tools for transcriptional control and genome editing to investigate metabolic pathways of bacteria. Specifically, he will examine the metabolic pathway responsible for production of the climatically important compound dimethylsulfide in marine bacteria.

## *Mohammed Gbadamosi*

Pharmaceutical Sciences, University of Florida

B.S., Biochemistry, University of Delaware

**Research Interest**

Mohammed seeks collaborative approaches to overcome challenges in personalized and precision medication. His goals are two-fold--to augment existing knowledge of drug-gene associations and to develop methods to optimize clinical use of this information. His research will promote new treatment strategies to improve patient prognosis and quality of life.

## *Caleb Gumbs*

Pharmaceutical Sciences, Florida A&M University

B.S., Chemistry, Alabama State University

**Research Interest**

Caleb's research focuses on drug design and chemical synthesis. He aims to develop medications to more effectively treat autoimmune diseases and neurodegenerative disorders, and his research will improve quality of life for people living with these conditions.

## *Adriane Jackson*

Higher Education Administration, Florida State University

B.A., Psychology, Nova Southeastern University

M.S.W., Social Work, Barry University

**Research Interest**

Adriane's research centers on the high turnover rates of Black women university presidents at Historically Black Colleges and Universities, and the relationship between shared governance and presidential tenure. This work will have indirect implications for program development and for retention and recruitment of academic leaders from and for HBCUs.

## *Jerchelle Jean-Poix*

Medical Sciences, University of South Florida

B.H.S., Health Science, University of Florida

M.P.H, Public Health, University of South Florida

**Research Interest**

Jerchelle's research focuses on oncology, primarily in women's health. She intends to identify and use possible biomarkers, enzymes, and/or other biological pathways to help develop personalized medical interventions. Her research will help identify deadly cancers earlier and improve treatment options for patients.

## *Isabel Laurenceau*

Human-Centered Computing, University of Florida

B.S., Computer Engineering, University of Florida

**Research Interest**

Isabel will research health wearable technology in human-centered computing. She plans to create wearable technology that will enable low income users to monitor their health in the absence of access to reliable health care. She intends for data generated by her work to inform relevant medical research.

## *LaToya Leary*

Religions of Western Antiquity, Florida State University

B.S., Chemistry/Mathematics, Saint Thomas University

M.A., Theological Studies – Old Testament, Columbia Theological Seminary

**Research Interest**

LaToya investigates constructions of social identity in early Jewish texts, and her latest research explores ancient notions of masculinity and resulting social norms surrounding societal "anomalies" (women, various ethnicities, children, the disabled). She aims to elucidate perceptions that contributed to the organization of ancient societies and reduce the perpetuation of societal constructions that fuel modern day oppression.

## *Shawnta Lloyd*

Epidemiology, University of Florida

B.S., Chemistry, Hampton University

M.P.H., Epidemiology, Emory University

**Research Interest**

Shawnta's research interests include mental health and health disparities in the aging population. She plans to assess and improve access to healthcare and focus on patient-centered outcomes. Her research will improve the quality of life for members of the aging population.

## *Randy Matos*

Electrical Engineering, Florida International University

B.S., Electrical Engineering, Florida International University

M.S., Electrical Engineering, Florida International University

**Research Interest**

Randy currently researches Magnetic Tunnel Junctions (MTJs) for applications in nano-magnetic logic. He plans to create a nano-scale logic gate using thin-film stacks of different materials. This research will benefit society by increasing response time, speed, and power efficiency of small-scale electronics.

## *Katherine McNamara*

Environmental and Global Health, University of Florida

B.S., Zoology, University of Florida

B.S., Spanish, University of Florida

M.H.S., Environmental and Global Health, University of Florida

**Research Interest**

Katie studies environmental and global health, focusing on the relationship of livestock to the health and welfare of Latin Americans. She specifically investigates how small-scale livestock production impacts nutrition for women and children, and generally empowers other vulnerable populations, including underrepresented minorities. A better understanding of these connections can help improve the lives of these populations in rural areas.

## *Enmanuel Medrano*

Biological Sciences, University of Miami

B.S., Biology, Florida International University

**Research Interest**

Enmanuel seeks to understand how neural circuits communicate with each other to produce a behavior in reaction to external stimuli. His research will help characterize normal functioning of neural circuits, which can lead to treatments that correct aberrant functioning caused by disorders such as Alzheimer's.

## *Brandon Mendez*

Business Admin. - Finance, Florida State University

B.S., Business Administration, College of Charleston

M.B.A., University of North Florida, Business Administration

**Research Interest**

Brandon's research interests include business mergers and acquisitions. He plans to use currently available and previously unidentified information sources to help identify a potential merger or acquisition target with a higher probability of operational success. This research will benefit shareholders and stakeholders of companies contemplating merger or acquisition.

## *Fernando Montalvo*

Applied Experimental and Human Factors Psychology, University of Central Florida

B.S., Psychology, Univ. of Central Florida

B.S., Anthropology, Univ. of Central Florida

B.S., Aeronautical Science, University of Central Florida

**Research Interest**

Fernando explores the use of social robotics in addressing the emotional needs of isolated or lonely older adults. His research aims to use social technology to improve social presence and increase psychological engagement among the elderly. This research will reduce the prevalence of chronic loneliness among older adults, significantly improving mental and physical health for this population.

## *Sana Nasim*

Biomedical Engineering, Florida International University

B.S., Biomedical Engineering, New Jersey Institute of Technology

**Research Interest**

Sana's research contributes to the understanding of valve endothelial cells (VEC) mechanobiology for diseases such as congenital aortic heart valve stenosis. Specifically, she focuses on understanding VEC signaling events based on a fluid-induced external mechanical stimulus that up regulates VEC proliferation.

## *Kendall Parker*

Mechanical Engineering, University of Florida

B.S., Mechanical Engineering, Florida A&M University

**Research Interest**

Kendall focuses on large scale power grid integration for renewable energy resources. She aims to use control systems to develop and refine algorithms for risk-bounded optimization that sustain changing user demands and load fluctuations. Her research will not only improve power grid optimization, but also enhance performance of various autonomous air, ground, and underwater systems.

## *Natalie Paquette*

Psychology (Human Factors & Cognition)
University of Central Florida

B.S., Psychology, University of Central Florida

M.A., Psychology, George Mason University

**Research Interest**

Natalie studies the neural underpinnings of cognitive function. She intends to better define the neurological and cognitive changes that occur across the lifespan; explore causation in neurodegenerative diseases, such as Alzheimer's and other abnormalities; and develop ways to promote healthy brain function. Her research will reduce the progression of neurodegenerative diseases and promote healthy aging.

## *Dustin Pearson*

English (Creative Writing), Florida State University

B.A., English, Clemson University

M.A., English, Clemson University

**Research Interest**

Dustin researches expressions of trauma in art by ethnic Americans. Within this context, he aims to study the relationship among intimacy, disclosure and human connection with respect to a person's ability to empathize with an occurrence outside his or her own lived experience. His research will validate the benefits of studying and practicing art by society's general population.

## *Joshua Peeples*

Electrical and Computer Engineering
University of Florida

B.S., Electrical Engineering, University of Alabama at Birmingham

**Research Interest**

Joshua conducts research in machine learning, pattern recognition, and computational intelligence. He plans to develop and refine novel object detection and classification algorithms that will use a variety of sensor data to automate image and signal understanding and fuse information. His research will assist in numerous applications that require object detection and classification, such as self-driving cars, autonomous robotics, augmented reality, and explosive hazard detection for the military.

## *Diandra Prioleau*

Computer Engineering, University of Florida

B.S., Computer Engineering, Florida A&M University

**Research Interest**

Diandra's human-centered computing research focuses on using technology to better understand human beings, such as underrepresented and underprivileged children in the educational system. Her work will bring awareness to the need to continue improving educational systems, both nationally and globally, and to develop new approaches to meet the needs of every child.

## *David Riera*

Curriculum and Instruction, Florida International University

B.S., Marine Biology & Environmental Science, Florida International University

M.S., Environmental Studies, Florida International University

**Research Interest**

David's research into STEAM educational strategies will enhance current methods and applied curricula. He plans to identify pedagogical applications and learning environments that effectively facilitate equitable access for diverse students from underrepresented and underserved communities to STEAM fields. This research will foster inclusion and representation in STEAM by providing educators with novel techniques to best engage typically excluded student groups.

## *Isabel Rivera*

Physics, University of Central Florida

B.S., Physics, University of South Florida

**Research Interest**

Isabel researches small bodies such as planetary rings, asteroids, comets, dust, and small moons by means of data analysis and microgravity experiments to better understand the origin and evolution of the solar system. This research will benefit society by helping answer the mysteries of early planet formation and provide a blueprint for how Earth may have emerged.

## *Tracoyia Roach*

Medical Sciences, University of Florida

B.S., Biology, Florida A&M University

**Research Interest**

Tracoyia researches the autoimmune disease Systemic Lupus Erythematosus (lupus). She aims to study and provide information on how a gene (Pbxl) correlates with chemical reactions in T cells to help develop new treatments for people diagnosed with lupus.

## *Jasmyn Sanders*

Clinical Psychology, University of Miami

B.S., Psychology, Florida A&M University

**Research Interest**

Jasmyn will explore several aspects of HIV prevention and treatment, including psychosocial predictors of engagement in sexual risk behaviors (e.g., substance use and previous sexual trauma) and medication adherence among HIV positive individuals. She aims to combat growing social inequities and health disparities among racial/ethnic, sexual, and gender minority populations to improve health outcomes.

## *Xavier Scott*

Environmental Engineering, University of Miami

B.S., Microbiology, University of Miami

B.S., Psychology, University of Miami

M.S.P.H., Public Health, University of Miami

**Research Interest**

Xavier researches strategies to enhance bioenergy and apply nanotechnology for water reuse. He aims to increase the use of renewable resources (i.e., organic waste and water) to generate energy and reduce environmental impacts that result from improper management of organic waste and wastewater. This research will benefit society by decreasing contaminants' environmental burden (e.g., climate change).

## *Bobby Shed*

Finance, University of South Florida

B.A., Music Administration, University of Charleston

M.S., Economics, University of Texas at Dallas

**Research Interest**

The tools of finance tend to focus purely on quantitative goals--maximize profits, minimize costs, and achieve efficiency. Such optimization all but ignores the effects on human souls behind the numbers. Bobby researches topics that lie at the intersection of capital markets and social issues/ policy in an effort to better understand both.

## *Jesse Smith*

Human-Centered Computing, University of Florida

B.S., Computer Sciences, University of Maryland

B.S., Mathematics, University of Maryland

**Research Interest**

Jesse intends to research practical uses for virtual/augmented reality (VR/AR) in our daily lives and first aims to design and develop learning environments in VR/AR to enhance creative thinking and influence playful design. This work will push VR/AR into education, providing innovative and more engaging ways for children to study and master learning objectives.

## *Joseph Sturgess*

Industrial Engineering, University of Central Florida

B.S., Electrical Engineering, Tuskegee University

M.S., Journalism, University of Illinois Urbana Champaign

M.A., Physics, Fisk University

**Research Interest**

Joseph researches the design and fabrication of passive and wireless Surface Acoustic Wave (SAW) sensors, which are used to detect changes in physical phenomena such as temperature, gas concentration, strain and liquid levels. He plans to develop a SAW correlator and a SAW amplifier, and his work will benefit society by providing advancements in national security and communications.

## *Jason Tetuan*

Business Administration - Accounting
Florida Atlantic University

B.S., Accounting, Emporia State University

M.S., Accounting, Emporia State University

**Research Interest**

Jason will use behavioral accounting research to explore topics including accountant judgment and decision-making, human information processing and its impact on the accounting environment, and the relationship between differing cultures and differing accounting requirements throughout the international market. This research will provide a better understanding of diverse standards within the accounting profession.

## *Andrea Tillet*

Accounting, Florida State University

B.S., Accounting, Florida State University

M.S., Accounting, Florida State University

**Research Interest**

Andrea's research interests include the financial and operational impacts of new accounting standards on public companies. She plans to examine the end-to-end process of adopting a new accounting standard, including the cost of adoption and the roles that standard setters, regulatory bodies, auditors, advisors, and investors play during the implementation period. This research will benefit the accounting profession by identifying the challenges and key components associated with a large-scale standard implementation.

## *Francesca Toledo Cossu*

Marine Sciences, University of South Florida

B.S., Geology, University of Puerto Rico

**Research Interest**

Francesca's research focuses on using geochemical techniques to study Earth's past climates. She intends to provide a clearer record of past temperature trends by using clumped isotope analysis. This research will aid in understanding present climactic changes and how they will affect our environment.

## *Amanda Tonnaer*

Chemistry, University of Florida

B.S., Chemistry, University of West Florida

**Research Interest**

Amanda's research focuses on developing green methodologies for synthesizing small heterocyclic molecules with biological applications such as benzo[b]thiophenes. She aims to design methodologies that implement environmentally benign and simple chemistry while also improving functionality of the molecule by adding reactive handles. She intends for her research to aid the pharmaceutical industry.

## *Anita Walsh*

Economics, University of Florida

B.A., Economics, University of Florida

B.A., Mathematics, University of Florida

**Research Interest**

Anita's research will focus on the efficiency and equity of public policy with an emphasis on disparities in education and labor market opportunities. Through empirical analysis, she plans to develop models that precisely identify the mechanisms through which such disparities begin and persist. This research will allow public policy makers to address social inefficiencies by implementing demographic- and locality-specific reforms.

## *Lisa Wilson*

Pharmacodynamics, University of Florida

B.S., Biology, Rust College

M.Ed., Secondary Education, Grand Canyon University

**Research Interest**

Lisa researches pain and drug abuse and plans to use a Sigma receptor antagonist to potentiate the effect of low doses of cannabinoids. This research will point to new and safer avenues to treat pain that lack the addiction and tolerance liabilities associated with the use of opiates.

## *Anthony Windmon*

Computer Science, University of South Florida

B.S., Computer Engineering, Bethune-Cookman University

**Research Interest**

Anthony's research focuses on Smart Health. He plans to develop algorithms and mobile applications capable of detecting diseases (e.g., chronic heart failure) using big data and fundamental machine learning techniques. This research will benefit healthcare by diagnosing diseases in their early stages, thus preventing severe complications commonly associated with later discovery.