2022
Network of Minority Health Research Investigators Directory

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Contents

Network of Minority Health Research Investigators—History and Mission

In 1999, the National Institutes of Health (NIH) recognized the need to increase the number of minority health researchers who succeed in accessing grants and contracts for NIH research. The Office of Minority Health Research Coordination at the National Institute of Diabetes and Digestive and Kidney Disorders (NIDDK) established a communication network of current and potential biomedical research investigators and technical personnel interested in minority health research, including individuals from traditionally underserved communities—African American, Hispanic American, American Indian, Alaskan Native, and Native Hawaiian and other Pacific Islander—to address that need.

The primary mission of the Network of Minority Health Research Investigators (NMRI, or the Network) is to encourage minority health investigators to be researchers in fields of interest to the NIDDK, including diabetes; endocrinology; metabolism; digestive diseases; nutrition; and kidney, urologic, and hematologic diseases. An important component of this network is the promotion of two-way communication between NMRI mevmbers and the NIDDK. Through the Network, the NIDDK elicits recommendations for strategies to enhance opportunities for, and support of, underrepresented population groups and others in biomedical research. The NMRI strives to advance scientific knowledge and contribute to the reduction and eventual elimination of racial and ethnic health disparities.

More than 300 researchers have participated in NMRI workshops in the past decade, and approximately 100 are active members. The success of the NMRI, a network that is "owned" by its members and supported by the NIDDK, begins with the dedication of senior investigators who mentor and serve as role models for junior investigators. The participation of active members and the recruitment of new members are the primary reasons for the Network's success in the past and the reason for confidence that it will continue to grow in the future.

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Griffin P. Rodgers, M.D., MACP

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Dr. Griffin P. Rodgers was named Director of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)—one of the National Institutes of Health (NIH)—on April 1, 2007. He had served as NIDDK's Acting Director since March 2006 and had been the Institute's Deputy Director since January 2001. As the Director of NIDDK, Dr. Rodgers provides scientific leadership and manages a staff of more than 630 employees and a budget more than $2.25 billion.

Dr. Rodgers received his undergraduate, graduate, and medical degrees from Brown University in Providence, Rhode Island. He performed his residency and chief residency in internal medicine at Barnes Hospital and the Washington University School of Medicine in St. Louis. His fellowship training in hematology was in a joint program of the NIH with The George Washington University and the Washington Veterans Administration Medical Center. In addition to his medical and research training, he earned an M.B.A., with a focus on the business of medicine/science, from Johns Hopkins University in 2005.

As a research investigator, Dr. Rodgers is widely recognized for his contributions to the development of the first effective—and now U.S. Food and Drug Administration–approved—therapy for sickle cell anemia. He was a principal investigator in clinical trials to develop therapy for patients with sickle cell disease and also performed basic research that focused on understanding the molecular basis of how certain drugs induce gamma-globin gene expression. He and his collaborators recently reported on a modified blood stem-cell transplant regimen that is highly effective in reversing sickle cell disease in adults and is associated with relatively low toxicity. He has been honored for his research with numerous awards, including the 1998 Richard and Hinda Rosenthal Foundation Award, the 2000 Arthur S. Flemming Award, the Legacy of Leadership Award in 2002, and a Mastership from the American College of Physicians in 2005.

Dr. Rodgers has been an invited professor at medical schools and hospitals both nationally and internationally. He has been honored with many named lectureships at American medical centers and has published more than 250 original research articles, reviews, and book chapters; has edited four books and monographs; and holds three patents.

Dr. Rodgers is a member of the American Society of Hematology, the American Society of Clinical Investigation, the Association of American Physicians, the American Academy of Arts and Sciences, and the National Academy of Medicine, among others. He served as Governor to the American College of Physicians and as Chair of the Hematology Subspecialty Board and as a member of the American Board of Internal Medicine's Board of Directors.

Lawrence Y.C. Agodoa, M.D., FACP

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Dr. Lawrence Y.C. Agodoa graduated from Cornell University Medical College, New York, in 1971. He completed internship and residency training in internal medicine at the University of Washington Hospitals in Seattle and 3 years of training in clinical and basic research in nephrology and renal pathology.

Dr. Agodoa served as Chief of the Nephrology Service at the Madigan Army Medical Center in Tacoma, Washington, from 1976 to 1981. He subsequently completed 2 years of clinical and research training in rheumatology and immunology from 1981 to 1983. In 1983, he was assigned to the Walter Reed Army Medical Center as Assistant Chief of the Nephrology Service and the Nephrology Training Program and also was appointed to the faculty of Medicine at the Uniformed Services University of the Health Sciences (USUHS) in Bethesda, Maryland. In 1985, he was appointed Director of the Military Medical Research Fellowship at the Walter Reed Army Institute of Research.

In 1987, Dr. Agodoa was appointed Director of the Clinical Affairs Program in the Division of Kidney, Urologic, and Hematologic Diseases at the NIDDK in Bethesda, Maryland. He also was an intramural research scientist in NIDDK's Laboratory of Cell and Molecular Biology from 1987 to 1992. Currently, he is Professor of Medicine at the USUHS F. Edward Hebert School of Medicine and a Program Director at the NIH. His current duties include serving as Director, Office of Minority Health Research Coordination, NIDDK, and Director of the Minority Chronic Kidney Disease and End-Stage Renal Disease Programs at NIDDK.

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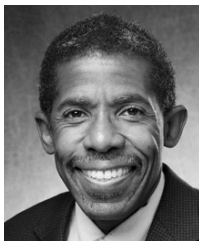

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Research Interests
My research is focused on elucidating the mechanisms that are responsible for cardiac dysfunction in obesity, diabetes, and insulin-resistant states. My studies have elucidated mechanisms that are responsible for mitochondrial dysfunction that characterizes the heart in insulin-resistant states, and I have pioneered studies of insulin action and glucose metabolism in the heart. Recent studies have focused on (1) the contribution of excessive myocardial insulin signaling in the myocardium in accelerating left ventricular remodeling in the hypertrophied and failing heart, (2) the regulation of myocardial autophagy by insulin signaling, (3) the mechanisms by which myocardial lipid overload alters autophagy in cardiac muscle, (4) the role of altered mitochondrial dynamics in the pathophysiology of cardiac dysfunction in obesity and insulin-resistant states, and (5) mechanisms for increased thrombosis in obesity and insulin resistant states.

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Research Interests
My research primarily focuses on the implementation of obesity prevention and diabetes self-management interventions. These interventions have been implemented within community and clinical settings serving Latino communities. Study aims have measured not only effectiveness but also implementation measures and have assessed facilitators for scaling successful interventions within clinical settings. I have committed my research to decreasing health inequities among Latinos and am increasingly looking to social care integration to address major gaps with diabetes self-management practices. Given the current mortality disparities among Latinos associated with diabetes and chronic kidney disease, I will continue to focus on this population and investigate ways the health care sector can provide culturally competent services. In the future, I will be working on systematically analyzing gaps within clinical guidelines for diabetes care and implementing clinical interventions that compare approaches to serving Latinos.

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Research Interests

My research focuses on the evaluation of prevention and treatment interventions related to nutrition, weight management, chronic disease prevention, and the development and dissemination of best practice guidelines. I work with populations that are disproportionally affected by obesity and chronic diseases for the purpose of designing effective and culturally appropriate interventions. My research in critical thinking has led to the development and implementation of a critical thinking model to empower individuals to make healthy lifestyle changes. My research goals are to (1) develop evidence-based obesity, weight management, and chronic disease prevention programs suitable for community outreach, information dissemination, and public health education and tailor these programs so that they are culturally appropriate to minority and other audiences; (2) make significant contributions toward understanding and decreasing health disparities among underserved (rural and low-income) and minority (African Americans, Hispanics, Native Hawaiians and Pacific Islanders) populations; and (3) refine the critical thinking methodology for behavior change among low-income individuals.

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Research Interests

My current research is focused on understanding the role of heme oxygenase-1 (HO-1) in modulation of immune responses during development (health) and in response to renal injury as a result of ferroptotic cell death. HO-1 is a cytoprotective, potent antioxidant enzyme, which is induced as an adaptive and beneficial response to injury. It has been shown to be protective in animal models and several clinically important conditions, such as acute renal failure, transplant rejection, angiogenesis, and atherosclerosis. Ferroptosis is an iron-dependent form of regulated, nonapoptotic cell death that is triggered under conditions of glutathione depletion and/or inactivation of glutathione peroxidase 4 (GPX4). Recent research shows that ferroptosis may mediate cell death and tubular damage in models of acute kidney injury. Even though HO-1 is protective against kidney injury, it is a source of intracellular iron (required for ferroptosis) because of its ability to catabolize the breakdown of toxic heme into iron, biliverdin, and carbon monoxide. Therefore, the goal of my research is to elucidate the role of HO-1 in the regulation of ferroptosis and to understand the mechanisms by which ferroptotic cell death activates the immune system and propagates renal damage.

Rodrigo Aguilar, M.D.

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Research Interests
After completing the national boards, I became a research fellow in the Georgetown University Hospital Department of Nephrology and Hypertension, where I had the opportunity to work on several projects, especially focusing in acute kidney injury and renal replacement therapy.

At this time, I am an internal medicine resident at Marshall University Medical Center, where my main projects have been in clinical research, with a particular interest in cardiology.

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Research Interests
I am working on research related to lipid metabolomics and the significance of lipid/lipoprotein pathways of residual atherosclerotic cardiovascular risk and cardiovascular health outcomes. This work is being conducted under the mentorship of Drs. Samia Mora, Paul Ridker, and Julie Buring. Using nuclear magnetic resonance to provide detailed phenotyping of the circulating lipoprotein milieu, in conjunction with measures of standard lipids and apolipoproteins and rich phenotypic data from several cohorts, I am working to uncover associations between cardiovascular disease (CVD) risk and inflammatory and lipoprotein pathways of risk by analyzing Justification for the Use of Statin in Prevention: An Intervention Trial Evaluating Rosuvastatin (JUPITER) data. This work will lead to the identification of lipoprotein pathways of CVD risk. I also am interested in minority research, nutrition, and metabolic disease research.

Cynthia Akagbosu, M.D., M.A.

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Research Interests

I am currently a pediatric gastroenterology fellow and also am pursuing board certification in obesity medicine. My research interests involve studying the pathophysiology of obesity, with a focus on discerning the molecular mechanisms that regulate obesity. I aim, ultimately, to translate that knowledge into clinical practice and advance medications, devices, procedures, and surgeries that treat pediatric obesity. By conducting research in a premier child and adolescent bariatric surgery program at Children's National Hospital, I hope to gain the tools to create my own multidisciplinary tertiary care center for pediatric obesity. For my fellowship research project, I am examining the microbiome of children and adolescents undergoing bariatric surgery. My mentors include Dr. Suchitra Hourigan, chief of the Clinical Microbiome Unit at the National Institute of Allergy and Infectious Diseases, NIH, and Dr. Evan Nadler, co-director of the Obesity Institute at Children's National Hospital. My long-term research interests also include bariatric endoscopy.

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Research Interests

The prevalence of obesity and associated comorbidities, such as diabetes and cardiovascular disease, has increased dramatically over the last several decades. My research focuses on investigating the role of mitochondria function and dynamics and stress response pathways in the pathophysiology of obesity and diabetes. My current research investigates stress response pathways in brown adipose tissue (BAT). Activation of BAT function has emerged as a promising therapeutic strategy to increase energy expenditure and counteract weight gain. Recent evidence in mice and humans suggests a role for BAT in regulating the secretion of endocrine factors, or BATokines, such as fibroblast growth factor 21 (FGF21) and growth and differentiation factor 15 (GDF15), that may promote cardiometabolic health. Our work in mice lacking the mitochondrial fusion protein optic atrophy 1 (OPA1) in BAT demonstrated that mitochondrial stress induces the integrated stress response (ISR), which is required to improve metabolic fitness in these mice, partially via FGF21 secretion as a BATokine. We also demonstrated that the ISR is induced in BAT in response to cold. Our research program aims to understand the role of the ISR in the regulation of BAT-mediated systemic metabolic adaptations in response to cold, diet-induced obesity, and mitochondrial stress. Our current research projects focus on (1) investigating the role of PKR-like ER kinase (PERK) as an upstream regulator of ISR activation in BAT; (2) the role of the activating transcription factor 4 (ATF4), the main effector of the ISR, in BAT thermogenesis and metabolic homeostasis; and (3) the role of GDF15 in the regulation of BAT-mediated metabolic protection. We believe these studies have the potential of identifying new pathways that can be targeted to induce BAT's thermogenic activity and secretome to counteract obesity and its comorbidities.

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Research Interests
My research interests include the developmental origins of type 2 diabetes, specifically fetal programming of the pancreatic beta cells.

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Research Interests
Obstructive nephropathy is one of the most common chronic kidney diseases (CKDs) in the United States, affecting more than 10 million adults and children. It results in a progressive and permanent loss in renal function that is characterized by interstitial inflammation and tubulointerstitial fibrosis that leads to end-stage renal disease (ESRD). Human renal tubular cells secrete a number of pro-inflammatory and pro-fibrotic mediators that may contribute to the pathophysiology of obstructive nephropathy-related disorders. Understanding the regulatory pathways that control their production is paramount to developing effective therapeutics to treat these diseases. It is clear that cPLA2α and 20-HETE inhibitors have anti-inflammatory and anti-fibrotic properties. Therefore, novel cPLA2α and/or 20-HETE inhibitors may offer an alternative approach to traditional anti-inflammatory/anti-fibrotic therapies for treatment of obstructive renal injury. My research has focused on identifying the intracellular signaling mechanisms underlying the renal tubular cell response to obstructive nephropathy.

One project focuses on the inhibition or gene disruption of cytosolic phospholipase A2α (cPLA2α) as a mechanism that confers protection against chronic kidney injury, such as obstructive nephropathy. A second project focuses on the role of ω-hydroxylase metabolite of arachidonic acid, 20-hydroxyeicosatetraeonic acid (20-HETE), in obstructive-induced kidney injury. Thus, my laboratory propose that inhibition of cPLA2α and/or 20-HETE counteracts the development of renal dysfunction and progression of obstructive mediated renal injury. Moreover, the role of 20-HETE synthesis inhibitors, antagonists, and analogs in the treatment of obstructive-induced renal injury offers a unique opportunity to investigate novel, stable ω-hydroxylase analogs, antagonists, and inhibitors and their roles in renal inflammation, apoptosis, and fibrosis.

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Research Interests

I am an Assistant Professor in the John W. Deming Department of Medicine, Section of Nephrology and Hypertension, at the Tulane University School of Medicine. My training, experience, and research interests are focused on mitigating health disparities, particularly among patients with kidney disease or cardiovascular disease from historically underserved communities. I am particularly interested in improving access to care and patient activation/empowerment among patients living with kidney disease.

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Research Interests

Skeletal muscles are very adaptable tissues. Shifts in activity patterns, such as endurance and strength training, activate molecular pathways that induce predictable changes in size and metabolic properties. Curiously, certain muscles and motor systems deviate from this stereotype. These variants of the skeletal muscle "mold" also react differently to neuromuscular diseases, such as amyotrophic lateral sclerosis (ALS, or Lou Gehrig's disease), mitochondrial myopathies, myasthenia gravis, and some muscular dystrophies. This laboratory studies motor systems that are constantly active and have peculiar phenotypes; understanding how they are different also may explain why they are spared by some neuromuscular diseases and targeted by others. We use multiple experimental models and technical approaches to analyze how muscles and motor neurons change their gene expression and function in response to activity, stressors, and age. Lately, we have begun to explore how the metabolic and functional profiles of specific motor systems are contingent on the bidirectional communication between skeletal muscles and their motor neurons. This cross-talk between muscles and nerves also may be an important and hitherto unrecognized influence on the differential susceptibility to neuromuscular disease.

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Research Interests
My research is focused on the molecular epidemiology of liver and pancreatic cancers and seeks to understand how inherited genetic variation and exposure to environmental or lifestyle factors act in concert to influence susceptibility to these cancers. The overarching goal of my research is to contribute novel findings to improve strategies for prevention, early detection, and timely clinical intervention for liver and pancreatic cancers. In general, my research has involved the integration of rigorous epidemiologic methods with clinical and high-throughput genomic data to elucidate the molecular processes underlying cancer susceptibility, with a keen focus on analyzing and interpreting data in a biologically meaningful way toward practical actions to improve the health of patients and populations.

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Research Interests
Infectious complications account for significant morbidity and mortality in patients who undergo cancer chemotherapy treatment. Infectious disease management remains a challenge in these patients because impaired immunity limits the utility of clinical, physiological, and laboratory parameters often employed to guide the management of infections in non-chemotherapy patients. Genetic stratification that identifies patients at risk of developing infectious complications during chemotherapy treatment could be a strategy clinicians could employ to target interventions that reduce the incidence or mitigate the effects of these complications. Unfortunately, such methods have yet to be employed. Recognition of these opportunities and the desire to employ innovative tools at the bedside that translate into better patient outcomes has fueled my research efforts in the past few years, and I have been intimately involved in the care of cancer patients for the bulk of my career. Spending the last 2 years as a director of supportive care at a large bone marrow transplant unit exposed urgent needs and challenges for chemotherapy patients, for which in-depth understanding of the pathophysiologic processes is lacking. My current position as the Medical Director of Transplant Infectious Diseases at the University of Cincinnati accords the opportunity to continue to ask the appropriate research questions that unravel the distinct and complex pathophysiology underlying the infections afflicting these patients. Exploration of a genome-wide association study data set of more than 1,000 stem cell transplant recipients is one of many career objectives I have outlined, and I have dedicated my last few years toward this. More recently, I have been involved in evaluating outcomes of organ transplantation in HIV-positive recipients. We recently presented data indicating that renal transplantation in HIV-positive patients was associated with clinical and cost outcomes that are comparable to HIV-negative patients who receive renal transplantation. This work was presented as an oral abstract at IDWeek 2016 and highlighted extensively in the media (http://www.infectiousdiseaseadvisor.com/idweek-2016/increased-kidney-transplantation-rejection-seen-in-patients-with-hiv/article/568994/).

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Research Interests

My passion for preventing and reducing chronic health conditions (e.g., obesity and cancer) among racial and ethnic minority, socioeconomically disadvantaged, and medically underserved communities has remained steadfast throughout my academic and research career. My motivation is a personal one. It is based on an awareness of the growing burden of chronic health conditions within the communities in which I live, work, worship, learn, and play. I particularly am concerned with the increasing rates of obesity and obesity-related chronic health conditions and disability among racial and ethnic minority and low-income women, children, and families. As a result, I have chosen to pursue a career in conducting health disparities research and community-based participatory research to help solve the problem of obesity and its associated negative consequences (e.g., certain types of cancer). Specifically, my research interests are focused on developing, implementing, and evaluating community-based, culturally sensitive health promotion interventions. My research plans in the near term are aimed at continuing the development of my research expertise in the areas of community-based participatory research, health promotion interventions to reduce obesity and cancer risk, mobile health (mHealth) technology development to sustain health promotion intervention effects, and health promotion intervention evaluation. My ultimate aim in the long term is to develop a program of research involving a multidisciplinary collaborative team of community members, community stakeholders, providers, researchers, and students working together as equal partners toward the goal of preventing and reducing health disparities, particularly obesity and cancer disparities.

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Research Interests

My research interest is to apply primary cancer cells and stem cells, mouse-human xenograft models, and animal models of human genetic disease to understand disease pathophysiology, treatment, and therapy. I am interested in using primary tissue-cultured cells as model systems for oncogenic disease and as patient-specific disease models for basic and translationally focused research. I am particularly interested in the genetics of cancer (cholangiocarcinoma, liver cancer and pancreatic cancer), the tumor microenvironment, tumor heterogeneity, and the overall driving effect of tumor-initiating cells, or "cancer stem cells." My long-term vision is to combine translationally focused independent research with patient care.

As a postdoctoral research fellow within the Department of Gastroenterology and Hepatology at Mayo Clinic, my work with induced pluripotent stem cells involved the development of hepatocyte-like cells. I developed a small molecule–based protocol that enables the efficient transformation of patient-specific pluripotent stem cells into functional hepatocytes that are permissive to hepatitis B virus infection and efficiently support the replication and life cycle of the virus. These cells are being used as a model to interrogate the biological basis for aggressive hepatitis B virus–associated hepatocellular carcinoma among ethnic immigrant minorities.

Ricardo Azziz, M.D., M.P.H., M.B.A.

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Research Interests

My biomedical research focuses on the study of reproductive endocrinology and androgen excess disorders, including the epidemiology, genetics, and pathophysiology of polycystic ovary syndrome, non-classic adrenal hyperplasias, the role of the adrenal in hyperandrogenic disorders, the genetics of hyperandrogenic disorders, the physiology treatment of hirsutism, and the regulation and physiology of adrenal androgens. I have published more than 500 original peer-reviewed articles, book chapters, and reviews.

As for my research achievements, I was the recipient of, among other recognitions, the 2000 President's Achievement Award of the Society for Gynecologic Investigation and was elected as a member of the Association of American Physicians in 2014. I am recognized as a thought leader in the arenas of higher education and academic health care, and my scholarship in these areas focuses on the study of leadership and faculty development, diversity and inclusion, change management, and mergers and consolidations.

Joselyn Reyes Bahamonde, M.D.

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Research Interests

My long-term goal is to combine my basic science and clinical interest in glomerular disease and carry out translational research in glomerulonephritis, specifically in focal segmental glomerulosclerosis (FSGS), focusing on the mechanism of podocyte injury and signaling pathways. I am fortunate to have Dr. Kirk Campbell as my mentor and program director. Thus, my current work at Dr. Campbell's laboratory is on podocyte injury based on Hippo signaling and Yes-associated protein (YAP). It has been described that podocytes display a predominant nuclear localization of YAP, and this seems to be crucial for podocyte survival. We have seen in previous studies that YAP silencing leads to podocyte injury and loss, likely playing an important role in the development of FSGS. Interestingly we have observed that the silencing of YAP leads to upregulation and downregulation of many proteins and channels, such as KCa3.1, a calcium-activated potassium channel that modulates calcium signaling and membrane potential in different cells. KCa3.1 is widely express through the body, including podocytes. We have observed that YAP knockdown cells have an increased expression of KCa3.1. I believe this might be one of the mechanisms of podocyte injury by increasing the activity of the calcium-gated potassium efflux. My current work includes the use of cell culture with YAP knockout and control podocytes, cell treatment, mice perfusion, albumin quantification in mice urine, western blot, qPCR, and tissue and cell immunofluorescence staining. With the help of Dr. Campbell and the support of the Division of Nephrology at Mount Sinai Hospital, I am planning to continue my career as a scientist nephrologist with the goal of expanding my research in the mechanism of podocyte injury, as well as continue improving my clinical skills taking care of patients with different glomerular diseases, such as FSGS, vasculitis, lupus nephritis, and membranous nephropathy. In the near future, my goal is to become a faculty member of the Division of Nephrology, applying for a K grant to allow the establishment of a pathway to become an independent researcher.

Eric Bailey, Ph.D., M.P.H.

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Research Interests

I am trained as a cultural and medical anthropologist with public health expertise. Currently, my areas of research interests involve examining overweight and obesity issues among health disparity populations in the United States and globally. I particularly am interested in examining the sociocultural and behavioral factors that influence specific underserved and underrepresented populations and affect their ability to maintain a healthy lifestyle. By analyzing the sociocultural and behavioral factors among specific underserved and underrepresented populations and determining which factors are of most importance to their ability to maintain a healthy lifestyle, I can better understand the type of new strategies that will provide a framework in developing a culturally competent overweight prevention program. Specific underserved and underrepresented populations that I am most interested in conducting research on are (1) all racial and ethnic populations, (2) Generation Z populations (young adults), (3) rural populations, (4) immigrant populations, and (5) indigenous populations in countries other than the United States. For the past 15 years, I have been training graduate public health professionals, medical students, and anthropology graduate students in my Ethnic and Rural Health Disparities Graduate Certificate Program to investigate the major health and disease issues among underserved and underrepresented populations, and now I would like to start conducting my own research specifically related to overweight, obesity, racial and ethnic health disparities, and global health disparities.

Joyce Balls-Berry, Ph.D., M.P.E.

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Research Interests

I am a psychiatric epidemiologist and health educator with research and teaching experience. My research applies community engagement across the translational research spectrum. This includes understanding diverse communities' willingness to participate in research and determining the best approaches to provide underrepresented populations a voice in the research process, including using community-based participatory research and community-partnered participatory research. I am the founder of the Minority Women Research Network. The Network's mission is to promote community and patient engagement in research conducted by minority women scientists interested in research collaborations, academic scholarship, innovation, and dissemination. In addition to these endeavors, I serve as the principal investigator or co-investigator on several international, national, and local community-engaged research studies focused on diverse communities with the goal of increasing health equity.

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Research Interests
With my extensive work as a clinician and an educator, I currently spend a small fraction of my time on medical research. With the recent completion of my administrative tenure as Assistant Dean for Student Affairs, I am in the process of increasing my effort and time in clinical research. My research interests are parallel to my clinical interests, and I have concentrated on clinical trials and original research in outcome studies related to extracorporeal therapies (hemodialysis, bioartificial liver devices, apheresis, etc.), particularly in the geriatric population. I have been successful in getting a modest grant-in-aid from a foundation and publishing several original research articles. I have been on an expert committee at the National Institutes of Health and have published at least 46 research abstracts at national and international meetings; all but two of them were accepted for either oral or poster presentations, with three of them winning awards (at the National Institutes of Health, International Society of Blood Purification, and the American Society for Artificial Internal Organs). At least 15 of my 62 publications are of original research (others are reviews or educational material).

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Research Interests
I am deputy chief of the Review Branch and chief of the Special Emphasis Panels Section I at the NIDDK. My responsibilities include overseeing the review of applications for a wide range of topics, from translational research to time-sensitive grants to ancillary studies. My research interests include endothelial and epithelial permeability, ion pumps and channels, and the role of activation of leukocytes and subsequent oxygen-radical generation on tissue injury in sepsis and ischemia/reperfusion injury. Tissue injury from sepsis and ischemia/reperfusion contributes to high levels of illness and death. A better understanding of the cellular processes involved in tissue injury may improve methods of prevention and treatment. I also regularly participate in applicant training workshops, present on the role of the scientific review administrator in the peer review process, and contribute to mock study sections.

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Research Interests

Chronic Hepatitis B virus (HBV) is the leading cause of hepatocellular carcinoma (HCC) globally and is associated with more than 50 percent of HCC cases. Moreover, HCC disproportionally occurs in young HBV patients from sub-Saharan Africa and individuals of African ancestry, Latinos, Asians, and Native Americans in the United States. Most HCC patients present with advanced or intermediate diseases, at which cure rates are modestly efficacious. There is an imminent need to develop novel therapies for advanced liver cancer patients. Oncolytic viral therapy utilizes self-amplifying viral vectors to deliver therapeutic means to destroy tumor cells while recruiting host immune system for a synergistic tumor cells clearance. I strongly believe in the ability of oncolytic vectors combined with immunotherapy (checkpoint inhibitors) to induce potent tumor regression in humans, which will improve patients' survival. Consequently, my research interest is centered on the development of strategies that will favor the combinatory effect of oncolytic viral therapy an immunotherapy for the treatment of advanced liver cancers. I have more than 6 years of experience working with chronic HBV and liver cancer patients from underserved areas in the context of low-resource settings. However, I had minimal exposure to basic sciences and translational research because my training and daily interventions were exclusively clinical. Therefore, my immediate goal will be to further my basic and translational research skills in engineering oncolytic viral vectors throughout intense didactic trainings (virology courses from Mayo graduate school) and bench work with experienced researchers from my mentor's—Dr. Mitesh Borad—group. Finally at the end of my training, I will be expected to develop enough expertise and publications to compete for career development grant mechanisms, such as K awards, which will enable me to develop an independent research program in the field of viral therapy and gene therapy for advanced and intermediate liver cancers. I believe that I am capable to learn well and effectively in accordance to the scientific discipline. If I gain the opportunity to further my research experience through funding, I will apply this acquired knowledge into my community and start a brilliant career in cancer research field.

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Research Interests

My primary goal is to become a recognized leader in the field of kidney stone epidemiology and an independently funded investigator of social inequities in the treatment and prevention of urologic disease. I study the social determinants of stone disease, starting with healthy food access. By investigating these factors and their effects on nephrolithiasis outcomes and recurrence, I will be able to develop targeted interventions to reduce morbidity and mortality from kidney stones. My personal interest lies in the clinical, social, and behavioral factors that contribute to kidney stone formation and influence treatment outcomes. The modern understanding of kidney stone disease as a recurrent, chronic disease process suggests that it shares many of the social predictors of other chronic diseases, such as diabetes and hypertension. These social factors are understudied and undercharacterized in kidney stones.

Tiffany Beckman, M.D., M.P.H.

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Research Interests

My research interests include (1) studying neuroendocrine regulation of appetite and using brain functional magnetic resonance imaging (fMRI) to define the neural correlates of obesity; (2) using a rodent model to study the neurobiology of eating behavior; (3) investigating satiety and changes in gut hormones with protein diet supplementation before and after gastric bypass surgery; (4) using community-based research methods to examine the effects of improved food availability on incident rates of diabetes and obesity in American Indians; (5) using holistic methods—such as Traditional Medicine, cross-cultural healing methods, and story-telling—to improve health disparities in American Indians; (6) studying COVID-19 in the American Indian population in Minnesota and prevention, treatment and other public health strategies to mitigate disease onset; (7) investigating quality improvements in elder care in the American Indian population and associated longevity.

I direct the Northern Satellite Center for American Indian Health Disparities, which is based at the University of Minnesota and funded by three Institutes of the NIH (NIDDK, National Institute on Aging, and National Institute on Minority Health and Health Disparities) through a collaborative consortium agreement with Dr. Spero Manson of the University of Colorado and Dr. Dedra Buchwald of Washington State University. I am a member of the Leech Lake Band of Ojibwe, Minnesota Chippewa tribe. I also am a member of the Board of Regents American Indian Policy Consultation group at the University of Minnesota.

Angela Bermúdez-Millán, Ph.D., M.P.H.

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Research Interests

I am an assistant professor in the Department of Public Health Sciences at the UConn Health School of Medicine. I have experience conducting mixed-methods studies and coordinating randomized, controlled trials (RCTs). I completed my first postdoctoral training at the Hispanic Health Council/Hartford Hospital, working in the Breastfeeding Education and Support RCT for Obese Women (BESTOW) study and also coordinating the Community Connections Core of the Connecticut NIH EXPORT Center for Eliminating Health Disparities among Latinos (NIH–National Center on Minority Health and Health Disparities [NCMHD] grant # P20MD001765, principal investigator [PI] Rafael Pérez-Escamilla). My second postdoctoral training was at UConn Health, in the Division of Behavioral Sciences and Community Health, UConn School of Dental Medicine, coordinating the RCT Community Health Workers (CHW) Assisting Latinos Manage Stress and Diabetes (CALMS-D). CALMS-D compared the efficacy of CHW-led diabetes education (DE) versus CHW-led DE plus CHW-led stress management in Latinos with type 2 diabetes (NIH-NCMHD grant # 5 R01 MD005879, PIs Julie Wagner and Rafael Pérez-Escamilla). My research interest is to better understand and intervene on the social determinants of health, specifically food insecurity and its effects in cardiometabolic risk markers. I am co-investigator in the Diabetes Risk Reduction through Eat, Walk, Sleep, and Medication Management (DREAM) trial (clinicaltrials.gov identifier DK103663), leading the CHW nutrition intervention. I also am the PI of the Monthly Cycling of Food Insecurity and Diabetes Risk (Food Insecurity Cycling, FIC) study. This longitudinal study is examining the impact of food insecurity as it unfolds over the course of the month, to demonstrate changes in household food insecurity, dietary quality, emotional eating, binge-eating, mental distress, and diabetes markers. I am an active member of The Hartford Advisory Commission on Food Policy, Food Security Working Group. I have written numerous research articles and book chapters. I also have presented my research at the American Society of Nutrition and American Public Health Association annual meetings.

Monica Bianco, M.D.

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Research Interests
I currently am working on identifying maternal metabolites and cord blood methylation associations with a higher risk of developing metabolic disease in childhood. Maternal metabolomics during pregnancy and cord-blood methylation may provide insight into the pathophysiology underlying these associations. Using the Hyperglycemia and Adverse Pregnancy Outcome Study (HAPO) and its follow-up study, my goal is to assess whether maternal metabolomics data and cord blood methylation data can help identify offspring at risk for youth-onset type 2 diabetes (T2DM) using low disposition index in childhood as a marker for future risk of developing T2DM. Early identification of newborns at risk for developing youth-onset T2DM will allow earlier diagnosis, preventive interventions, and treatment that, in turn, can result in decreased morbidity and mortality. I hope that my research results can be translated into clinical practice and help develop strategies to prevent and treat metabolic conditions before they cause a life-long impact on an individual's health.

Shirley Blanchard, Ph.D.

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Research Interests
My research interests include obesity and depression among African American women in Omaha, dance as intervention for weight control among African American adolescents, and self-management of diabetes for residents in Omaha Housing Authority. The Omaha Housing Authority assigned me three towers to develop a self-management program for diabetes. Residents of the Towers attended the monthly meetings focused on health literacy (definition of diabetes) and the difference between type 1 and type 2 diabetes. Complications from diabetes were taught using anatomical models for the participants to handle and visualize. Educational sessions also included preparing healthy snacks and meals. A pharmacist and African American male nurse provided one-on-one health education for male residents of the Towers. A client with bilateral lower extremity amputations related his experience with type 2 diabetes. This research resulted in a grant proposal for health education.

Shayna T.J. Bradford, Ph.D.

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Research Interests
My research interests center on understanding kidney disease disparities at the molecular and cellular levels, as well as identifying novel drug entities to probe and potentially target molecules driving health inequity. Currently, I am studying the role of *TNIK,* which was identified using state-of-the-art single-cell technologies, that is expressed after acute kidney injury (AKI) in both mice and humans, specifically in proximal tubules that fail to repair after injury. Understanding the role of *TNIK* in AKI may lead to novel treatment strategies that lessen the transition from AKI to chronic kidney disease.

Veronica Brady, Ph.D., M.S.N., B.S.N.

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Research Interests
I am an early-stage investigator (ESI), per the NIH. I have an interest in diabetes and comorbid disease. I currently am involved in a study looking at immune checkpoint inhibitor–induced type 1 diabetes and diabetes distress. I also have an interest in exploring glycemic outcomes among persons with diabetes and comorbid HIV. I am working with a team using a large electronic health record database to identify and predict symptoms of diabetes among persons without a prior diagnosis.

Cristal Brown, M.D.

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Research Interests
My ultimate goal is to transform the end-of-life management of patients with decompensated cirrhosis, both eligible and ineligible for liver transplantation, to include early advanced care planning, palliative care services, and increased hospice utilization. Early data in other end-organ diseases suggest both decreased health care costs and increased patient satisfaction with the use of early palliative care. I believe this will be applicable to end-stage liver disease and provide improved end-of-life care.

Denver Brown, M.D.

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Research Interests

My long-term goal is to conduct independent research in pediatric chronic kidney disease (CKD) outcomes. I have participated in several postgraduate research activities that have contributed to my career aspiration of becoming a physician–scientist. Presently, my research focuses on identifying whether metabolic acidosis is a modifiable risk factor of CKD progression in children. I used a large cohort of children enrolled in a national, multisite, prospective study of pediatric CKD to evaluate this relationship longitudinally. This has been done in a European Cohort but not performed longitudinally in a multiethnic cohort. My results indicating that metabolic acidosis increases the risk of more rapid CKD progression has been well received by the pediatric nephrology community at the various scientific forums where I have presented my work from this project, including an oral presentation at the national Pediatric Academic Society Conference in 2019. I submitted a manuscript of my findings for the consideration of the 2019 *Clinical Journal of the American Society of Nephrology* Trainee of the Year Award and was given the second place award. My other research efforts have included examining the efficacy of a group-based care approach to the treatment of hypertension in children and adults. Additionally, during my NIH-supported pediatric nephrology training program, I have published on a variety of topics, including an editorial on a novel treatment of metabolic acidosis, a book chapter on how to clinically approach the evaluation and management a child with hematuria, and a review of malaria-induced acute kidney injury. Now, as an assistant professor with 70 percent protected research time, I am working to expand my investigation of the consequences of metabolic acidosis on pediatric CKD progression to nonstudy settings (instead looking to evaluate whether there is an association using data from patients in routine clinical settings). Ultimately, I would like to use the results from these investigations as data for a clinical trial, something that has not yet been done in a pediatric population.

Lynda Brown, Ph.D.

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Research Interests

I am the grant director at Funding Pathways, which partners with a faith-based organization, New Journey. New Journey helps girls aging out of the foster care system achieve independence, offering career counseling, educational opportunities, and transitional housing. New Journey operates as a faith-based program of Purpose House Church.

Prior to Funding Pathways, I was an associate professor and the coordinator of the graduate program in food and nutritional sciences at North Carolina A&T State University. I first joined NMRI as a postdoctoral researcher, and it has been an important source of mentors through my transition from postdoctoral researcher to associate professor and finally to the nonprofit world.

My current focus is community development and faith-based grants working with New Journey to create a network of support for foster children as they age out of the foster care system so that they will have happy, healthy, and successful lives and careers.

Susan D. Brown, Ph.D.

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Research Interests

As a behavioral scientist, my program of research examines the efficacy, effectiveness, and implementation of behavioral interventions for diabetes and cardiovascular disease prevention, particularly among racially and ethnically diverse women at high risk. This includes developing and testing interventions to promote meaningful engagement in (1) lifelong healthy eating, physical activity, and weight management behaviors; (2) preventive health services, such as recommended diabetes screening and healthy lifestyle programs; and (3) clinical research, such as strategies to improve the representation of racial and ethnic minorities in randomized clinical trials. My advanced training and collaborative, multidisciplinary program of research have been sponsored by the NIDDK; National Heart, Lung, and Blood Institute; and National Institute on Minority Health and Health Disparities, among others.

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Research Interests

I am a professor and director of the Program for Research on Faith, Justice, and Health in the Department of Behavioral and Social Sciences at the University of Houston College of Medicine. I recently have joined the faculty at the University of Houston to bolster the College of Medicine curriculum with an enhanced focus on social factors influencing health and health care outcomes. I am a sociologist who examines the full range of determinants as they relate to the onset and progression of chronic diseases among African American males over the life course and across generations.

The NIH has been a major supporter of my work though a National Institute of Mental Health–American Sociological Association predoctoral fellowship, a Ruth L. Kirschstein Research Service Award postdoctoral fellowship in family medicine, a career development award (K01), and a National Institute on Aging (NIA) administrative supplement. I am one of a few sociologists who have published in each of the leading journals in nephrology. This work has been supported by NIH predoctoral, postdoctoral, and early-career research awards, and related publications can be found in leading nephrology, public health, and men's health journals. I am a former editor of *Research on Race and Ethnic Relations;* current associate editor of *Ethnicity & Disease* and *Behavioral Medicine;* and co-editor of two recent books, *Men's Health Equity* and *Racism: Science and Tools for the Public Health Professional*. I have earned graduate degrees in rehabilitation counseling and divinity and have served African American congregations as an ordained Baptist minister for more than two decades. My current work leverages professional, educational, and clerical experiences, as well as pilot funding from the NIA to develop and evaluate comprehensive biopsychosocial models that specify how faith can "get under the skin" to slow declines in physical and cognitive functioning among African American men during middle and late life. This work has gained international attention and has been featured on numerous global media outlets, including *USA Today,* The Today Show, and *Time Magazine*. I am committed to leveraging the strengths of research and faith communities toward efforts to improve the health of disadvantaged and disenfranchised males, their families, and other related populations. I earned a Ph.D. in sociology from North Carolina State University and received postdoctoral training in family medicine from the University of Wisconsin–Madison and in biobehavioral health from Duke University.

Alexander Bullen, M.D.

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Research Interests
One of my main research interests is to improve hemodynamics during dialysis by using individualized cool dialysate and evaluating its impact on the frequency of intradialytic hypotension, adequacy of hemodialysis, and other parameters. I also am interested in studying the patients' perception of a cool dialysate, as well as the nephrologists' acceptance of an individualized cool dialysate protocol. With the same focus of improving outcomes on patients on hemodialysis, I am currently in the developing phase of a study to evaluate a simple, yet effective manner to increase physical activity among this patient population. Another research interest is evaluating whether there is an association between a novel marker of calcification and bone disease. With the help of my mentor, I have been able to collect preliminary data, which I currently am analyzing to determine the relationship between the novel marker and such factors as total hip and spine bone mineral density and risk of fracture.

Natasha Burke, Ph.D., M.A.

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Research Interests
My research program makes inroads into eating- and weight-related disparities by addressing measurement, models, and interventions for multiply marginalized children, adolescents, and emerging adults. My interests include the complex interplay among weight status, sociodemographic characteristics, psychological comorbidities, and associated risk factors. Given the persistence of significant eating- and weight-related health disparities, my goal is to continue to inform research and interventions in ethnic minority and economically disadvantaged populations.

Martin Burks, M.D., M.B.A.

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Research Interests
My research interest is focused on colorectal carcinoma and identifying tumor budding. Tumor budding is an independent prognostic factor and linked to poor clinical outcomes for patients with colorectal carcinoma. Tumor budding is associated with an increased risk of lymph node metastasis and the need for adjuvant therapy and neoadjuvant therapy in various settings. We are developing technologies in the fields of digital pathology, artificial technology, and machine learning to identify tumor budding on whole-slide imaging.

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Research Interests

Fibroblast growth factor 23 (FGF23) is an important phosphate- and vitamin D–regulating hormone that causes rare disorders, such as hypophosphatemic rickets/osteomalacia, and contributes significantly to the disease burden of common diseases, such as chronic kidney disease. Enhanced understanding of how the body regulates FGF23 can greatly improve the care provided to the growing number of patients with FGF23-related illnesses; however, much is still unknown about FGF23 physiology.

Given the numerous feedback loops in endocrinology, multiple studies are needed to understand the interplay between serum and dietary phosphate, FGF23, parathyroid hormone (PTH) and vitamin D. Through my now-completed NIDDK K23 grant, I performed a number of smaller-scale physiologic FGF23 studies in humans. Through different experimental models, I have shown that dietary phosphate, vitamin D, and possibly PTH are key regulators of FGF23; while in the normal range, serum phosphate is not. I also have described striking differences in the available FGF23 assays to detect changes in the physiologic range.

My current research is focused on the epidemiology of menopause. I am the site principal investigator for a seven-site longitudinal study of women's health (the Study of Women's Health Across the Nation, SWAN) which has followed 3,300 Black, Chinese, Hispanic, Japanese, and white women since 1996, from their premenopausal years to our upcoming visit. SWAN has carefully phenotyped the physiological and psychosocial changes that occur during the menopausal transition and is assessing their relations to subsequent health and age-related diseases.

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Research Interests

My research interest focuses on the field of immunometabolism. I currently am investigating the events involved in the pathophysiology of the chronic low-grade systemic inflammation that is observed in obese patients. I particularly am interested in the role of autophagy in regulating such inflammatory state. It has been established that many pro-inflammatory cytokines are involved in the development of meta-inflammation, but the events initiating immune cell activation in visceral adipose tissue remain unclear. The purpose of my project is to understand the role of autophagy and NF-kB in the chronicity of the obesity-induced inflammatory state.

Kirk Campbell, M.D.

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Research Interests
Despite the identification of several disease-causing gene mutations and an associated expansion in structural and functional correlates, the underlying mechanisms of podocyte loss remain poorly understood. Putative validated targets for drug development are scarce, and, disappointingly, podocyte-specific therapeutic agents are not currently available. The development of such agents is crucial, given the causal relationship between podocyte loss and the progression of various glomerular diseases. Our current projects focus on understanding the mechanisms of podocyte injury and identifying potential targets for therapeutic intervention.

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Research Interests
Alcoholic and nonalcoholic liver diseases are major causes of liver failure worldwide and affect minority populations disproportionately. Insulin resistance has been linked to disease progression in both diseases. Therefore, understanding the pathogenesis of insulin resistance in these diseases is critical to addressing these public health problems.

The goal of my research is to investigate the mechanisms of insulin resistance underlying alcoholic and nonalcoholic steatosis. Specifically, I plan to examine the functional relationship between lipid droplet proteins, toxic lipid metabolite accumulation, and insulin resistance in these disorders using complementary *in vivo* and cellular approaches. Current projects in the laboratory include investigating the relevant ceramide synthetic pathways in the pathogenesis of insulin resistance in an *in vivo* experimental model of alcoholic liver disease, investigating the upstream regulation of the lipid droplet protein perilipin 2 in a cellular model of alcoholic steatosis, and elucidating the mechanistic link between perilipin 2 and hepatocellular ceramide content in an *in vivo* model of alcoholic liver disease.

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Research Interests
I am a board-certified gastroenterologist and clinical hepatologist and division head of gastroenterology at the University of Washington. My research focuses on the mechanisms of insulin resistance in alcoholic fatty liver disease (ALD) and nonalcoholic fatty liver disease (NAFLD). We have found a critical role of the major hepatic lipid droplet proteins perilipin 2 (PLIN2) and perilipin 3 (PLIN3) in development of hepatic steatosis, glucose tolerance, and insulin sensitivity in mouse models of ALD and NAFLD. Most recently, we uncovered that lipotoxic ceramides positively regulate PLIN2 and that genetic and pharmacologic ceramide inhibition reduces steatosis through very low-density lipoprotein and lipophagy-mediated mechanisms. We will advance our initial findings by investigating the mechanisms of ceramide synthase 6-mediated PLIN2 regulation and its relevance to human disease.

Current investigations in our laboratory include elucidating the interaction of lipid droplet proteins with sphingolipid metabolites in impairment of insulin signaling using comprehensive *in vivo* metabolic studies, genetic models, and cellular approaches. These studies form the basis for translational studies investigating the prognostic and pathologic role of lipids and lipid-associated proteins in patients with ALD and NAFLD. In addition to my laboratory research, I am a translational researcher interested in understanding the relevance of these basic mechanisms for humans. In that capacity, I am a co-investigator for the Million Veteran Program to help establish genetic risks for NAFLD development and severity and a prior sub-investigator of an AAV8 clinical trial for patients with familial hyperlipidemia. Insights gained from these studies form the basis of future translational and functional investigation.

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Research Interests
The overarching theme of my research focuses on health disparities in the development of diabetes and its vascular complications. With expertise in study design and research methods, I have extensive experience with large observational cohort studies, and I have published on a range of social, clinical, and lifestyle factors related to the occurrence of diabetes and vascular complications. Currently, I am leading research projects directed toward understanding (1) the role of glycemic markers in the development of diabetes complications, (2) racial and ethnic differences in diabetes complications, and (3) social determinants of diabetes risk.

A list of my published work is available at http://www.ncbi.nlm.nih.gov/sites/myncbi/april.carson.1/bibliography/44238538/public.

Carmen Castaneda-Sceppa, M.D., Ph.D.

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Research Interests

I am the dean of the Bouvé College of Health Sciences and a professor at Northeastern University. As a physician and nutrition scientist, my work centers around advancing and prolonging health for all—or the health span. Specifically, my program of research is based on developing and testing lifestyle interventions to promote healthy aging and quality of life. I examine health and wellness in settings that promote physical activity among underserved and vulnerable populations, specifically older adults and the elderly, and particularly Hispanics and African Americans.

My research provides evidence-based information to transform the way we think about healthy lifestyle from personal choice to preventive medicine. For example, the Academy of Sciences and the Institute of Medicine has used my research findings to revise the Dietary Recommended Intake for protein in older adults; my pioneering work on resistance exercise in older adults with kidney disease and diabetes has been adopted as a standard of care by the American Diabetes Association; and my research has contributed to the American College of Sports Medicine's and Heart Association's recommendations for physical activity in older adults.

Continued funding for my program of research includes funding from the Brookdale Foundation; the International Life Sciences Institute; the NIH; the National Science Foundation; the National Space and Biomedical Research Institute; and corporations and foundations, such as Novartis and Boston Children's Hospital.

I have been an active and long-time member and contributor of the Gerontological Society of America (GSA) and am a GSA fellow for the Health Sciences Section. In 2021, I was voted in as treasurer-elect (1-year role) and treasurer (3-year role) of the GSA Board of Directors. I also have been an active member of the American Society for Nutrition.

I received my medical degree from Francisco Marroquín University in Guatemala City, Guatemala, where I was born and raised. I received my Ph.D. in nutrition from The Gerald J. and Dorothy R. Friedman School of Nutrition Science and Policy at Tufts University in Boston, Massachusetts.

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Research Interests

In my current position, I am an Assistant Professor and Clinical Coordinator for the dietetics program in the Department of Nutritional Sciences at Howard University. I am in the initial stages of developing a research program to explore and develop a tailored intervention application to address the health needs of minority populations. My goal is to successfully build a culturally relevant application that is specific to the needs of a minority population and to integrate the day-to-day interventional activities to prevent and reduce metabolic syndrome– and cardiovascular disease (CVD)–associated risks. My research aims will be to determine the effectiveness of using a tailored intervention to develop effective health promotion programs to address diabetes, obesity, night eating syndrome (NES), and sleep disorders in Black and Hispanic/Latino populations with risk for CVD. This proposed study is to characterize individuals NES in Blacks to address the suboptimal and to determine control of type 2 diabetes in Blacks. Also, I seek to explore motivation and self-efficacy for behavioral change for individuals within our study populations that may be at high risk for CVD. This study will employ a mixed methodology to examine the extent and effectiveness of using existing technology as tools for positive change in addressing chronic disease.

My short-term academic and research objectives and strategies include acquiring a K01 Award, which would provide me the additional resources needed for the development of pertinent data to examine the impact of sleep, dietary behavior, limited physical activity, and smoking on CVD in minority populations, especially among individuals older than 60 years.

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Research Interests

My lived experience and long-standing, equity-driven career makes me a critical leader on the forefront of community- and systems-level change. My life's work centers on addressing structural racism, eliminating unnecessary and systemic health barriers, and advocating for Coloradans who experience the greatest needs. Notably, I am recognized for spearheading the change to a Medicaid payment rule so undocumented patients with kidney failure can access life-saving maintenance dialysis. This effort came after the death of a patient named Hilda, who was ineligible for Medicaid due to her undocumented status and therefore unable to receive regular life-saving dialysis treatments. This was my sentinel event, in which I realized I could use my lens and power as a Latinx physician to engage in advocacy and policy development.

Since this significant health policy improvement, I have removed other barriers and advanced equity for the Latinx community, focusing on improving the quality and cultural responsiveness of care for individuals with end-stage kidney disease. My work to test community-based interventions to improve the well-being of Latinos with kidney disease is funded by the National Institutes of Health and the Robert Wood Johnson Foundation. Since the emergence of the COVID-19 pandemic, I have pivoted priorities and responded to urgent community needs by providing clinical care as an internal medicine hospitalist to patients hospitalized with COVID-19 at Denver Health. I also conducted multiple studies focused on the Latinx community and COVID-19, which documented the disparate experiences and harm faced by the Latinx community, while continuing to advocate for just access to care and resources. These studies informed public health programs in Colorado and nationwide. A current study is looking at changes in vaccine deliberation following hospitalization for COVID-19 among diverse, unvaccinated individuals. I also connected with community-based and health policy stakeholders to advocate for access to outpatient COVID-19 care for undocumented immigrants.

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Research Interests

My research aims to elucidate the metabolic mechanisms linking diet, obesity, and cancer and to characterize the potential beneficial effects of certain dietary patterns acting on converging pathways of inflammation, dyslipidemia, and insulin resistance. Subclinical inflammation and atherogenic dyslipidemia may be a critically shared pathophysiological pathway for cancer and atherosclerosis. Using metabolomics, I am examining the association of Western diet– versus prudent diet–associated metabolites to help dissect the role of dietary factors that promote obesity and increase colorectal cancer risk. My other research interest is focused on the use of supplements for chemoprevention. I have completed one clinical trial of vitamin D supplementation in Blacks living in Boston. One key finding from the clinical trial was that vitamin D supplementation lowered blood pressure. I am currently an investigator for the VITamin D and OmegA-3 TriaL (VITAL), a large randomized trial of vitamin D3 and marine omega-3 fatty acids in the primary prevention of cancer and cardiovascular disease among a multiethnic population of over 26,000 individuals (U01CA138962).

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Research Interests

I have developed a robust clinical research program using multiple methods—including clinical epidemiology, health services research, decision sciences, and clinical trials—with the aim of better understanding and improving care in acute and chronic kidney disease. Additional interests include bone and mineral metabolism, hypertension, and urinary stone disease. I spend a large proportion of my time mentoring junior faculty, fellows, residents, and medical and graduate students.

Ryon Cobb, Ph.D.

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Research Interests

My program of research contributes to ongoing efforts to create a more integrated science that better elucidates how one's racial identification combines with psychosocial risk factors to shape the health of adults throughout the life course. To date, I have published more than 15 manuscripts, mainly targeting (1) the links between racial identification and disparities in biological and mortality risks among adults and (2) how perceived psychosocial stressors relate to disparities in single-system measures of biological risk among older adults.

Lois M. Coleman, Ph.D., M.S.

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Research Interests
I am most interested in conducting research that will aid in eliminating health disparities and creating health equity. My research aim is to understand how social, cultural, and environmental influences contribute to obesity. I am currently examining subjective perceptions of body weight/size, with a particular interest in how those perceptions are formed and how they influence health behaviors.

Sabena Conley, Ph.D., M.S.

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Research Interests
I have been engaged in several preclinical research projects that focus on the extent of sympathetic activation in the kidney during metabolic syndrome (MetS), systematic insulin resistance, and examining how MetS affects insulin signaling–related genes in adipose tissue–derived mesenchymal stem/stromal cells. These early studies have triggered my interest in kidney disease research and have attracted my attention to investigating factors that can be translated into targeted treatments for patients with chronic kidney diseases.

Marimar Contreras Nieves, M.D.

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Research Interests
My current research interest is in nephrology, particularly global health. I started getting involved in research in nephrology during the second year of my internal medicine residency, when I met my mentor, Dr. Shuchi Anand, a Stanford nephrologist.

I have been working with Dr. Anand in the project "Kidney Disease in California's Central Valley." Our goal is to study chronic kidney disease of unknown origin (CKDu), a condition principally affecting young men in arid, farming communities around the globe. Dr. Anand has learned that there is a kidney failure "hot spot" in California's Central Valley, where most of the farm workers are immigrants from Mexico and Central America. We hope to characterize this population and the type and extend of kidney disease as part of a more comprehensive study of CKDu in which Dr. Anand is participating.

My work has included working in the Institutional Review Board (IRB) proposal, presenting the project in research meetings for feedback, literature review, and developing the questionnaires that we plan to implement at DaVita Dialysis Units. The project was approved by the IRB. We are in the process of doing pilots with patients so that we can optimize our questionnaire.

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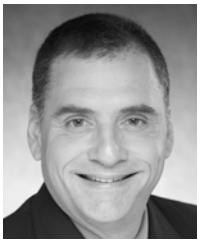
Research Interests

As a molecular exercise immunologist, my long-term research goals are to define the mechanism(s) of inflammatory-driven vascular disease and reveal how interventions targeting endothelial health can suppress and reverse these conditions to advocate for adjunct treatment strategies in African Americans. My experience as a basic science and clinical research exercise physiologist includes actively participating in designing and managing externally funded exercise research studies (aerobic and resistance) in animal models of disease (10+ years of experience) and humans (17+ years of experience). My clinical research exercise experience includes recruiting, developing, and managing exercise training interventions in clinical populations with type 2 diabetes, hypertension, congestive heart failure, cancer, liver and kidney disease, and bariatric surgery patients (most among African Americans). My training in translational research has encompassed interventions in animal and human models of cardiovascular, metabolic, and inflammatory disease and *in vitro* racial disparity studies of endothelial dysfunction that have provided a backdrop outlining biomarkers and anti-inflammatory effects of exercise training on tissue-specific inflammation (gut/colon) and metabolic and vascular function.

My research niche now includes intense racial disparity research involving defining interactions of circulating biomarkers of endothelial health (such as matrix metalloproteases, endothelial microparticles, and others) and gut health (short-chain fatty acids), their interaction with endothelial/vascular function, and their relationship to hypertension and risk for subsequent disease with vascular components (e.g., diabetes and kidney disease). I currently have two active clinical trials, funded by the American Heart Association and an NIH North Carolina Translational and Clinical Sciences Institute (NCTraCS) pilot grant, to define novel biomarkers of gut microbial health in an effort to attenuate the health disparity involving hypertension and subsequent cardiovascular disease in African Americans. My subject population includes college- to middle-aged African American men and women to define the interactions between exercise and the gut microbiome while identifying circulating biomarkers for vascular health and cardiovascular disease risk.



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Research Interests

I am a research scholar at Dr. Dale Abel's laboratory. My research is centered in the metabolic effects of skeletal muscle–specific depletion of dynamin-related protein 1 (DRP1). I established and validated inducible and constitutive murine models of skeletal muscle–specific depletion of DRP1 and am currently developing similar models in cultured skeletal muscle primary cells. My preliminary results indicate that mice with inducible depletion of DRP1 are, to some extent, protected from weight and adiposity gain when provided with high-fat diets. These animals also are protected for the development of glucose intolerance. The mechanisms of these phenotypes are currently under investigation but might be related to the secretion of myokines.

Leonor Corsino, M.D., M.H.S., FACE

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Research Interests

I am an associate professor in the Department of Medicine at the Duke University School of Medicine. My research focuses on the prevention and treatment of diabetes, obesity, and related complications, with a special interest in minority populations. I strive to continue working in this area to ameliorate health disparities. In addition to my role as a clinician scientist, I work on several initiatives aiming to increase diversity in our school, department, and institution. One of my personal goals is to foster the development of the next generation of academic physicians.

Deidra C. Crews, M.D.

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Research Interests

My research interests include chronic kidney disease epidemiology, comparative effectiveness of treatment strategies for chronic kidney disease and end-stage renal disease, and racial and socioeconomic disparities in chronic kidney disease. I have a particular interest in the mechanisms through which socioeconomic, lifestyle, and behavioral factors might exert an effect on racial disparities in chronic kidney disease.

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Research Interests

My main research interest is in the biology of aging, specifically in the hematologic compartment. One hematologic disease that is more prevalent with aging is acute myeloid leukemia (AML). Hence, my long-term goal is to become an independent researcher focused on understanding the mechanisms that drive AML, such as minimal residual disease and clonal hematopoiesis, and how these mechanisms vary by age, gender, and ethnicity. Another major research interest of mine is developing novel therapeutics that specifically target leukemia stem cells in AML with the ultimate goal of translating these findings to the clinic. My secondary research interest is drug development for the treatment of AML, specifically therapies that target the leukemia stem cell (LSCs) compartment. To identify a compound that can specifically target LSCs and to provide training in the conduct of rigorous and mechanistic translational research, I currently am working in a project that aims to eradicate LSCs by inhibition of heat shock protein 70 (HSP70). We have preliminary published data that this mechanism of action is effective in ablating LSCs without affecting the normal hematopoietic system. The goal of my project is to test this HSP70 inhibitor *in vivo* using animal models transplanted with patient-derived AML samples. The ultimate goal is to provide clinicians with a drug that can eradicate LSCs and thus improve survival of AML patients.

Luis Cubano, Ph.D.

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Research Interests

My research interest lies in workforce development, with the goal of enhancing the skills and attitudes of students needed for careers in biomedical science research and education through training in scientific skills to develop both their expertise and their dual identity as scientists and educators. My research also focuses on infrastructure development to provide support to institutions in the development of academic programs, as well as research administration to support the management of federal grants.

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Research Interests

Throughout my research career, I have made numerous outstanding contributions in the fields of molecular and cell biology and biochemistry. These include the identification of active factors in milk whey that prevent cell death in skin eczema; a previously unrecognized feature of a commonly used immunosuppressant that affects cellular organelles (mitochondria), which may help explain side effects of this long-term treatment; and a fundamental paradigm shift in our current understanding of chronic kidney disease (CKD) development, opening opportunities for new therapeutic approaches to prevent the progression of CKD.

My current and future studies aim to further explore the development and progression of CKD with the objective to identify key mediators, events, and biomarkers that potentially can serve as powerful diagnostic markers or develop new treatment therapies for this debilitating disease that affects millions of people worldwide, and to head toward individualized patient therapy.

Samuel Dagogo-Jack, M.D., M.S.

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Research Interests

My translational research focuses on the interaction of genetic and environmental factors in the prediction, prevention, and complications of prediabetes and diabetes. My studies have provided novel insights into mechanisms of diabetes complications, including hypoglycemia-associated autonomic failure; the role of race/ethnicity in the biology of dysglycemia; and the metabolic significance of leptin in humans, including the demonstration of impaired dynamic leptin secretion in diabetes. I am a principal investigator for four NIH-supported studies: (1) Diabetes Control and Complications Trial/Epidemiology of Diabetes Interventions and Complications (DCCT/EDIC); (2) Diabetes Prevention Program/Diabetes Prevention Program Outcomes Study (DPP/DPPOS); (3) Glycemia Reduction Approaches in Diabetes (GRADE); and (4) Pathobiology and Reversibility of Prediabetes in a Biracial Cohort (PROP-ABC).

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Research Interests

My research interests include patient-centered care, health education development, and reducing racial and ethnic health disparities in chronic diseases. My goal is to deepen the understanding of the creation, implementation, and evaluation of health campaigns with a special focus on health disparities in kidney transplantation affecting low-income, low-literacy, and underserved populations. My research explores patient education design, with a focus on memorable messaging and informed decision-making within the end-stage renal disease population. I currently am examining the utility of a digital storytelling library about exploring living donation as a supplement to mandated transplant education.

Daisy De León, Ph.D., M.S.

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Research Interests

My main research interest is the role of IGF-2 in breast cancer and diabetes on health disparities among African American women. My laboratory has published on IGF-2 actions in the development, progression, and metastasis of breast cancer among African American women. Current studies in my laboratory are identifying the signaling pathways and the cellular and molecular mechanisms associated with IGF-2 ability to promote breast cancer development and metastasis without the requirement of estrogen in the Nude/severe combined immunodeficient (SCID) mouse models. Of interest to my team is how dietary supplements and anti-inflammatory drugs regulate IGF-2 to prevent cancer. The research team in my laboratory integrates the cellular and molecular studies performed in established breast cancer cell lines with animal models and tumor tissues analysis to advance the translational significance of the research.

A current emphasis in my research laboratory is to determine the mechanisms that link IGF-2, diabetes, and the breast cancer survival disparity observed among African American women. The original observation, published recently, linked IGF-2, diabetes and breast cancer in a series of studies that integrated *in vivo* cell analysis with breast cancer tissues from African American women. At present, our main research studies are focused on the mechanisms of IGF-2 regulation of the mitochondria, the organelle at the intersection of breast cancer and diabetes.

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Research Interests
My research is focused on understanding the molecular mechanisms by which the vasoactive peptide endothelin-1 leads to inflammation and renal damage in hypertension and diabetes. We recently demonstrated that the ETB receptor is protective against the development of renal apoptosis in acute kidney injury and that overactivation of the ETA receptor, something that happens in many patients of salt-sensitive hypertension and diabetes, promotes kidney apoptosis and activation of cellular stress pathways like ER stress.

Marissa DeFreitas, M.D.

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Research Interests
I have developed a research interest in the field of fetal programming of adult disease, specifically as it relates to the long-term cardiovascular and renal risks of preterm birth. This has been under the strong mentorship of Dr. Carolyn Abitbol, who is a pioneer in the area of oligonephropathy of prematurity and risk of future chronic kidney disease. Dr. Abitbol has guided me as an early-stage investigator during my fellowship and for the past 2 years as a junior faculty member through a number of successful preliminary studies in this important topic area. I am in the process of revising and resubmitting a K23 award through the NIDDK titled "The Impact of Twinning on Kidney Development and Programming of Cardiovascular and Renal Disease." In addition to this abundant bedside clinical experience, the multiracial and ethnic demographics of the patients we serve have allowed our group to study neonatal renal development more closely. I have led efforts to recruit and longitudinally follow 54 mothers and infants in a sub-study of the Gerber Infant Kidney study at our center. The goal was to investigate umbilical cord histomorphometry and urine biomarkers across gestational age groups. My roles included managing the acquisition of blood, urine, and umbilical cord samples for storage and evaluation. My personal research interest relates to how adverse or competitive intrauterine environmental factors affect the development of the renal and cardiovascular systems. Our preliminary work suggests that such adversity *in utero* is associated with smaller kidney size and stiffer vessels, which might explain the cardiovascular and renal disease seen later in life in this population. During this time, I have had the fortune of building relationships and working with a multidisciplinary team in pediatric pathology, high-risk obstetrics, and neonatology, both locally and across centers, to study this important topic and look forward to continuing this collaboration as part of this project.

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Research Interests
My research interests focus in three main areas of clinical investigation: eradication of health inequities in kidney diseases, patient-centered approaches to kidney care, and the use of digital tools in chronic disease populations. My expertise lies in the use of observational data, primary data collection, clinical trial design and evaluation, epidemiology, and population health science. I have developed and tested low-literacy digital tools in chronic kidney disease and acute kidney injury populations; evaluated psychosocial and social determinants of health in minority populations, and used large data sets (VA and Medicare) to evaluate population health trends in kidney diseases. I have also focused on individuals with or at risk of diabetic kidney disease, with a particular interest in optimal medication and self-management of this condition.

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Research Interests
My research interests are diverse and include understanding links between bone/mineral metabolism and children with cerebral palsy who have a frailty phenotype. I also have interests in translational research and developing tools that will help us understand how to improve care, outcomes, and health-related quality of life in children with differences in sexual development.

Karen Tabb Dina, Ph.D.

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Research Interests
My current research investigates the relationship between diabetes and depressive symptoms during pregnancy and postdelivery outcomes for mothers and infants. Although significant gains have been made in documenting the national prevalence of maternal health disparities (e.g., depression), more work is needed to understand the interaction of diabetes and depression during the perinatal period. Accordingly, the NIDDK and National Institute on Minority Health and Health Disparities are the most appropriate Institutes, given my current and future research interests.

Ayotunde Dokun, M.D., Ph.D.

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Research Interests
Peripheral arterial disease (PAD) of the lower extremities is the result of atherosclerotic blockage of blood vessels, and its severity varies even among people with similar occlusions, suggesting a possible role for genetics in its severity. Individuals with diabetes are more likely to develop PAD, and when people have PAD and diabetes, the disease is more severe, resulting in higher risk of amputation and death. Therefore, studies in our laboratory currently seek to understand how the metabolic environment in diabetes interacts with genetics and contribute to the poor PAD outcomes seen in individuals with diabetes.

Obidiugwu Duru, M.D., M.H.S.

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Research Interests
I have several different research projects addressing issues related to obesity, prediabetes and diabetes. I lead projects engaging patients with prediabetes in shared decision making for diabetes prevention, specifically considering the options of intensive lifestyle change and/or metformin. I also have a project working with UnitedHealthcare to evaluate comprehensive care management for high-cost, high-need patients with diabetes.

Lincoln Edwards, D.D.S., Ph.D.

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Research Interests
As the human body continues to expand and fuel the epidemic of type 2 diabetes, novel approaches to the treatment of metabolic diseases will be needed. My research interest involves the development of imidazoline compounds as therapeutic agents to treat metabolic diseases, such as type 2 diabetes. Some of these compounds currently are in clinical use as antihypertensive agents, and I am exploring the possibility of developing imidazoline compounds as single-agent therapy for patients with diabetes and hypertension. I also am studying the cross-talk between insulin and imidazoline receptor signaling pathways.

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Research Interests

My research interest engages the examination of mind–body intervention effectiveness in disease control in African Americans. I have an interest in examining stress and exercise lifestyle management programing on chronic diseases and related cardiovascular pathology. Specifically, the effects of a culturally tailored mindfulness-based stress reduction and exercise programing with complementary health education on chronic diseases (diabetes, hypertension, resistant hypertension) as a primary and secondary prevention strategy in minorities burdened with health disparities.

My research proposes to evaluate the impact of a culturally tailored, mindfulness-based stress management intervention and diabetes self-management education on perceived stress and physiological markers of stress in blood pressure and biomarkers of stress (e.g. cortisol, c-reactive protein) in diabetic African American patients. A secondary focus of this research is to determine patient adherence to medication, attitudes toward physical activity, and healthy food selections. Developing culturally tailored stress management programs is important in improving adherence to diabetes education and enhancing the outcomes for pharmacological interventions used for glycemic control.

Attaining glycemic control and slowing progression of complications of diabetes, such as macrovascular complications associated with endothelial dysfunction, is an area of future research I would like to explore.

Tekeda Ferguson, Ph.D., M.P.H., M.S.P.H.

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Research Interests

My interest and area of expertise is in chronic disease epidemiology, including cardiometabolic disorders, social determinants of health, and chronic disease development in HIV. My work has focused on taking a biopsychosocial approach to understand the social environment, as well as traditional pathophysiologic measures on the development of insulin resistance, metabolic syndrome, and cardiovascular disease. This approach involves an appreciation that disease and illness do not manifest only in terms of pathophysiology, but are also simultaneously influenced by many different levels, from cellular to organ system to person to family and to society. I have current grant support investigating the effects of alcohol, life stress, community, and environmental factors in chronic inflammation, HIV/AIDS, and disparities in cancer. As an investigator with the Louisiana State University Health Sciences Center, Comprehensive Alcohol Research Center, I am investigating alcohol use and alcohol use disorders with the association of insulin resistance and increased risk of cardiometabolic conditions in people living with HIV. I am involved in multiple intervention studies, including decreasing risky alcohol use and increasing healthy behaviors and testing the prediction that aerobic exercise improves glycemic control in people living with HIV and alcohol use disorder.

Johnny Davis Figueroa, Ph.D.

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Research Interests

There is a critical unmet need to build a new framework for minority health promotion and disease prevention. Emerging evidence from my laboratory supports that neuroscience can contribute to unmasking childhood roots of health disparities. The research of my laboratory builds logically on my previous work and addresses two critical questions: (1) How does psychosocial stress alter the neurodevelopmental trajectories of the cognitive-emotional brain? and (2) What mechanisms connect early-life stress to neuronal dysfunction, disordered eating, and obesity? The translational and interdisciplinary research from our laboratory stands to bring a paradigm shift in research in health disparities by identifying causal relationships underlying early-life stress-induced vulnerabilities to obesity in a novel rat model. My overarching goal is to address health disparities by unraveling mechanisms of early-life brain–environment interactions that contribute to differential health outcomes in Hispanics/Latinos. Progress toward a better mechanistic understanding of the remarkable link between childhood adversities and health outcomes could lead to transformative discoveries that (1) reveal potential molecular and cellular therapeutic targets for disease prevention and treatment and (2) support the development of personalized approaches for optimizing minority health in response to specific interventions.

I have a broad background in cognitive and behavioral neuroscience and specific expertise in molecular biology, confocal microscopy, electrophysiology, and neuroimaging. NIH-funded projects in my laboratory aim to (1) develop and validate animal models that advance health disparities research, (2) determine how early-life adversities heighten the risk for obesity and psychopathology, (3) translate research findings into interventions that are integrated into minority health care, and (4) enhance the biomedical research workforce diversity.

Gregory Florant, Ph.D.

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Research Interests

I study how animals regulate food intake and bone metabolism. Our studies also focus on energy metabolism and obesity. I use mammals that undergo hibernation as an animal model. These animals do not eat for nearly 7 months and rely solely on endogenous fat stores. I also am interested in how fatty acids and other nutrients alter feeding behavior. I also have studied bone metabolism in hibernators. Interestingly, they do not lose bone mass during their hibernation period.

Maurice Fluitt, Ph.D.

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Research Interests

My research interest includes identifying markers of type 2 diabetes mellitus (T2DM) and understanding its complex molecular etiology (i.e., epigenetic regulation). I particularly am interested in complications associated with T2DM and how it affects minority populations, specifically with diabetic kidney disease (DKD). Although we have made significant progress in understanding and identifying mechanisms and treatments for DKD, many patients continue to face progressive decline in kidney function, leading to end-stage renal disease. This highlights the need to identify early noninvasive markers and the underlying mechanisms contributing to DKD. My current work investigates the role of microRNAs (miRNAs) as markers, mediators, and therapeutics for DKD.

Yvonne R. Ford, Ph.D., M.H.S., M.S.N., B.S.N.

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Research Interests

I am interested in the cardiovascular health of African American/Black women who have 5 or more years of disease-free breast cancer survival. My Ph.D. dissertation work was about stories of African American women who are long-term survivors of breast cancer. These women were of interest because they defied the odds of mortality—African American women die from breast cancer more than any other population of women in the United States. Because these women have a history of breast cancer treatments that may harm their hearts and lead to heart failure, my focus shifted from telling the stories of these women to assessing their cardiovascular risk. I am particularly interested in genomic predictors of heart failure in this population, because the longer they have survived the diagnosis, the more likely the treatment was cardiotoxic and they may have sub-clinical heart failure.

Because these women are more likely to have primary care as their usual source of care, their increased cardiovascular risk may not be detected or treated. To this end, I attended the Summer Genetics Institute at the NIH and participate in the PRIDE program at Washington University. The focus of PRIDE was cardiovascular genetics and epidemiology, and I attended this intensive program for two summers in St. Louis, Missouri. This background work has given me tools and mentors to help further my interest in health disparities, genomics, and molecular biology. I also have conducted research on quantifying cardiovascular risk in the population of interest using three methods of calculating risk: Framingham risk score, atherosclerotic cardiovascular disease (ASCVD) risk score, and Life's Simple 7 risk score from the American Heart Association. I gained experience with collecting and storing serum biomarker data, using accelerometers to assess physical activity, and using the National Cancer Institute's web-based dietary assessment tool, ASA24.

Using the ASA24 platform resulted in more than half of the sample's having incomplete data; I am collaborating with colleagues in computational science and computer engineering to develop a mobile app that can better capture these data. My plan is to extend the feasibility study and use the previous variables, adding serum biomarkers of BNP, ANP, and troponin, to again quantify cardiovascular risk prior to beginning a heart-healthy intervention. I also am interested in screening participants prior to any cardiovascular disease risk-reduction strategies, using echocardiograms and electrocardiograms to detect any cardiovascular morbidity.

Lisa Gay Fryar, Ph.D., M.S.N., B.S.N.

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Research Interests

I am a recent Ph.D. graduate in nursing. My research interest is how the physiological, psychological, and sociocultural sequelae impact the behavioral health outcomes of persons living with chronic diseases. An extensive literature review led to the development of a conceptual model titled Chronic Disease Outcomes Triad Model. This research initially investigated adults living with sickle cell disease. According to the research, the lifelong experience of acute and chronic pain associated with sickle cell disease (SCD) not only has damaging physiological sequelae, but it also can negatively impact affected persons psychologically and socioculturally. The study was to investigate the interrelational and interactional mind–body–social relationship of the triadic sequelae determined from research of the disease as predictors of disease-related behavioral health outcomes.

The findings indicated that adults with SCD have pain and other physical and psychological symptoms (e.g., depression, weakness, fatigue, and either working or attending school or not). Participants who reported more physiological symptoms were more likely to report more psychological symptoms, which interfered with their work or school involvement. Participants with more physiological and psychological sequelae were more likely to have less work or school (sociocultural) involvement. Physiological sequelae (pain and other physical symptoms), psychological sequelae (depression and other psychological symptoms), and sociocultural sequelae (work or school involvement) predicted behavioral health outcomes (fatalism, perceived prejudice, and self-efficacy). Additionally, other relevant findings indicated that adults with SCD experience disease-related complications (e.g., stroke, avascular necrosis, or eye problems) and participant-related complications (e.g., older age at diagnosis and older current age), and gender-related complications, which also predicted behavioral health outcomes (i.e., fatalism, perceived prejudice, and self-efficacy).

Future research could include using this model on other diseases, such as diabetes, chronic kidney disease, and fibromyalgia.

Mario Ricardo Funes Hernandez, M.D.

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Research Interests
I am a clinical research nephrology fellow at Stanford University. I obtained my medical degree at the National Autonomous University of Honduras. My internal medicine residency was at Saint Peter's University Hospital/Rutgers Robert Wood Johnson Medical School, serving as assistant chief resident, and I was a recipient of the Sister Marie de Pazzi award as best resident of the internal medicine class of 2020. I am the current nephrology chief fellow, a heart health technology fellow at the Stanford Center of Digital Health, and a student working toward a Master of Science of epidemiology and clinical research. I have an American Heart Association Research Supplement to Promote Diversity in Science award to assist in the development of digital health technology tools in the management of hypertension in patients with chronic kidney disease and resistant hypertension.

Musa Gabere, Ph.D., M.S.

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Research Interests
I am interested in understanding the transcriptome changes in hepatocarcinoma patients undergoing Phase I clinical trials subjected to immunovirotherapy. This is important in identifying biomarkers for prediction of prognosis and response to oncolytic viral therapy and immunotherapy. This will lay the foundation for applying R-series grants to understand the important biomarkers for subsequent clinical trials in relation to cancer patients' treatment.

In the long run, I will be able to establish an independent research program in the field of personalized medicine in cancer by (1) gaining independence by securing both intramural and extramural funding, (2) publishing high-quality work that contributes to development of personalized medicine, (3) expanding collaboration efforts in the field, and (4) expanding the knowledge base to new and emerging technologies in cancer genetics and bioinformatics analyses.

Crystal Gadegbeku, M.D., FASN

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Research Interests
My research interests include hypertension and vascular biology in kidney disease, chronic kidney disease, and health disparities in kidney disease.

Trudy Gaillard, Ph.D., M.S., B.S.N.

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Research Interests
My research has focused on (1) exploring the traditional and nontraditional risk factors associated with the development of prediabetes, type 2 diabetes, cardiovascular disease (CVD), and cognitive impairment; and (2) community diabetes self-management education programs. My studies have focused on differences in metabolic syndrome and insulin resistance and their correlates in African Americans and white Americans. I am interested in developing culturally specific, community-based diabetes self-management and support programs aimed at prevention and management of prediabetes, type 2 diabetes, cardiovascular disease, and cognitive function.

Jorge Gamboa, M.D., Ph.D.

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Research Interests
My research is focused in the role of mitochondria in human diseases. I am particularly interested to evaluate how mitochondrial dysfunction could affect the pathogenesis of many conditions, such as diabetes, kidney disease, and cardiovascular morbidity and mortality. More important, I am interested in therapeutic approaches to modulate or prevent mitochondrial dysfunction. My research is focused on the role of oxidative stress and inflammation in chronic kidney disease and their impact on muscle mitochondria in humans. Patients with chronic kidney disease experience frailty and sarcopenia, conditions that are associated with increased mortality in this population. Mitochondrial abnormalities in skeletal muscle may explain the frailty phenotype in patients with chronic kidney disease. We have been studying ultrastructure changes and mitochondrial function in skeletal muscle biopsies from patients with chronic kidney disease and healthy controls. We have evaluated mitochondrial function *in vivo* using 31P magnetic resonance spectroscopy. We have also used *in vitro* and *in vivo* techniques to measure markers of mitochondrial function and mitochondrial content.

Courtney Ellen-Marie Gamston, Pharm.D.

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Research Interests
My research interests include a focus on ambulatory care with an emphasis on the interplay between type 2 diabetes (T2DM), hypertension, dyslipidemia, and obesity. Through the patient populations I have served, I have found that patients with T2DM often are affected by at least one of the other three disease states. The focus of my research, as a pharmacist, is on what role pharmacists can play in increasing patient education to improve medication therapy, self-care, and, ultimately, long-term diabetes complications and outcomes. Next year, I will be moving into a faculty position at a school of osteopathic medicine, and my goal is to work in concert with the doctors in my practice to create a sustainable model of care that optimizes that care and our ability to serve patients.

Melawhy Garcia, Ph.D., M.P.H.

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Research Interests
My research interest includes addressing cardiometabolic risk factors and diabetes among Latinos in the United States. I conduct mixed-methods research to examine factors that put Latinos at risk for chronic conditions, as well as to inform research interventions to address obesity and diabetes. I am interested in conducting clinical research within health care settings and through the use of health information technology and mobile health.

Pablo Garcia, M.D.

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Research Interests
I am a first-year transplant nephrology fellow at Stanford University. I have research interest in chronic kidney disease (CKD) prevention in lower-middle income countries, COVID-19 among patients on dialysis, onco-nephrology, tubulointerstitial nephritis, and CKD due to unknown etiologies.

My career goal is to become an academic nephrologist who excels in clinical research with focused interest and expertise in tubulointerstitial kidney disease and chronic kidney disease of unknown origin.

Mariana Barboza Gardner, Ph.D., M.S.

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Research Interests
The overall goal of my research is centered on elucidating the chemical structure and functional roles that carbohydrates (termed glycans) and glycoconjugates play in critical biological processes, such as host-diet-microbe interactions in health and disease. Currently, my research is focused on the structural elucidation of host glycan on the gut–brain axis and modulation by diet and upon interactions with commensal and pathogenic microbiota. Specifically, my NIH NIDDK R21 award is tackling obesity by assessing the leptin receptor glycosylation in the brain of lean and diet-induced obese mice. I also am actively examining the effect of diet on brain development by determining the fate of monosaccharides and oligosaccharides from human milk into brain glycoconjugates, including glycoproteins and glycolipids. Another area of interest is in translational research. Using glycomics strategies for the discovery of tissue-specific glycan-based biomarkers, I aim to develop markers for the diagnosis, early detection, and monitoring treatment of a broad range of human diseases that affect the digestive tract and accessory organs.

Senta Georgia, Ph.D.

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Research Interests
The Georgia Laboratory uses a three-pronged approach to design novel strategies for making new insulin-secreting cells. We use *in vivo* models to study how insulin-secreting cells can duplicate themselves to respond to increased demand for insulin. We plan to use this knowledge to design strategies to increase the number of insulin-secreting cells that remain in the pancreas of type 1 diabetic patients. We use *in vivo* models to study how insulin-producing cells emerge from stem cells during fetal development. By improving our understanding of how these cells are formed, we plan to direct non-pancreas cells to differentiate into insulin-secreting cells in the laboratory. We apply the principles we learned from *in vivo* models to human adult gut stem cells. We plan to reprogram human gut stem cells into pancreatic insulin-secreting cells. We are one of the few laboratories in the world that has established methods to genetically manipulate human gut stem cells *ex vivo,* therefore bringing us one step closer to having an individualized and renewable transplantation approach that would not require long-term immunosuppression for patients. Taken together, our three-pronged approach studies the basic biology of insulin-secreting cells and translates that knowledge into potential cell replacement strategies for type 1 diabetes patients.

Agustin Gonzalez-Vicente, Ph.D., M.S.

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Research Interests

Chronic kidney diseases (CKD) are common among African American patients. The excess risk for CKD in this population is largely explained by social determinants of health and by the presence of genetic variants in the APOL1 gene that are unique to African ancestral populations. The pathogenic mechanisms responsible for the genetic association remain poorly understood. Most important, the lack of consensus on the mechanisms by which APOL1 risk variants induce kidney diseases hinders the development of specific therapies.

Our major focus is to study glomerular and single-cell transcriptomes from kidneys and organ models to uncover transcriptional phenotypes associated with the presence of APOL1 kidney risk variants. Our goal is to extract gene signatures that could inform research about the pathobiology of APOL1 and help identify potential therapeutic agents. We work in association with large NIH consortia, in particular, the Nephrotic Syndrome Study Network (NEPTUNE) and the Kidney Precision Medicine Project (KPMP).

Eddie Greene, M.D.

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Research Interests

I am an associate professor and consultant physician in the Department of Internal Medicine (Division of Nephrology and Hypertension) at the Mayo Clinic (Rochester, Minnesota). Of particular relevance to the NMRI are several of my clinical, administrative, and research interests, which include (1) health disparities, (2) diversity in medical education and research, (3) the pathophysiology of chronic kidney disease (specifically the biology of fibrosis-inducing signaling cascades in renal tubular cells and in the renal mesangium), (4) the evaluation and management of cardiovascular comorbidities in patients with chronic kidney disease and hypertension, and (5) the pathophysiology of renal disease and accompanying care of patients with renal malignancies.

I currently serve in several key institutional and external leadership capacities that are relevant to the NMRI, including (1) as a member of the Mayo Clinic Board of Governors and the Internal Board of Trustees of the Mayo Clinic and (2) as Medical Director of the Office For Diversity in Education in the Mayo Clinic College of Medicine at Mayo Clinic. I previously served as the President of the Officers and Councilors of Mayo Clinic Medical Staff. Also relevant is that I have served as co-curriculum leader and co-director for the Mayo Clinic Center for Translational Science Activities (CTSA)/Center for Clinical and Translational Science (CCaTS) Grant Health Disparities Education Group.

External to Mayo and in a national and international capacity, I also serve as an associate editor of *Diabetes Care,* one of the premier journals for clinical and translational research in diabetes mellitus and am a member of the American Heart Association Publications Committee.

My research, clinical skills, and medical education and academic service efforts also have been nationally and internationally recognized at multiple academic institutions and conferences and at the NIH, including the National Institute on Minority Health and Health Disparities (NIMHD), National Institute of General Medical Sciences, and NIDDK NMRI (of which I have been a member since 2001 and for which I served as the national Program Committee Chair in 2009). I also have previously served on several NIH advisory panels and review panels (NIH Grant Review Study Sections) in various capacities and am currently a member of the U.S. Department of Health and Human Services National Advisory Council overseeing the strategic direction and function of the NIMHD at the NIH.

I am a prior recipient of the prestigious Robert Wood Johnson Harold Amos Medical Faculty Development Award and continue to serve in additional important leadership capacities at the NIH, American Society of Nephrology, American Heart Society, and Mayo Clinic.

Absalon Dennis Gutierrez, M.D.

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Research Interests

Pharmacogenetics of the Response to GLP-1 in Mexican Americans with Prediabetes; NIH R01, principal investigator (PI). We will (1) test the association of single-nucleotide polymorphisms (SNPs) that regulate expression (eQTLs) of 11 candidate genes in a range of relevant metabolic tissues with differential GLP-1 response; (2) perform RNA sequencing before and after treatment to identify eQTLs in blood that predict response to GLP-1 therapy and develop risk-based prediction models in H/Ls; and (3) determine the effects of genetic regulation of candidate genes and newly discovered eQTLs phenome-wide in a large existing biobank, BioVU. For aims 1 and 2, responses will be measured in 300 study subjects with prediabetes recruited from an established Mexican American cohort via the oral minimal model method, before and after GLP-1 therapy, quantifying GLP-1 hormone efficacy and GLP-1-induced pancreatic beta cell insulin release and peripheral insulin sensitivity. Procedures include serial measurements of plasma glucose, insulin, C-peptide, and GLP-1, and peripheral blood collection for RNA sequencing. Our central hypotheses are: (1) metabolic tissue-based eQTLs of GLP-1-associated genes will be associated with physiological response to endogenous and exogenous GLP-1, (2) identification of eQTLs associated with GLP-1 treatment-induced changes in whole blood will identify new gene targets, and (3) these data will lead to the creation of eQTL-based prediction models for related diseases.

GLP-1 Therapy: The Role of IL-6 Signaling and Adipose Tissue Remodeling in Metabolic Response; NIH R21, PI. This project focuses primarily on the effects of GLP-1 analog therapy on fat homeostasis in prediabetes. Specifically, we are examining the collaborative roles of GLP-1 receptor activation and IL-6 signaling on adipose tissue beiging. These effects are being investigated via a human clinical trial, mouse models, and cell cultures. Prior studies—leading to development of our current study—investigated the role of GLP-1 analog therapy on free fatty acid–induced inflammatory signaling, triglyceride metabolism, and endothelial dysfunction.

Cameron County Cohort studies. We perform epidemiological studies examining the relationship between insulin resistance and adipocytokine levels in the Cameron County Hispanic Cohort. We also are interested in the genetic factors that promote the progression of prediabetes to type 2 diabetes mellitus.

Ketosis-Prone Diabetes. We are assisting with a clinical trial that tests the general hypothesis that the severe but partially reversible and intermittent beta cell dysfunction in ketosis-prone diabetes (KPD) is mediated through diminished availability of arginine for nitric oxide synthesis, which, in turn, impairs insulin secretion.

Orlando Gutierrez, M.D.

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Research Interests
I am interested in the relationships between disturbances in mineral metabolism and clinical outcomes, with a special interest in behavioral and environmental exposures that may modulate this pathways. Within this area of interest, we have primarily focused on (1) the connections between disturbances in phosphorus metabolism and cardio- and cerebrovascular morbidity and mortality, including the emerging role of fibroblast growth factor 23 (FGF23); (2) the reciprocal relationships between disturbances in mineral and iron metabolism in individuals with chronic kidney disease, with a particular focus on novel regulators of iron, such as hepcidin and soluble hemojuvelin; and (3) the role of nutrition in the development and progression of metabolic complications related to kidney injury, focusing on the role of advanced glycation end-products in the pathophysiology of inflammation, insulin resistance, and endothelial dysfunction in patients with chronic kidney disease.

Frank A. Hamilton, M.D., M.P.H.

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Research Interests

I am board certified in internal medicine, gastroenterology, and preventive medicine, and I currently serve as director of the Gastrointestinal (GI) Program within the Division of Digestive Diseases and Nutrition in the NIDDK. I also am the project scientist for the NIDDK Gastroparesis Consortium and the Irritable Bowel Diseases Consortium

I received my M.D. from Howard University and pursued a combined internal medicine residency/preventive medicine program through a United States Public Health Service (USPHS) training program and subsequently received my M.P.H. from the Bloomberg School of Health at Johns Hopkins University. After completion of this residency, I obtained further training at the University of Maryland in the Department of Medicine as a GI fellow. Upon completion of my fellowship, I served as faculty at the USPHS Hospital Baltimore, the University of Maryland, and the Baltimore VA Medical Center. Prior to coming to the NIH, I served in the Office of the Surgeon General USPHS, where I was a staff physician on the landmark U.S. Department of Health and Human Services Task Force on Black and Minority Health.

In 1987, I joined the extramural program at NIH/NIDDK as a program director in the Division of Digestive Diseases and Nutrition, where I have been instrumental in fostering basic and clinical research in gastroenterology. I have been active in several professional organizations, such as the American Gastroenterological Association (AGA), National Medical Association, and the American College of Gastroenterology (ACG) and have promoted diversity in the makeup of these organizations and in eliminating health disparities in colorectal cancer screening.

My career has been distinguished by my receiving several honors, which include the following: Distinguished Service and Achievement award from the American Motility Society; being elected into Delta Omega Public Health Honor Society; two USPHS Hindus Poindexter Award for Career Service; USPHS Meritorious Service Medal; Department of Defense Commendation Medal for Service to the Uniformed Services of Health Sciences; and the Outstanding Service Medal, USPHS Honor Medal. Most recently, in 2013, I was awarded the ACG Leadership Award in Minority Health. As a member of the ACG, serving on many committees of the College, I have championed the inclusion of minorities in educational components of the College. In addition, I served as the principal contributor to ACG Publications on Colorectal Cancer (CRC) in African Americans which, recommended that CRC screening begin at age 45.

My research areas include GI motility disorders, functional bowel disorders, inflammatory bowel disease, and clinical trials in fecal incontinence.

Jarrad Hampton-Marcell, Ph.D., M.S.

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Research Interests
I am a microbial ecologist who specializes in host–microbe interactions and their influence on human health. Focusing on the gut microbiome, my research elicits how microbial community structure and function contribute to chronic diseases, such as diabetes, obesity, and systemic inflammatory and immune responses. I use a combination of computational modeling (including machine learning) and molecular microbiology to identify and manipulate pertinent microbial taxa within the gut microbiome. I specifically focus on short-chain fatty acid producers, which often are associated with the gut health, as well as the overall health of the host. My research goal is to optimize gut microbiomes and build synthetic microbial communities that influence energy availability, protein synthesis, and anti-inflammatory consequences in humans.

Keisha Hardeman, Ph.D.

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Research Interests
The objectives of my work are to (1) address important biological questions of mitochondrial dysfunction and metabolic regulation in the context of nonalcoholic fatty liver disease (NAFLD) and (2) support my training to develop as an independent scientist and researcher. In my present research, I examine hepatic metabolism in the setting of NAFLD, which is characterized by the accumulation of hepatic triglycerides, inflammation, and oxidative stress; it is closely associated with obesity and insulin resistance and affects 25–30 percent of the population. I use multidisciplinary approaches (*in vivo* tracers, cell and animal models, and cell biology techniques) to understand the metabolic basis of NAFLD—in particular with regard to the elevated energy demand and substrate flux coupled to deteriorating mitochondrial capacity and cellular damage.

Jacqueline Harris, Ph.D.

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Research Interests

I have undertaken formal and practical training in statistics and statistical genetics, and I have been involved in several research projects, such as statistical modeling of health disparities, genetic network discovery in the HapMap data set, and applied statistics problem involving survival analysis of glioblastoma multiforme (GBM) patients as predicted by an 8-gene expression signature. Findings from this research have been published in such journals as *PLOS ONE* and *Archives of Medical Research*. The GBM survival paper received national recognition and was ranked in the top 2 percent of published articles in biology and medicine by Faculty of 1000 Medicine. My current research interests continue to focus on important questions in genetics and genomics. More recently, my research has focused on developing a unique application for exploratory structural equation modeling (ESEM) to study genetic disease networks in complex disease. To demonstrate this method, I have carried out a pilot study using a small data set of multiethnic children and created a metabolic disease gene network. I have plans to further develop this new approach in larger data sets. As a postdoctoral researcher, I was invited to attend the National Heart, Lung, and Blood Institute Populations Studies workshop. There, I learned how to obtain access to larger data sets with genetic data, such as the Jackson Heart Study and Strong Heart Study, for the application of these methods. Now, as an assistant professor at Grambling State University (GSU), my career development continues. I am taking advantage of the partnership between GSU and The Louisiana Biomedical Research Network (LBRN). The LBRN is funded by the NIH and the Louisiana Board of Regents. The goal of the LBRN is to expand the biomedical footprint in the state of Louisiana, providing resources and training to faculty and students. Upon my arrival at GSU, I met with LBRN organizers and found that LBRN resources could support the development of my research and training. More specifically, the LBRN's Bioinformatics, Biostatistics, and Computational Biology (BBCB) Core provides bioinformatics training, conducts workshops, and provides bioinformatics analysis services. The core also provides access to the IBM Delta Cluster and has a dedicated BBCB allocation for the high-performance computing resources at Louisiana State University. The BBCB Core maintains software licenses and access to Ingenuity Pathway Analysis, Partek Flow, DNASTAR, and Ion Torrent analysis software. In addition, the core maintains several open-source tools for bioinformatics, such as bowtie, tophat, cufflinks, samtools, GATK, QIIME, DADA2, Phyloseq, and others.

B. Michelle Harris, Ph.D., M.P.H., M.S.

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Research Interests

I am interested in rededicating myself to building a strong research agenda in the areas of nutrition and diabetes. Obesity prevention in minority populations, and especially in women, will continue to be my focus. I also am interested in using secondary data from large survey databases to address some of my research questions.

I would like to partner with others who are involved in transitional research in my areas of interest. I am a registered dietitian with years of experience at the community and public health levels.

Diana Hernandez, Ph.D.

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Research Interests

My long-term career goal is to become an independent investigator and an example for all women and Hispanics, like me, to demonstrate that it is always possible to emerge from underrepresented minorities. I would like to take my expertise, leadership, training, and motivation from different areas worked during my career and combine it in the surgery and nephrology research fields. My main graduate achievements are 13 peer-reviewed scientific articles, 38 presentations in scientific symposia, and three research grants to fully subsidize my doctorates and postdoctoral (NIH fellow) programs. I have the passion and scientific tools in molecular and cellular biology, hemodynamics, and vascular biology fields to succeed in the fight against the different diseases. My main project is based on the mechanical and physiological characterization of the vessel involved in arteriovenous fistula creation. With my unique engineering and biology combined vision, I am able to quantify LOX-enzyme using liquid chromatography electrospray ionization tandem mass spectrometry and establish the relation with arteriovenous (AV) fistula failure. Targeting this enzyme can improve AV fistula lifetime and, in this way, the quality of life for hemodialysis patients, as well as long-term consequences of oxygen therapy in the neonatal patients. In addition to the scientific preparation received as a postdoctoral trainee during this time, I increased my grant writing, public speaking, laboratory management, and mentoring skills that allow me to continue with my career development in sciences.

Patricia Vanessa Hernandez, M.D.

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Research Interests

I graduated with the title of Doctor of Medicine (M.D.) from Pontificia Universidade Catolica de Campinas, in Campinas, Brazil. During my medical education, I worked for more than 1 year as a research assistant at Universidade Estadual de Campinas and received a scholarship for this. My project was a translational study and developed along with the Science Computer and Pathology Department of Universidade Estadual de Campinas. We investigated whether texture analysis obtained from digitalized microscopic images could help to distinguish keloids and hypertrophic scars. We could classify nearly 90 percent of the cases using this method. This study was presented in a local conference, where it received an award, and in an international conference, in Heraklion, Greece.

During my surgical training in Brazil, I had the opportunity to participate in some case reports and one retrospective study that resulted in presentations and publications in peer-reviewed journals. My focus has always been diagnosis because this is the foundation of patient care. Because of my curiosity to better understand the mechanism of the diseases as the way to provide more help to more patients, in addition to my desire to focus on molecular diagnosis and investigative studies, I shifted my career to Pathology.

I moved to the United States in December 2016. Here, I had the opportunity to work as a research trainee at Mayo Clinic Arizona. I got involved with some research studies, mainly in esophageal diseases. Furthermore, I started working on a database of eosinophilic esophagitis, focusing on the microscopic features and outcomes. From all these projects, I realized how important quality practices in medicine are. I wanted to not only study the diseases, but also make inferences based on numbers. With my training in JMP software, I engaged in informatics as a career path.

After completion of a data science course, which introduced me to R programming, I was accepted as a research assistant at the Institute for Systems Biology (Hadlock Lab). The huge amount of complex data in medicine managed by programming code—such as clinical features and laboratory results extracted from electronic medical records—offers the opportunity to achieve key insight into disease processes and was the main feature of my position at Hadlock Lab. Although it can be difficult to understand certain diseases on a small scale, by analyzing large-scale databases, we have been able to observe interesting results.

Currently I am a clinical pathology resident at Washington University in St. Louis and am working on studies involving COVID-19 and HLA, COVID-19 and pregnancy, and constitutional genetic disorders. My plan is to gain more experience in molecular pathology and bioinformatics to further my academic career.

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Research Interests

Approximately 6–15 percent of women worldwide are affected by polycystic ovary syndrome (PCOS). Although PCOS originally was described as a reproductive disorder with associated obesity, more than 30 years of clinical research have confirmed that it is also a metabolic disorder. Hyperandrogenism is the strongest predictor of metabolic dysfunction associated with PCOS. In addition to infertility, women with PCOS diagnosed with hyperandrogenism and ovulatory dysfunction have an increased risk of developing gestational diabetes, type 2 diabetes, cardiovascular disease, and nonalcoholic fatty liver disease. We previously developed a mouse model that uses the aromatase inhibitor, letrozole, to elevate endogenous testosterone levels in female mice. This mouse model has hallmarks of PCOS, including hyperandrogenism, anovulation, and polycystic ovaries. In addition, we showed that letrozole treatment results in increased weight, abdominal adiposity, dysglycemia, hyperinsulinemia, and insulin resistance. In the current study, we further characterized the metabolic dysfunction that occurs after letrozole treatment to determine whether systemic impairment in insulin sensitivity is associated with lower insulin-stimulated glucose disposal in peripheral insulin target tissues, such as liver, fat, or skeletal muscle. We performed hyperinsulinemic-euglycemic clamp studies and observed that letrozole-treated mice were indeed insulin resistant independent of body weight. Additionally, letrozole-treated mice had an overall lower glucose infusion rate and glucose turnover, when normalized to body weight. Moreover, letrozole-treated mice exhibited an impaired insulin-stimulated glucose disposal rate, which is indicative of insulin resistance in skeletal muscle. In contrast, there was no difference observed in insulin-stimulated suppression of hepatic glucose production. These results are in agreement with our previous findings that indicated skeletal muscle–specific insulin signaling (as measured by AKT phosphorylation) was blunted in letrozole-treated mice. In summary, we demonstrated that the letrozole-induced PCOS mouse model exhibits impaired insulin action in skeletal muscle. Future studies will focus on mechanisms involved in skeletal insulin resistance in this mouse model.

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Research Interests

My research has a focus on identifying, preventing, and intervening the metabolic risk factors associated with Alzheimer's disease and frailty syndrome in populations who are at higher risk for comorbidities. I also have interests in the preclinical stages of chronic disease development, such as metabolic syndrome, insulin resistance, and mild cognitive impairment in individuals with complex and lifetime health conditions. My investigations include the evaluation of physical and lifestyle behavioral therapies for individuals with cognitive impairments or disabilities. I have great expertise in investigations related to exercise training for older individuals with cognitive impairments. My current studies include patient-reported outcome measurement methods and health services research. I have published more than 100 peer-reviewed products (papers, abstracts, and book chapters), and I have mentored more than 50 trainees in clinical and applied research.

Frankie Darryn Heyward, Ph.D.

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Research Interests

I plan to integrate the research skills I will have acquired throughout the different phases of my training to elucidate the molecular pathogenesis of obesity-induced cognitive impairment. I plan to accomplish this by first harnessing the power of next-generation sequencing to further appreciate genome-wide transcriptional and epigenetic dysregulation within the brain of metabolically abnormal subjects. Specifically, using various mouse models of obesity, I will characterize the panoply of obesity-induced transcriptional and epigenetic aberrations within the central nervous system (CNS). Using cutting-edge gene-engineering techniques, I will seek to determine the causal relationship between obesity-related transcriptional dysregulation and cognitive impairment. Using novel neuropharmacology techniques, I will strive to identify novel therapeutic targets.

I ultimately intend for my findings to be translatable to humans. Therefore, I also will investigate the effect that chronic obesity confers on gene expression within the CNS of human subjects, using postmortem brain samples. It is my hope that I will observe a fair degree of overlap between the transcriptional patterns in the brains of my mouse models of obesity and humans; such an observation will further inform my search for therapeutic targets to eventually treat obesity-induced cognitive impairment in metabolically abnormal human subjects.

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Research Interests

I am the Division Chair of Nephrology and Hypertension, the Dialysis Medical Director, and the Associate Director for Research and Innovation in the Department of Medicine at the Mayo Clinic in Jacksonville, Florida. I hold the academic rank of Professor of Medicine, am the Director of the Translational and Regenerative Nephrology Research Laboratory, and am a member of the Mayo Center for Regenerative Medicine Florida Leadership Committee. I am engaged in training future clinicians and researchers and serve as a member of the Mayo Regenerative Sciences Core Ph.D. Faculty. My research mission is to advance clinical translation of promising, novel therapeutics for diabetic kidney disease, the most common cause of kidney failure in the United States. My translational investigations examine mesenchymal stromal/stem cell function and senescence in animal models of and humans with diabetic kidney disease. I bring research from the bench to the bedside, extending investigations from my research laboratory to investigator-initiated clinical trials testing the safety and efficacy of these novel therapies in individuals burdened by chronic kidney disease.

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Research Interests

I am a postdoctoral researcher in the Neurosignaling Laboratory at Pennington Biomedical Research Center. My research centers on the effects of macronutrients on neuroendocrine pathways that regulate metabolic health. My general interest focuses on probing the effects of various nutrients and diets that alter cellular and molecular effects to benefit general health and affect the life span. Early work of myself and others reported that long-lived mice, such as Ames-dwarf mice and PAPP-A knock-out mice, are resistant to metabolic impairment when subjected to diet-induced obesity (graduate training—Andrzej Bartke Laboratory). My current work focuses on the effects of low-protein diet on the induction of FGF21 signaling in the brain on improving metabolism and health. Additional experiments seek to determine these adaptive metabolic effects of protein intake and FGF21 during aging (postdoctoral training—Christopher D. Morrison). Equally important, my related career interests are to provide mentorship and opportunities for individuals who have been shown to be underrepresented (e.g., race/ethnic groups, disabilities) in the biomedical research workforce.

Antentor Othrell Hinton, Jr., Ph.D.

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Research Interests

The Hinton Laboratory utilizes serial block-face scanning electron microscopy (SBF-SEM) and focus ion beam scanning electron microscopy (FIB-SEM) to investigate the molecular mechanisms that regulate molecule transfer and morphology changes between the mitochondria and the endoplasmic reticulum and how these mechanisms are altered during pathophysiological states of diabetes, obesity, and cardiovascular disease. Technical approaches employed in the laboratory target cellular physiology, biophysics, structural biology, molecular pharmacology, and cell signaling, and we translate our research from the bench to the bedside. The Hinton group applies such techniques as primary cell isolation, bioinformatics programming for large data sets, *in vitro* exercise, confocal/stimulated emission depletion microscopy, transmission electron microscopy, 3D electron microscopy (FIB-SEM and SBF-SEM), and various types of image analysis. Additionally, we use human primary cells and cell lines and mouse and fly model organisms to delineate pathophysiological states.

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Research Interests
I am interested in using technology-based interventions to increase access to care and improve patient care outcomes. My current focus is on childhood functional abdominal pain disorders, such as irritable bowel syndrome. I plan to conduct a clinical trial assessing the feasibility and efficacy of a patient-centered psychological therapy delivered via mobile health application on smartphones. This project will serve as a template for testing and evaluating emerging health technologies directed for clinical interventions.

Malorie Holmes, M.D.

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Research Interests
I currently am a nephrology fellow at Stanford University. My research interests include health care disparities and kidney stone disease management. I am interested in prevention and management of stone disease, specifically at the primary care level. My work will evaluate the understanding and implementation of stone disease guidelines and evaluating the efficacy of dietary and laboratory measures in underserved populations where those measures are not easily implemented. I also am interested in evaluating general nephrology care in underserved areas and developing ways to overcome the barriers to health care for those who live in rural areas, areas without a kidney specialist, or areas of poverty and low socioeconomic status.

Charles Howell, M.D.

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Research Interests
I have had long-standing clinical and research interests in racial disparities in liver diseases, with a focus on chronic hepatitis C virus infection and primary liver cancer, with funding from the NIH, private foundations, and private corporations. From 2000 to 2007, I chaired the steering committee and was a principal investigator for the study of viral resistance to antiviral therapy for chronic hepatitis C (VIRAHEP-C). From 2011 to 2013, I co-chaired the National Medical Association's Task Force on Hepatitis C in African Americans. Recently, I was a panelist addressing U.S. health policy and research innovations at the second commemoration of World Hepatitis Day at the White House, where I received a Certificate of Appreciation for leadership in prevention and treatment of viral hepatitis.

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Research Interests
I am a nationally recognized expert on issues related to hospital productivity and process, with extensive expertise in the area of outcomes as it relates to electronic health records (EHRs), health information technology (IT), and meaningful use. In particular, my interest in nonparametric approaches to the assessment of outcomes vis-à-vis frontier methodologies has been useful in gaining a greater understanding of how the explosion of investment in health IT has affected both research and practice. I have conducted a number of studies looking specifically at the adoption of EHR technology and the differences that exist based by medical focus. For instance, medical–surgical units are more concerned about the pace of change in EHR adoption than OB/GYN units. These findings then can help us explore how differences across medical cultures, areas of practice, and expectations of technology add to many of the other issues that influence the adoption of EHR technology. More recently, I have taken my knowledge and experience with the analysis of large-scale data sets to address areas where data collection is nascent. In this context, I also have worked to engage junior researchers to help them develop their research agendas, and this has diversified the focus of my work beyond efficiency, including some of the first work on the use of social media by hospitals through the development of objective metrics and automated assessment and evaluation tools.

Lina Huerta-Saenz, M.D.

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Research Interests
I am a pediatric endocrinologist and early-stage physician–scientist. My main research interests are (1) the impact of medical nutrition therapy to prevent and treat type 1 and type 2 diabetes mellitus in pediatric population and (2) anti-inflammatory diet to prolong beta-cell survival in type 1 and type 2 diabetes.

During my pediatric endocrinology fellowship, I worked on the development of a clinical questionnaire to assess nutrition and healthy knowledge in children and youth with type 1 diabetes (NutriCarbQuiz 2). Now, I am working on designing specific nutrition interventions to increase the survival rate of the remaining pancreatic islet cells in children and youth with early-onset type 1 and type 2 diabetes. My goal is to enroll patients from different ethnicities for all my research studies, so I can contribute in the effort to decrease health disparities in children/youth. I expect the results of my research studies to contribute to our current understanding about the progression of this disease, and I advocate for individualized medicine care.

Yvette Maria Huet, Ph.D.

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Research Interests

The Huet group is primarily interested in the role of sex and gender in health and disease. I also have a long-standing interest and work in the area of understanding barriers and what can be done to remove these barriers so that there is increased participation and advancement of underrepresented minorities (URMs) and women at all levels of the academy. Current projects include the following: (1) Although it is known that isometric exercise training (IET), such as with a handgrip, is effective at reducing resting blood pressure (RBP) in a short period (4–10 weeks), little is known about the mechanisms responsible for IET-induced RBP reductions. This uncertainty derives from a lack of understanding concerning the most effective IET programs for specific populations and a more systematic examination of possible endocrine mechanisms underlying the effect of IET in one muscle group resulting in the systemic response of decreased RBP. Our research group is examining different populations, more specifically age, sex and hormonal status (contraceptive) on the IET-induced decreases in RBP and the concomitant changes that may occur in hormones and pro- and anti-inflammatory molecules that may influence these changes in RBP. (2) Although there have been many studies that have investigated both biological and social roles in sexually transmitted infection (STI) acquisition, few have reassessed the rates of disparity in gender and disease prevalence in the more recent years. We are currently examining the diagnosis rates of certain diseases in a recent, large population data set to determine if gender alone may influence the predication of STI status and thus determine if gender alone is a continued risk factor for STI acquisition. (3) Several epidemiologic studies have shown that there is evidence for the association of asthma and allergies or autoimmune disorders in families with children that have been diagnosed with autism spectrum disorder (ASD). We are doing a retrospective study to look at associations between asthmatic children and ASD, the role sex may play in these associations, the association between the use of additional services in combination with prescription medication for management of ASD and asthma, and finally if there is any impact of the severity of asthma, as well as the severity of ASD on the use of additional services by these children. My work in the areas of URM and women faculty's success extend from best practices in the transition from graduate student to faculty, recruiting faculty, training faculty to be good mentors for URM and women graduate students, changing policies and procedures, and providing programming for success for all faculty, including leadership.

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Research Interests

My laboratory examines molecular mechanisms by which members of the fibroblast growth factor family of ligands and fibroblast growth factor receptors regulate bone development, remodeling, and disorders of bone and articular cartilage. A second area of recent research focus is utilizing humanized mice harboring the sickle gene to elucidate the molecular mechanisms underlying osteoporosis in sickle cell disease an understudied area in bone biology.

Stephanie Ibemere, Ph.D., M.S.N.

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Research Interests

My research program focuses on building health care provider capacity to deliver high-quality and effective care for chronic disease symptom management through community-engaged research. I am particularly interested in the management of sickle cell disease. My dissertation research focused on the cultural influences in the management of sickle cell disease in an eastern province of Sierra Leone. The lack of a clinical model, provider and community knowledge, and infrastructural constraints demonstrate the need for further education and capacity building of the health system in Sierra Leone to make a greater impact on sickle cell disease morbidity and mortality. My overarching program of research focuses on the development and adaptation of tools for chronic disease providers in both high- and low-resource contexts to more effectively deliver care to their patients and improve patient quality of life and health outcomes. I am passionate about addressing health care disparities in partnership with communities to co-create feasible and sustainable health care interventions for and with providers and patients.

Boubakari Ibrahimou, Ph.D.

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Research Interests

My research interests encompass the exposure to air pollutants and their consequences on health outcomes, including cardiovascular disease, respiratory disease, and diabetes. I am interested in the interaction between diabetes and environmental pollutants and respiratory disease and environmental pollutants and their combined risk on cardiovascular disease and kidney disease.

Given the complex composition of such pollutants as particulate matter (PM) in the environment, it is believed that our exposure is not limited to one chemical at a time but to several possible mixtures with varying composition and mix ratios. These mixtures could be formed because they are emitted at the same time from the same source origin as latent factors. As a result, humans are more susceptible to exposure to these mixtures, as characterized by these latent factors. Factor analysis is one tool used in the literature to define mixtures. Unfortunately, statistical methods of identifying mixtures are limited. My interest is in developing new tools to identify mixtures and exploring their combined exposure consequences on cardiovascular disease, diabetes, renal disease, and respiratory disease.

Additionally, exposure to PM chemicals during pregnancy is known to be harmful to both mother and child. I am interested in developing a new method of identifying mixture exposures during pregnancy and their health-related consequences.

Yaritza Inostroza-Nieves, Ph.D.

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Research Interests
Molecules of the major histocompatibility complex (MHC), and in particular specific human leukocyte antigen (HLA) alleles, have been proposed in the pathophysiology of immune and vascular alterations leading to vaso-occlusive crises and stroke in sickle cell disease (SCD). Endothelial cells express MHC molecules following exposure to cytokines. SCD is characterized, in part, by vascular endothelial cell activation, increased oxidative stress, sickle cell adhesion, and excess levels of the potent mitogen endothelin-1 (ET-1). ET-1 activates endothelial cells, induces oxidative stress and inflammation in the vascular wall, and regulates erythrocyte homeostasis. However, the role of ET-1 on MHC regulation in SCD is not clear.

I have been working for the past 10 years in the field of molecular immunology, looking at the biochemical process and signaling mechanisms in the immune system as part of my doctoral and postdoctoral training. These experiences have allowed me to develop expertise in several molecular biology techniques, including, western blot, real-time PCR, cell culture, chromatin immunoprecipitation, and ELISA, among others—techniques that will be critical as I develop into an independent investigator.

Carlos Isales, M.D.

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Research Interests
We are interested in the impact of nutrients on stem cells and the aging process. Caloric restriction seems to retard the aging process, but how it does this is not clear. We do know that as we age, the stem cells become adipocytes rather than muscle or bone cells. We are looking for the regulators of this molecular switch with aging. In particular, we are interested in the impact of dietary amino acids on bone marrow mesenchymal stem cell (BMSC) function. Our data demonstrate that amino acids have varying anabolic or catabolic effects. There are 20 common dietary amino acids, and our data demonstrate that the aromatic amino acids have the most potent anabolic effects, particularly in the aging mouse model. Aging (24-month-old) C57BL/6 mice fed a low-protein diet lose bone, but this loss is prevented by dietary supplementation of aromatic amino acids. Our central hypothesis is that amino acids are not just fuel, broken down to provide ATP for cell function, but rather that amino acids normally function as “nutritional hormones” binding to extracellular receptors and activating cell-signaling pathways. Our data are consistent with the aging process resulting in the loss of the ability of BMSCs to “sense” these normal anabolic signals from nutrients through epigenetic mechanisms. Further aging is associated with the accumulation of toxic breakdown products of these metabolites that interfere with their normal anabolic actions.

Chandra L. Jackson, Ph.D., M.S.

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Research Interests

Focusing on the epidemiology, prevention, and control of obesity and type 2 diabetes, my past work highlighted the potential for health information technology to improve diabetes care, as well as racial and ethnic differences in (1) overweight/obesity trends within levels of educational attainment and (2) obesity-related mortality. My long-term career plans are to investigate the role of suboptimal diet and lifestyle (e.g., sleep) as modifiable contributors to the disproportionate obesity and diabetes risk experienced by traditionally under-resourced populations. By centering my research objectives on modifiable, social determinants of obesity and diabetes across the life span, I plan to contribute to the translation of epidemiologic findings into interventions and policies that address structural macro-level and individual-level barriers to achieving and maintaining a healthy weight.

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Research Interests

My area of research interest is renal physiology, focusing on understanding how the heterogeneity segments of the kidney regulate various parameters, such as water and electrolyte balance, in order to maintain homeostasis. Presently, I have three major ongoing projects in my laboratory. My first project is identifying urinary protein markers associated with various pathophysiological diseases, specifically sodium-induced hypertension. My second project involves characterizing a cluster of genes and their temporal expression in the kidney during the developmental phase of hypertension. I have initiated a third project that will examine the interactions of the intrarenal hormones in renal carcinoma cells. The three major intrarenal hormones that we will be investigating are the renin-angiotensin-aldosterone system, prostaglandin, and Kinin-Kalikrein system.

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Research Interests

My research interests are sickle cell disease (SCD), pharmacogenetics, and health care disparities. Currently, I am pursuing two related SCD research initiatives. First, my recent tours (2014–2015) in providing clinical care to patients with the Ebola virus in Sierra Leone during the Ebola epidemic in West Africa created opportunities for a health systems-strengthening SCD initiative. My principal partners in the proposed Sierra Leone SCD initiative are Jericho Road Community Health Center (Buffalo, New York); the Comprehensive Sickle Cell Center at the Medical College of Georgia (Augusta, Georgia); The Sierra Leone Sickle Cell Society (London, England); the Sickle Cell Carers Awareness Network (Sierra Leone); and the University of Cincinnati Colleges of Nursing and Medicine. The proposed project will establish SCD cohorts at the University of Cincinnati and Augusta University (Medical College of Georgia) Comprehensive Sickle Cell Disease Centers and in Kono District (Sierra Leone); implement a pilot educational program for clinicians; develop research initiatives to investigate the natural history of SCD in the patient cohorts; and create a pilot SCD-preventive care program in Kono District (Sierra Leone). I have completed needs-assessment studies to facilitate the establishment of a collaborative SCD pilot wellness and preventive care project in Sierra Leone. Funds from my faculty start-up package has been repurposed to underwrite this project. As an early-stage research scientist, my current research program explores the role of drug-metabolizing enzymes and transporter to identify at-risk SCD patients for analgesic drugs failure. Enabling this goal was the award of a K01-mentored research grant from the National Institutes for Health/National Institute for Nursing Research. We are currently building a robust pharmacogenetic research program centered on the clinical translation of inherited genetic correlates that would foster the development of algorithms for personalized selection of analgesics and psychopharmacotherapy for the individual patient with SCD. To date, we have genotyped and determined the frequencies of 36 drug-metabolizing enzymes (including the CYP2C8, CYP2C9, and CYP2C19) and transporters involved in differential variation in drug metabolism in sickle cell disease patient cohorts.

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Research Interests

My passion is health promotion and chronic disease prevention among underserved minorities of various ethnic and cultural backgrounds. I have conducted research among women veterans with cardiovascular disease and helped update cardiovascular screening guidelines and, more recently, among Latino communities at risk of diabetes and other chronic diseases. I also co-created a culturally sensitive diabetes prevention program that was implemented and evaluated among Latinos. This project became my doctoral dissertation, and aspects of that work were presented at the American Public Health Association 2016 annual meeting. I am currently in the process of publishing our results and plan to pursue further research to help empower and improve the health of communities with a disproportionate prevalence of chronic diseases. Because I was raised in a military family and have lived in several countries and cultures, I believe that I have a unique perspective of issues faced by underserved, disadvantaged, immigrant, and minority communities in the United States. I believe that with more mentoring and funding I could help to better promote health in these populations.

Tanya Johns, M.D., M.H.S.

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Research Interests

My research interests include elucidating risk factors that contribute to a higher burden of chronic kidney disease (CKD) among racial and ethnic minorities to ultimately inform novel, culturally tailored interventions that improve kidney disease outcomes. Although my previous research has focused on interventions in health care delivery for patients with CKD, I have become increasingly interested in interventions to prevent and slow the progression of CKD. Given the scarcity of proven interventions in CKD, patients and their providers are desperate for novel therapeutic approaches to prevent and treat kidney disease. There is growing evidence that certain dietary patterns could affect kidney function. My current research examines the association of dietary patterns on CKD development and progression in racial and ethnic minorities.

Kennita Johnson, Ph.D.

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Research Interests

Biomedical imaging provides noninvasive anatomical and functional information about health and disease. Adapting existing imaging modalities to quickly provide clinicians new tools to make earlier diagnosis or monitor response to therapy opens up new interventions. My research focuses on adapting image acquisition and image analysis techniques and the modification of contrast agents to create more accurate and efficient clinical tools. I primarily focus on the imaging of diabetic kidney disease (DKD), which disproportionately affects the Black community. Because not all diabetic patients will progress to DKD, it is essential to predict which patients need aggressive treatment to prevent future disease. Contrast-enhanced ultrasound (CEUS) is a kidney-safe imaging modality. Because microbubbles—the contrast agent for ultrasound—remain in the vasculature, the possibility of contrast-induced nephropathy that occurs with magnetic resonance imaging or computerized tomography contrast agents is not a problem. Additionally, microbubbles are a good surrogate for measuring blood flow and perfusion. Mathematical quantification of perfusion changes in the kidney images provides clues to changing structure and function, which may predict future DKD. Microbubbles also offer a framework to convert CEUS to a molecular imaging modality. Ligands are attached to the shell of the microbubble to report which receptors present on the vascular endothelium. By curating ligand–receptor pairs specific to DKD, molecular CEUS is another tool to predict impending disease. These molecularly targeting microbubbles work with ultrasound equipment most clinics already have, making this research easily translatable. This meets our larger goal of developing an imaging protocol using CEUS techniques to predict which patients develop DKD.

Holly J. Jones, Ph.D.

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Research Interests

I have extensive experience as a family nurse practitioner and health educator in hospital and community care settings. This clinical experience fueled my research interests in women's health, chronic stress, disease prevention, wellness, and health promotion. My specific research interest is in the effect of chronic stress on symptom expression and chronic illness. My population of interest is midlife Black women. My research training in symptoms management enables me to explore the possibilities of developing interventions to decrease the effects of chronic stress on symptom expression and adverse health outcomes. My dissertation research focused on stress and symptom expression in a cohort of white and Black midlife women residing in the San Francisco Bay area. I included both qualitative and quantitative analyses to explore the experience of stress and symptoms in the lives of those women participating in the study. Midlife is a life phase that is particularly susceptible to stress and commonly associated with change. Physiological biomarkers—along with demographic and self-report data—were useful in telling the story of the women and describing the impact of stress on their lives and health status.

Currently, I am attempting to continue my research in the Midwest. I will focus on midlife Black women residing in the Greater Cincinnati area to explore stress experiences, coping strategies, and barriers to care that may uniquely impact this subpopulation of American Black women. This research will set the stage for the development and implementation of a stress-reduction wellness program designed to decrease perceived stress and stress-related symptoms, encourage the adoption of healthy lifestyle behaviors, and improve health outcomes. Furthermore, I strive to conduct research that will help health care providers identify persons or populations at risk of adverse effects related to chronic stress and to establish tailored interventions aimed at managing stress, decreasing symptoms, and improving quality of life.

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Research Interests

My research interests center around the identification and elimination of factors contributing to disparities in liver disease, liver transplantation, and hepatocellular carcinoma. My population of interest is composed mainly of Blacks and Hispanics, because the incidence of hepatocellular carcinoma is increasing in these populations for different reasons. My current work uses qualitative methods to assess perceptions of liver disease, hepatitis B, and hepatocellular carcinoma, as well as barriers to care among Blacks with and without chronic hepatitis B.

Joshua J. Joseph, M.D.

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Research Interests
I am an assistant professor of medicine in the Division of Endocrinology, Diabetes, and Metabolism at The Ohio State University Wexler Medical Center. I previously was the Christopher D. Saudek M.D. Fellow in Diabetes Research in the Division of Endocrinology, Diabetes and Metabolism at the Johns Hopkins University School of Medicine. I am an alumnus of Morehouse College (B.S. in Biology, 2003) and Boston University School of Medicine (M.D., 2009), during which time I spent 2 years at the National Institutes of Health in the Medical Research Scholars Program. I completed my internal medicine residency and was on the General Internal Medicine faculty at Yale University School of Medicine. My research focuses on diabetes and cardiovascular disease prevention and treatment, with a focus on health equity and translational epidemiology.

Myra A. Kleinpeter, M.D., M.P.H.

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Research Interests
I have interests in chronic disease management, continuing education, quality improvement, and providing health care to underserved populations. Research activities include assessing the impact of cardiovascular disease risk factors in chronic kidney disease patients, health literacy assessment and outcomes on disease, impact of modifying patient education programs on health outcomes, and modified clinical visits effect on health outcomes and access to health care.

Carlos Linares Koloffon, M.D., M.P.H.

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Research Interests
My research interest focus in the areas of public policy, political determinants, and social determinants of health. Also, I am interested in cardiovascular disease and chronic kidney disease in vulnerable populations and how social inequalities impact the outcomes of this persons.

Because many contemporary health problems are affecting the population, my interests are framed in health systems that can support clinical and applied public health research aimed to community-engaged interventions when applicable.

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Research Interests

I direct the Division of Translational Neuroscience and Population Studies and the Master of Science in Clinical Research (MSCR) Program. I am committed to the development of the next generation of academic and translational researchers. As the program director for the MSCR at the Medical University of South Carolina, I work closely with the training and education components for clinical and translational research, with a particular focus on underrepresented minority early-career individuals and developing a balance of research and clinical responsibilities, as well as domestic and family life. I have collaborated—and continue to—on numerous team science education and training efforts, functioning as a team with synergistic and complementary attributes. Much of my career has focused on mentoring and training in the area of clinical research and epidemiology, with a major focus on health disparities nationally and globally. I have been the primary mentor for more than 30 trainees and have served as training director for numerous student projects. I continue to teach as principal instructor for clinical epidemiology, critical review of the literature, team science, and clinical research methodology. I also am involved with academic and research programs, including the South Carolina Clinical & Translational Research Institute; Predoctoral Clinical and Translational Research Training Program; Neurological Emergencies Treatment Trials Network Statistical and Data Management; and, most recently, Training in Research for Academic Neurologists to Sustain Careers and Enhance the Numbers of Diverse Scholars (TRANSCENDS). I also serve on the NMRI. I currently am leading the Division of Translational Neurology and Population Studies, which includes objectives and aims consistent with clinical research training with Training and Evaluation Study for New Translational Science Teams. In addition, my role with the MSCR Program complements and should provide a collaborative and synergistic approach for clinical training with team science. As a result of these previous experiences, I am aware of the importance of communication and interactions between mentors and mentees and of constructing a realistic research plan, timeline, and budget. In 2021, I was appointed the chair of the Executive Committee and Steering Committee for the National Heart, Lung, and Blood Institute Coronary Artery Risk Development in Young Adults (CARDIA) Study. As the immediate past president of the World Hypertension League, I am committed to the theme of developing global teams of clinical investigators. I am former deputy editor-in-chief of the *Journal of Clinical Hypertension,* associate editor for *Ethnicity and Disease* and *Therapeutic Advances in Cardiovascular Disease,* and member of the editorial board of *Hypertension*.

Joseph Larkin III, Ph.D.

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Research Interests

Our laboratory's primary focus is directed toward better understanding the balance between the immune system's ability to utilize inflammation to effectively eliminate pathogenic microorganisms and cancers, while remaining nonresponsive to self-tissues and commensal microorganisms. Although inflammation is essential, chronic inflammation results in the onset of autoimmune diseases, such as rheumatoid arthritis, type 1 diabetes, multiple sclerosis, and lupus.

My laboratory is interested in the intersection of two naturally occurring processes, suppressors of cytokine signaling (SOCS) and regulatory T cells (Tregs), that are critical in the regulation of inflammation. We previously have shown that, in addition to regulating cytokines, SOCS proteins also have a significant role in the regulation of Treg functions. As an extension of these findings, we currently are examining the role of SOCS proteins in the regulation of immune cells, particularly Tregs, during lupus onset, diabetes progression, psoriasis, and uveitis. In addition, we also are examining the capacity of gut bacteria composition to modulate immune system functions that promote type 1 diabetes onset.

Maudry-Beverley Lashley, Ph.D.

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Research Interests

In my research, I have examined the impact of major life stressors (i.e., mortgage foreclosure) on family functioning, alcohol and condom use, depression, anxiety, and resilience of the Black Woman, particularly single Black mothers. I have coauthored several manuscripts that have been published pertaining to alcohol. One of them, "Perceived Parental Reaction to College Drinking among Minority Women" (*International Journal of Ethnic College Health*), sought to assess the prevalence of alcohol use and the relationship between level of drinking and women's perception of parental reactions to their drinking and to describe women's views of familial influence of college drinking. There is another manuscript that is in press titled, "Alcohol-Related Sexual Expectations and Condom Use among Black College Women" (*Journal of Behavioral and Social Sciences*). This study (1) investigated the relationship between alcohol and condom use and (2) evaluated alcohol/sexual experiences and perceptions of how alcohol influences the decision to use a condom among Black college women. Another published manuscript, "Minority College Women's Views on Condom Negotiation" (*International Journal of Environmental Research and Public Health*), was an exploratory study that addressed the gap in the literature about the relationship between condom negotiation strategies and frequency of condom use. It also provided a framework to better understand the context of condom negotiations among African American college women. Findings from this study highlighted the need to decrease women's reliance on men to supply condoms and reduce stigma associated with female preparedness. I also have published several manuscripts pertaining to single mothers, one of which I co-authored with my undergraduate research assistant, L. Ollivierre, including "Exploring the Linkages of Single Black Mothers and Their College Experiences" (*Global Education Journal*), "Self-perceptions of Black Single Mothers Attending College" (*Comprehensive Psychology*), and "Psycho-social Impact of Mortgage Foreclosure" (*International Journal of Business Research*). I also have co-authored two book chapters, which are expected to be published later this spring. These manuscripts deal with romantic relationships of the Black woman and the importance of taking care of self when the stereotype strong Black woman is called into question. Recently, my research and scholarship has expanded, and I am currently examining cardiovascular issues with a focus on asthma, smoking, and alcohol use and their impact on the liver and kidney as these diseases applies to underrepresented women who self-identity with the African diaspora. My area of research is influenced by my Afro-American/Afro-Caribbean heritage, and I realize that some of these women with existing asthma conditions do not comply with.

Mark Andrew Lawson, Ph.D.

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Research Interests

Maintenance of proper health depends on the proper regulation of the complex physiological systems that control energy balance, metabolism, growth, and reproduction. Of these, reproduction is unique in that it depends on other systems to operate properly and changes dramatically throughout life. Puberty, menstrual cycling, menopause, and aging are all unique reproductive stages that are a result of complex interactions between the reproductive and other systems. Because fertility depends on overall health, it is sensitive to proper physiological balance. Although the consequences of physiological imbalance result in reproductive problems—such as infertility, difficulty of conception, and reproductive problems in both sexes—very little is known of the sensing mechanisms that impact the reproductive system. The reproductive hormones that control fertility are produced in the brain, pituitary gland, and the ovary or testis. The neuropeptide hormone gonadotropin-releasing hormone (GnRH) is released in pulses from the hypothalamus and stimulates the pituitary to produce luteinizing hormone (LH) and follicle-stimulating hormone (FSH). LH and FSH, in turn, stimulate the ovary or testis to produce the gonadal steroids and other hormones that act as either positive or negative feedback regulators of GnRH and LH or FSH synthesis and release. The production of GnRH by the brain and LH or FSH by the pituitary also is influenced by other hormones—such as insulin, activin, and inhibin—and by mediators of metabolic and energy status. Our work is focused on the communication between the brain and pituitary gland via GnRH and how this communication is altered by input from other hormone signaling systems or by metabolic status. Research topics in our laboratory include (1) the study of pulsatile GnRH signaling and its consequences on gene expression, (2) GnRH regulation of protein synthesis and the role of the unfolded protein response in maintaining pituitary cell health, (3) the role of insulin as a regulator of pituitary sensitivity to GnRH, (4) the impact of fatty acids and inflammatory signals on the ability of the pituitary to respond to GnRH, and (5) the role of bone morphogenetic proteins and related hormones in the regulation of GnRH neurons.

Janice Lea, M.D.

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Research Interests

My major research focus has been in the area of hypertension and chronic kidney disease (CKD), most notably serving as the Emory Principal Investigator for the NIH African American Study of Kidney Disease and Hypertension. Currently, my research focus is in the intersection of hypertension, CKD, dialysis care, racial disparities, and access to care for vulnerable populations.

Cynthia Nicole Lebron, Ph.D., M.P.H.

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Research Interests

My research focus lies at the intersection of racial and ethnic health disparities in obesity and maternal and child health. I began in health research as a community health worker at the Miami Healthy Heart Initiative for Hispanics with diabetes and then continued to work through several community research liaison positions. My work experience and diverse training in prevention science and community health have provided the foundation for my career that has focused on minority health and led me to a position as an assistant professor at the School of Nursing and Health Sciences at the University of Miami in August 2020. As a research coordinator and then a predoctoral student, I worked with multiple principal investigators as they developed, evaluated, and implemented prevention interventions in minority populations in adults, adolescents, and preschool-age children. As I established my independence as a researcher, my work in obesity prevention motivated me to focus on prevention earlier along the life course. My NIH-funded predoctoral research focused on pre- and perinatal exposures as risk factors for early-childhood-onset obesity in a racially and ethnically diverse population. Research projects I currently lead range from family-based interventions to cannabis use in pregnant and breastfeeding mothers. The work I have done thus far has shown my determination to carve out a niche as a female Hispanic health disparities and maternal and child health researcher and mentor.

Anna Lee, Ph.D.

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Research Interests

I have the expertise, leadership, training, and motivation necessary to successfully conduct diabetes-related health disparities research. I have a background in social psychology, with specific training and expertise in faculty development and engaging in health-related research. In a pilot grant funded by Hampton University's Minority Male Health Initiative and sponsored by the National Institute on Minority Health and Health Disparities, I examined the impact of experiences with racism and masculinity on obesity risk in Black adult males. Currently, I am co-principal investigator on a grant to examine relationships between neighborhood socioeconomic context, psychosocial distress, race, and diabetes risk, funded by the Vanderbilt Diabetes Research Center and the North Carolina Diabetes Research Center. In addition to pursuing research grants and leading all aspects of my research projects, I regularly participate in research and writing retreats, workshops on grant writing, and courses in program evaluation. I am committed to exploring social, cultural, and structural factors impacting the health outcomes of racial and ethnic minorities.

Christine Limonte, M.D.

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Research Interests

My primary research interest is diabetic kidney disease. Specifically, I am interested in the mechanisms that underlie different clinical presentations of diabetic kidney disease. My current research involves using proteomics techniques to identify biomarkers associated with rapid versus non-rapid estimated glomerular filtration rate decline in a large, multinational type 1 diabetes cohort. In the future, I hope to learn systems biology methodology to participate in research that takes on a precision medicine approach.

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Research Interests

I am a bilingual and bicultural doctorally prepared nurse–midwife, and I have worked in maternal and child health and women's health since 1981, including such positions as clinical nurse–midwife, health service administrator, educator, and researcher. I have developed a program of research on human lactation with an emphasis on health disparities in Kentucky. I have conducted several studies in the field of breastfeeding using a qualitative and quantitative approach. A study funded by CCTS included a randomized controlled trial that tested the feasibility of culturally and linguistically appropriate intervention in Latinx women in Kentucky. I have become interested in the variations that occur in the breastmilk compounds based on the mother's behaviors and environment. I conducted a study looking for adipokine concentration in breastmilk and its relation with infants' salivary and serum levels of adipokines. Currently, I am working on toxic trace elements in infant blood associated with infant feeding and the mother's environment. I am submitting an R21 to conduct formative research to adapt an early intervention to prevent childhood obesity in the Latinx community in Kentucky.

Holly Lofton, M.D.

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Research Interests

My research interests reflect my clinical expertise—weight management and obesity. As the director of the New York University (NYU) Medical Weight Management program and the program director of the NYU clinical obesity fellowship, I see more than 100 patients per week. Hearing the daily struggles of these patients has piqued my interest in preventing obesity in children, adolescents, and adults. I have utilized my patient panel to perform retrospective analyses of weight loss outcomes in patients with intragastric balloons, both with and without pharmacotherapy. Additionally, I have published the 12-month outcomes of my clinical patients on supervised medical weight management programs versus those utilizing more conservative weight loss programs. I also am interested in performing research aimed at increasing the level of obesity education in medical schools and residency programs because there currently is a paucity of educational opportunities in this field. I would like to utilize my clinic and those of my colleagues in weight management to do so. I have a research goal of developing a medical school curriculum that could be standardized to provide education on this topic at a variety of institutions. My current research involves clinical research involving GLP-1 receptor agonist and weight management. I am investigating the effects of these compounds on weight loss in those with obesity and also in subjects who have regained weight after bariatric surgery.

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Research Interests

Middle-aged Black Americans are disproportionately impacted by cardiovascular disease. A healthy diet is associated with reduced chronic disease risk. Yet, Black Americans are more likely to have poor diet quality and share a disproportionate burden of diet-related chronic disease. Access to healthy foods in the neighborhood context is a key factor that limits diet quality. Unhealthy foods are heavily promoted, with high access to fast-food restaurants and fewer opportunities for accessing healthy foods in predominantly Black communities. However, home-gardening interventions present an opportunity to address the issue of diet quality and limited access to healthy foods. Seeing that a suboptimal diet plays a large role in chronic disease risk, findings suggest that a home-gardening intervention may hold promise for improving diet quality in Black Americans who reside in predominantly Black communities.

Home-gardening interventions improve access to healthy foods, decrease waist circumference and body mass index, and increase fruit and vegetable intake. Home-gardening interventions also have demonstrated success in improving dietary quality for cancer survivors and people with obesity, diabetes, and cardiovascular disease. Yet, the barriers reported include time; gardening knowledge; and garden management, space, and housing type. There also are challenges to the evaluation of the impact of home-gardening. The majority of gardening studies are observational and utilize a cross-sectional design. Few have explored the impact of home-gardening interventions on Black Americans, and those that did were more likely to be qualitative, involve youth, or be case studies. Community engagement is also an important strategy that must be inherent in the development, implementation, and evaluation of addressing health inequities that often is overlooked in home-gardening interventions.

In our pilot study, we are working with a community-based organization, Chicago Grows Food, in which we are evaluating the Grow Your Groceries program, a home-gardening program in which grow kits are given to residents of communities with limited food access. The participants also received a curriculum, and part of this study is to redesign the curriculum to improve the utility of the grow kits and evaluate the impact of fruit and vegetable intake. Qualitatively, the participants have expressed favorability toward the grow kits and have enjoyed using them.

In this study, we will design the curriculum with Chicago Grow Foods for this population of interest, and we will examine the effects of the "Grow Your Groceries" program on dietary intake, perceived food access, and physiological outcomes on Black Americans with chronic disease risk. I will utilize this study's findings to expand the development of a multilevel dietary intervention to reduce chronic disease risks in Black Americans.

Jesus Manuel Lopez-Guisa, Ph.D., M.B.A., M.S.

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Research Interests
Currently I am working in the immunology researching severe immunocompromising diseases in children. Our main goal is to develop functional assays for clinical diagnostics. We also conduct genetic analysis using Sanger sequencing and next-generation sequencing. We have developed a panel of genes involved in immune regulation. This approach helps to determine the patients' therapies or the need for bone marrow transplant.

Karina R. Lora, Ph.D.

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Research Interests
One of my primary research foci is health disparities in obesity prevention, specifically social determinants of health and nutrition behaviors of minority families. To that extent, I conduct research on environmental and behavioral approaches to prevent obesity in children and adults, particularly in underserved populations; parental influences on children's food consumption and obesity development; dietary assessment methodology; and minority men's health. During my faculty appointment at the University of Oklahoma, I received a pilot Clinical and Translational Science Institute award to examine low-income African American and Hispanic fathers' feeding practices, styles, and perceived stress in relation to their preschoolers' intake of sugar-sweetened beverages, fruit juice, and water, as well as child's body weight. As a result, for the last 6 years, I have been investigating Hispanic and African American fathers' feeding practices and health-promoting behaviors (e.g., purchasing and making high-calorie foods available, sedentary behaviors) at home and the influence of these practices on their preschool children's and partner's intake of calorie-dense foods. Evidence is growing that fathers, along with mothers, play an important role in children's eating and obesity risk though their own perceptions, behaviors, and attitudes toward healthy eating, engagement in physical activity, and maintaining a healthy weight. Among minorities, studies of mothers' and fathers' co-parenting roles related to food and physical activity with their children that, in turn, could influence their own children's development have been limited. For instance, fathers and mothers may relate to one another in their food and physical activity co-parenting roles, but these roles may be affected by competing responsibilities (i.e., work), culture, parental upbringing, or support and solidarity in their parenting efforts. Recently, I finalized 40 in-depth interviews with Hispanic parents of 3- to 5-year-old children, interviewed separately, to examine their food and physical activity co-parenting behaviors with their children. Through these interviews, fathers communicated many times during data collection their desire for "men's programs" that will "work for them." These field observations let me craft a new area of research related to minority men's health. Hispanic males have the highest rate of obesity in our nation, yet they are sorely understudied and largely underrepresented in weight-loss behavioral interventions aimed to prevent the development of obesity-related chronic diseases, such as cardiovascular disease. At The George Washington University, I have recently received pilot funding to investigate low-income, first-generation overweight and obese middle-aged Hispanic men of different backgrounds to tailor men's nutrition and physical activity behaviors toward maintenance of a healthy weight.

Sharifa Tahirah Love-Rutledge, Ph.D., M.S.

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Research Interests

Diabetes affects millions of people each year. Many approaches have been used to study diabetes and its complications. As a doctoral student, I studied the downstream effects of insulin, focusing on the role of chromium (Cr) in insulin signaling, using analytical chemistry approaches to show that Cr present at the commonly accepted nutritional levels and had little effect on insulin signaling, amending earlier reports in the literature to the contrary. As a postdoctoral fellow, I broadened my training to study the dysfunction of the cells that produce insulin. My current focus is understanding the induction of the disease through the dysfunction of insulin-secreting β cells by broadening my skillset to include more molecular biology approaches to study the mechanism of diabetes and cell-specific changes. This broad set of skills and experiences will allow me to address this challenging disease through multiple approaches.

It has been recently proposed that type 1 and type 2 diabetes disease pathologies have more in common than previously thought. My research interests are broadly focused on the islets of Langerhans and the stress signals produced by the β cell during the initiation of type 1 diabetes, and how some of these same stress signals are important for β cell death in type 2 diabetes.

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Research Interests

My main area of interest is racial and ethnic disparities in access to kidney transplant and living donation, as well as outcomes after kidney transplantation. I have specific interest in disparities existing among the Latinx community.

As a Latino woman in the field of transplant nephrology, I have experienced firsthand some of the hardships and inequities minority communities face when accessing adequate health care. The roots of these are multilevel but are frequently associated to inadequate health literacy, distrust of the current health care system, poor socioeconomic determinants of health, and lack of cultural competency of those providing health care. These barriers are of particular importance when caring for patients with advanced kidney disease, for whom timely delivery of care directly affects their future choice for renal replacement therapy and, therefore, their own survival. The Latinx community (the largest minority in the United States) faces, in addition, linguistic barriers, and many face also immigration uncertainty. Seventy-five percent of the 11 million of undocumented immigrants in the United States are Latinx. Thus, language and immigration status further impair the Latino community's ability to receive the standard of care. In the case of renal health, that means the inability to receive a timely transplant.

My research interest focuses on understanding the root of these disparities, which is key in figuring out potential solutions. An additional challenge within the Latinx community is that no two Latinos may look or feel the same, necessarily. Latinxs are a very diverse community with a wide range of origins and perceptions; preference in education and beliefs can differ from one geographic group to the other. Through my research, I hope to build strategies to minimize or overcome the existing barriers that currently limit the access to standard of care. I also hope to be able to remove existing disincentives and, specifically within my program, create a comprehensive, culturally competent, and linguistically sensitive program for the care of the advanced kidney disease Latino patient.

Anika Lucas, M.D.

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Research Interests

I am a second-year nephrology fellow with a long-term goal of becoming an independent clinical researcher focused on women's health and health disparities in nephrology. My interest in the unique health experiences of women initially developed as an undergraduate student. As a participant in the Amgen Scholars Program, I conducted a pilot study on the sleeping patterns of African American breast cancer survivors under the mentorship of faculty at Howard University. The experience of designing a research project, collecting and analyzing data, and presenting my work at local and national research symposia inspired me to pursue a career in clinical research centered on women's health.

Joseph Lunyera, M.D., M.S.

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Research Interests

I have a broad research agenda that encompasses social, environmental and biological potential etiologies for kidney disease in various global populations. My current research is focused on kidney disease outcomes within the Jackson Heart Study—the largest study of cardiovascular disease in African Americans—where I lead several analyses aimed at identifying risk factors for chronic kidney disease (CKD). Specifically, I currently am studying the role of sleep duration, vitamin D deficiency, hydration status, and other potential exposure factors in the etiology of CKD in African Americans. I also have a secondary interest in acute kidney injury (AKI). My current studies in AKI have two broad aims: (1) to understand the role of patient behavior change in AKI outcomes and (2) to examine factors that belie racial disparities in the incidence of AKI.

Etienne Vasconcellos de Macedo, M.D., Ph.D.

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Research Interests

My research interests are focused on three related topics: prevention and early diagnosis of acute kidney disease (AKD); timing of renal support in AKD; and factors affecting progression to chronic kidney disease. The increasing prevalence of AKD in community and hospitalized patients, coupled with high rates of non-complete renal recovery, highlights the need to focus on prevention and promoting recovery from AKD. Awareness of AKD risk factors and availability of methods for early diagnosis of acute kidney injury (AKI) may help prevent and avoid progression of stage severity. In a multicenter international study, we screened health care center patients to determine signs and symptoms, comorbidities, and exposures associated with higher risk of AKI. Based on their risk profiles, we provided serum creatinine point-of-care tests at six sequential time points and evaluated the impact of management in renal function recovery. Determining the parameters to indicate and follow renal support in patients with AKD will allow us to establish guidelines for treatment and improve outcomes. In a research project not yet initiated, we will evaluate a novel approach to quantify factors that define the need for renal support to patients with AKD. This approach is based on the principle that, at any given time, the need for renal support depends on the balance between the demand and the renal functional capacity, and a mismatch of demand and capacity indicates the need for renal support. Knowledge of factors influencing renal recovery and affecting progression to CKD may direct research and clinical efforts to modifiable factors that could facilitate renal function recovery and decrease end-stage renal disease from AKD progression. I am involved in a study evaluating the effect of diet on progression of AKD to CKD. In a proposed research project, I plan to characterize patterns of care experienced by patients who meet the criteria for AKD and will analyze how racial/ethnic and socioeconomic disparities affect CKD progression after an AKD episode.

Wairimu Magua, Ph.D., M.S.

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Research Interests
The overarching objective of my research is to develop a detailed understanding of patient-specific trajectories following kidney transplantation, with the aim of informing clinical monitoring. I leverage patient-level pre-transplant, perioperative, and post-transplant clinical and nonclinical data and benchmark data from national registries to capture recipient clinical states over time using statistical, mathematical, and machine-learning approaches. My long-term goal is to develop a robust clinical outcomes and disparities research program with an integrated evidence-based intervention component that is informed by a complex adaptive systems framework.

Gayenell Smith Magwood, Ph.D., M.S.N., B.S.N.

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Research Interests
My primary research focuses on socioenvironmental and biobehavioral factors in development and implementation of community-based lifestyle interventions for multiple risk reduction (cardiometabolic risk), particularly diabetes and obesity among African Americans. My interest extends to multi-risk reduction (hypertension, stroke prevention). I have clinical and research experience related to the kidney transplant population. My commitment to multiple risk reduction stems from my long-term commitment to health disparities research. My research experience includes community-engaged diabetes prevention intervention development and implementation. My research combines advocacy and science to inform best practices for building, enhancing, and sustaining partnerships with communities and contributing expertise in the intersection of community and health systems with underserved populations.

Andrea Marshall, Ph.D.

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Research Interests
My broad research interests seek to understand how such factors as dietary nutrition, genetic mutations, or the aging process cause changes in the cellular landscape that either promote or protect against disease.

Vanessa Marshall, Ph.D., M.A.

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Research Interests
My research interests include health disparities, health services research, community-based participatory research, clinical trials, interventions, quality improvement, evaluation, and implementation science.

Janet Diaz Martinez, Ph.D.

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Research Interests
I am a postdoctoral fellow in the Robert Stempel College of Public Health and Social Work at Florida International University and director of clinical and community research at Caridad Center. My research interests focus on community-engaged research strategies to improve the overall health of medically underserved populations, particularly Latinx immigrant communities, through developing targeted interventions that address their unique medical, nutritional, and social challenges (e.g., limited access to care, economic disadvantages, food insecurity, low English proficiency, limited health literacy). I particularly am interested in identifying early CKD biomarkers and novel predictors and understanding the role of dietary patterns and nutrients in developing kidney disease and its progression. My doctoral thesis research focused on the relationship of inflammation, nutritional status, and diet with health outcomes in hemodialysis patients. I investigated the relationship of a novel marker of inflammation (neutrophile-to lymphocyte ratio) with mortality and hospitalizations in end-stage renal disease patients.

My specific postdoctoral research projects include three main areas: (1) the evaluation of how drug use (alcohol, smoking, cannabis, and cocaine) in minorities living with HIV may affect cardiovascular health and kidney function to suggest novel strategies to reduce the burden of kidney disease in the HIV population, (2) the impact of the COVID-19 epidemic in marginalized communities, and (3) the determination of social determinants of health that contribute to health disparities among underserved Latinx communities.

My current research project involves a community engagement initiative to address gaps in education and increase chronic kidney disease screening among Latinx adults with or at risk for kidney disease. My research program is funded through the National Kidney Foundation, 2022–2023 Kidney Health Equity Community Engagement Award.

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Research Interests

I started my research training studying protein–protein communication under the direction of Dr. Narasaiah Gavini, but I had a strong desire to study medicine, so I embarked on the journey of exploring phenotypic modification of bone breaking strength by injecting 25-hydroxycholicalciferol into embryos subjected to suboptimal temperature. This study focused on epigenetic modulation of chicken embryonic development to increase poultry yield for greater economic gain. During my Ph.D. training, I explored immunology and toxicology labs before settling in the Basic Science and Toxicology Department under the mentorship of Drs. Matthew Ross and Stephen Pruett. Although the specialty of the laboratory was carboxylesterase, I investigated the role endogenous toxins had on cardiovascular disease (CVD). My dissertation research focused on modulating the components of the endocannabinoid system as a means of truncating the oxyradical-induced inflammatory response seen with CVD. I used such approaches as HPLC-MS/MS and proteomic, genomic, molecular biology, and cell culture techniques to investigate proteins and G protein-coupled receptors that are involved in the inflammatory process.

My training has spanned genetics, immunology, proteomics, and genomics as it pertains to vascular injury/inflammation.

My research interest lies in deciphering the relationship between the cardiovascular system and the toxicological impact of endogenous xenobiotics as it pertains to atherosclerosis, in addition to adding to the body of scientific knowledge. To date, atherosclerosis remains one of the leading causes of mortality and morbidity in our society without a known cure or any viable lifestyle options to truncate the occurrence. Therefore, I am interested in building my career in the area of vascular toxicology to assist in overcoming diseases that are driven by factors leading to cardiovascular disease. I would like to further utilize my knowledge and experience in generating a community-based science interest program to increase scientific awareness of behavioral changes that will impact a healthy heart and, subsequently, renal health. It is my further desire to secure a career in a research institution to advance the goals of ameliorating cardiovascular disease. By joining the laboratory of Dr. Adebowale Adebiyi, I intend to gain experience in electrophysiology, intracellular Ca^{2+} imaging, high-speed confocal microscopy, and pressurized artery diameter measurements. Having these tools from Dr. Adebiyi's lab, along with participating in the formal postdoctoral training program at University of Tennessee Health Science Center, will make me a more grounded vascular scientist.

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Research Interests

My research interests are in diabetes, chronic foot pain, and self-management behaviors. My overall research goal is to identify effective preventive strategies involving technology to reduce diabetes complications and improve the quality of life of those with diabetes and at risk for diabetic foot ulcers.

I have an extensive background and experience in working with patients with multiple chronic diseases—including diabetes, depression, and stroke, among others—as a nurse and adult nurse practitioner. During my fellowship training, I worked with diabetes, depression and stroke patients in setting goals in behavioral terms to manage their modifiable risk factors for optimal health outcomes. I developed skills and became familiar with the use of mobile health (mHealth) technologies to coach patients in the development of self-management skills, such as self-monitoring and goal setting, for improved health outcomes.

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Research Interests

My research interests include cross-cultural communication, especially as it pertains to the patient–physician relationship and its impact on health care outcomes of African Americans with diabetes, hypertension, or chronic pain. In addition, I have identified opportunities to lead and promote partnerships that have led to externally funded research and training grants. For example, I partnered with The Ohio State University College of Medicine biomedical scientist program leadership in submitting a response to the National Institute of General Medical Sciences R25 Request for Applications to create DISCOVERY PREP, a postbaccalaureate program to enhance diversity of students entering Ph.D. biomedical scientist training.

I also serve as co-investigator for a National Institute on Minority Health and Health Disparities R01 funded research initiative led by Dr. Sakima Smith to determine the influence of CYP3A4*22 on simvastatin pharmacokinetics in African Americans to improve safety and decrease health care outcomes disparities.

Lisa McElroy, M.D., M.S.

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Research Interests

My academic focus is directed toward how complex health care processes and large, multidisciplinary teams affect outcomes of high-cost, high-acuity patients. My early work identified high rates of readmissions in the early postoperative period following organ transplant that led to a multidisciplinary learning collaborative redesign of the workflow and communication tools used for handoffs of liver transplant recipients to the intensive care unit. As my research has progressed, an emerging theme has been the interplay between biologic and social risk, which each contribute to a patient's ultimate success but receive disproportionate consideration in anticipation of and in response to subpar outcomes. I am currently involved in several efforts that build on this concept and employ an approach to health equity research that accounts for center- and organizational-level characteristics when examining differences in care based on social determinants of health.

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Research Interests

I have worked for approximately the past 10 years understanding the mechanisms of renin biology and release. During my Ph.D. experience, I worked with primary cultures of cardiomyocytes. I acquired experience in molecular biology techniques to study signaling mechanisms controlling cardiac hypertrophy in cells, as well as whole-animal physiology, to understand the role of prostaglandins in remodeling and cardiac infarction. One strength of my career path is that I always studied the pathobiology of hypertension, from heart to kidney, and from molecule to whole-animal models.

Since then, I was particularly intrigued by how processes occurring at a very small scale govern cell structure and function. The field of renin biology has been extensibly understudied at a molecular level. This is in part due to the lack of technological development to either isolate or study cells that produce and release renin. This has impaired the ability to advance the knowledge on very basic mechanisms of renin biology. When compared to the advances in the knowledge on other endocrine secretory cells, such as insulin, the field of renin is very behind, preventing the development of better targets for the treatment of hypertension. In the past 6 years, I have invested a significant amount of time to develop all required methodology to fill this gap and finally make progress in the field of renin biology. I have all of the required tools and equipment to conduct this research. I have institutional and academic support from mentors and peers. In my opinion, I have risked productivity trying to develop new methodologies; however, I am convinced this will move this field forward.

Although it is well established that the renin-angiotensin system is activated in diabetes and contributes to hypertension, the role of the juxtaglomerular cells and the renin and pro-renin they store has not been studied in detail. We are taking an approach from renin cell and molecular biology to whole-animal pathology. We think that integrating those two are essential in obtaining a fine understanding of the mechanism mediating this effect.

Our long-term goal is to uncover novel targets for development of pharmacological agents to prevent hypertension and kidney damage in diabetes. Our overall objective is to determine the mechanisms of renin and pro-renin release, and their implication in the development of hypertension and kidney damage in a progressive model of type 1 diabetes.

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Research Interests

My overall research interest and goal includes the use of population genomics and quantitative and statistical genetics methods to understand human genome variation and utilize this information to dissect complex diseases, particularly allergy disorders, through approaches and methods ranging from linkage, association, admixture mapping, and transcriptional profiling analysis. Complementary to statistical analysis, I also frequently apply biological pathways and functional commonalities analysis to uncover co-regulation of gene expression across the genome, data mining, and bioinformatics techniques for candidate gene prioritization procedures from linkage and expression studies. My long-term goals are to reduce childhood morbidity and mortality associated with metabolic and allergic disorders, and to eliminate the significant racial disparities in asthma and asthma-related outcomes. To enhance my analytical skills for verifying statistical properties of biological problems as applied to admixed populations—such as ancestry inference, disease gene localization, evolutionary relationship, patterns of molecular diversities, and population structure in disease genetics—I will be actively involved in the NMRI program.

Adeola Michael, Ph.D.

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Research Interests

My research is focused on understanding liver complications in sickle cell disease (SCD). SCD is one of the most common genetic diseases in the world. Liver or biliary complications—including hepatomegaly, cirrhosis, chronic biliary disease, and fibrosis—are evident in about 40 percent of hospitalized SCD patients. However, the molecular mechanisms responsible for sickle cell hepatobiliary injury remain poorly understood. In my work, I hypothesized that the chronic inflammatory state associated with SCD promotes hepatobiliary injury and can be modeled in SCD mice.

My research goal is to become a tenure-track assistant professor at a research institution, studying signaling mechanisms in adult and pediatric diseases, with the end goal of creating avenues for mentorship and contributing to the scientific community.

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Research Interests
My training and education have placed me at the interface of molecular biology and epidemiology. I have performed extensive research in cell signaling during the progression of cancer and, more recently, nutritional and molecular epidemiology. Previously a fellow in a molecular epidemiology of cancer training program, I conducted research examining the role of dietary exposures, including red meat and sugar, as well as genetic polymorphisms on cancer risk and survival, working with multiple studies, including a substudy of the Prostate, Lung, Colorectal, and Ovarian Cancer Screening Trial. I have done additional research on the interaction between vitamin D and insulin-like growth factor, as well as diet and metabolomic signatures, as part of a separate biobehavioral cancer prevention and control training program.

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Research Interests
My laboratory's major focus is to study nutritional status in obesity and following weight loss intervention. I specifically research nutritional interventions targeting obesity-related disease, nutrition after bariatric surgery, nutrient bioavailability, and the prevention of type 2 diabetes in adolescents.

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Research Interests

The Miranda Laboratory studies neurotransmitter transporters and their role in diseases. We investigate the role of endocytosis and posttranslational modifications in the regulation of activity of the transporters for dopamine and glycine. We also investigate the effects of the psychostimulant methamphetamine in the stability of the dopamine transporter and receptors in the brain, utilizing a rodent model. In addition, our latest research focus has been on the role of glycine transporters in pharmacological interventions and disease. The neuronal glycine transporters coordinate a variety of motor and sensory functions and mutation at those results in impair motor or sensory control. For these transporters, we investigate the location and function of glycinergic neurons in the rodent brain containing either or both of two transporters, GlyT1 and GlyT2, utilizing a variety of biochemical approaches and microscopy imaging techniques. Throughout my career at Yale University, I have gained extensive experience in the analysis of the structure-function relationships of primary and secondary transporters in yeast and mammalian cells. During my postdoctoral training at the University of Colorado, I expanded my research skills to include the cell biology of the dopamine transporter. During that time, I discovered that protein kinase C–dependent endocytosis and further downregulation of DAT are triggered by ubiquitination. This training accounts for more than 15 years' experience studying transporters.

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Research Interests

My research involves weight loss interventions for low-income and minority populations. I became involved in obesity management for low-income and minority populations because of my clinical experience. Early in my clinical years of medical school, I recognized that many medical problems were caused or exacerbated by excess weight. Later, as a primary care physician at a clinic with large low-income and minority populations, I watched in frustration as my patients' attempts to lose weight were hampered by lack of money and access to structured programs. Unfortunately, health care payers, including Medicaid, typically do not cover weight-loss programs, and my patients could not afford to pay for expensive commercial programs like Weight Watchers or Jenny Craig. This inspired me to find cost-effective ways to bring successful weight loss interventions to low-income patients within a primary care or community setting.

As I reviewed available weight-loss programs to identify those with costs that could possibly be within reach of low-income populations, I found Take Off Pounds Sensibly (TOPS), which is a national, nonprofit, peer-led weight loss program. However, although the annual cost of $120 likely was within reach for most of my patients, there had not been a rigorous scientific evaluation of the TOPS program, and I chose to undertake such an analysis. The results of my initial study, a secondary database analysis, were promising; participants lost a clinically significant amount of weight (≥5% of initial weight) and maintained the weight loss for up to 7 years.

In my current R01, we are recruiting older African American women with obesity to lose weight with TOPS and monitoring their changes in weight and physical function. I also have a pilot grant in which we are using TOPS among African American breast cancer survivors with excess weight.

Another research interest involves studying a low-carbohydrate diet among patients with chronic kidney disease.

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Research Interests

Kidney stone (KS) disease is becoming more prevalent in the United States and is associated with a number of systemic diseases. Lifestyle factors, genetics, and diet all contribute to stone pathogenesis. A major risk factor for stone formation is an elevation in urinary oxalate, which can be derived endogenously or from the diet. Dietary oxalate intake may induce supersaturation of calcium oxalate (CaOx), which may generate crystals of this stone, forming salt in urine and perhaps the nephron. CaOx crystals that interact with renal epithelium activate innate immunity by releasing cytokines and chemokines to stimulate monocyte recruitment. We previously reported that patients with CaOx KS disease have altered monocyte cellular energetics and increased inflammation. In addition, we determined that oxalate directly disrupts cellular energetics and redox homeostasis in monocytes from healthy subjects. Current efforts include investigating the relationship between urinary crystals, macrophage activation, reactive oxygen species, and pro-inflammatory signaling pathways following oxalate consumption and exposure using a cell culture model, an animal model, and controlled dietary feeding studies in humans. The long-term goals of this research are to (1) understand how oxalate impacts monocyte and macrophage immunometabolism in KS disease and (2) identify therapies to modulate monocyte and macrophage metabolism in an effort to reduce or prevent KS formation. The impact of our research will help us understand how macrophages respond to crystals and may identify potential approaches to assess stone risk and reduce stone formation and recurrence.

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Research Interests

I am currently a postdoctoral fellow at the Mayo Graduate School in the Clinical and Translational Sciences (CTS) track. My long-term career goal is to improve immigrant and minority health by becoming a translational and health disparities researcher, with an emphasis on digestive diseases. At the end of my CTS Ph.D. training, the program will enable me to conduct research across the spectrum of translational science from bench-to-bedside-to-curbside, allowing me to contribute to the knowledge base and improve health outcomes and health care delivery for all patients. Growing up in the Somali community, I have come to see many individuals succumb to liver diseases, and I was not quite sure why Somalis were relatively more subjected to this illness compared with other populations. However, there were no trained individuals whom the Somali community trusted until Dr. Shire, a Somali researcher, came to Mayo Clinic. My current thesis project was initiated as a result of community concerns about the high rates of end-stage liver disease and liver cancer expressed by the Somali community to Dr. Shire. A recent study published by Shire et al. determined that the largest African immigrant community in Minnesota was disproportionately affected by chronic hepatitis and its sequalae. Thus, the findings from this study suggest that other African populations also are at substantial risk for hepatitis B virus, hepatitis C virus, and liver cancer. My thesis project involves identifying members of the immigrant African and Asian communities with hepatitis B and C viruses and linking them to care. We have partnered with local community organizations, religious establishments, clinics, amateur sports teams, businesses, and schools to provide health educational seminars, focus group sessions, and built community advisory boards. Once we have identified the positive participants, we link them to care, take blood samples, and conduct biological research to determine genetic signatures and unique immunologic factors to disease progression. This project will impact my future research aspirations of becoming a translational scientist, while at the same time enabling me to identify the societal and cultural barriers that potentially lead to health disparities among underserved communities. Noting that many immigrants and refugees come to the United States from areas endemic for hepatitis, the potential positive impact of this work on public health would ultimately be considerable. If I am granted membership to NMRI, it will enable me to attend and disseminate my research at this year's NMRI meeting and meet potential mentors who are world-renowned scientists/clinicians in addressing health disparities.

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Research Interests

I have a solid program of research on prostate and bladder cancer (more than $2 million as principal investigator [PI], $1.1 million as a co-investigator [co-I]) funded by the NIH, U.S. Department of Defense (DoD), and American Cancer Society (ACS). Below I have provided an overview of my areas of expertise and prior research support.

In 1998, after receiving my Bachelor's (with honors) and Master's degrees in educational psychology, I joined the Department of Psychology at Khartoum University in Sudan as a lecturer. During this time, I taught several undergraduate courses and supervised undergraduate research required for the completion of Bachelor's and Diploma degrees in psychology at the University of Khartoum, including Introduction to Statistics and Research Methodology, Physiological Psychology, and Cognitive Psychology. I also supervised undergraduate research that addressed different topics, including coping with cancer and treatment side effects. Supervising undergraduate research in cancer increased my interests in psychosocial and behavioral issues involved in cancer prevention and health care. Because academic resources were very limited at the Department of Psychology, Khartoum University, I applied for The German Academic Exchange Program and received a 4-year scholarship to obtain a Ph.D. in health psychology at the Free University of Berlin, Germany. I received my Ph.D. (*magna cum laude*) in October 2004. My dissertation research focused on examining the role of personal and social resources, and coping for finding meaning in cancer. I was particularly interested in examining the mediation effects of coping strategies in the relationships among personal and social resources and finding meaning in cancer. During this time, I improved my skills in recruitment of newly diagnosed cancer patients, data entry and organization, and quantitative data analyses using SPSS.

In 2006, I joined the Department of Urology at the Icahn School of Medicine at Mount Sinai to continue my postdoctoral training. As a postdoctoral research associate and a senior project manager at the Icahn School of Medicine at Mount Sinai (2006–2009) I developed strong expertise in developing and evaluating multimedia interventions to enhance quality of life and improve symptom management among prostate cancer survivors (funded by the National Cancer Institute and DoD). In 2010, I was appointed assistant professor and a faculty member of the Department of Urology, the Icahn School of Medicine at Mount Sinai in New York. Although I did my postdoctoral training at Mount Sinai on prostate cancer, I have moved on to independent status with my own research and laboratory space (2010). I am currently a PI or a Co-I on several previous funded grants (NIH, DoD, and ACS).

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Research Interests
There are many social determinants of health, and at the moment I am interested in exploring the relationship between food insecurity and kidney outcomes in children and adolescents. I prefer studying food insecurity as an exposure because it is prevalent and measurable and can be effectively addressed with governmental resources, food banks, and community resources. As a pediatric nephrology fellow, I am naturally curious about any associations with kidney outcomes. Another interest of mine is the health of Indigenous populations, especially that of Native Americans and Native Hawaiians and Pacific Islanders. I foresee my career being clinical and research oriented, working at the intersection of social determinants of health, kidney outcomes, and Indigenous children and families.

Darren Moore, Ph.D.

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Research Interests
My area of research focuses on obesity, weight loss, eating disorders, and comorbidities, with an emphasis on health disparities among men, African American families, and minority/marginalized populations. I am interested in various interventions to address the obesity epidemic, including behavioral, surgical, and nonsurgical interventions. I am also interested in exploring cultural perspectives regarding food and eating behaviors, as well as considering ways to address barriers to utilization/uptake and successful outcomes postintervention. I am also interested in couple/family factors that may contribute to behaviors and outcomes, in addition to patient-level and provider-level factors.

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Research Interests
I am an associate professor at the Department of Neurology of The University of Texas Health Science Center at Houston. I have 16 years of experience in the field of protein misfolding diseases, specifically in prion and Alzheimer's diseases. I have expertise in protein biochemistry and animal pathology (including behavioral aspects). My main research topics involve the prion-like nature of Aβ aggregates in Alzheimer's disease, the contribution of circulating Aβ aggregates in brain pathology, the strain and species barrier phenomena in prion diseases, and the pathological interaction among amyloidogenic proteins. Relevant to this application, I have importantly contributed to the development of the Protein Misfolding Cyclic Amplification technology for its use in the diagnosis and study of prion diseases. Relevant for this network, I currently am investigating whether acute or chronic liver damage can pose a risk for Alzheimer's disease.

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Research Interests
My research is focused on the cellular and molecular signal transduction pathways of G-protein-coupled receptors in the vascular wall of blood vessels and how the dysfunction of these signaling pathways can contribute to cardiovascular diseases, such as hypertension, atherosclerosis, and insulin resistance associated with diabetes. My laboratory has delineated the signaling pathway by which angiotensin II receptors cause cell proliferation, and more recently, research is being done on protease-activated receptor (PAR) signaling in the vasculature. I have shown how PAR-1 and PAR-2 differentially activate endothelial nitric oxide synthase phosphorylation in the regulation of nitric oxide production, and current studies are delineating the role of other PARs, such as PAR-3 and PAR-4, in the signaling pathways that lead to vascular inflammation, cell migration, and proliferation in cardiovascular diseases. Understanding the signaling pathways involved in these diseases will allow therapeutic agents to be developed at the molecular level.

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Research Interests
My main research interest is to improve our understanding of the epidemiology of kidney diseases in sub-Saharan Africa. I believe that this will lead to new knowledge that will ultimately improve health care delivery in this region. A better understanding of kidney diseases in sub-Saharan Africa also may shed valuable insight regarding kidney disease in all people of African ancestry. The risk of end-stage renal disease is four- to fivefold higher among African Americans than European Americans in the United States. I have noticed numerous parallels between the suffering I witnessed among kidney patients in East Africa and among African Americans. These observations continuously motivate me to help and to elucidate some of the mechanisms that account for these disparities. I believe that research into mechanisms of diseases can help address some of these disparities. For instance, the recent discovery of variants in the apolipoprotein L1 (APOL1) gene and risk of kidney diseases is changing our understanding of kidney diseases among Black people. This may lead into new interventions that may address disparities in kidney diseases worldwide.

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Research Interests

The Musah Lab aims to understand how molecular and biophysical cues can function either synergistically or independently to guide organ development and function and how these processes can be therapeutically harnessed to treat human disease, including kidney and extra-renal complications. Research in our laboratory covers a range of interests, from fundamental studies of stem cell and tissue differentiation to engineered devices for clinical diagnostics and therapeutics. A major effort in our laboratory is focused on understanding the roles of molecular and biophysical cues in human organ development and how these processes can be applied to understand disease mechanisms and develop new therapeutic strategies. We develop differentiation methods by the identification and optimization of multiple, synergistic factors within the stem cell niche to guide organ-specific cell lineage specification. To engineer *in vitro* models of human tissues and organs, we integrate our stem cell differentiation strategies with microfluidic systems engineering, hydrogel synthesis, biofunctionalization, and 3D bioprinting technologies to build dynamic circuits with living cells. Our interdisciplinary team of scientists, engineers, and clinicians uses ideas and approaches spanning stem cell and developmental biology, biophysics, microengineering, chemistry, medicine, genome engineering, and computational/mathematical modeling of complex biological problems.

Bolni Marius Nagalo, Ph.D., M.S.

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Research Interests

Hepatocellular carcinomas (HCCs) are highly aggressive cancers that are usually refractory to available treatment. HCC is the third-leading cause of death from cancer worldwide and the ninth-leading cause of cancer deaths in the United States (Parkin DM, 2005: Altekruse SF, 2009). I am working toward evaluating the therapeutic potential of attenuated oncolytic viruses in *in vitro* and *in vivo* models of human gastrointestinal tract cancer.

Lauren Nephew, M.D., M.A., M.S.

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Research Interests

I am a transplant hepatologist at the Indiana University School of Medicine. This is my first year as an assistant professor on the tenure tract. I am interested in better understanding racial disparities in access to liver transplantation and end-stage liver disease outcomes. Recently I used the United Network for Organ Sharing (UNOS) database to better understand gender disparities in liver transplantation. We found that women are less likely to receive organ offers than men for several reasons, including smaller size/stature and being less likely to receive exception points, resulting in a lower model for end-stage liver disease scores. I also have just submitted a paper exploring indications for liver transplant listing in Black and Hispanic end-stage liver disease patients. We found that Black patients, unlike white patients, are unlikely to be listed for nonalcoholic steatohepatitis. Black patients continue to be more likely to be listed for hepatitis C virus, even in the era of direct acting antivirals, and are more likely to be listed for acute liver failure and cholestatic liver diseases than white patients. I also submitted a KL2 application in January 2018 that is under review exploring racial disparities in hepatocellular carcinoma (HCC) outcomes. I hope to soon be working to set up the infrastructure to prospectively enroll a cohort of Black and white patients around the Indianapolis metropolitan area with newly diagnosed HCC to deeply explore racial differences in comorbidities, liver disease severity, tumor characteristics, treatments, and outcomes. I also plan to explore the impact of the social determinants of health (literacy, income, and social support) on patients' ability to receive appropriate treatment and on mortality.

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Research Interests

I aspire to become an independent investigator and make meaningful contributions to remedying health care disparities and lessening the disproportionate burden of chronic diseases experienced by underserved and disenfranchised patient communities through the use of genomics and complex clinical data. Black and Latino communities are underrepresented in biomedical research, and without concerted efforts to include ethnically diverse populations in genomic studies, we risk creating a genomic divide, wherein scientific advances exacerbate existing health inequities. My research focuses on strategies for making genomic medicine more inclusive of diverse patient populations and accessible to nephrologists with limited expertise in clinical genomics, in the hope of improving patients' long-term health outcomes through the delivery of more personalized care.

Javier A. Neyra, M.D., M.S.

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Research Interests

I have spent the last 10 years studying critically ill patients at risk or with acute kidney injury (AKI). My experience with clinical and translational research has suited me with necessary knowledge and tools to design and conduct pragmatic and informative clinical studies. I understand the complexity of the AKI syndrome for diagnosis, prognosis, therapeutics, and the current limitations to successfully translate bench experiments into clinical practice. My hands-on research experience includes data transformation and harmonization, multimodal data integration, biobank development, biomarker measurements, and clinical trials in the field of critical care nephrology.

Dequina Nicholas, Ph.D.

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Research Interests

My research goal is to advance the current standard of care for patients with metabolic disease through basic science research. The disproportionate number of African Americans and Mexican Americans affected by metabolic disease and the pervasiveness of obesity and type 2 diabetes in my family fuels my drive, determination, and persistence toward discovering what mechanisms underlie the etiology of metabolic disease. Nearly 38 percent of American adults are obese, making obesity one of the United States' most pervasive, expensive, and deadly health issues. Comorbid conditions include an increased risk of developing high blood pressure, metabolic syndrome, type 2 diabetes, polycystic ovary syndrome (the most common metabolic and reproductive diseases respectively), and a host of other diseases. Most importantly, obesity is associated with chronic inflammation believed to be responsible for these conditions. Despite intense interest and extensive studies, the molecular mechanisms by which obesity induces inflammation remains unknown, and I will address this gap in knowledge with my research program. My graduate and postgraduate research experiences in immunology and metabolism have provided me with the knowledge and skills to conduct research on the mechanisms of obesity-induced inflammation. During my graduate studies, I was the first to describe fatty acid–specific antibodies in human subjects (Nicholas, et al. 2015, *Mediators Inflamm*). Importantly, I also discovered that saturated fatty acids are ligands for MD-2, the accessory protein of the pro-inflammatory toll-like receptor 4, therefore resolving a long-standing question in the field of lipid immunology (Nicholas, et al. 2017, *PLOS One*). Although these studies provide important conceptual advancements, they also raise several new questions important for understanding obesity-induced inflammation, including (1) How does the human immune system generate a seemingly antigen-specific response to saturated fatty acids? and (2) How does chronic exposure to increased lipids (as seen in obesity and overnutrition) affect immune cell function? To address the latter question, I initiated a collaboration between the Boston University Medical Center and computational biologists at the Massachusetts Institute of Technology during my first postdoctoral fellowship (Nicholas, et al. 2017, *PLOS One*). We revealed that impaired lipid metabolism is critical to T helper cell 17 cytokine production, the inflammatory process that defines type 2 diabetes (Nicholas, et al. 2019, *Cell Metabolism*). Thus, the overarching goal of my research is to understand how excess nutrients affect immune cell function and the contribution this process makes to the development of type 2 diabetes and polycystic ovary syndrome.

Susanne B. Nicholas, M.D., Ph.D., M.P.H.

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Research Interests

I am a tenured professor of medicine at the David Geffen School of Medicine at the University of California, Los Angeles (UCLA) in the Division of Nephrology; Division of General Internal Medicine; and Division of Endocrinology, Diabetes, and Metabolism. I received my medical degree from the University of California, San Diego; Master's in Public Health from San Diego State University; and Ph.D. from UCLA. My primary research interests are to understand and identify key factors that promote the pathogenic mechanisms of diabetic kidney disease, uncover and validate novel therapeutic targets and predictive biomarkers of diabetic kidney disease to facilitate clinical trials, and perform population studies in disparities of chronic kidney disease (CKD) health. To accomplish these goals, I lead individual teams involved in small-molecule drug development and identification of potentially modifiable risk factors involved in CKD progression, particularly in racial and ethnic populations.

I established and chair the UCLA Nephrology Racial Health Equity Committee, with a goal to deliver equitable care to kidney patients; co-lead the Clinical Care & Innovation workgroup of the American Society of Nephrology (ASN) Health Care Justice Committee; and am on the Steering Committee of the ASN Kidney Health Initiative. I am the vice chair for the Academic Senate Committee on Research and serve as president of the Medical Advisory Executive Advisory Committee at the local National Kidney Foundation. I have led the charge around provider and community education and community outreach through scientific symposia and CKD screening. I have received several awards, including the National Kidney Foundation (NKF) Medical Advisory Board Distinguished Service Award for my many years of dedication to the NKF at the local and national levels and the Minority Access, Inc. National Role Model Faculty Researcher Award. I have mentored students, postdoctoral researchers, fellows, and junior faculty, and I serve as director or co-director of NIH-funded fellowship training programs. I am the 2022 president-elect for Women in Nephrology, which has provided education and mentorship for nephrology trainees and faculty since 1983. Through my research, I have established collaborations locally, nationally, and internationally. I have published more than 100 original papers, reviews, and book chapters in the areas of diabetic kidney disease, hypertension, and health disparities, and I have presented more than 130 abstracts at scientific meetings. I have been a reviewer for grants from several federal and private organizations and serve on the editorial board for the *American Journal of Nephrology* and the *American Journal of Kidney Diseases*.

Tagbo Herman Roland Niepa, Ph.D.

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Research Interests

My laboratory (The microBiointerface Lab) focuses on the interactions of microbes with biological interfaces. My research involves the design of a confined system to grow cells that are unable to be cultured in laboratory conditions. Less than 5 percent of known microbes can be grown in the laboratory, preventing us from studying microbiomes implicated in our daily life. Oral and gut microbiomes, known to harbor hundreds to thousands of beneficial species, can be disrupted by microenvironmental changes, leading to unbalanced interactions promoting plaque-biofilm formation, dental caries, periodontal diseases, diabetes, cancer, sepsis, and even death. Similar trends affect the environment; hence, I develop artificial microniches to understand and control ecosystems. In these bubbles, cells can be seeded in nanoliter volumes of culture media at rates of 100–300,000 nanocultures in 10 min. Each nanoculture is encapsulated in a polymer membrane and developed into synthetic microbial communities. Alternatively, multiple species can be co-cultured within the nanoculture. Chemical communication across the membrane allows us to study the effects of physical and chemical interactions between cells and investigate microbial pathophysiology. By mimicking human, marine, and soil microbiomes in nanocultures, patterns of microbial dominance and metabolism, specific to healthy and diseased environments will be revealed.

The second focus of my research incorporates aspects of chemical, environmental, and bioengineering, as well as molecular biology, electrochemistry, and material science to answer fundamental questions. This multidisciplinary research aims to establish how microbes evolve and can be controlled through physical and chemical insults. We are developing techniques to, first, eliminate harmful microbial communities (biofilms) associated with solid surfaces, such as medical implants, which have been found to be susceptible to low-level electric currents. A level of 500 microamperes, below the perception level of human skin, can disrupt the membrane of microorganisms. This current level could eradicate a population of persister cells at a concentration of 100 billion cells in 1 hour when the current was mediated with various electrode materials. Persister cells are a subpopulation of bacterial cells that are dormant, thus tolerant to antibiotics, and can recolonize an environment after antibiotic treatment with equal populations of normal and persister cells, thus maintaining chronic infections. My laboratory focuses on developing this technology into treatment for infection control.

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Research Interests

I am an assistant professor at Children's Mercy Hospital in the department of Pediatric Hematology, Oncology, and Blood and Marrow Transplant. Trained in both the Caribbean and the United States, I am experienced in producing high-quality research in both high- and low-resource environments, from epidemiological profiles of children with sickle cell disease completed during residency in Haiti to South Carolina, where I worked on multiple sickle cell disease projects. These ranged from a single-institution case series to multi-institution statewide clinical research, qualitative research investigating the perception of individuals with sickle cell disease on barriers to care, to basic science, with induction of δ-globin production by inhibiting lysine-specific demethylase 1 (LSD-1) in K562 cells. I have a strong interest in global health and sickle cell disease and plan to develop my research career investigating the intersection of sickle cell and infectious diseases.

Keith Norris, M.D., Ph.D.

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Research Interests

My research interests focus on the prevention and early intervention of chronic kidney disease (CKD) and CKD risk factors, mainly in African Americans. Other research areas include the role of vitamin D and oxidative stress in health disparities, and enhancing community–academic partnerships to improve health outcomes. I have extensive experience in patient recruitment and retention and community-partnered research within the South Los Angeles community. I was the CDU principal investigator for the NIH-funded African American Study of Kidney Disease and Hypertension (AASK) and the AASK Cohort Study. To date, AASK is the largest comparative drug intervention trial focusing on renal outcomes conducted in African Americans. With my community partner, I created the nation's first community faculty track at a medical school as a novel strategy to inculcate social determinants of health from a community level into research and health professional education. Much of my career has focused and continues to focus on health policy related to CKD and, more recently, examining health disparities using secondary databases. I am also active in mentoring from high school student to junior faculty levels.

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Research Interests

My research focuses on planning and evaluating evidence-based behavioral interventions for the prevention and management of chronic diseases, specifically diabetes and cardiovascular disease. I also have an interest in examining how psychosocial and environmental determinants of health behaviors (e.g., diet, physical activity, medication adherence) influence chronic disease prevention and management. Specifically, I am interested in the association between occupation, positive psychological well-being, and Life's Simple 7 among people with and without diabetes in the Jackson Heart Study. More recently, I became an investigator on a project providing nutrition education and cooking instruction to low-income families attending a midtown urban family practice clinic. Participants are patients with recently diagnosed type 2 diabetes or hypertension. The goal of this demonstration project is to show that a program of education, cooking instruction, and supervised practice in shopping for, selecting, and cooking inexpensive, healthy (non-processed) foods is feasible and acceptable and can lead to changes in knowledge, attitudes, and behaviors related to healthy eating.

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Research Interests

I am interested in clinical research and clinical trials. I have worked as a research associate and research assistant, collecting and analyzing clinical data on different projects in the past, including research on diabetes mellitus, acute respiratory distress syndrome, and hepatitis B. I currently am a nephrology fellow, and I am interested in and starting to work on a project on hyponatremia and research involving the kidney disorders.

Diana Obanda, Ph.D.

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Research Interests
I am interested in the role of functional foods and plant compounds in health and disease, with a focus on obesity-induced inflammation and insulin resistance. We use cellular and *in vivo* assays, spectrometry, bioinformatics, and molecular biology to identify pharmacologically active phytochemicals and nutraceuticals and to study their effects and mechanisms of action. Our clinical targets include metabolic syndrome, inflammation, and the gut microbiome.

Amie Ogunsakin, M.D.

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Research Interests
My focus is on obesity and the yet undetermined mechanisms, which may be implicated in the pathogenesis of nonalcoholic fatty liver disease in individuals who have insulin resistance and type 2 diabetes. Individuals with nonalcoholic steatohepatitis are at higher risk of death from cardiovascular disease. Currently, insulin resistance, obesity, and obstructive sleep apnea are associated risk factors for developing nonalcoholic fatty liver disease. There have been many mechanistic explanations, potential surrogate makers, and imaging techniques that have been employed. However, there is not a universally adopted consensus on a simple screening test for nonalcoholic steatohepatitis or the best approach in identifying and monitoring individuals at high risk for this complication of insulin resistance.

S. Michelle Ogunwole, M.D.

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Research Interests
I am an internal medicine physician, social epidemiologist, and health services and health disparities researcher. My research and clinical work focus on women's health throughout the life course, with special interest in the pregnancy and postpartum and interpregnancy health of Black women. Specifically, I am interested in three main topics: (1) the role of the general internist in managing chronic disease in the postpartum period, particularly for women with medically complicated pregnancies that confer elevated future cardiovascular risk; (2) African American women's experience with the health care system (specifically their experiences of racial discrimination) and barriers to follow-up after pregnancy; (3) quality improvement around transitions of care from obstetrics to primary care for racial and ethnic minorities who experience medically complicated pregnancies; (4) how health care policies specifically related to Medicaid expansion can improve maternal health outcomes and reduce disparities; and (5) community-based doula and community health worker interventions to improve maternal health outcomes.

Tatiana Nunes de Oliveira, M.D.

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Research Interests
My research interests are in the area of neurology, more specifically in epilepsy and its associations with other nosologies. My goal is to study the association of epilepsy and cerebral palsy, as a side complementary study of a bigger longitudinal study that is already funded—called Cerebral Palsy Adult Transition Longitudinal Study (CPAT)—of the Center for Gait and Movement Analysis, in Children's Hospital Colorado. The main work will focus on gait alterations, cardiometabolic syndrome due to inactivity, and nutritional changes due to the ketogenic diet often used for epilepsy control.

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Research Interests

My research focuses on (1) the effects of short- and long-term hyperglycemia on the integrity of specific organs and tissues, with a focus in identifying biochemical markers for early detection of complications associated with diabetes; (2) the hypoglycemic and hypolipidemic properties of some medicinal plants in animal models of diabetes; (3) the effects of medicinal plant preparations for the treatment of type 2 diabetes (T2D) using *in vitro* models; (4) how thermotherapy affects miRNA and HSP70 gene expression in healthy and T2D human skeletal muscle cell line models; and (5) how thermotherapy influences markers of oxidative stress and inflammation.

Elimelda Moige Ongeri, Ph.D.

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Research Interests

My research investigates cellular and molecular mechanisms underlying the progression of diabetic kidney disease (DKD) in mouse models and human patients. This has led me to study health disparities in DKD. My specific focus is the role of meprin metalloproteases in kidney injury. Meprins are most abundantly expressed in the brush border membranes of proximal kidney tubules. Meprins translocate to the cytosol and basolateral compartments and enhance kidney injury in ischemia reperfusion. Meprins also have emerged as susceptibility genes in DKD. Single-nucleotide polymorphisms (SNPs) in the meprin beta gene were associated with DKD in the Pima Indians, a United States ethnic group with extremely high prevalence of diabetes and DKD. Our work has demonstrated glomerular expression of meprins in mice with streptozotocin (STZ)–induced type 1 diabetes but not in nondiabetic controls. In another study, we showed increased urinary meprin excretion in diabetic African American men. More importantly, meprin levels in urine positively correlated to the level of kidney injury as determined by the urinary albumin-to-creatinine ratio. My work on health disparities in DKD seeks to identify biomarkers associated with susceptibility genes in minority ethnic populations with high prevalence of DKD and to determine the suitability of such biomarkers for early diagnosis of DKD. I also am collaborating with colleagues in nanoengineering to develop ultrasensitive biosensors (based on the unique biomarkers) for diagnosis and evaluation therapeutic outcomes in DKD. Because diabetes is such a multifaceted disease, I also partner with community engagement experts to increase health literacy regarding DKD among African Americans. A recent study by my group demonstrated that a significant number of diabetic patients at a large community clinic in the city of Greensboro, North Carolina, have undiagnosed kidney injury. A majority of these patients are uninsured or underinsured. Our goal is to partner with regional community clinics to mount educational outreach to increase health literacy pertaining to diabetes and DKD. This would make patients better advocates for their own health and slow the progression to end-stage renal disorder. This work is done in partnership with faith-based communities and employs culturally and gender-sensitive approaches that work for the African American community.

We recently have commenced studies to understand how meprins may modulate the pathophysiology of neurodegenerative diseases, such as Alzheimer's disease (AD). Meprin substrates involved in the pathogenesis of AD include the amyloid precursor protein (APP) and triggering receptor expressed on myeloid cells 2. Processing APP into amyloid-beta peptide (Aβ) is a key step in AD pathogenesis. Meprin β cleavage of APP results in the formation of highly aggregation-prone, truncated Aβ2-40/42 peptides, suggesting that enhanced APP processing by meprin β contributes to a severe AD pathology.

Rudy M. Ortiz, Ph.D., M.S.

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Research Interests
In general, our laboratory is interested in pursuing questions around the shifts in substrate-level metabolism that are associated with perturbed conditions, such as prolonged fasting, chronic caloric restriction, and hyperphagia as they relate to potential risk of cardiovascular and metabolic diseases. Similarly, we have a profound interest in elucidating the potential health benefits of functional foods as assessed through controlled clinical interventions, especially in young adults. At a cellular level, we are fascinated with the effects of impaired lipid metabolism, especially at the level of the liver and the potential impacts of this dysregulation on cardiovascular and renal function. We are interested in the contributions of AT1 signaling on hepatic and adipose lipid metabolism and the factors that alter mitochondrial function as related to Nrf2-mediated signaling and redox biology. We also recently have adopted -omic approaches to help us better identify novel signaling pathways and networks associated with our interventions and perturbations.

Patrick Osei-Owusu, Ph.D., FAHA

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Research Interests
The overall research focus of my laboratory is to understand the role of G protein signaling regulation in health and disease. Specifically, we seek to understand how G protein regulation by regulators of G protein signaling proteins are altered in the regulation of blood pressure and kidney function. Currently, one project is to investigate the etiology of hypertension and renal dysfunction resulting from the deficiency of the extracellular metric protein, elastin. Although elastin deficiency in implicated in stiffening of conducting vessels, including the aorta, carotid, and femoral arteries, the mechanisms by which the loss of extracellular proteins translates to altered signaling at the cellular level are not known. We have initial data indicating that cell signaling defects in vascular smooth muscle and sodium handling by the renal tubular system may be involved in the augmented blood pressure and abnormal kidney function because of elastin insufficiency.

Antwi-Boasiako Oteng, Ph.D., M.S.

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Research Interests
My research interest is focused on nutritional metabolism and molecular physiology as related to chronic metabolic diseases, such as obesity, insulin resistance, and diabetes. These metabolic abnormalities are intricately linked and may arise from obesity due to an imbalance between energy intake and energy expenditure. Therefore, I have been involved in basic studies that investigate how different food macronutrients, particularly lipids, set up metabolic abnormalities, as well as the molecular pathways and targets that are involved and that could be targeted to reverse such metabolic diseases.

Currently, my research has been focused on the heterogeneous class of metabolites called bile acids. Certain species of bile acids are elevated in obese individuals and in persons with metabolic and liver diseases, suggesting that such bile acids may have a causal role in the development of metabolic syndrome. Therefore, using a humanized mouse model, I am investigating the role of modulated bile acid metabolism in metabolic diseases.

Roland Owens, Ph.D.

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Research Interests
I received my bachelor's degree in biology from the University of Maryland, Baltimore County (UMBC), and my Ph.D. in biology from Johns Hopkins University. I began my career at NIH as a National Research Service Award Fellow in the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development. In 1988, I received an Intramural Research Training Award in the NIDDK. I became a principal investigator in NIDDK in 1992 and was tenured in 1998. My research focused on adeno-associated virus type-2 (AAV2). My group's 1994 paper "Adeno-associated Virus (AAV) Rep Proteins Mediate Complex Formation between AAV DNA and Its Integration Site in Human DNA" (*Proc. Natl. Acad. Sci. USA*) has been cited more than 250 times. I am a co-inventor on two patents involving AAV2 gene therapy applications. I served on the editorial board of the *Journal of Virology* from 1997 to 2002, and I was a member of the NIH Central Tenure Committee from 2000 to 2002. I am active in mentoring minority scientists, and in 2002 I was selected as Mentor of the Year by the UMBC Meyerhoff Scholarship Program. I became an assistant director of the NIH Office of Intramural Research (OIR) in 2008. My primary duty is to facilitate and enhance principal investigator recruitment within the Intramural Research Program. As a logical offshoot of this primary duty, I am the principal OIR senior staff member responsible for promoting diversity and inclusion in the biomedical research workforce. I also coordinate an annual course for new tenure-track principal investigators titled, "How to Succeed as a PI at the NIH—Leadership and Management Skills." In 2010, I won an NIH Director's Award for co-leading the NIH-wide Earl Stadtman tenure-track investigator search. In 2011, I won an NIH Merit Award "in recognition of the exemplary support to NIH Leadership's establishing diversity programs."

Arthur Owora, Dr.P.H., M.P.H.

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Research Interests

I am an applied biostatistician and quantitative epidemiologist by training. My teaching and research interests are at the interface of biostatistical methodology and how it is used to solve public health problems supported by epidemiological concepts of causality. Much of my work to date has focused on maternal-child health issues, including but not limited to, the measurement of psychiatric disorders (e.g., maternal depression), modeling of developmental origins of disease/health in children (e.g., childhood obesity and asthma), and HIV/AIDS in both the United States and sub-Saharan Africa.

Mukoso N. Ozieh, M.D.

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Research Interests

The focus of my research is to reduce and eliminate health disparities in African American adults, focusing on individuals with coexisting type 2 diabetes mellitus and chronic kidney disease (CKD), diabetic kidney disease (DKD). I am particularly interested in developing novel interventions that address social risk factors in African American adults with DKD, especially individuals living in the inner city. I am a diversity supplement and Clinical and Translational Science Institute–mentored career development (KL2) award recipient. The goal of my KL2 project was to understand the challenges faced by African Americans living with CKD and to examine barriers and facilitators to genetic testing. The preliminary findings from the KL2 proposal led me to shift the focus of my research to understand the role of social risk as a barrier to self-care with a goal of developing a culturally tailored intervention (1) founded on patients' lived experiences and (2) that addresses social risk to improve clinical and patient-centered outcomes.

Betty Pace, M.D.

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Research Interests

I am a professor of pediatrics, Francis J. Tedesco Distinguished Chair, and Interim Chief of the Pediatric Hematology/Oncology Division. I provide leadership for a National Institutes of Health–funded basic research laboratory, focused on studies related to globin gene regulation and the design of drugs to induce fetal hemoglobin to treat sickle cell disease. In 2010, I joined the faculty at Augusta University as Professor of Pediatrics with a joint appointment in the Department of Biochemistry and Molecular Biology, and I am a member of the Augusta Sickle Cell Disease Research Center. I am the Director of the Pediatric Sickle Cell Program, which provides medical services for 700 children at the Children's Hospital of Georgia in Augusta and rural South Georgia outreach clinics. I have maintained an active training program since 1994, providing opportunity for more than 75 trainees, the majority underrepresented, at the high school, undergraduate, graduate, postdoctoral, and junior faculty levels. I also provide leadership for a national National Heart, Lung, and Blood Institute–funded training program—Increase Diversity for Individuals Engaged in Health-Related Research—in which more than 76 junior faculty across the United States have participated. I have dedicated more than 20 years to increasing the diversity of the biomedical research workforce to improve delivery of culturally sensitive medical care. I received the 2017 American Society of Hematology Award for Leadership in Promoting Diversity.

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Research Interests
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Transition metals and cell differentiation—My laboratory is investigating the biological roles of transition metals—such as Cu, Zn, Co, and Mn—in the development of mammalian cells. Metals play many critical roles in biology as cofactors for a variety of enzymes that are necessary for energy production, tissue maturation, signal transduction, and oxidative stress resistance. Metal homeostasis requires chelation by high-affinity binding molecules, transport, and sensing by transcriptional regulators to maintain low levels of free metals, because free metals participate in different toxic reactions. How organisms acquire these micronutrients and how they distribute them to specific cellular compartments or target proteins are subjects of intense scientific interest. Moreover, little is known about how metals and the proteins that handle and distribute them participate in processes that regulate normal growth and development. Eukaryotic genomes encode a wide variety of metal transporters and metalloproteins. Although their biochemical and metal-binding properties are relatively well understood, little is known about the fine-tuned regulation of their expression, specificity for metal transport, and the redundancy of functions in the context of cell differentiation and development.

Copper: one ion, different cellular destinations—My laboratory conducts systematic studies that combine a variety of molecular and cell biology techniques into biological models, including established cell lines and primary cultures. We incorporate diverse biochemistry techniques and combine them with high-resolution, cutting-edge, synchrotron-based X-ray fluorescence spectroscopy. In particular, we study skeletal muscle differentiation, because muscles present an elevated intrinsic need for transition metals, such as Cu, for proper function. This ion is required for mitochondrial energy production as a fundamental component of cytochrome c oxidase, which is elevated during the course of differentiation. We hypothesize that the proper cellular distribution of Cu+ has a leading role in the differentiation of the muscle lineage. We have evidence that supports different cellular roles for Cu, in addition to energy production. Moreover, we hypothesize that diverse, devastating myopathies are associated with Cu deficiencies at different levels, from mitochondrial Cu transport and function to general cellular failure in Cu homeostasis and gene regulation. We hope to provide novel molecular mechanisms that help us understand the basis of muscular phenotypes observed in mitochondrial myopathies and also in Menkes' and Wilson's disease patients.

Dolly Padovani-Claudio, M.D., Ph.D.

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Research Interests

The primary goal of my laboratory is to understand triggers to diabetic retinopathy onset and progression and to identify novel therapies for diabetic retinopathy (the leading cause of blindness in working-age adults). We study processes at the intersection of metabolic dysregulation, inflammation, and vascular growth in the retina. We use validated *in vitro* and *in vivo* models that reproduce specific retinopathy-associated cellular behaviors. We are particularly interested in investigating the role that glial-derived chemokines and growth factors play in the modulation of retinal angiogenesis. In addition, we are using the Synthetic Derivative, Vanderbilt's BioVU genomic databank–associated de-identified medical record system, to develop and validate cohorts of patients with progressive stages of diabetic retinopathy to investigate associations between polymorphisms in specific chemokine and growth factor families with susceptibility, progression, and response to current therapies in diabetic retinopathy. Ultimately, we would like to develop individualized medicine approaches to retinopathy diagnosis and management and identify existing drugs that can be repurposed to prevent, abort, or revert angiogenic retinopathies.

Ivana Parker, Ph.D., M.S.

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Research Interests

I am interested in using a systems immunology approach to investigate links between gut dysfunction and inflammatory signaling pathways. I plan to use computational models to characterize immune cells of patients with digestive disease and discover connections between these diseases. Using proteomics analysis, I plan to characterize protein signaling pathways in people who have digestive disease. I also plan to identify biomarkers that make diagnosing digestive disease and subsequent systemic inflammation easier for patients and doctors. Additionally, I am interested in applying computational models to better understand antibody maturation in patients who acquire HIV while taking preventive antiretroviral therapy (also known as pre-exposure prophylaxis, or PrEP). This is an emerging field with limited patient samples, and my time at the Centers for Disease Control and Prevention has shown me that there is a need for additional ways to analyze viral replication, especially in the presence of antiretroviral drugs.

Christian Parry, Ph.D.

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Research Interests

My primary research interest is investigating pediatric blood disorders. The goal of my current project is studying the bioinorganic chemistry (the role of host factors and the effect of iron and oxidative stress) in sickle cell disease (HbSS) and sickle cell trait (HbAS). Interestingly, sickle cell disease inhibits HIV progression. We have demonstrated previously the role of cellular protein phosphatase 1 (PP1) in HIV-1 transcription and replication. Nrf2 is an important cellular protein that is expressed under oxidative stress. Nrf2-mediated heme oxygenase 1 expression is an important antioxidative mechanism. How do host factors PP1 and Nrf2 respond to iron (and iron chelators)? Iron and oxygen form an intricate link important in signaling and necessary for life; however, excess iron and oxidative stress are harmful. Iron is tightly regulated in humans. About two-thirds of the body's iron supply is stored in hemoglobin molecules, and the rest is stored in macrophages in the liver, bone marrow, and spleen; excess iron is stored in ferritin batteries. Iron stores are important in viral replication. As part of this research, we shall design and optimize newer iron chelators with fewer side effects to modulate iron levels in sickle cell disease and for treatment of iron overload, and small-molecule inhibitors targeted to disrupt the virus-host interface as a new class of antiviral therapies. My interest in sickle cell research is a natural step for me given my prior work: elucidating the basis of fetal-maternal alloimmunity and determining the structure of large molecular complexes in red blood cells and the molecular basis of juvenile diabetes. I draw on a multidisciplinary approach. I also am carrying out structural characterization and proteomics studies of Marburg and Ebola virus proteins toward developing small-molecule inhibitors as therapeutics against these zoonoses.

Francisco Pasquel, M.D., M.P.H.

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Research Interests

I am interested in diabetes technology; cardiometabolic diseases, including diabetes; and nonalcoholic fatty liver disease. My current research is focused on metabolism during stress in patients with heart disease. I also am interested in disparities in diabetes care. During COVID-19, some of my research has focused on understanding transformations in diabetes care (remote glucose monitoring, telehealth) and outcomes research in patients with COVID-19 (diabetic ketoacidosis, heart disease).

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Research Interests

The primary goal of my work is to decrease the prevalence and improve treatment of diabetes and diabetes-associated diseases among underserved populations in the United States. I am the founder and director of a community-based diabetes prevention program for Latinos in Colorado. I am also the chief of endocrinology for Denver Health and head of the Denver Health Diabetes Quality Improvement Collaborative. Recent research projects have focused on identifying factors that predict success in the diabetes prevention program and health services research focused on diabetes management.

Oscar Perez, M.D.

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Research Interests
Nonalcoholic fatty liver disease (NAFLD) is the most prevalent cause of chronic liver disease in the western world. It has been reported that the disease affects 10–30 percent of the general population in the United States and up to 70 percent of obese adults and 50 percent of obese children. Multiple risk factors—such as obesity, hyperglycemia, insulin resistance, and dyslipidemia—are highly implicated in the pathogenesis of the disease. At the molecular level, excess free fatty acids in the liver have been shown to alter multiple biochemical pathways of the mitochondria and peroxisomes that result in the overproduction of reactive oxygen species (ROS), thus causing oxidative stress. The role of oxidative stress in the pathogenesis of NAFLD is highly documented, making this process a good target for pharmacological intervention with partial success in clinical trials by using free radical scavengers (FRS). Recent reports indicate that a more effective alternative to combat oxidative stress is by stimulating the endogenous enzymatic antioxidant system of mammalian cells instead of using FRS. This endogenous system is composed of a broad network of enzymes that dynamically respond to unfavorable environmental conditions for the prevention and repair of oxidative damage. Nrf2 is the transcription factor that is considered the master regulator of this antioxidant system, and an extensive body of research indicates that the Nrf2 pathway is an important target for preventing NAFLD. Specifically, Nrf2 knockout mice develop diet-induced steatohepatitis versus wild-type animals, and inducing an increase in the activity of Nrf2 is a good strategy to prevent or treat NAFLD *in vivo*. Studies with multiple animal models have shown that activating the Nrf2 pathway is a great strategy to counteract oxidative damage; thus, multiple research groups and pharmaceutical companies are developing compounds that interfere with the endogenous degradation of Nrf2. Recently, we discovered a novel way to increase the activity of Nrf2 by stimulating its translation. More importantly, we developed a biosensor reporter system (issued patent) that facilitates the identification of compounds that promote the translation of Nrf2, which has allowed me to identify natural compounds that stimulate its translation. Also, previous reports by others indicate that these compounds prevent NAFLD in animal models. I see great potential in the pharmaceutical development of compounds that activate the Nrf2 pathway but am taking an alternative approach based on increasing the translation of Nrf2, rather than inhibiting the degradation of Nrf2. I believe that this approach will allow the identification of compounds with very low toxicity compared with the best inhibitors of the protein that controls the degradation of Nrf2.

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Research Interests
My research focus is on addressing disparities in kidney disease. I have a particular interest in addressing barriers with the completion of the transplant evaluation process. I am evaluating the quality of social support received by kidney transplant candidates and recipients in efforts to redefine and implement patient-centered programs targeted toward addressing the barriers influencing disparities.

Ariana Pichardo-Lowden, M.D., M.Ed., M.S.

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Research Interests

The overarching goal of my research work is to improve quality of care and outcomes of patients with diabetes mellitus through the implementation of best practices. Diabetes has a worldwide impact, and its care poses a large economic burden in the inpatient and ambulatory settings. Dysglycemia is quite prevalent in the hospital and is associated with increased morbidity and mortality. My research focuses on a system-based intervention to address gaps in the management of diabetes and dysglycemia among hospitalized patients and in the transition of care. This work is inherently translational and employs advanced health informatics principles, using electronic health records to promote and test standards of diabetes care. Through the implementation of our validated diabetes clinical decision support tools, we have assessed the impact of clinical decision support on hospital glucose management, documentation, case recognition, and continuity of care domains. This NIH-funded program demonstrated improvements in glycemic care among hospitalized patients and a reduction in hospital length of stay. Our multidisciplinary investigative team continues advancing toward a comprehensive assessment of clinical decision support on clinical, economic, and practice performance outcomes.

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Research Interests

The overall goal of my research is to understand the cellular and molecular mechanisms that contribute to proximal tubule cell death during acute kidney injury (AKI) and, more recently, in models of renal fibrosis. Our laboratory is examining the role that increased lipotoxicity plays in the pathogenesis of proximal tubule cell death and tubulo-interstitial fibrosis. We use both *in vivo* and *in vitro* models of ischemia reperfusion and cisplatin-mediated AKI, as well as unilateral ureteral obstruction. Our studies support the notion that PPARalpha, a nuclear receptor transcription factor expressed in the proximal tubule and also in pericytes, serves as an important metabolic sensor for lipid homeostasis, and when stimulated by either a ligand or by using transgenic mice, we find that PPARalpha mediates cytoprotection by reducing the accumulation of neutral lipids. I have served as the program director of the T32 Nephrology Training Program for the last 5 years at the University of Arkansas, where I serve as mentor for several postdoctoral fellows in our laboratory, some of whom have been promoted to junior faculty positions. I renewed the UAMS T32 Training Grant in Nephrology through 2017. I also have served as member of the American Society of Nephrology Acute Kidney Injury Advisory group for the last 4 years. I was a regular member of the Pathobiology of Kidney Disease study section at the NIH until 2011, and I serve on the editorial board of Kidney International. Currently, I serve as regular member of the DDK-D NIH study section that reviews T32 and K awards.

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Research Interests
My interest in research began early in my career. During my residency as a dermatologist in Mexico City, I began studying patients with cutaneous autoimmune conditions, especially patients with cutaneous lupus erythematosus. I worked for 2 years at the Northwestern University Department of Dermatology, where I participated in multiple trials, including NIH grant trials for patients with psoriasis, atopic dermatitis, and cutaneous lymphoma, among others. At the moment, I am working as a fellow at The State University of New York, Buffalo, in the Department of Dermatology, where I am writing several NIH grants, and I am trying to develop a cohort of Mexican patients with pemphigus vulgaris. Also, I am being mentored by Dr. Martha Daviglus (from the University of Illinois Chicago and Northwestern University) in epidemiology among Hispanics. Therefore, I want to develop my knowledge in epidemiology to conduct studies with Hispanics, a population that is extremely affected with metabolic syndrome, obesity, diabetes, and kidney disease.

Candice Price, Ph.D.

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Research Interests
My current research focuses on investigating the mechanisms by which consumption of sugar-sweetened beverages (SSB) increases risks for cardiovascular disease (CVD) and insulin resistance. Current studies apply the use of stable isotopes during a hyperinsulinemic euglycemic clamp for the measurement of hepatic and whole-body insulin resistance, as well as *de novo* lipogenesis and triglyceride synthesis under non-steady-state conditions. Additional outcomes include quantification of hepatic fat content using magnetic resonance imaging and fecal collections for the measurement of gut microbiome in response to SSB. As a Building Interdisciplinary Research Careers in Women's Health Scholar, I will extend my previous investigations examining metabolic differences between African American and Caucasian women to address gaps in knowledge regarding the elevated risk for CVD in African American women and understand the potential role of added sugar consumption. Specifically, current and future research studies focus on understanding the potential link between psychological stress and added sugar intake and the potential synergistic effects on metabolic function and risk factors for CVD and insulin resistance. Primary outcomes measures include metabolomic profiling, gut microbiome profiling, and microRNA expression.

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Research Interests
I investigate vascular function in bone in advanced age, health, and disease. I investigate endothelium-dependent and independent vasodilator responses of bone blood vessels to a variety of stimuli (i.e., agonists, pressure, and flow), skeletal perfusion and vascular density. We correlate these findings to changes in the skeleton following our interventions that altered vascular function.

Currently, we are investigating the following conditions and interventions on the bone vascular network and bone: intermittent parathyroid hormone administration, type 2 diabetes mellitus, aging, anti-pro-inflammatory treatment and bone marrow ablation.

Tanjala Purnell, Ph.D., M.P.H.

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Research Interests
I am a health services researcher and social epidemiologist with primary interests related to promoting patient-centered care and addressing multilevel determinants of disparities in health care quality, shared treatment decision making, and disease self-management for patients with chronic kidney disease, diabetes, and hypertension. I also lead the Johns Hopkins Center for Health Equity's educational and training initiatives for public health and clinical researchers working to advance health equity.

Bridgett Rahim-Williams, Ph.D., M.P.H., M.A.

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Research Interests

I am a minority health, health disparities, social and behavioral science, and applied medical anthropology researcher. My research interests are in the areas of minority women's health and health disparities associated with chronic disease comorbidity. I have a special interest in diabetes self-management and the effects of chronic, comorbid pain on physical activity, functional mobility, and health-related quality of life.

As a principal investigator (PI), I have studied the self-management of type 2 diabetes among African American women and health care providers. Moreover, I have conducted pilot research using innovative and novel games for health (exergaming) methodologies to investigate ethnic group differences in pain, physical activity, and functional mobility among women with knee osteoarthritis. The pilot was funded by the NIH's National Institute on Aging, under a minority supplement through the University of Florida Claude D. Pepper Center on Aging and Geriatric Research. Additionally, my research in women's health has included collaborating as a co-PI on an R01 study investigating Pharmacotherapy to Reduce Harmful Drinking in HIV-infected Women (Robert L. Cook, M.D., M.P.H., PI). As a pain researcher, I collaborate with leading pain scientists at the University of Florida, where I completed postdoctoral training in pain research and training as a scholar in aging research.

In developing my program of research, I have trained as a senior research fellow at the NIH, the National Institute on Minority Health and Health Disparities (NIMHD), and the National Institute on Nursing Research). In support of my research, I have received the highly competitive K22 DREAM Fellowship, funded by the NIMHD. My work seeks to inform clinical practice, community-based interventions, health education, and health promotion. I would like to make a valuable contribution to improving health-related quality of life and eliminating modifiable health disparities among minority women.

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Research Interests

My research is in developmental programming of type 2 diabetes (T2D). I study the effects of both maternal and paternal environmental chemical exposure on offspring obesity and glucose homeostasis. I previously have shown that maternal exposure to both polychlorinated bisphenyls and bisphenol A (BPA) adversely affect body composition and glucose homeostasis in a sex-specific manner. More recently, I have shown that paternal BPA exposure impairs glucose tolerance in offspring. Currently, my work investigates mechanisms by which intrauterine growth restriction leads to T2D in adulthood, with particular emphasis on beta-cell dysfunction.

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Research Interests

My research works on applying and developing ways of investigating the intersection of race, ethnicity, and gender and its implication for identity development, educational attainment, and health. I am particularly interested in the socialization among urban marginalized groups (e.g., Latino, African American, Asian, gay youth, PWD) as mediated by their relationships with significant individuals, as well as the micro- and macro-level structures and psychosocial experiences that influence their health, educational, and life-course experiences. My research is guided by the principal that sociocultural and historical context are important in the study of phenomenon. I also intend to examine the ways in which marginalized groups narrate, construct, and make sense of their identity. A secondary goal of this research is to examine more explicitly the impact of socialization practices on psychological and emotional and physical health, as well as academic engagement and achievement. Another important goal of this research is to contribute to the development of culturally appropriate and sensitive programming and policies that improve the outcomes (i.e., emotional, social, psychological, educational, health) of marginalized groups. I also pursue research on the efficacy of applied community-based positive development interventions in urban areas that target not just socialization, identity, life course, health and educational outcomes but also the reduction of specific problematic outcomes, such as alcohol and drug use in at-risk individuals. Currently in my position, I am working on the incorporation of my interests and previous research to diabetes education and management using an empowerment approach with culturally relevant constructs in a faith-based community setting.

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Research Interests

I am a nephrology fellow in the clinician–scientist track at the Icahn School of Medicine at Mount Sinai. I pursued a predoctoral research fellowship in parasitic diseases in the Alexander Von Humboldt Tropical Medicine Institute in Lima, Peru. I obtained my medical degree at the Universidad Peruana Cayetano Heredia, where I developed a strong interest in the acute kidney injury–chronic kidney disease conundrum. After relocating to the United States, I served as a postdoctoral research fellow at the University of Kentucky Medical Center. During my internal medicine training at Saint Louis University School of Medicine, I was a winner of the American Society of Nephrology Innovations in Kidney Education Contest 2018. I am currently a Master's of Science in Clinical Research student and a nephrology fellow at the Icahn School of Medicine at Mount Sinai in New York. I am interested in APOL1/biomarkers and the utilization of precision medicine to identify subphenotypes of disease and better treatment strategies.

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Research Interests

Our fundamental goals in the laboratory are to generate lead matter to dissect relevant biological pathways through the following mechanism: (1) identify unique natural products from terrestrial sources, (2) establish synthetic protocols for those molecules, and (3) evaluate their structure activity relationship and identify their biological targets through chemical biology experiments. These molecular probes are designed to provide basic mechanistic insight regarding mode of action through pharmacological evaluation at the cellular level first and later at the organismal level. Although chemical modifications can advance these compounds from hit to lead, our main objective remains at developing a better understanding of the biological system by using these natural products as chemical tools.

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Research Interests

I have worked for the past 13 years in the area of pharmaceutical outcomes research. I am currently a principal investigator in an internal grant that seeks to compare the effectiveness of dual versus triple antihyperglycemic regimens in cardiovascular and renal outcomes using a very large database of electronic medical records from UPMC (formerly known as the University of Pittsburgh Medical Center). In terms of collaborative research, I have published more than 25 manuscripts and book chapters and delivered more than 50 poster and podium presentations at national and international conferences. In my pharmacoepidemiologic studies, I have demonstrated that medication regimens for secondary prevention of morbidity and mortality of diabetes are not optimal. My work also has shown that racial and ethnic disparities in the management quality of patients with diabetes exist. These studies were developed using the National Health and Nutrition Examination Survey (NHANES). Finally, I have demonstrated the clinical effectiveness and economic value of clinical pharmacy services among patients with diabetes and cardiovascular and other diseases through retrospective studies and systematic reviews. I have gained expertise in using the National Ambulatory Medical Care Survey (NAMCS) to evaluate the trends in the use of opioids among adult patients admitted to the emergency department for kidney stones. Most recently, I became a co-investigator in a multicenter U.S. Food and Drug Administration–funded grant that seeks to identify the best communication strategies that could be used to achieve high vaccination rates for COVID-19 among racial and ethnic minorities in the United States.

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Research Interests
My program of research is focused on finding novel ways to transform the way care is provided to older adults managing chronic conditions by considering a patient's illness representation. Illness representation theory focuses on the individual patient's having a unique way of thinking about their diagnosed illness based on their individual lived experience, thoughts about health, and experience with friends or family who have had the same illness. An illness representation has several dimensions, including the patient's perception of the illness's consequences to their life and how much control they feel they have over the progression of the illness. I believe that by bringing illness representation information into the clinical environment, we can improve health outcomes for our patients through improved shared decision-making and care planning. Clinicians often have a goal of providing more patient-centered care, but the time constraints of a typical clinic visit can make it challenging to achieve. Knowledge of a patient's illness representation will provide the patient and the health care provider common ground to work from. By understanding a patient's illness representation, the health care provider can identify areas where a patient's perception of their illness is not aligned with disease realities or with their current treatment plan. Instead of broad health education, the illness representation information can identify opportunities for tailored disease-specific health and self-management education. Instead of a generic treatment plan, the illness representation information can identify which treatments or self-management goals are less likely to be adhered to due to an incompatibility between perception of the illness and the suggested treatment plan. My long-term goal is to transform patient care delivery by developing efficient patient-centered ways in which health care providers can both target specific needs and respect patient preferences based on their perceived illness reality.

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Research Interests
I am the Peter and Frances Georgeson Professor in Gastroenterology Cancer Research and consultant in gastroenterology and hepatology at the Mayo Clinic, where I am co-principal investigator of the Mayo Specialized Program of Research Excellence in Hepatobiliary Cancers, associate director of predoctoral programs in the Mayo Clinic Center for Clinical and Translational Science, and director for research at Mayo Clinic Alix School of Medicine.

My research focuses on basic molecular mechanisms of liver and biliary carcinogenesis; epidemiologic studies of environmental, lifestyle, and genetic risk factors for liver and biliary tract cancers; biomarkers for early diagnosis of liver, bile duct, and pancreas cancers; and prevention, diagnosis, and treatment of hepatitis, liver and biliary tract cancers. I have a particular interest in health disparities affecting immigrant African communities in the United States, as well as in Africa.

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Research Interests

I am a clinical scientist who aspires to contribute to the medical community by conducting innovative and clinical translational research. The objective of my research is to equip the members of the health care team with tools to provide personalized and optimal patient care. My clinical research is in the field of experimental and clinical translational pharmacology. My research goals are to optimize patient care through personalized medicine. My research interests are in cardiovascular and metabolic disorders using a multilayered approach of pharmacogenomics, pharmacokinetics, and pharmacodynamics to identify sources of inter- and intravariability in response to drug therapy. Another area of research interest is studying minority populations and investigating genetic markers that have predictive values in identifying disease risk and response to drug therapy.

My clinical and research interests include the pharmacotherapy of hypertension, hyperlipidemia, hyperuricemia, and gout. Specifically, my current research interests are focused on identifying the genetic basis of developing gout and gout risk management. Also, my research interest is to further elucidate the role of hyperuricemia and gout in the development of chronic kidney diseases, hypertension, and metabolic syndrome. Additionally, my research is investigating the role of urate-lowering therapies in delaying the onset or progression of chronic kidney disease.

Another research interest involves studying underrepresented populations that are prone to develop hyperuricemia and gout. This will help advance the research in general while learning new pathways for developing gout and hyperuricemia. Additionally, these studies also will assess the common comorbidities of gout, mostly hypertension, chronic kidney disease, and metabolic syndrome. The long-term goal of this research is to address health disparities across different racial groups. Ultimately, the knowledge of sources of variability in disease development and drug response is expected to optimize disease risk management and the selection of the right drug, dose, and frequency to the right patient to achieve the desired clinical outcomes.

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Research Interests

Role and regulation of microRNAs in the cardiometabolic dysfunction in Polycystic Ovary Syndrome (PCOS). Polycystic ovary syndrome (PCOS) is the most common endocrine disorder in reproductive-age women. PCOS women present higher incidence of cardiovascular risk factors, such as obesity, insulin resistance (IR), and dyslipidemia. Thus, there is an urgent need for better therapeutic options to treat cardiometabolic dysfunction in PCOS. MicroRNAs (miRNAs) are endogenous, small, non-coding RNAs that downregulate the expression levels of specific proteins. Several miRNAs are dysregulated in PCOS women. However, the role of miRNAs as therapeutic agents to treat the cardiometabolic dysfunction of PCOS remains largely unexplored. We use animal experimental models of PCOS to elucidate the role and regulation of the microRNAs in the cardiometabolic dysregulations in PCOS. Our goal is to elucidate the molecular mechanisms that mediate the cardiometabolic dysregulations in PCOS to design novel therapeutic approaches to abolish or mitigate the cardiovascular risk factors that lead to the increased incidence of major cardiovascular events in PCOS women.

Molecular mechanisms of aldosterone-mediated cardiac and renal injury and dysfunction. Excess aldosterone (ALDO) causes hypertension and cardiac hypertrophy, inflammation, fibrosis, and dysfunction. Primary aldosteronism (PA), the most common cause of secondary hypertension, is a human pathology characterized by the excess autonomous secretion of ALDO by the adrenal gland and is associated with severe cardio-renal damage. Despite the prevalence of PA and its deleterious consequences, the molecular mechanisms that mediate the onset and progression of ALDO-mediated cardiac and renal injury and dysfunction remain poorly understood. We use a variety of experimental models ranging from cells to whole animals and apply a range of molecular, cellular, and physiology techniques to elucidate the genes, pathways and networks modulated by excess ALDO. We aim to elucidate potential targets that we can manipulate to abolish or mitigate the deleterious cardiac and renal effects of excess ALDO observed in patients with PA.

Role of microRNAs in acetaminophen-induced acute liver failure. Acute liver failure (ALF) is characterized by severe and sudden loss of hepatocellular function in patients with previously normal liver function, leading, in many cases, multiorgan system failure and death. In the United States, drug-induced liver injury is the main cause of ALF, and acetaminophen (APAP) intoxication accounts for approximately 50 percent of the cases. Current therapies are suboptimal; therefore, alternative or complementary pharmacological interventions and therapies are desperately needed. We aim to identify miRNAs that could be pharmacologically manipulated to abolish or mitigate the effects of APAP-induced ALF.

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Research Interests

My main interest is in cation transport dysregulation in cardiovascular diseases, including hypertension, sickle cell, and diabetes. These studies have focused our research on two problems relevant to patients with diabetes and hypertension: (1) the role of cellular magnesium in the pathophysiology of cardiovascular disease, and (2) the role of aldosterone and mineralocorticoid receptor activation in vascular inflammation. My group has led the discovery of a novel mechanism for the rapid/nongenomic effects of aldosterone in vascular tissue using both *in vivo* and *in vitro* approaches. These studies show a prominent role for striatin, a caveolin-1 binding protein, in aldosterone-mediated oxidant stress and inflammation and formed the basis for our most recent NIH R01 grant award, entitled, "Aldosterone, Intracellular Leukocyte Magnesium, and Inflammation in Diabetes." This was an ancillary clinical trial that used a translational research approach to characterize the role of mineralocorticoid receptor activation in vascular inflammatory processes in patients with type 2 diabetes. A significant part of my professional activities also is devoted to mentoring junior faculty, fellows, and students at local, national, and international levels. To this end, I am a consultant for medical research and training institutes in Puerto Rico, Portugal, and Mexico. For my teaching and mentoring contributions, I was honored to receive the A. Clifford Barger Excellence in Mentoring Award at Harvard Medical School (HMS). I also direct a translational research summer program for medical students and recent medical graduates interested in minority health research and was humbled to receive the Harold Amos Faculty Diversity Award at HMS. These recognitions among the 11,000 HMS faculty members led to my appointment as a Scholar of The Academy at HMS, an institution established to advance excellence in education of physicians and scientists throughout Harvard, and my most recent recognition as a member of The Council of Mentors at Harvard, a group of distinguished faculty noted for their accomplishments and excellence in mentoring.

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Research Interests

At the University of Florida (UF), I participated in two long-term, interdisciplinary, community-based participatory programs, both of which had the mission to promote health and prevent disease in at-risk communities. My involvement in these initiatives included developing, implementing, evaluating, and disseminating findings of culturally sensitive interventions aimed to increase health-promoting behaviors and reduce health-risk behaviors in these communities. Additionally, the focus of this research was on understanding the relationship among these interventions (and its associated lifestyle changes) and health outcomes. The two programs of research that I was involved in with UF are the Culturally Sensitive Health Promotion Program and the Patient-Centered Culturally Sensitive Health Care (PC-CSHC) Research Program. The core aspect of the Culturally Sensitive Health Promotion Program was developing and testing the Health-Smart Behavior Program, anchored in Health Self-Empowerment Theory. Through participation in this program, community members learned to make healthy behavior choices over a series of meetings that included goal-setting, health and wellness education, and peer support. The PC-CSHC Program seeks to understand the association of patient-centered culturally sensitive health care and health outcomes (e.g., patient satisfaction and treatment adherence). This program also trains providers and health care administrators to increase their cultural sensitivity. My doctoral dissertation looked at the association of health literacy and health self-efficacy with engagement in health-promoting behaviors and treatment adherence in a sample of culturally diverse rural patients. Since 2014, I have partnered with the Harvard Medical School on the Effectiveness of DECIDE in Patient-Provider Communication, Therapeutic Alliance, and Care Continuation project (principal investigator: Margarita Alegría, Ph.D.). The purpose of this study is to learn more about how patients and behavioral health care providers interact to improve shared decision-making. Currently, I am writing a manuscript with Dr. Alegría titled, "The Association of Racial/Ethnic Patient–Provider Concordance and Treatment Continuation." In my time at the University of Denver (the last 8 months), my research has continued to concentrate on understanding the impact of patient-centered cultural sensitivity on treatment recommendations and treatment outcomes. I have partnered with Denver Health, Colorado's primary safety net institution, to develop and conduct two research projects: (1) Preferred Provider Cultural Sensitivity Indicators and Their Association with Perceived Quality of Care, and (2) Implicit Bias and Opioid Prescriptions at Emergency Department Visits. Additionally, I am a consultant for the Latino Community Foundation of Colorado on a project titled Colorado Latino Age Wave. This project supports the well-being of Latino older adults in Denver.

Sylvia Eleni Rosas, M.D., M.S.

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Research Interests

I am an associate professor of medicine at Harvard Medical School. I am the founding director of the Latino Kidney Clinic at Joslin Diabetes Center. I perform epidemiological research in the setting of chronic kidney disease (CKD), with a particular emphasis in cardiovascular and metabolic complications. I have been site principal investigator (PI) of multiple clinical trials in individuals with chronic kidney disease and end-stage renal disease. I am the PI for a recruitment center for the APOL1 Long-term Kidney Transplantation Outcomes (APOLLO) study and a multi-PI for a CKD recruitment site for Kidney Precision Medicine Project (KPMP). I was the site PI for the Prevention of Early Renal Loss (PERL) study, a randomized, controlled study of allopurinol in patients with type 1 diabetes, which recently was published in the *New England Journal of Medicine*. I am interested in the use of biomarkers and genes for the risk prediction of CKD and its complications. I am interested in increasing diversity in medicine and performing health disparities research. I am the president-elect of the National Kidney Foundation.

Omaima Sabek, Ph.D.

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Research Interests

Over the last 15 years, I have been involved with human islets isolation and transplantation. In our center, we have isolated human islets from more than 420 cadaver donors. I have designed and carried out experiments aimed at improving human islet recovery, engraftment, and functioning with emphasis on donor variables, isolation methods, and islet preservation. Moreover, we identified a gene expression profile that can predict islet function and studied those genes during 2 weeks of culture using microarray analysis. Identifying and validating those set of genes is very useful in developing a potency assay for screening human islet preparations before clinical transplant and the possibilities of devising strategies for improvement of post-transplant functionality. To improve islet engraftment and functionality, we used gene therapy, specifically islet transduction with TGFβ, VEGF, and/or IL1-β to test the hypothesis that those genes would result in improving islet vascularization (angiogenesis) and suppressing host-specific and nonspecific immune response. In the recent years, my interest has been to investigate the role and potential mechanism underlying the actions of the bone hormone osteocalcin in early diabetes.

Juan Sanabria, M.D., M.S.

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Research Interests

I have been involved in the ischemi-reperfusion injuries that occur to liver grafts prior to liver implantation of the graft. We have studies to ameliorate those injuries, and we are studying *ex-vivo* perfusions of liver grafts in a large-animal model in order to repair the graft and increase the number of organs available for transplantation. In addition, we are studying the metabolic changes that occur during the development of hepatocellular carcinoma (HCC) in patients with cirrhosis. We have identified metabolites and disturbances of the glutathione species as early biological markers of cancer development. Finally, we are conducting a randomized, controlled trial for the treatment of advanced HCC, testing transarterial chemoembolization versus stereotactic body radiation therapy in the downstaging of primary liver tumors with the end point of eligibility for liver transplant. Lately, we have explored the genomic patterns of gastrointestinal tumors, their associations with metabolic patterns and biological behaviors, and their significance for therapy.

Antonio J. Sanchez, M.D.

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Research Interests

I have a strong research interest in nonalcoholic fatty liver disease (NAFLD), a growing public health problem. NAFLD is a leading cause of cirrhosis and hepatocellular carcinoma. NAFLD patients may progress to nonalcoholic steatohepatitis (NASH), which leads to end-stage liver disease. The incidence of decompensated NASH cirrhosis is rising and is now becoming the leading indication for liver transplantation.

My current research is focused on better understanding the risk of disease progression and hepatic decompensation in patients with NAFLD. Based on data from our research cohort study at University of Iowa Hospitals and Clinics, we developed the Iowa NAFLD Decompensation Risk Model, a novel and easy-to-use clinical tool that incorporates simple variables (age, platelet count, and presence of diabetes) to identify patients with NAFLD at a higher risk of progression to cirrhosis and development of hepatic events. This unique tool helps clinicians identify NAFLD patients at risk for progression, allowing early interventions to prevent progression to cirrhosis and severe complications.

Clinical trials are the method of translating research into new medicines and treatments that can provide new and improved patient outcomes. We have a very active clinical research unit in hepatology; our goal is to better understand mechanisms of disease and therapeutic options for patients with NAFLD. Our aim is to prevent progression of liver disease and promote regression of liver fibrosis, improving patient outcomes.

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Research Interests
My research interests are the effects of somatic mutation in age-related diseases. I have worked in the field of molecular basis of aging and neurodegeneration for more than 18 years. I started my career in my home country, Colombia, as a research assistant for numerous research projects working with a multidisciplinary team characterizing the demographic, clinical, and genetic components of neurodegenerative disorders, especially Alzheimer's disease and mild cognitive impairment. Following my interest in the molecular basis of neurodegeneration, I focused on age-associated oxidative DNA damage in my graduate studies while I gained extensive experience in *in vitro* and *in vivo* models of neurodegeneration. My interest in the genomics of aging and neurodegeneration led me to join the laboratory of Dr. Rosa Rademakers at the Mayo Clinic, where I made my most significant contribution to the field, publishing more than 20 scientific articles on the genetics of atypical parkinsonism and primary tauopathies. Moved by the importance of DNA damage and somatic mutation in aging and neurodegeneration, I joined the laboratory of Dr. Scott Kennedy, a pioneer in accurate detection of somatic mutation, at the University of Washington in 2017, where I currently am implementing duplex sequencing to characterize age-associated somatic variation and the molecular mechanisms that regulate it. In my first original research project awarded by CurePSP, I studied the impact that oxidative damage in specific genes has on gene expression in progressive supranuclear palsy, Parkinson's disease, and Alzheimer's disease. My focus recently has expanded to the field of somatic mutation and aging. I currently am working on mouse models of aging, performing a multisystem comparison of age-associated somatic mutation in the mitochondria and in nuclear genes. My goal is to elucidate the molecular genomic changes that occur with age and why they predispose to specific and multisystemic chronic disorders, because I think this will advance the field of aging research.

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Research Interests
My research interests include studying kidney disease in children, particularly in neonates/infants. I have completed research investigating outcomes of neonates with end-stage kidney disease and am currently examining long-term renal outcomes in children with a history of preterm birth. I also am beginning to explore the relationship between inflammation and the development of kidney disease in children.

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Research Interests

I am a medical graduate from the University of San Carlos de Guatemala, Guatemala City. Currently, I work as a clinical research assistant at the Bone Marrow Transplant Unit at the Stanford School of Medicine. My current research focuses on adult patients with refractory/relapsed B-acute lymphocytic leukemia and acute myeloid leukemia patient outcomes post–hematopoietic cell transplant of the standard of care versus clinical trials. I have a research interest in hematologic diseases in lower-middle-income countries. I want to collaborate with physicians in the United States and other countries to promote research regarding hematologic diseases in the underserved Hispanic populations. My career goal is to complete a residency in internal medicine and become an academic hematology-oncologist who excels in clinical research with a focused interest in hematologic disease and cancer cell therapies.

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Research Interests

My research interests currently focus on autoimmune thyroid disease. During my training, I investigated the mechanism of expression of thyroid-stimulating hormone and the regulation of thyrotrope function and thyroid hormone receptor expression. With this basic training in molecular biology research, I became interested in the genetic and epigenetic factors that predispose people to autoimmune thyroid disease, who composed a large part of my clinical practice as an academic endocrinologist. I have established collaborations within and outside of my institution to study the genetic and immunological processes leading to the development of autoimmune thyroid disease. I have actively participated in several grant proposals on these topics, resulting in a number of peer-reviewed publications.

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Research Interests

I am a physician–researcher whose work seeks to understand the causes of racial disparities, particularly for individuals with chronic kidney disease (CKD), and how we can ameliorate them. My scholarly work has drawn on my background in public policy, clinical medicine, and health services research. In one line of inquiry, I use large data sets and analytic techniques to examine how geography influences health care access and outcomes. I examine how neighborhood and regional factors influence access to transplantation and high-quality dialysis facilities. An additional line of work focuses on improving access and quality of care for patients with advanced CKD. In my NIDDK K23, I am developing and implementing an inpatient patient education and referral program for patients with advanced CKD. Building on fundamental tenets for high-quality care for patients with advanced CKD—early referral, patient-centered education, and interdisciplinary teams—the overarching goal of the program is to reduce barriers to informed decision-making about renal replacement therapy for African Americans.

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Research Interests

I currently am investigating the pharmacological inhibition of beta-oxidation and androgen receptor signaling in cancer. The research in my laboratory focuses on the molecular understanding of cancer lipid catabolism via CPT1A, a mitochondrial rate-limiting enzyme for beta-oxidation that I have found to be very abundant in hormone-dependent cancers. Specifically, I have developed effective measures of lipid catabolism in cancer cells and tied these metabolic findings to hormonal, biochemical, and immune-signaling pathways using human and mouse models. This research has led to the identification of novel nontoxic combinatorial therapies for advanced prostate and ovarian cancers. The implications of my research go beyond prostate cancer, because breast, endometrial, lung, colon, and pancreatic cancers are very lipid dependent, as well, expanding the significance of my work. Ultimately, my goal is to connect physiology and metabolism with behavior and lifestyle choices, which will affect longevity and health span.

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Research Interests

My ultimate goal is to utilize my knowledge and experience to carry out truly translational research focused on improving current kidney stone management and thus enhancing the quality of life for the rising percentage of the population with kidney stone disease. The primary research focus involves the pathogenesis of kidney stone disease. Nephrolithiasis, or kidney stone formation, is the most common disease of the urinary system and affects approximately 10 percent of North Americans. By far, the most common uroliths are calcium based, accounting for 80 percent of all stones and usually presenting in the form of calcium oxalate. Patients with known kidney calculi and positive urine cultures are treated preoperatively with antibiotics to clear infection as a prerequisite for surgery. Despite this, patients sometimes may demonstrate positive stone cultures. It is unknown how these bacteria interact with kidney stones. Recent work has demonstrated bacteria infestation of calcium-based stones. I am interested in investigating the process by which this occurs.

I also have an enduring interest in peristalsis, and I plan to focus some of my research efforts on identifying and better characterizing the specific cell population responsible for the initiation of peristalsis. In previous work, I have utilized biophysiological techniques to investigate contractility in human ureteral tissue and porcine tissue. My work also has focused on understanding the effect of ureteral stent placement on peristalsis. However, we do not currently have a comprehensive understanding of the peristaltic process. I plan to continue my work in this area by better elucidating the fundamental processes underlying the initiation of this activity and hope to utilize this improved understanding to tackle the dysfunctional ureteral contractions identified in phenomena ranging from congenital disorders, such as ureteropelvic junction obstruction, to iatrogenic aperistalsis seen after ureteral stent placement.

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Research Interests

My interest in diabetes and the diabetic foot ulcer started when I was a teenager growing up in South Carolina. Anybody who was diagnosed with diabetes knew that the worst was yet to come after such a diagnosis. Regular illness, loss of eyesight, and trouble with the eyes were all signs of a chronic disease that eventually led to an early death. Care of the feet was no concern or mentioned, because many people worked in the cotton fields, tobacco fields, or just outside in the elements. Later, as a registered nurse, the focus of the care of the diabetic person was primarily on the medications and the diet. I do not recall foot care being mentioned as a concern. There was always just one or two nurses who were the diabetic nurses, and again, the diet and medications were the major topics for patient education. Learning about giving self-injections was a lesson for some, as well. Most Southern dishes prepared were cooked using fat-back bacon, lard, lots of sugar and salt, and plenty of grease to make the food, like biscuits, taste better. It was a common occurrence for a diabetic to go through a diabetic coma, as if it were a "rite of passage" for being a diabetic.

After seeing family members go through these various aspects of their chronic disease of diabetes, the sores on the feet seem to always lead to the foot, but mostly the leg being cut off. Somehow, in my readings, I began to see articles written about the diabetic foot ulcer and how it affected Black people and their families. What was further interesting to me was seeing non–African Americans not have the same problems as African Americans. Scientists were writing that the diabetic foot ulcer is preventable! The writings of the Institute of Medicine pointed out the inequities of access to care for people of color and the reasons why African Americans health outcomes were so dire.

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Research Interests

My long-term research interests as a physician–scientist are to apply genetic and genomic analysis tools toward the goal of improving personalized medicine. During my career, I plan to study genomic dysregulation in the pathogenesis of human metabolic and kidney diseases while caring for urology patients. To that end, I am now undertaking residency training in urology at Northwestern University. During my Master's training in toxicology at Columbia University, I utilized biostatistical and epidemiological tools to investigate gene–environment interactions. This experience not only introduced me to the field of toxicology and molecular epidemiology, but also sparked my interest in epigenomic medicine.

My Ph.D. dissertation research at the University of Rochester focused on a combined comparative genomic and metabolomic approach to study hyperglycemia. I used wasp (*Nasonia*) venom to decouple sorbitol pathway activation from hyperglycemia *in vitro* to study sorbitol's relative contribution to the pathophysiology of diabetic glomerular disease *in vivo*. I am now primarily interested in investigating the impact of macro- and microenvironmental exposure on genetics and epigenetic regulatory mechanisms in urological disorders. After completing my residency training in urology, I plan to complete a fellowship in infertility and andrology, during which I will further my research into genomic determinants of genitourinary disease.

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Research Interests

My primary research interest lies at the intersection of kidney disease and diabetes, with the goal of improving clinical outcomes among racial and ethnic minorities, focusing primarily on the Hispanic/Latinx population. Nearly 15 percent of residents in Durham, North Carolina—where I practice—identify as Hispanic or Latinx, and this number is only growing. Patients of Hispanic/Latinx background are also disproportionately affected by kidney disease, of which the leading cause is diabetes. There are a number of evidence-based therapies proven to delay the progression of diabetic kidney disease, including the sodium-glucose cotransporter-2 inhibitors. My primary project aims to examine prescribing of evidence-based diabetic therapies in a large cohort of Hispanic/Latinx patients with diabetes to see if prescribing differs based on Hispanic heritage background or the risk of developing end-stage kidney disease (ESKD). Subsequently, I plan to interview physicians at Duke University who are most likely to encounter patients who would benefit from these evidence-based diabetes therapies to identify barriers and facilitators to prescribing. We hope to discover common and emergent themes from these in-depth interviews that will inform the subsequent development of a clinical intervention (e.g., decision support tool or educational curriculum) to optimize and enhance the prescribing of these evidence-based diabetes therapies to those who would benefit the most, which includes Hispanics/Latinx and other racial and ethnic minorities.

Another research interest of mine is the relationship between kidney disease and infectious disease. An ongoing project looks to evaluate how shifts in the phenotype of patients with ESKD on hemodialysis (HD) with concomitant *Staphylococcus aureus* bacteremia in addition to the molecular epidemiology of their bacterial isolates has affected clinical outcomes. To conduct this project, I am using a large, prospectively collected data set and biorepository that identifies and enrolls all eligible patients who present to Duke with *S. aureus* bacteremia. The database contains more than 25 years of clinical data, bacterial isolates, and DNA/RNA on more than 3,000 patients. The *S. aureus* bacterial isolates in the cohort have been genotyped, and particularly virulent strains of methicillin-resistant *S. aureus* have been identified as increasing in frequency within the ESKD patient population over time. In the same time period, we have noted worsening clinical outcomes, including metastatic complications and *S. aureus* bacteremia–attributable mortality among patients with ESKD on HD. My goal is to identify predictor variables of negative clinical outcomes with the goal of ultimately instituting measures to prevent or limit infections from the most virulent strains. I am particularly interested in this project due to the fact that racial and ethnic minorities are disproportionately affected by kidney disease, with 75 percent of the HD-dependent patients in the cohort identifying as African American.

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Research Interests

I am an experimental geriatric neuropsychologist by training. I also am a community-engaged researcher. My research focuses on psychosocial and environmental determinants of health behaviors and cognitive function in older African Americans. Specifically, I am interested in how objective and subjective indices of community health interact with health-promoting behaviors among community residents to influence cognitive function and cognitive aging in this population. To complement these interests, I also engage in academic-community research partnerships to develop health-promoting interventions to improve cognitive health in older African Americans and other underserved communities. This programmatic line of research may shed light on how specific community features independently relate to cognitive function and how these features interact with individual-level behaviors (physical activity, social activity) to influence cognitive function. Results from this research also may help inform neighborhood-level interventions aimed at improving cognitive outcomes in older African Americans and assist in the development of public health strategies for healthy aging in place.

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Research Interests

My research interests are focused on developing culturally relevant community-based interventions aimed at reducing cardiometabolic disease in minority youth. Community-based research strategies are critical for developing interventions that are culturally relevant, accessible, acceptable, and sustainable, which ultimately contributes to their effectiveness. To reach youth, it is critical that the family unit and their cultural values and norms also be a central focus of health-promotion efforts. Therefore, most of my work is delivered in community settings and targets the family in addition to the child. My more recent work focuses specifically on cardiometabolic diseases. This work focuses on identifying the risk factors that prelude diseases by working to identify the physiological determinants of obesity, insulin resistance, and type 2 diabetes in Latino youth and then implementing interventions to reduce these risk factors and improve health outcomes. Clinical measures and assessments of cardiometabolic risk factors in high-risk minority youth broaden my skill set to include collaboration with the clinical sector and assessment of the clinical manifestations of childhood obesity, allowing me to build a research program that bridges the translation gap from clinic to community.

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Research Interests
Currently, I am a postdoctoral researcher in the Postgraduate Program at the Department of Internal Medicine in the University of Iowa. My studies are in the laboratory of Dr. Sue C. Bodine, focusing on skeletal muscle plasticity. My research interests include understanding the signaling mechanisms that can induce either hypertrophy or atrophy. We are further interested in how diet, obesity, and aging affect growth and atrophy.

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Research Interests
During the past 5 years, my research focus has been and continues to be mitochondrial metabolism and thrombosis. Mitochondrial metabolism and thrombosis represents a unique niche with limitless potential for growth and development. Most mitochondrial biologists view platelets as insignificant cell fragments; similarly, most hematologists have only a rudimentary view of mitochondria as the powerhouse of the cell. Both camps are partially correct and incorrect. Although platelets are cell fragments, they perform complex signaling and play critical roles other immunological functions besides hemostasis. In addition to providing energy, mitochondria play a critical role in signaling and apoptosis. Diabetes, which is a metabolic disease, increases an individual's risk for cardiovascular diseases, one of its most common comorbidities. Platelet mitochondria are dysfunctional in the presence of type 2 diabetes mellitus (DM), thereby merging these two seemingly divergent fields. My research interest seeks to illuminate the unknowns in this precarious merger.

My ultimate career goal is to establish an independent research laboratory in thrombosis and metabolism. My undergraduate training introduced me to research, my graduate training introduced me to cardiovascular diseases, and my postdoctoral training gave me a research niche. Now, as junior faculty I have the subject, the training, the novelty, and the passion—but not the funding—to pursue this goal. Thus, as part of the NMRI, I hope to acquire the necessary grant-writing skills and professional development to become a competitive R01 applicant. Additionally, I think the NMRI would be invaluable in providing a roadmap for exploring and expanding my current research niche.

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Research Interests

My expertise in bacterial pathogenesis and my growing understanding of the effects of numerous factors on the gut microbiome motivate my interest in becoming a thought leader in gastroenterology at the interface of personalized medicine. More specifically, I ultimately endeavor to do R01-funded research on the gut microbiome and its role in human health and gastrointestinal disease. As my dissertation work was in neither anaerobic microbiology nor the study of the microbiome, a major focus of my postdoctoral work has been focused on expanding my current set of laboratory skills, learning *Bacteroides* genetics, and honing my rudimentary R programming skills to analyze microbiome data under the guidance of my mentor, Dr. Seth Rakoff-Nahoum. My work in the Rakoff-Nahoum laboratory synthesizes my prior experiences, sharpening my focus on mechanism and comprehensive analysis beyond phenomenology in the study of the microbiome. My current project seeks to understand how nutritionally derived glycans may modify antibiotic resistance among commensal members of the gut microbiome. By identifying which sugars alter resistance to specific antibiotics across bacteria (especially among *Bacteroides*—the predominant Gram-negative bacteria of the human gut), we may ultimately devise targeted antibiotic-specific prebiotic strategies to promote colonization resistance by the gut microbiome against opportunistic enteric infection.

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Research Interests

My research interests are dietary interventions and chronic disease prevention. My research is focused on polyphenol-rich foods, other functional foods, and their impact on the risk factors associated with metabolic syndrome (i.e., prediabetes, obesity, and hypertension) in populations that are at increased risk of developing type 2 diabetes and cardiovascular disease. Previous research findings in my laboratory have shown that consuming polyphenol-rich foods, such as blueberries, improved insulin sensitivity, endothelial function, oxidative stress, and inflammation in older adults with metabolic syndrome. The overall goal is to identify healthy foods that may help prevent or delay the progression of metabolic syndrome risk factors from developing into type 2 diabetes and/or cardiovascular disease.

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Research Interests
My research takes a multidisciplinary approach to understanding health disparities beginning in childhood. I have focused most of my work on the role of childhood adversities (i.e., violence, parental incarceration, maltreatment) and its effect on physical health outcomes across the life course. Currently I am the principal investigator of the Boricua Youth Study-Health, which examines the role of childhood adversity on cardiometabolic health among a cohort of young adults. I am also Message Passing Interface (MPI) of the Disparities in Biological Aging study, part of the Child Health and Development Studies. Within this unique cohort of adults followed from birth, we will examine the associations of childhood and adult socioeconomic status and social stressors on methylation age, genome-wide methylation and telomere length in adulthood. Thus, this work can extend our understanding on how stress "gets under the skin" to alter cardiometabolic health and other chronic health conditions. Understanding how childhood adversities affect cardiometabolic health can inform prevention and interventions for cardiovascular health promotion in childhood.

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Research Interests
My current research at the University of Washington focuses on the cellular aspects of aging kidneys and chronic kidney diseases. As a trained cell and molecular biologist, my particular emphasis has been on understanding how mechanisms of aging can result in directing both cell behavior and structural tissue remodeling in the kidney. Specifically, I use my training to study how the epithelial cells of renal glomerular filtration units respond to various injuries. I am interested in the mechanisms of when and how these responses either balance tissue homeostasis or result in fibrotic disease pathologies. Ultimately, I combine these interests to understand why renal homeostasis breaks down with age, resulting in aging glomerulopathy. Most recently, my work has contributed to the understanding of how diabetic induction of glomerulosclerosis is regulated via the Notch signaling pathway and to the prevention of age-induced glomerulosclerosis through the regulation of mitochondrial function.

Beyond my work in basic and translational science, I am committed to finding ways to provide research experiences to students who might not otherwise have access to the bench. I spent the first 3 years of my postdoctoral training at the University of Pennsylvania as a Research and Teaching Fellow through the NIH Institutional Research and Academic Career Development (IRACDA) scholar program. This program required the standard postdoctoral research commitment, as well as extensive time outside of the university teaching undergraduate- and graduate-level courses in primarily minority-serving institutions. During this time, I created a project designed to lead students in a traditional classroom setting through the biomedical bench research experience of hypothesis-driven experimental design and result interpretation. As I continue to develop my research career, I intend to also find ways to expand on this outreach experience through collaborations with other researchers and educators.

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Research Interests

My clinical research interests are in diabetes and obesity. I currently am working on developing an outpatient protocol for our Obesity Clinic at The University of Iowa on the role of very low-calorie diets for weight loss in select patients as a bridge to several surgeries, such as bariatric surgery, orthopedic surgery, and transplant surgery. I am interested in taking part in multicenter randomized clinical trials on the prevention of diabetes and obesity in adults, focusing on modifiable risk factors.

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Research Interests

My research interests range the spectrum of pediatric nephrology and are clinical in nature. I have worked to create a chronic kidney disease (CKD) clinic, because we realized in our institution that our preparation of our patients transitioning to dialysis was suboptimal and lacking. We began to institute increased education and preparation. We then collected our data to see how we can do a better job with our CKD patients, specifically with emergency dialysis starts. Through our changes, we have been able to better prepare our patients for renal replacement therapies and have decreased our emergent dialysis starts to zero.

I also have expanded my interests to our dialysis population, specifically with infection risk. I will join my other colleagues this year to work with our collaborative throughout pediatric nephrology. I also have an interest—which started during my fellowship—in the progression of CKD. Despite access to care, African Americans still progress to end-stage kidney disease faster than comparable cohorts. We hypothesized that the response to injury may be different and focused on wound healing. We have some preliminary data related to that project, and the work of analyzing the data has been ongoing.

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Research Interests

I am interested in ion channels and how their structure accounts for the diversity of their functional roles in the nervous system, as well as signaling in other cell types. Most recently, I have focused on cyclic nucleotide-gated (CNG) channels in rod and cone photoreceptors. I study channel function using patch clamp electrophysiology and then use structural modeling with molecular dynamics simulations to hypothesize how the structure accounts for the function. The channels are activated by the binding of cGMP or cAMP in a cytoplasmic domain of each subunit of a tetrameric channel. How is information about the binding communicated to the gating regions of the channel that regulates ion flow across the membrane? We collaborate with veterinary ophthalmologists who identified mutations in CNG channel subunits in dogs that result in day-blindness, an inherited condition similar to achromatopsia in humans. My laboratory focuses on understanding the molecular pathophysiology of the canine disease to provide insights about achromatopsia. Currently, I am at Yale University as associate director of STEM student success and am planning to submit an NIH Maximizing Access to Research Careers training grant for Yale to support undergraduates interested in biomedical research.

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Research Interests

I am a professor in the Department of Health & Human Sciences and an associate dean in the Frank R. Seaver College of Science and Engineering at Loyola Marymount University. I am formally trained as a molecular biologist (Ph.D. in molecular biology, Princeton University), epidemiologist (M.S. in epidemiology, University of California, Los Angeles) and bioethicist (master's degree in public affairs and politics from Rutgers University). I teach courses in nutrition, chronic disease epidemiology, obesity and behavior, public health, health and well-being in homeless communities, health services for marginalized populations, cancer survivorship, and medical bioethics.

My research interests connect epidemiology, exercise physiology, nutrition, and rehabilitation science to examine the effects of a combined aerobic exercise and resistance training program on the body composition of cancer survivors and on reducing the risk of type 2 diabetes mellitus, obesity-related kidney failure, cardiovascular disease, and osteoporosis among cancer survivors.

As an associate dean, my portfolio includes diversity, equity and inclusion, external grants and funding, faculty recruitment and hiring, student success, and faculty and staff professional development.

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Research Interests

My current research focuses on developing statistical methods to reduce measurement error biases associated with physical activity data obtained from devices in obesity studies among animal models and elementary school–aged children. As researchers work to understand the factors underlying obesity and metabolic health among children and adolescents, the data collected are becoming increasingly complex. As a biostatistician, I have developed methods to analyze complex data on topics ranging from radiation effects among atomic bomb survivors to physical activity assessments in animal studies and elementary school–aged children. In these studies, we found that current statistical methods do not adequately address measurement error, leading to potentially inaccurate conclusions. For example, in obesity studies of animals, we found that failure to account for measurement error associated with objective measures of energy expenditure led to a 75 percent attenuation in the estimated effects of energy expenditure. In our work on measurement error in radiation-dose assessments, we also found that the true effects of radiation dose were underestimated. These results illustrate that conclusions drawn from complex data prone to measurement errors often are inaccurate without appropriate statistical methods.

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Research Interests

My research theme focuses on cell cycle and circadian control of terminal cell differentiation with focus on adipogenesis. Terminal cell differentiation is crucial for developing, maintaining, and regenerating tissues in humans and all multicellular organisms. Fat cells (adipocytes), neurons, skeletal muscle cells, cardiomyocytes, and many other essential cell types are generated through terminal cell differentiation, Thus, understanding how to control terminal differentiation has significant therapeutic value. The overarching focus of my laboratory is to understand how to control terminal differentiation to maintain the dynamic balance between progenitor and differentiated cells that ensures healthy tissue development and prevents disease. For example, not maintaining sufficient progenitor cells to generate adipocytes to safely store lipids under conditions of caloric excess in adults can lead to metabolic disease. As an example of the importance of maintaining the progenitor–differentiated cell balance in development, the many neuronal and glial domains of the spinal cord are differentiated in an ordered sequence from the same progenitor pool, and early depletion of progenitors can lead to malformed, nonfunctioning tissues. My laboratory develops and uses quantitative systems biology approaches, including live single-cell imaging of fluorescent reporters, quantitative proteomics, and computational modeling. We have focused our studies on understanding adipogenesis because proper functioning of adipogenesis is critical for preventing metabolic disease, and several studies have shown the validity of using *in vitro* adipogenesis to understand the *in vivo* adipogenesis process that occurs in mice and humans. Furthermore, adipogenesis is fast and experimentally accessible, which gives it unique advantages as a model for understanding regulatory principles for terminal differentiation in general.

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Research Interests

My current research interest is increasing the awareness of chronic kidney disease (CKD) among Blacks. Although Blacks represent only 13.2 percent of the overall U.S. population, they constitute more than 35 percent of all patients in the United States receiving dialysis for kidney failure. The disparities in the numbers further underscore the need to address the problem of CKD with the targeted objective of increasing the proportion of persons with CKD who know they have or are at risk impaired renal function. Diabetes is the leading cause of kidney failure among African Americans, who are twice as likely to be diagnosed with diabetes as Caucasians. The potential disconnect among these patients, outside of the lack of focus on CKD prevention, may be tied to health literacy—the ability of patients to obtain, process, and understand basic health information and services needed to make screening and treatment decisions, affecting outcomes. This is associated with provider–patient communication, which often is brief and occurs during oral communications in rushed medical consultations. My research goal is to determine the feasibility of an mHealth program designed to address CKD, diabetes, and high blood pressure self-management adherence and increase health literacy surrounding CKD among a sample of African Americans with or at risk for CKD.

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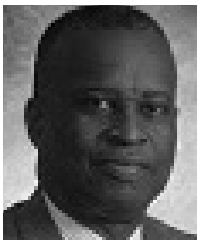
Research Interests

My research during the past 10 years has focused on health disparities and understanding the contextual factors that influence health outcomes among racially and ethnically diverse populations. In my research, I utilize community-based participatory research (CBPR) approaches to understand and address disparities among African Americans and Latinos, with a focus on diabetes prevention and management and the implementation of evidence-based research into practice. To investigate health disparities among underserved populations, I am developing three intersecting lines of research. First, I am interested in exploring how African Americans and Latinos interact with the health care system and what barriers they face to successful health care utilization and disease management. Second, I am focused on health delivery system redesign and understanding what individual- (e.g., race, gender) and systems-level (e.g., point of care) factors may hinder or facilitate the receipt of diabetes prevention services by patients who are at risk for diabetes. Third, I am dedicated to transforming research into action by engaging community and health systems stakeholders in adapting, implementing, and sustaining interventions that address health disparities. To address these issues, I employ qualitative, quantitative, and mixed methodologies to explore the disparities (e.g., racial, gender) in the health outcomes of those with or at risk for diabetes. These experiences have provided me with a foundation of knowledge and methods that will allow me to continue my career trajectory in health disparities and diabetes research while utilizing CBPR approaches.



Terry Thompson

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Research Interests

The concept of race has always played an important role in the psychology of the African American experience. In my own efforts to understand how African Americans continue to negotiate the problem of race, my research has focused on African American male health experiences encompassing race-related health disparities and the consequences of these experiences as they attempt to navigate a healthy life course. My research explores health behaviors, healthy outcomes, health messaging, and moderators of self-health behaviors (self-efficacy, self-care management, self-reported adherence, and self-esteem) all in the context of obesity, diet, and food insecurity in African American men who suffer from type 2 diabetes while having to cope with marginalization and enduring endless psychosocial adjustments to the health care system. To explore this issue, I have begun to examine how males approach their health care and the unhealthy behaviors that plague their existence on a daily basis. My research agenda is focused specifically on the nature, causes, and consequences of unhealthy lifestyles and how such behaviors impact the health life course of African American men. My future plans are to continue advancing the scholarship on understanding the scope of race- and socioeconomic status–related disparities of community-dwelling males across the life course—particularly those males suffering from type 2 diabetes.

In addition, for my continued research plans, I propose to undertake a randomized pilot trial to test the efficacy of a novel approach to obesity self-efficacy and patient-centered care as mediated by health messaging during physician–patient encounters in men suffering from type 2 diabetes. My hypothesis is that as researchers develop health-messaging interventions, barriers to therapeutic and behavioral adherence will be eliminated. This pilot study will generate preliminary information that will bolster our knowledge on how to effectively create a large-scale intervention that can address obesity, food insecurity, and self-efficacy and its limitations in African American men living in an urban environment. If effective, this potentially could have substantial implications for a reduction in health care costs. Results from this innovative pilot study will be used to provide effect sizes for subsequent K training awards and R01 applications to further uncover unhealthy behaviors in low-income African American men. Finally, because my work is consistent with the mission of the NIDDK, I am delighted about the potential opportunity to become a member of an outstanding research team.

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Research Interests

I have a wide breadth of expertise in working with communities and have been very active in addressing issues related to health disparities and sexual health among persons of color in the United States. I have extensive experience managing large-scale projects and working with diverse and interdisciplinary investigators. For example, for more than 8 years I served as co-principal investigator and co-director of the Institute for HIV Prevention Leadership. In this role, I leveraged resources across multiple organizations, managed a diverse and interdisciplinary staff, oversaw the curriculum for capacity building, and worked to ensure that project deadlines were met. I was a subcontractor on this project and worked with project staff and participants from across the country. I also served as the principal investigator of the Southern Nevada Teen Pregnancy Prevention Project, where I oversaw the implementation of an evidence-based HIV and teen pregnancy prevention intervention with African American youth among African American faith-based organizations. This project was funded at almost $2.8 million over 5 years.

Currently, I am a member of the Steering Community and co-chair of the Dissemination Committee for the National Maternal Health Research Network, which is funded by the Patient-Centered Outcomes Research Institute (PCORI). I am also on the advisory committee examining the impact of COVID-19 on maternal health. I am the University of Nevada, Las Vegas Community Engagement and Outreach Site Director for the Mountain West Clinical & Translational Research Infrastructure Network Project. I work with site directors across the 13 institutions of higher education that are a part of this project. In addition, I serve as a member of the Professional Development Curriculum Committee for this project.

Additionally, I am working with Nevada Partners, Inc., on the West Las Vegas Promise Neighborhood project. In this work, I am a member of the Healthy Children, Healthy Families, Healthy Community pillar, in which I provide research-based information about the health of residents in the community and potential strategies for addressing health issues. I am chair of the Data Committee. In this role, I have worked with the pillars and interns from the Center for Health Disparities Research to develop and implement an Institutional Review Board–approved community assessment tool for the West Las Vegas Promise Neighborhood. We also are drafting tools for assets mapping of services that are provided within the community related to all of the pillars. My work with the West Las Vegas Promise Neighborhood represents more than 5 years of work that I have done with Nevada Partners, Inc.

I also have experience with qualitative research. I worked for several years with the University of South Carolina to conduct focus groups regarding HIV risk among African Americans in Georgia, Florida, and South Carolina.

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Research Interests
I am a social epidemiologist and gerontologist who has significantly contributed to the understanding of how race, socioeconomic status, and segregation influence the health and well-being of African Americans. My most recent work focuses on improving the lives of Black men. I serve as principal investigator on several National Institute on Aging–funded grants: Stress and Mortality among Black Men Study, Stress and Longevity among African American Families Study, and the Johns Hopkins Alzheimer's Disease Resource Center for Minority Aging Research. I participate in several training programs designed to develop underrepresented minorities at many career stages.

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Research Interests
I currently am a Master of Health Science candidate at the Johns Hopkins Bloomberg School of Public Health. My current research interests span various topics, including investigating the effect of residual kidney function on aspects of morbidity, mortality, and its clearance of non-urea solutes; adverse drug events in chronic kidney disease; mitigating risk factors of mortality in the end-stage renal disease (ESRD) population; and social determinants of health in the ESRD population. I have a personal interest in kidney disease in Hispanic communities and populations.

Jasmine Tzeggai

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Research Interests

Broadly, my research interests align with my interests in working with the underserved and addressing the epidemic of chronic disease in our nation. In communities with limited health literacy and insufficient resources, research is essential to addressing patient needs efficiently and equitably. My hope is to engage in research that both identifies barriers to health equity and generates solutions to overcome these barriers. One avenue to improved health equity and outcomes is patient education. Chronic kidney disease affects one in seven Americans, but patients with this condition have considerable gaps in knowledge regarding the process of disease, associated negative health outcomes, and the importance of preventing disease progression. My current research goal is to facilitate patient understanding by engaging both patients and physicians using a patient-centered educational tool. By exploring the utility of this tool in an urban minority population, I hope to identify ways in which patient education and patient-centered care may improve the long-term health of undeserved patients.

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Research Interests

My current research focuses on the molecular mechanisms that underpin the tumor suppressor function of the Na/K-ATPase-α1/Src signalosome in the liver and how a dysregulation of this signaling complex in pathological states (such as occurs in nonalcoholic steatohepatitis [NASH]) works in tandem with surviving (anti-apoptotic protein) and Smac/Diablo (a proapoptotic protein) to create an oncogenic apoptotic switch that drives the progression of NASH to hepatocellular carcinoma (HCC) in cells, murine models, and human subjects. This study also involved a therapeutic normalization of the dysregulation of the complex using a novel peptide (pNaKtide) to restore cell function back to normal. The results from this study raised the possibility that pNaKtide may be a useful therapeutic agent for treatment of NASH-related HCC and other forms of cancer. I am also involved in a study to develop a liquid biopsy for early detection of HCC, as well as assessing the role of autophagy in NASH-related HCC.

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Research Interests

I am passionate about improving health outcomes in vulnerable patients with kidney disease. My research is aimed toward understanding the influence of novel psychosocial factors on adherence in patients with kidney disease and developing evidence-based, patient-centered innovative approaches to improve adherence and critical health outcomes in this patient population. I have a fundamental interest in promoting health equity by addressing health disparities in these vulnerable patients, especially those mediated by race.

I have specifically assessed the impact of motivation-based psychosocial factors mediated by self-determination theory—such as autonomous motivation and perception of providers' autonomy support—on medication adherence and serum phosphorus control in dialysis patients. I discovered that these factors are linked strongly with phosphate binder medication adherence. Phosphate binder adherence also strongly associates with serum phosphorus control. Furthermore, I have found interesting differences by race, which could be potential targets for future intervention.

Building directly upon these discoveries of potential pathways, I have tested the feasibility of motivational interviewing to improve these key motivation-based psychosocial factors, medication adherence, and bone mineral health in dialysis patients through an NIDDK F32-funded randomized, controlled trial. Through a previous Building Interdisciplinary Research Careers in Women's Health K12 award, as well as my current NIH K23 award, I currently am focusing my research interests on identifying novel patient- and provider-level psychosocial determinants of treatment adherence among African American dialysis patients. And most recently, through my NIH R03 award, I have developed culturally sensitive strategies to improve dialysis treatment adherence among African American patients, which will be pilot tested shortly.

Through community partnerships, I have conducted formative research to understand barriers to chronic kidney disease (CKD) screening in African Americans, especially those who are at risk for CKD. I also have facilitated community deliberations with African Americans across the United States to identify perspectives on APOL1 testing in routine patient care and kidney transplant setting.

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Research Interests

My research interests border on cardiovascular disease outcomes; physical activity and determinants of morbidity and mortality in chronic kidney disease and end-stage renal disease; understanding the alterations that occur in the structural and microcellular level in the cardiorenal system following transplant; and translating this knowledge to improve patient outcomes, safety, and survival at a population level.

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Research Interests

I am a cellular and molecular biologist with a passion for the discovery of novel biomarkers and targeted-treatment strategies in hematological disorders and the osteohematopoietic niche. Currently, my main research interests are hematopoietic stress, bone formation, and tissue regeneration. I am a new faculty member in the Department of Biology at James Madison University (Harrisonburg, Virginia) establishing a research program involving undergraduate and graduate research students. Research in my laboratory seeks to (1) understand the role of stress (e.g., inflammation) and injury as regulators of osteogenesis and (2) investigate the osteohematopoietic niche in the context of stress and myelodysplastic syndrome (MDS), a disease of age-related impaired function of the osteohematopoietic niche.

The osteohematopoietic niche includes hematopoietic stem and progenitor cells and bone marrow mesenchymal stem cells that can be differentiated into the osteogenic lineage, among many other cellular components. These cells are affected and respond in an interconnected way to aging and stresses, disease, and injury. This usually is clinically translated into anemia and fractures, among other phenotypes, such as posttraumatic heterotopic ossification.

I currently am focusing most of my research efforts on the underlying molecular mechanisms of bone marrow mesenchymal stem cell–derived bone formation. I am investigating an miRNA signature and the downstream RNA-binding proteins that contribute to ectopic bone formation after injury. In addition, I aim to expand my research endeavors to investigate the osteohematopoietic bone marrow niche in the context of MDS. MDS are diverse group of clonal hematopoietic malignancies characterized by ineffective hematopoiesis, progressive bone marrow failure, cytogenetic and molecular abnormalities, and variable risk of progression to acute myeloid leukemia (Cogle et al. 2015). I am interested in focusing from the perspective of the osteoblasts and osteoclasts and maintenance of the bone architecture, as well as in the cross-talk between the bone compartment and the hematopoietic stem and progenitor cells that contribute to disease formation and progression. I strongly believe that a better understanding of the osteohematopoietic niche components will give us more translational insights and the potential for more effective targeted clinical interventions.

Although I have a strong background and training in hematology, having performed previous work in pediatric acute lymphoid leukemia research and in the regulation of fetal hemoglobin as a treatment strategy for sickle cell disease, as a new faculty, I believe that I would strongly benefit from networking and collaborators in these new independent scientific endeavors.

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Research Interests

I am an Associate Professor within the Departments of Anesthesia and Clinical Pharmacology at Children's National Medical Center in Washington, D.C. My research focuses on the unique population of obese and morbidly obese pediatric anesthetic patients. These patients are susceptible to the development of significant comorbid disease states, which may require frequent surgical care. As a result, it is imperative that accurate drug dosing before, during, and after surgical procedures be employed. Currently, there is a paucity of dosing guidelines in the pediatric population, because most drugs administered to children are used off-label. This particularly is seen in the obese pediatric surgical population, because dosing is extrapolated from adult data. The purpose of my research is to capitalize on standard of care dosing regimens used in the surgical setting to better understand the effects of obesity on perioperative outcomes.

Roberto Vazquez-Padron, Ph.D.

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Research Interests

My career goal is to make a highly significant scientific contribution to the field of hemodialysis that helps improve vascular access outcomes and function. During the past 7 years, my team has studied arteriovenous (AV) fistulas in human and experimental models. Our unique biorepository of longitudinal human biopsies (vein and fistula obtained from patients undergoing two-stage fistula creation) contains more than 500 native veins, more than 400 fistulas, and more than 200 tissue pairs from 753 patients. We have published 18 papers (plus two in press) in the field of vascular access, including human and animal data. I have secured multiple NIH funding sources in the last 10 years. I am working with outstanding institutional support and with an excellent network of collaborators. In addition to my scientific mission, I am very committed to helping minority scientists to establish a career as an independent investigator in United States. I currently am the mentor of two junior Latina investigators who recently received K awards from NIDDK and the National Heart, Lung, and Blood Institute.

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Research Interests
The goal of my research is to promote diversity, inclusion, and health equity efforts in the continuum of medical education. I am interested in pipeline programs, educational efforts related to health disparities and health equity, and research in language-concordant care. I currently direct three pipeline programs, direct efforts at holistic recruitment efforts at the premedical, medical, and trainee levels and above. I am interested in efforts at promoting inclusive climates within departments aimed at reducing bias and discrimination for all minority and marginalized populations.

Claudio Villanueva, Ph.D.

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Research Interests
My research is focused on studying mechanisms that regulate lipid storage in adipocytes. Our laboratory has identified genes that can change the metabolic wiring of adipocytes, from energy-storing cells to thermogenic adipocytes that burn energy. This occurs with cold exposure, and we are actively finding cellular interventions that promote this metabolic rewiring. Our laboratory also is interested in understanding how adipocytes communicate with distal tissues, such as the liver, and how they play an important role in regulating lipid balance in the liver. We hope that our studies will find new interventions for such metabolic diseases as diabetes and fatty liver.

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Research Interests

Diabetes mellitus is the fastest growing pathology in the United States. By 2050 up to 30 percent of the U.S. population may suffer from this disease. We have continued to pursue research efforts jointly with Dr. Wolfgang Dillmann, Head of the Department of Medicine at the University of California, San Diego, to examine the effects that diabetes has on cardiac structure and function. Efforts focus on alterations, which arise in both cardiac myocytes and fibroblasts. Several manuscripts have been published on the subject with past awards obtained from the NIH.

Our laboratory has identified a unique capacity of cacao flavanols to stimulate mitochondrial biogenesis. Such effects can be evidenced in multiple cell types and tissues. There is also a unique stereoisomer biology for flavanols that appears to correlate with the ability of the compounds to exert various levels of potency via what, in principle, appear to be cell surface receptors (a novel finding). Such work is being supported by past and current NIH R01 (NIDDK and NCCAM)–supported grants.

Our laboratory continues to aggressively pursue several projects related to the characterization of the therapeutic potential of cocoa flavanols (in particular epicatechin). Ongoing projects include the use of animal models of exercise performance, diabetes, steroid-induced diabetes, myocardial infarction, and muscular dystrophy. Pilot studies initially were performed in patients with type 2 diabetes and heart failure using specially formulated chocolate from The Hershey Company with highly promising results, and three studies were published. New studies have been implemented in subjects with hypertriglyceridemia with vary favorable results (average drop in triglyceride levels of 75 mg/dL). In collaboration with clinician scientists at the University of California, Davis, a recent study was completed in Becker muscular dystrophy patients being treated with epicatechin; very favorable results were observed, and several manuscripts are to be submitted soon on the subject.

We are also currently investigating the effects that the cacao flavanol (-)-epicatechin has on skeletal muscle structure and function in normal senile subjects suffering from sarcopenia. This work is funded by the National Institute on Aging under an R21, and we have generated encouraging preliminary data.

Through collaborations with private sponsors, we also are investigating the role that wound healing resolution promoter compounds have on cardiac structure and function.

I am currently the co-director of a National Institute of General Medical Sciences–funded Institutional Research and Academic Career Development (IRACDA) training program to support the development of postdoctoral fellows (diversity focused) and encourage their movement as academic faculty at national institutions.

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Research Interests
As a physician and researcher in training, I have worked and trained in a variety of clinical research settings. More recently, I have had to the opportunity to be exposed to health disparities research opportunities. I determined from these professional and personal experiences that I desire to work with other medical experts who work with (ethnically) underserved patients with chronic disease to help navigate the immense challenges that can occur in seniors' health/medical lives and explore research interventions to reduce health disparities within African American and Latino populations, particularly as they continue to affect some groups over others very significantly. I am excited at the possibility of these opportunities, which will only enhance my learning and provide me with an opportunity to one day become an expert in health disparities within chronically diseased populations. In the process, I would like to focus on those patients affected by hematologic and pulmonary disorders and address the large ethnic and socioeconomic gaps that still exist within the elderly population.

Cynthia Warrick, Ph.D., M.S., RPh

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Research Interests
Having served as an administrator (i.e., Chair, Dean, and President) of Historically Black Colleges and Universities (HBCUs), I have witnessed significant funding cuts in higher education accompanied by a decrease in research involvement by faculty and students. My research interest is currently focused on the development of models and programs to enhance HBCU faculty and students' interest, involvement, and success in research and toward advanced degrees in the biomedical sciences. This work is critical to the success of African American and Hispanic students' exposure and development as future biomedical scientists. Because of my father's medical history with chronic kidney disease and my work as a pharmacist, I am very interested in developing successful pharmacist intervention models to assist patients with diabetes and hypertension to prevent chronic kidney disease and dialysis. I am interested in developing a study to look at the spatial relationships between dialysis centers, race, and socioeconomic conditions.

Catherine Waters, Ph.D.

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Research Interests
My program of research focuses on primary prevention and community-based participatory action research, in collaboration with public and private partnerships. In particular, my focus is on lifestyle health behavior interventions (physical activity and nutrition) as protective mechanisms to prevent disease—specifically cancer, type 2 diabetes, and heart disease—to maximize health and quality of life and to improve health equity and parity in underrepresented populations and communities. End-of-life care planning is another research interest.

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Research Interests
I trained family medicine and primary care physicians in epidemiology, research methods, and statistics to increase physicians' practice of evidence-based medicine and provide quality health care. Since graduating the last class (2007), I began to focus my research on innovative health interventions developed for faith-based communities. I collaborate with other researchers on various investigations, all designed to understand disease states and processes, reduce or eliminate diseases and poor health behaviors, or promote health in clinical and community-based populations.

As a social epidemiologist and translational researcher, I seek to implement interventions that improve health, specifically related to obesity and chronic disease outcomes. For example, Winning Over Weight (WOW) Wellness was designed to decrease obesity in African American women, concluding that interventions conducted in faith-based settings are effective to decrease obesity and improve social support. Since WOW, my research has been modeled from motivators for change theory, choice theories, and incentive theories in efforts to understand what intrinsically motivates African American women to eat healthier, exercise more, adequately rest, and effectively cope with stress.

Another developing area of research for me is community-engaged research—in particular, engaging underengaged populations in research involving topics and issues that concern them, or of a particularly sensitive matter. I also lead and help coordinate community research investigations to assist with increasing access to health and medical resources, as well as promote opportunities to participate in research and mechanisms that promote bidirectional communication between underrepresented and underserved populations and health researchers. I currently serve as co-investigator on several federally funded projects, including but not limited to a Centers for Disease Control and Prevention–funded Telemedicine project (R. Grewal, principal investigator [PI]: 2017–2022), the NIH-funded JAX-ASCENT project (M. Pahor, PI: 2017–2022), and the NIH-funded Florida Registry Aging Studies project (T. Gaillard, PI: 2020–2023). I also serve on civic boards, as well as scientific and national committees aimed to improve population health.

Ebony Weems, Ph.D., M.S.

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Research Interests
The Centers for Disease Control and Prevention reports Alabama as having the highest adult rate of obesity in the nation and the sixth-highest obesity rate for children and adolescents age 10 to 17. Since 2000, the obesity rate has risen from 22.6 percent to 36.3 percent and continues to rise. The highest rates were observed in minorities and people who live in low-income areas and reside in food deserts. Food deserts and access to nutritious food are influenced by food availability, geographic accessibility, social acceptability of food options, food prices, and the availability of public transportation. Minorities and low-income communities often face these challenges and constraints at higher rates than other communities. Several factors are known to affect obesity. However, there is a gap in research on factors that contribute to obesity in North Alabama. Understanding the variables and underlying cause of obesity is essential to the development of programs and identification of drug targets, management, and prevention of the disease.

Amaris Williams, Ph.D., M.B.A.

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Research Interests
I am interested in research that finds ways to shrink racial disparities in hypertension control, including research into quality improvement of health systems. Our methods include treatment intensification, exercise programs, nutrition education interventions, lifestyle interventions, and smoking cessation interventions.

I also am interested in diabetes control and how disparities in glycemic control can be improved. Some measures we have tried include cooking classes for people with diabetes, food pantry–based interventions for those who are food insecure, and lifestyle interventions that emphasize the American Heart Association's Life's Simple 7.

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Research Interests
My research interests focus on the implementation of community-based, behavioral, and social support interventions designed to mitigate social risk factors and structural inequities to reduce health disparities and improve health outcomes among non-Hispanic Black adults with type 2 diabetes. Currently, I am funded as principal investigator by the NIH/NIDDK to conduct a pilot randomized control trial aimed at mitigating stressors associated with multi-caregiving responsibilities in non-Hispanic Black women with type 2 diabetes.

Laura Williams, M.D., M.P.H.

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Research Interests
My research interests are diabetes prevention, behavioral interventions, obesity management, and translational science. My primary population of interest is African Americans in faith-based settings. My passion is translating evidenced-based interventions, such as the Diabetes Prevention Program (DPP), into real-world settings. The hallmark of my research is training community members as interventionists. My current NIDDK R01 seeks to modify the DPP from a "one-size-fits-all" approach to identify weight-loss nonresponders early and offer individual-level attention to effect greater weight loss.

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Research Interests
I am a behavioral research scientist, and my research focuses on the complex and dynamic relationship between suboptimal sleep and insomnia and chronic disease, including diabetes. I have a K23 Career Award to identify a broad range of determinants of suboptimal adherence in patients diagnosed with sleep apnea and comorbid insomnia and an administrative supplement to identify sleep apnea and comorbid insomnia as a novel risk factor for Alzheimer's-related diseases in African Americans/Blacks. My long-term goal is to translate research findings into diverse, practice-based settings and engage communities and stakeholders to achieve well-being and sustainable change in the lives of individuals and communities who have been historically marginalized and disenfranchised. In addition to my research, I am engaged in mentoring and serve as co-director for the Peer Mentor Development Program for the NIH-funded PRogram to Increase Diversity among individuals Engaged in health services research (PRIDE) and the graduate advisor for the New York University Ph.D. program in population health.

Sacha Williams, M.D., M.P.H., M.S.

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Research Interests
My research interests include global surgery, health disparities, and biotechnology.

Bryan Anthony Wilson, Ph.D., M.B.A.

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Research Interests

I am a nationally recognized and award-winning scientific leader recognized as key talent and am eager to apply my 14 years of scientific expertise, leadership, education, and communications skills to develop visionary and performance-driven health care and biomedical science teams and talent. I am intentionally dedicated to embracing change, championing optimism and supporting teams with a spirit of excellence and vigor. I am a forward-looking initiator, skilled at life science communication and enhancing the pipeline advancement of improved human therapeutics, products, services, and key talent. I am highly adaptable to new products, techniques, markets, and industries, with a dynamic 14-year portfolio of accomplishments and expertise in cardiovascular biomedical science/clinical research, innovation, regulatory affairs, patient advocacy, and scientific business strategy.

My science expertise includes cardiovascular disease, renal physiology, diabetes, mitochondria, nutrition, and population health. I have growth-minded team leadership skills aimed at supporting business units and building relationships. I am highly collaborative, with experience developing relationships with investigators, providers at academic and nonacademic institutions, advisory boards, corporations, and patient advocacy groups. I am high achieving, with high moral character and integrity, consistently exceeding established goals, and I am recognized internationally for my dedication in utilizing diverse methods to generate unique value streams for patients, health care, and biomedical science stakeholders globally.

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Research Interests

My interest lies in deciphering androgen receptor–dependent signaling in androgen-responsive systems. My laboratory utilizes quantitative mass spectrometry as a proteomic platform to probe the composition and regulatory structure of protein networks in cellular models of human disease. We implement flexible experimental workflows to interrogate androgen receptor–dependent signaling in representative cell models of androgen receptor–related diseases. These androgen receptor–related diseases include neoplasms originating from the male prostate gland and spinal bulbar muscular atrophy that corrupts skeletal muscle and neuronal functions in humans. We are mapping androgen-dependent signaling at the level of the proteome and implementing genomic technologies (e.g., CRISPRa/CRISPRi) to perturb gene function in cellular models to understand how aberrant androgen receptor–dependent signaling contributes to the development and progression of androgen receptor–related diseases in humans.

Nicole C. Wright, Ph.D., M.P.H.

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Research Interests

I earned a Bachelor of Science from Elon University in Elon, North Carolina, and both my Master's of Public Health and doctorate in Epidemiology from the University of Arizona in Tucson, Arizona. My research encompasses the umbrella of osteoporosis and musculoskeletal diseases epidemiology. I have become one of the national leaders in using population data to assess the prevalence of osteoporosis and evaluating trends in fragility fractures. My early work focused on identifying risk factors for fractures using the nationwide Women's Health Initiative cohort study, including rheumatoid arthritis, hip structural geometry, calcium and vitamin D supplementation, admixture, and the role specific fractures play in fracture recurrence. During a 2-year postdoctoral fellowship in the University of Alabama at Birmingham (UAB) Department of Epidemiology, I expanded from traditional cohort-based observational studies to studies in administrative claims data. Specifically, I focused on the incidence of osteoporotic fractures in the U.S. Medicare population, with interest in identifying potential race and ethnic disparities in fracture incidence and outcomes. During this time, I also became involved with developing and validating claims-based algorithms to identify osteoporosis prevention activities, medications, and outcomes. I joined the UAB Department of Epidemiology faculty as an Assistant Professor in December of 2012. In addition to continuing previous lines of research, I became interested in two unique areas within the osteoporosis field: (1) understanding patient activation and optimizing patient participation in osteoporosis related clinical trials, and (2) evaluating racial disparities in osteoporosis management and outcome. With funding from the Agency for Healthcare Research and Quality K12 and pilot funding from the Resource Centers for Minority Aging Research, I have been able to use quantitative and qualitative methods to investigate racial differences in osteoporosis knowledge and utilization of prevention activities. I currently have a K01 award from the National Institute of Arthritis and Musculoskeletal and Skin Diseases to investigate racial differences in fractures outcomes.

Miheret Seyoum Yitayew, M.D., M.P.H.

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Research Interests

My research interest focuses on infant nutrition and growth for optimal development, with my current research centering on identifying the best postnatal growth monitoring tool for preterm infants to guide clinical nutritional interventions that foster optimal neurodevelopmental outcomes.

I also am interested in quality improvement research that aims to reduce disparities in birth outcomes. My current focus involves identification of clinical and community-based interventions specific to minority parents that improve short- and long-term outcome for their children.

Raquel Teixeira Yokoda, M.D.

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Research Interests

My research interests are in the pathogenesis and diagnosis of liver tumors, bone and soft tissue sarcomas, and central nervous system gliomas and meningiomas. I have postgraduate medical training in gastroenterology, transplant hepatology, and anatomic pathology and neuropathology with molecular neuro-oncology. The core of my research has shifted to translational research in the past few years. It evolved into a diagnostic perspective, considering methylation profiling and biomarkers development. I use digital microscopic imaging, transcriptomics data, and machine learning for diagnostic approach and molecular categorization of solid tumors with unpredicted behavior by morphology alone. The main scope is to understand oncogenesis in the early evolving states. As an anatomic pathologist, I am involved in all aspects of diagnostic testing, investigative autopsies, and biobanking of organs and neoplastic tissue. I am based in New York, and national collaboration is welcome.

Bessie Ann Young, M.D., M.P.H.

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Research Interests

I am a vice dean for equity, diversity, inclusion; medical director for the University of Washington Office of Healthcare Equity; and professor in the Division of Nephrology, Department of Medicine at the University of Washington. I am currently engaged in health justice medical education; quality improvement; and research on justice, equity, diversity, and inclusion issues. I have focused much of my career on improving access and quality of care for those with diabetes, hypertension, and kidney disease. My research concentrates on evaluating risk factors for the development and progression of kidney disease in communities comprising those who are Black, Indigenous, and people of color; genetic testing for APOL1-associated kidney disease in African Americans; education about kidney disease and kidney replacement therapies; and evaluating the intersection of health disparities and health equity issues in medicine. I am a member of the University of Washington's Kidney Research Institute and the Veterans Affairs Center for Innovation for Veteran-Centered and Value-Driven Care and founding director of the University of Washington Justice, Equity, Diversity, and Inclusion Center for Transformational Research. My preferred pronouns are she/her/hers.

Roger Zoh, Ph.D.

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Research Interests
In my research, I am primarily interested in the development of rigorous and scalable statistical methods appropriate for the analysis of complex, high-dimensional data that arise in cancer or nutrition studies. Today, there is an increasing interest in assessing to what extent gut microbiome profile, gene expression, diet, and other environmental factors interact together as driving forces of obesity and other chronic diseases. The question of leveraging various sources of data to help understand better understand disease progression and to characterize disease is very much an appealing idea but reveals a rather nontrivial statistical approach. The sheer dimension of the data often is a major impediment to the use of traditional statistical techniques such as principal component analysis or canonical correlation analysis. Hence, we need to create both scalable and appropriate statistical techniques to answer these complex and useful questions.

NMRI Meeting Participants

Michael Abdelmasseh, M.D.

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Research Interests

I am a clinical research fellow at the Marshall University School of Medicine in the Surgery Department. My primary research focus is on evaluating surgical outcomes. I am interested in assessing the value of different surgical services, including colorectal surgeries, hepatobiliary surgeries, pancreatic surgeries, hernia repair surgeries, trauma, surgical critical care, and cancers. I was part of the team that started the familial cancer registry in West Virginia, the first in the state.

I am also interested in public health research; I have conducted and contributed to studies on various aspects of public health, including COVID-19 and the epidemiology of hypertension, obesity, nutrition, and diabetes.

Ananta Addala, D.O., M.P.H.

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Research Interests

I am an early-career physician scientist committed to a career as an independent investigator addressing disparities in type 1 diabetes management and outcomes. My long-standing research and clinical interests are to promote equitable care for youth with type 1 diabetes, informed by the biological, social, psychological, and systemic determinants of health. As a physician with a background in pediatric endocrinology, epidemiology, and behavioral health, I am uniquely qualified to understand and address the medical, social, and economic inequities of diverse youth with type 1 diabetes. I have explored the role of provider bias on diabetes technology recommendations for youth with public insurance.

Fowsiyo Ahmed, M.D.

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Research Interests
My research interests include research projects that center around reducing health disparities in the screening, diagnosis, and treatment of hepatobiliary cancers among immigrant African communities and identifying biomarkers that can help better detect and diagnose premalignant liver lesions from nonmalignant liver lesions, thus improving the diagnosis, treatment, and overall prognosis.

I am also a member of the Somali Health Advisory Committee (SHAC); our main mission is to provide health education and awareness to the Somali community living in Minnesota and bridge the social/cultural gap between health care providers and the Somali community.

Ahmed Al Saedi, Ph.D.

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Research Interests
I am an early-career researcher in musculoskeletal diseases, aging, and stem cells (https://orcid.org/0000-0002-2479-5317). I hold an M.Sc. (infectious diseases and immunology, 2011) and an M.Phil. (medicine, 2013), both from The University of Sydney, and a Ph.D. (2017) from the University of Melbourne. My Ph.D. research investigated mesenchymal stem cells (MSCs) in bone remodeling, focusing on aging and disease.

I am a postdoctoral research fellow at the Australian Institute for Musculoskeletal Science (2018–present). I am investigating the role of senescence in changing the differentiation fate of MSCs from a healthy osteogenic to a pathological adipogenic profile and how this increases the risk of bone fragility due to bone lipotoxicity. I supervise and contribute to research projects that focus on novel mechanisms underpinning the pathology of osteoporosis and osteosarcopenia. This includes higher degree research student training and mentorship.

To date, I have published 34 journal articles, with 16 first-author papers and another four first-author papers under review. I have secured more than $32,000 in research funding and travel grants. Given the novelty and impact of my Ph.D., I have been awarded several prestigious prizes, including the AgNovos Young Investigator Award at the World Congress on Osteoporosis, Osteoarthritis and Musculoskeletal Diseases–International Osteoporosis Foundation (IOF)–European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis Congress; a grant from the Endocrine Fellows Forum (EFF) on metabolic bone diseases of the American Society for Bone and Mineral Research (ASBMR); and, most recently, one of the ASBMR Young Investigator awards in Orlando 2019. Additionally, I have been invited to give oral and poster presentations at numerous conferences including ASBMR, EFF, and IOF.

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Research Interests
I conduct and engage in research within the broad areas of public health, mental health, social work, and disability. My research interests are in the areas of health promotion, health psychology, and behavioral medicine, and I am particularly interested in the prevention of cardiovascular disease and other chronic diseases across the adult lifespan. I am also interested in the psychosocial outcomes of predicting individuals' risks of illness or disease status and the context in which randomized control trials are conducted and how they are experienced by participants and implemented.

Ligia Artiles, M.A.

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Research Interests
I work as a program analyst at the National Institute on Minority Health and Health Disparities (NIMHD) and coordinate the Health Disparities Research Institute (HDRI). The HDRI program will feature lectures on minority health and health disparities research, small group discussions, mock grant review, and seminars. Institute participants also will have the opportunity to meet with NIH scientific staff engaged in related health disparities research across the various NIH Institutes and Centers. Lectures and seminars will include the etiology of health disparities, methods and measurement, and intervention and implementation research. Participants will receive consultation on the development of research interests into an application (e.g., R21, R01, K award), consultation on research strategies and methodologies for proposed studies, and opportunities to meet with NIMHD and other NIH program officials.

Jessica Cooke Bailey, Ph.D.

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Research Interests
My work as a genomic data scientist has encompassed many aspects of statistical and computational analyses of various complex diseases, including type 2 diabetes, diabetic and nondiabetic nephropathy, age-related macular degeneration, and primary open-angle glaucoma in African Americans and in European Americans, including the Amish. I have worked with genomic data from population samples and families with data that was genotyped and imputed, on the single-SNP, genome-wide association study, and exome levels.

In my current position, I have the opportunity to develop my own research ideas, and during this time my goal is to evaluate and quantify nongenetic and genetic differences that contribute to the disparate rates of glaucoma in individuals with primarily African ancestry. The purpose of this work is to identify clinically actionable modifiers that will ameliorate the clinical approach and treatment of glaucoma. I will focus on enhancing my clinical and translational knowledge base through attending coursework, as well as formally and informally training and interacting with field experts. The knowledge and skills I gain, along with the data and results I obtain, will empower me to transition to an independent career as a multidisciplinary team scientist.

Randall Basaraba, D.V.M., Ph.D.

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Research Interests
My professional medical training was as a Doctor of Veterinary Medicine, and I had a subsequent residency in anatomic pathology. I completed a combined pathology residency and Ph.D. graduate training at Washington State University. I was board certified by the American College of Veterinary Pathologists in 1992. I served as a faculty member at Kansas State University prior to accepting my current position at Colorado State University. I am currently a professor with tenure within the Microbiology, Immunology, and Pathology Department and head of the Metabolism of Infectious Diseases Laboratory. I have extensive training and experience in the pathogenesis of chronic infectious diseases using animal models of human tuberculosis as the model system. More recently, we have developed a small-animal model of diabetes/tuberculosis (TB) comorbidity to better understand this rapidly emerging comorbidity, as well as to investigate host-directed therapies to treat diabetes and TB. Currently, I have five graduate students and am funded through the National Institute of Allergy and Infectious Diseases and have had previous American Diabetes Association funding.

Jorge Alberto Benavides-Vasquez, M.S.

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Research Interests

My main research interests include cancer outcomes, especially hematological malignancies, and health care disparities in minority populations in the United States, especially regarding diabetes and metabolic syndrome. I currently am working on two papers for publication, one on metropolitan versus nonmetropolitan residence as risk factor for advanced stage at diagnosis in breast cancer and the other, a systematic review of prevalence of diabetic retinopathy in prediabetic children and adolescents.

Wendy Bennett, M.D., M.P.H.

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Research Interests

I am a practicing primary care physician and associate professor of medicine in the Johns Hopkins University School of Medicine, Division of General Internal Medicine (GIM), with joint appointments in the Johns Hopkins Bloomberg School of Public Health in the Departments of Epidemiology and Population, Family, and Reproductive Health. Since completing my GIM fellowship 15 years ago, I have brought together a multidisciplinary team to build a research program aimed at reducing chronic disease risk among pregnant and postpartum women, ultimately to eliminate disparities in maternal morbidity and mortality. I have created a remotely delivered health coaching program for pregnant women to prevent excessive gestational weight gain and reduce future obesity and cardiovascular disease in women and their offspring. My team now is working to test and implement this program into community-based prenatal care practices, through training of existing staff as health coaches and designing new models for counseling, coaching, supporting, and partnering with women through their pregnancies and after delivery. This project has underscored the importance of patient-, provider-, and practice-level stakeholder engagement in all aspects of intervention design, as well as implementation, to enhance future scalability. For the past 2 years, I also have been serving as the Director of Research for Johns Hopkins Community Physicians, a network of more than 30 primary care practices in Maryland and Washington, D.C. Under my leadership, the network's priority has been to build strong, collaborative relationships with academic researchers to address critical health care delivery problems in important areas, such as understanding and overcoming barriers to effective health care, addressing racial disparities in health care delivery, and improving clinical quality and patient-important outcomes. Ultimately, giving voice to primary care providers and our patients has the potential to speed up the process of testing and scaling patient-centered outcomes research into primary care practices.

John Bernhart, Ph.D., M.P.H.

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Research Interests
I am interested in dissemination and implementation (D&I) research of evidence-based programs addressing health disparities of obesity, physical inactivity, and dietary behaviors among African Americans. My education and training experiences in public health and community-based participatory research began as an undergraduate. During this time, I developed and delivered a health education program in church and school settings in southeastern Brazil. Then, as a master's student, I assisted with a study assessing healthy eating and physical activity in a low-income, predominantly African American community in central Texas. Throughout my doctoral program, I worked as a graduate research assistant in the Prevention Research Center on the Centers for Disease Control and Prevention–funded Faith, Activity, & Nutrition Program Dissemination and Implementation Study (principal investigator: Wilcox). I contributed to the development of intervention materials, recruited and communicated with church partners, published manuscripts, and presented research findings at national conferences. Currently, I have received funding for a postdoctoral fellowship through a diversity supplement from the National Heart, Lung, and Blood Institute (3R01HL135220-04S1). This supplement has provided me with exceptional research and training experiences, where I am leading my own D&I trial of a healthy eating program for African Americans in the community. During this fellowship, I also have submitted and received internal funding, presented research findings at conferences, published manuscripts, and mentored undergraduate and graduate students. In 2021, I received the Ann John Institute Magellan Faculty Fellow award from the University of South Carolina, recognizing my efforts of interdisciplinary mentoring of undergraduate students on research projects.

Mary Bouxsein, Ph.D.

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Research Interests
My research focuses on understanding the biomechanical underpinnings of skeletal fragility and includes studies in osteoporosis and stress fractures. Our work involves preclinical animal models, translational studies using human tissue, and biomechanical epidemiology. We employ state-of-the-art imaging and biomechanical techniques to gain insight into risk factors for fracture, as well as to test interventions to improve skeletal health. We also study the effects of reduced mechanical loading on the skeleton, in part to understand contribution of reduced activity to age-related bone loss, and also to better understand impact of spaceflight on the musculoskeletal system.

Fernando Bril, M.D.

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Research Interests
Even before starting my internal medicine residency, I had a strong interest in clinical research and biostatistics, embarking early on a career as a physician–scientist. My research interest quickly brought me to the field of nonalcoholic fatty liver disease (NAFLD), insulin resistance, and type 2 diabetes (T2D).

Since its original description in 1980, NAFLD has been a growing field. Fueled by the obesity and T2D epidemics, NAFLD has become the most common chronic liver disease worldwide, and in the near future it is likely to become the first cause of liver transplants in the United States.

My main research interest has been to understand the metabolic mechanisms that promote the progression from isolated steatosis (without inflammation or necrosis) to nonalcoholic steatohepatitis (NASH) and to identify pharmacological approaches that could be used to delay this progression. To answer these questions, I have applied the use of stable isotopes to measure glucose turnover, *de novo* lipogenesis, gluconeogenesis, or lipolysis rates, as well as state-of-the-art liver and cardiac magnetic resonance imaging to detect the consequences of intratissue fat accumulation.

In addition to exploring pharmacological options that could help patients with NAFLD, I have focused on trying to find biomarkers that could allow us to easily diagnose patients with NAFLD or NASH in the clinical setting. For this purpose, we have used metabolimics, lipidomics, and other tools to identify potential useful serum biomarkers.

Manuel Britto

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Research Interests
My actual research interests involve personalized medicine, as I believe this is a huge area of development in the future. The ability to precisely target individual illness based on the person's genetic code is fascinating and potentially lifesaving. I feel that research in this field can lead to cost-effective and preventive measures in terms of screening and management of diseases in the future.

Qierra Brockman

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Research Interests
Epigenetics is the collective heritable changes in phenotype through mechanisms that are independent of alterations in the DNA sequence. Alterations in the epigenetic profile have been implicated in a number of areas of study, including stem cells, regenerative medicine, memory processing, age-related diseases, and cancer. Epigenetic changes have been observed in early stages of tumor development and described as contributing to cancer initiation and progression. Histone modifications (post-translational modifications to the N-terminal tails of histone proteins) and DNA methylation are two common modifications observed in cancer. There are a number of universal epigenetic modifiers implicated in varying tumorigenesis mechanisms, such as the enzymatic subunit (EZH2) of the polycomb repressive complex 2 (PRC2). EZH2 is a histone methyltransferase that catalyzes mono-, di-, and tri-methylation on histone 3 lysine 27 (H3K27). This methylation pattern is associated with transcriptional repression. Alterations in EZH2 enzymatic activity have been reported in a number of cancers including breast cancer, colon cancer, lung cancer, and multiple myeloma (MM).

MM is a presently uncured malignant neoplasm of plasma cells in the bone marrow and is characterized by the presence of the overproduction of monoclonal protein, anemia, calcium dysregulation, and bone damage. MM is clinically preceded by two asymptomatic plasma cell dyscrasias, smoldering multiple myeloma and monoclonal gammopathy of undetermined significance. Recent efforts by our group have identified a number of critical functions for NIMA-related kinase 2 (NEK2), a cell-cycle serine/threonine kinase upregulated in MM patients and correlated with poor patient prognosis. CDK/cyclin complexes and other cell cycle regulators are known to mediate the maintenance and propagation of epigenetic modifications, such as DNA (DMNT1) and histone methylation (EZH2), that regulate gene transcription. Both epigenetics and cell cycle regulation are known to play essential roles in a number of cancers, but little is known about how these mechanisms interact and regulate each other. Understanding how NEK2 regulates epigenetic reprogramming will lead to a better understanding of the machinery involved in cell cycle, as well as improved detection methods and novel therapies for MM patients.

Erin Bumann, D.D.S., Ph.D., M.S.

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Research Interests

We identified multiple developmental mechanisms that control the size and shape of the jaw skeleton. Our experiments not only reveal that neural crest mesenchyme (NCM) autonomously regulates cell cycle progression and the timing of osteogenic differentiation, but they also indicate that cell cycle and osteogenesis are inexorably linked as a developmental module *in vivo* as they are *in vitro*. Our work also uncovered a novel function for bone resorption, which is to help establish species-specific jaw length, and our transplant experiments indicate that the underlying molecular mechanisms stem from the ability of NCM to control the activity of its own derivatives (i.e., osteocytes) and also that of mesoderm-derived osteoclasts. We show the remarkable ability of NCM to maintain spatiotemporal control over the induction, differentiation, deposition, mineralization, and the resorption of bone is what integrates the determinants of jaw length across multiple embryonic stages, and is what empowers NCM with its ability to generate skeletal variation during disease and evolution.

Theodore Busby

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Research Interests

Cellular differentiation and commitment are regulated, in part, by the chromatin landscape of the cell. Our laboratory focuses on the development and maintenance of mineralized tissue. The objective of my project is to understand the molecular role of the mammalian SWI/SNF (BAF) chromatin remodeling complex in bone and tooth cell differentiation. BAF contributes to gene activation by sliding nucleosomes into an open conformation around active genomic loci. The BAF complex comprises about 15 subunits assembled from 29 genes, and the composition of subunits promotes cell-specific regulation. We currently are characterizing the BAF subunits that are important for the machinery specific to mineralized tissue. In doing so, we are dissecting the roles of these subunits in promoting chromatin accessibility and histone modifications in osteoblasts and odontoblasts, the matrix of producing the cells of the bone and tooth. I also have worked on a project to dissect the role of the MLL/Set1 histone methylation complex in promoting the formation of leukemia and lymphoma. The goal was to determine whether these malignancies require cellular levels of the noncatalytic core subunits of the methylation complex that far exceed those of normal homeostatic cells. It is noteworthy that these factors were not considered previously to be oncogenic. We hypothesized that if the expression of the core module subunits were reduced to comparable levels of normal cells, malignant cells would be more vulnerable to therapeutics.

Catherine Butler, M.D., M.A.

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Research Interests

I am an acting instructor in the Division of Nephrology at the University of Washington and a health services research fellow with the U.S. Department of Veterans Affairs Health Services Research & Development Seattle-Denver Center of Innovation, conducting research intended to support a more person-centered approach to care for adults with kidney failure. To date, my research has focused on understanding how health care system–level processes shape patients' experiences of illness and health outcomes, with a special emphasis in the impact of health care resource limitation.

My existing work includes cohort studies using large registry and administrative databases, as well as qualitative analysis of documentation in the electronic health record to better understand the kidney transplant evaluation process. Relatively little is understood about the early steps in the process of selecting patients for kidney transplant, and they are challenging to study, likely because these represent complex care processes occurring across multiple care settings and are shaped by a range of clinical, operational, and ethical considerations. Understanding will benefit from a mixed-methods approach to investigation informed by clinical, ethical, and policy perspectives.

My work during the COVID-19 pandemic elucidated the complex impact of a range of types of resource limitation on clinical care, including a need for more focus on "contingency capacity" settings and attention to clinicians' complex experience of adapting their professional identities to evolving care settings. I also worked with Washington state emergency preparedness committees to complete a multiphase research agenda, including a Delphi study, triage team simulation study, and interview-based qualitative analysis informing a statewide approach to scarce resource triage.

Isaac Campos

Predoctoral Trainee
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Research Interests

I am currently working under the direction of Dr. Christian Faul at The University of Alabama at Birmingham. The main focus of my research is devoted to understanding fibroblast growth factor (FGF) 23 and its effects on different tissues. Serum levels of FGF23 are elevated tremendously in patients with chronic kidney disease (CKD), and our translational research indicates that FGF23 may not only serve as biomarker for kidney disease progression, it also is a major contributor to cardiac injury in many patients with CKD. The group's recent work using primary cell culture systems and a variety of rodent models with elevated serum FGF23 has shown that circulating FGF23 also can contribute to systemic inflammation, which is associated with CKD. Circulating FGF23 can act through an FGFR4-mediated signaling mechanism in the heart, thereby contributing to the development of cardiac hypertrophy and heart failure. Dr. Faul's laboratory has shown that by administration of an FGFR4-specific blocking antibody that currently is in clinical cancer trials, FGF23's effects on the liver and the heart are reduced in the animal models of CKD. Because of the laboratory's *in vitro* and *in vivo* studies, we postulate that FGFR4-targeted therapies might protect from CKD-associated pathologies, such as chronic inflammation and heart failure.

Michael Cary, Ph.D.

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Research Interests

My research program focuses on improving health outcomes of older adults who use post-acute care services (e.g., Inpatient Rehabilitation, Skilled Nursing Facilities) because of an injury or worsening illness, with an emphasis on functional assessment and quality measurement. To date, I have used Medicare secondary data sets to better understand the influence of health system and patient factors on rehabilitation outcomes (functional status at discharge, functional status change, and discharge setting) following discharge from inpatient rehabilitation, mostly among older adults with hip fracture. My currently funded work focuses on system outcomes, including rates of complications and hospital readmission in inpatient rehabilitation settings. Specifically, through a granted funded by the Duke Clinical and Translational Sciences Award, I study "Clusters of Chronic Conditions Associated with Hospital Readmission among Hip Fracture Patients Discharged from Inpatient Rehabilitation."

Su-Hsin Chang, Ph.D.

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Research Interests
My research program is to integrate novel approaches in decision science, data science, simulation modeling, health econometrics and economics to address emerging clinical and public health problems with goals to inform timely systematic decisions at the intersection of obesity, cancer, and health disparities. My current research agenda has focused on five different areas: (1) health and economic burden of obesity and obesity-related multimorbidity, including cancers; (2) surgical treatment of obesity; (3) multiple myeloma prevention; (4) transplant outcomes; and (5) health disparities. My research program has been funded by a Translational Research Enhancement Core pilot grant, K01 HS022330, R21 DK110530, R01 CA253475, and U01 CA265735, on all of which my role is principal investigator.

My goal is to continue to build my research program in the aforementioned areas and further expand to new areas, including economic evaluation alongside clinical trials, economics of dissemination and implementation, and artificial intelligence in reducing health disparity. The long-term goal is to build a robust, sustainable, and reputable research program to impact on clinical paradigm and guidelines, as well as health policies.

Jyu-Lin Chen, Ph.D., M.S.N.

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Research Interests

My program of research focuses on two main areas: (1) development of innovative childhood obesity prevention interventions and (2) reduction of global health disparities for obesity and type 2 diabetes in Asia. My program of research on childhood obesity prevention addresses one of the most preventable global health issues that greatly impacts global health and nursing. Chinese Americans, as the second-largest immigrant population in the United States, are experiencing an increased prevalence of childhood obesity (31%) and a higher risk for cardiovascular disease and diabetes than non-Hispanic white populations. Additionally, about 33% of obese Chinese American children (age 6–18) already have nonalcoholic fatty liver disease. Therefore, there is a need to develop culture-sensitive intervention to prevent childhood obesity in this underserved and understudied population. As the first nurse scientist to specialize in childhood obesity prevention in Asians and Asian immigrants in the United States, I conducted several clinical studies—funded by NIH KL2, the Sigma Theta Tau International Nursing Research Grants, Safeway Foundation, and others—to examine the efficacy of culturally sensitive and tailored obesity prevention interventions in Chinese American children. I am currently working on the integration of communication technology to promote healthy physical and psychosocial lifestyle and prevent obesity among overweight Chinese American teens into primary care clinics. The second focus of my research program is to reduce global health disparities related to obesity and Type 2 diabetes (T2DM) in Chinese living in high-risk regions, such as in Asian Pacific Rim countries. One in four (more than 100 million) Chinese adults is estimated to have diabetes with type 2 diabetes mellitus (T2DM). My program of research addresses this critical global health threat as it focuses on childhood obesity and T2DM prevention by promoting a healthy lifestyle in children and their mothers with low or limited resources in Asian Pacific regions. I have been funded by UC Pacific Rim Research Program and Global Health Center in the School of Nursing to study risk factors associated with excessive weight gain in elementary school–age children in Taiwan and mainland China. I am also a co-investigator for a Hong Kong government–funded research study related to obesity management intervention. Recently, I have been funded as a Fulbright Cross-Strait Research Scholar (only one researcher is selected to study cross-strait issues per year). In this study, I am working with interdisciplinary research teams in Taiwan and China to identify risk factors associated with obesity and T2DM and explore strategies for healthy lifestyle promotion among preschool-age children and their mothers in Taiwan and China. Data generated from this Fulbright research grant will provide critical information on designing culturally appropriate and effective intervention to prevent obesity and diabetes in China and Taiwan.

Stephanie Chernitskiy

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Research Interests
Evidence for Action (E4A) is a grantmaking program of the Robert Wood Johnson Foundation. We fund research evaluating the population health, well-being, and health equity impacts of policies, programs, and practices. Findings will inform policy- and decision-making and help identify actionable strategies and priorities and for building a Culture of Health. We've funded research projects in a broad range of topics that include climate and environment, economic opportunity, food and nutrition, immigration, and workplace well-being. Our grantees evaluate interventions that operate on multiple scales, often outside of the health care sector, and are not necessarily directly targeted at influencing health outcomes. Our grantees identify interventions to evaluate and initiate, develop, design, and manage their research projects.

Camille Clarke, M.D.

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Research Interests
My research interests are fourfold but primarily lean towards the field of lifestyle medicine and the implications of behavior on chronic disease prevention and management in primary care. I firstly intend to elucidate the practice and evidence behind the active use and implementation of lifestyle medicine and particularly its role in facilitating long-term and sustainable changes of chronic disease management through the patient-centered medical home.

Sneha Couvillion, Ph.D.

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Research Interests
I am a staff scientist at the Pacific Northwest National Laboratory (PNNL) in Richland, Washington, with expertise in the application of advanced mass-spectrometry-based metabolomics, lipidomics, and proteomics approaches to understand the effects of environment, diet, and lifestyle on health, especially in the context of the microbiome. Some current projects I am working on include multi-omics of the human milk microbiome to investigate mastitis in nursing mothers and metabolomics-based studies to understand the effects of dietary components and additives on the gut microbiota and host health.

I have been very interested in applying my expertise in -omics to investigate health disparities in minority populations. I am especially interested in the metabolome and the microbiome as biological factors that determine health and their interactions with social and environmental conditions that an individual might be exposed to.

Araceli Dalma Cuaranta, M.D.

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Research Interests
I am interested and currently involved in clinical research of appendicitis, cholecystitis, diverticulitis, and colon cancer, with the aim of improving the postsurgical outcomes of patients with these digestive diseases. I believe that there are many areas where we can enhance the value of care of these patients, including diminishing the rate of complications and readmissions.

Gwendolyn Derk, M.D., Ph.D.

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Research Interests

I have a passion for working with vulnerable populations and studying unique hemodynamic physiologies. I began working under the guidance of Dr. Ken Wilund for my doctoral degree at the University of Illinois Urbana–Champaign in 2016. I began by conducting an observational study on the hemodynamics and cardiovascular outcomes of dialysis patients. Through this study, I not only developed an algorithm to noninvasively approximate cardiac output during dialysis treatments, but I also observed some larger systematic issues within the field. After studying the use of antihypertensive medications, as well as the lack of medication management in the dialysis population, I decided to focus my dissertation work on testing a medication deprescribing model that I believe will not only improve cardiovascular outcomes and fluid management but also improve patients' quality of life as it relates to fatigue, cramping, and fainting. My dissertation will consist of a prospective pilot and feasibility study that aims to assess the effects of a structured anti-hypertensive deprescribing protocol on cardiovascular function and patient-reported outcomes in patients with renal failure undergoing maintenance hemodialysis therapy. Three Fresenius Medical Care hemodialysis clinics in Illinois will implement a clinic-wide anti-hypertensive medication deprescribing protocol. In Aim 1, physician-approved patients at these clinics who are prescribed at least one anti-hypertensive medication will initially undergo a medication reconciliation to identify their current medication adherence, followed by a deprescribing protocol that uses an algorithm to systematically reduce one blood pressure medication per month as tolerated. Intradialytic blood pressure and symptoms will be closely tracked, and patients will be trained to use blood pressure monitors to track at-home blood pressure three times daily. To facilitate reduction of anti-hypertensive medications, additional education will be provided to encourage patients to reduce dietary sodium intake to lower inter-dialytic weight gain and promote dry-weight challenges. Outcomes will be captured continuously over a 6-month period. Our primary hypothesis is that the deprescribing protocol will result in a significant reduction in the number of intradialytic hypotensive events. In secondary analyses, we also will examine the impact of the deprescribing protocol on at-home blood pressure; estimated dry weight; percent volume overload; intra-dialytic weight gain; arterial stiffness (pulse wave velocity); and patient-reported outcomes, such as post-dialysis fatigue and cramping.

Mark Dewhirst, D.V.M., Ph.D.

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Research Interests

I have research interests in tumor hypoxia, angiogenesis, and drug transport and have been funded by the National Cancer Institute for my work on these subjects for more than 30 years.

I have mentored 20 medical students (seven Howard Hughes Fellows); 24 graduate students (11 U.S. Department of Defense [DOD] and 2 NIH-funded predoctoral fellows); 19 postdoctoral fellows (three NIH or DOD postdoctoral fellows); and 15 clinical fellows, residents, and junior faculty members.

Yelena Drexler, M.D.

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Research Interests

My research focuses on glomerular kidney diseases, including focal segmental glomerulosclerosis (FSGS), membranous nephropathy (MN), and minimal change disease (MCD), which are the three most common causes of primary nephrotic syndrome (NS) and together account for nearly half of all cases of glomerular disease in the United States. Current first-line treatment strategies for patients with NS include glucocorticoids and other immunosuppressive agents that are associated with significant systemic toxicity. My research is focused on the development of novel targeted therapeutic strategies, which is a critical need for the treatment of patients with NS and other glomerular diseases. FSGS, in particular—the single most common primary glomerular disease among patients with end-stage renal disease in the United States—is known to affect African American patients at a disproportionally higher rate than white patients and is associated with worse outcomes in this minority population. My research seeks to address the need for new insights into the pathogenesis of disease and novel treatment strategies for glomerular diseases, particularly among minority populations. My current active area of research involves the role of lipid-induced kidney injury in the pathogenesis of glomerular disease and as a potential novel therapeutic target. Along with my collaborators at the Katz Family Drug Discovery Center at the University of Miami, I am currently studying APOM, an apolipoprotein that is highly expressed in liver and kidney and is known to play a key role in HDL metabolism and thereby cholesterol efflux. We hypothesize that proteinuric kidney diseases represent a state of APOM deficiency and that decreased glomerular APOM expression correlates with clinical outcomes. To address the hypothesis, we utilize the resources provided by the NIH-funded Nephrotic Syndrome Study Network (NEPTUNE), a large, multiethnic, prospective, longitudinal cohort study of adults and children with NS, which was established to facilitate multidisciplinary innovative research in glomerular diseases. The NEPTUNE cohort study is enriched for individuals at high risk for adverse health outcomes, including African American and Hispanic patients. This well-characterized, diverse cohort of patients provides the basis for a rich framework of data, including rigorous phenotyping and genome-wide molecular profiling. My research harnesses this data and seeks to establish a role for glomerular APOM deficiency as a novel biomarker for proteinuric glomerular diseases. Exploring a new clinically relevant pathway of disease progression may ultimately translate into a new therapeutic opportunity for patients with NS and may open the door to therapies with bioactive lipids. My research seeks to develop and validate a novel biomarker and therapeutic target for patients with nephrotic syndrome and particularly for racial and ethnic minorities who are at the highest risk for adverse kidney disease outcomes.

Monica Esquivel, Ph.D.

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Research Interests

As a junior faculty, I am highly motivated to pursue an academic translational research career. The expertise needed to carry out this pursuit was established while pursuing my doctoral degree under the mentorship of Dr. Rachel Novotny at the University of Hawai'i at Mānoa under the Children's Healthy Living Program. My first first-author papers resulted from those studies on childhood obesity prevention through a randomized community-based trial that tested the effect of a childcare center wellness policy intervention on the obesogenic environment of preschool classrooms. During that same time, I worked closely with community organizations, building relationships to conduct community-based participatory research trials to address childhood obesity through environmental, policy, and systematic changes, specifically improving access to healthy food and in developing child growth–monitoring systems. In my current role as Assistant Professor in Nutrition, I work closely with communities to develop new strategies to address diet-related health disparities that include adult and child obesity, which are important factors in cancer prevention and survival. These initiatives aim to address food access and availability. In doing so, I have contributed to research on the affordability and food cost disparities that exist in the Pacific region, including Hawai'i (Greenberg, 2020), that contribute to food insecurity and poor access to healthy foods, such as fruits and vegetables. Working with communities, we identified the need to address food insecurity in the most vulnerable population, children. Together we developed an intervention aimed at improving fruit and vegetable access and consumption and obtained extramural funds to evaluate this pediatric produce prescription pilot (Esquivel et al, 2020). I also serve as a member of the Board of Directors at Ka'ala Farms (Wai'anae, O'ahu), a learning center that perpetuates Native Hawaiian values and culture by providing education and experiences related to growing and harvesting food, helping the community to overcome food insecurity and ensure access to culturally significant foods.

Ra'Sheda C. Forbes

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Research Interests

As a higher education practitioner, my work primarily is focused on the higher education landscape. My research primarily examines issues pertaining to postsecondary education. My topics of interest are access and retention and the role that a "sense of belonging" plays in student success, persistence, and retention.

I am interested in equity- and justice-oriented work (particularly the role this work plays in advancing faculty advancement), curriculum and instruction, state and federal higher education policy, and the financing of postsecondary education through TRIO programs.

Carol Fowler, Ph.D.

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Research Interests
By training, I am a medicinal chemist, and my research utilizes a broad range of proteomics and biophysical methods. In my current capacity, I am the Scientific Program Manager for the nephrology research portfolio in the Department of Veterans Affairs (VA) Office of Research and Development. This research portfolio encompasses both clinical and preclinical VA-funded research projects that focus on a wide range of topics, such as mechanisms of acute kidney injury (AKI) and treatment strategies for AKI, research on chronic kidney diseases, kidney fibrosis, regenerative medicine, and diabetic kidney disease. Funding mechanisms supported in my portfolio include clinical trials, investigator-initiated VA Merit Awards (analogous to the R01) and career development awards. I am interested in diversity, equity, and inclusion (DEI) programs and promoting DEI in my panel.

Molly Fox, Ph.D.

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Research Interests
I am primarily interested in the concepts of the biological embedding of socioecological conditions and the fetal origins of health and disease paradigm. My work addresses key questions related to (a) how an individual's social and environmental ecology influences biological systems and (b) how biological links between generations affect the development of homeostatic mechanisms associated with chronic disease risk. My short-term career goals are (a) to apply the frameworks of evolutionary and developmental biology toward addressing immigrant and minority health and (b) to investigate the sociocultural effects of migration on gestational biology. My past and current research has been guided by an interest in female reproductive function as a biological continuum between generations, and what this can reveal about health and disease. I was trained in the interdisciplinary field of biological anthropology at Yale University and the University of Cambridge.

Stephanie Freel, Ph.D.

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Research Interests
I have been an active member of the research community for more than 22 years in both academia and industry. For more than 15 years, including my graduate and postdoctoral research, my areas of interest have included the evolution and host response to HIV-1 during the acute phase of infection. Specifically, I investigated the unique character of the CD8 T cells' response in viral non-progressors, individuals who controlled virus replication without the aid of antiretroviral prophylaxis or treatment. In these patients, a robust CD8 T cell response during the acute phase suppressed viral replication through both well-recognized cytolytic effects and less well-understood suppressive effects. My primary focus of research was aimed at understanding the phenotype of CD8 cells that exert the virus suppressive effect, as well as the cytokine and chemokine profile of effective suppressive response. More recently, I transitioned research careers, moving away from the bench. As a research administrator, I have focused on education, mentorship, and workforce development. My research currently investigates the efficacy of formal and informal training for students, faculty, and staff.

Steven Michael Frenk, Ph.D.

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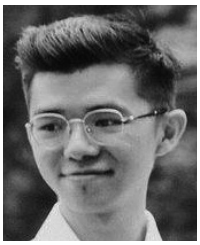
Research Interests
I am the Scientific Review Officer for the Kidney, Endocrine, and Digestive Disorders (KEDD) Study Section. KEDD reviews applications on the epidemiology and genetic epidemiology of diabetes; obesity; and kidney, urinary, gastrointestinal, and liver diseases in human populations. The focus of interest can include molecular, genetic, epigenetic, pharmacologic, behavioral, environmental, microbiome, diet and nutrition, and physical activity issues.



Daniel Rong Yao Gan, Ph.D.

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Research Interests

Since 2017, I have actively engaged in three prongs of research on community-based interventions for cognitive resilience on cohesion, at-homeness, and playfulness (CAP). Three indexes are created based on theories from community psychology, environmental gerontology, and occupational therapy. The CAP model of "everyday cognitive resilience" (Gan & Trivic, 2021) postulates that the "ability to benefit from everyday stimuli" may mitigate the lack of education in early life. The CAP model uses Deweyan person–place integration (Cutchin, 2004)—which understands persons and place as integrated wholes—and draws on theories from community psychology, environmental gerontology, and occupational therapy to identify modifiable variables for primary and secondary preventions. Using the CAP model, I hypothesize that (1) cognitively beneficial everyday stimuli may be inhibited by loneliness and depression and (2) at-homeness and playfulness within a socially cohesive environment enhances one's ability to benefit cognitively from everyday stimuli.

Data from the Canadian Longitudinal Study on Aging and U.S. COVID-19 Coping Study are analyzed using multilevel structural equation modelling (SEM). Neighborhood cohesion provides a meaningful social environment to support continued social participation as life space decreases amid cognitive decline. This variable enhances mental health across levels, from the community level to the individual level. Cohesion is measured using a 16-item Neighborhood Experience (OpenX) scale (Gan et al., 2020). A community-based intervention toolkit is readily available for deployment.

At-homeness is relevant in community settings, despite its origin in health care contexts. It is everyday ontological safety stemming from reminiscent appraisal of one's life and physical and social environments (Gan, Rowles, & Chaudhury, 2021). At-homeness is measured as an index ("alpha, std gen" in Stata v15.0) of life, housing, and relationship satisfaction. These are measured using the 5-item Satisfaction with Life Scale, 8-item Housing Quality Index (Gan, Wister, & Best, 2021), and 19-item Medical Outcomes Study Social Support Survey. At-homeness likely increases one's emotional capacity to entertain external stimuli. An e-Mental Health intervention is underway.

Playfulness is an open and fun-loving disposition that makes one attentive to everyday stimuli. This psychosocial and behavioral construct is a form of dynamic, adaptive variability that is developmentally beneficial and may be inhibited by unsurmountable challenges in one's environment (Burghardt, 2011; Eberle, 2014). Playfulness is measured as an index of *a priori* items selected from the eight-item Social Participation scale (Wister et al., 2019), including "family- or friendship-based activities outside the household" and selected (non-endurance) sports from the Physical Activity Scale for the Elderly. A systematic scoping review is completed.

Symielle Gaston, Ph.D., M.P.H.

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Research Interests

I investigate how differences in exposure to physical and social environmental stressors contribute to racial and ethnic and socioeconomic disparities in cardiometabolic health outcomes, such as type 2 diabetes. From a life-course perspective, I focus on elucidating pathways from stress to deleterious health behaviors, metabolic dysfunction, and cardiovascular disease. It is especially important to investigate stress-related exposures as mediators among women, because the pathways may affect pregnancy outcomes and offspring metabolic function. In particular, my research captures multilevel exposures that may contribute to the enduring cardiometabolic health disparities often observed in the literature. In prior research, I have studied both how adverse neighborhood environments may contribute to women's mental health and whether exposure to phthalates (a class of ubiquitous endocrine disrupting chemicals) is associated with metabolic syndrome among adolescents. As a postdoctoral fellow, I am currently investigating whether aspects of the physical and social environment—such as housing environments, racial and ethnic discrimination, and chemical exposures through personal care products—are associated with suboptimal sleep, which may be a novel contributor to racial/ethnic disparities in cardiometabolic health. As the common theme across my research projects, I seek to understand how micro- and macroexposures contribute to poor cardiometabolic health and associated health behaviors. By investigating these exposures over the life course, I will contribute to mitigating the burden of poor cardiometabolic health, including type 2 diabetes, that disproportionately affects marginalized populations.

Daniel Gossett, Ph.D.

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Research Interests

As a program director in the Division of Kidney, Urologic, and Hematologic Diseases, my portfolio includes research conducted by small businesses (Small Business Innovation Research and Small Business Technology Transfer); biomedical imaging of the kidney; technology development efforts; and translational research in the areas of kidney, urologic, and hematologic diseases.

I am a project scientist for the NIDDK (Re)Building a Kidney Consortium, which is working to improve or restore failing kidney function after injury or disease by either (1) stimulating productive kidney repair/regeneration *in vivo* or (2) generating functional kidney tissue *ex vivo* for transplantation.

I am a project scientist for the NIDDK Kidney Precision Medicine Project, which aims to ethically obtain and evaluate human kidney biopsies from participants with acute kidney injury or chronic kidney disease; create a kidney tissue atlas; define disease subgroups; and identify critical cells, pathways, and targets for novel therapies.

Indira Gowda, M.D.

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Research Interests
I have a strong interest in pursuing translational clinical science. I started doing research as an undergraduate evaluating single-nucleotide polymorphisms in opioid receptors, such as OPRM1, to understand the mutations' effects on pain and side-effect outcomes. I valued this experience because it introduced me to the data collection and analysis that culminated in completion of my undergraduate thesis.

Vala Hamidi, M.D.

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Research Interests
I have developed an interest in studying cardiovascular disease in the diabetic population because I increasingly realized that cardiovascular disease is among the leading causes of death in this population. During my endocrine clinical fellowship, using noninvasive and reliable techniques for measurement of endothelial function, we have studied the effect of incretin therapies ion endothelia function in the prediabetes state. Endothelial cell dysfunction in the context of insulin resistance is an area of research that I wish to dedicate a large portion of my career to in the hope of making an impact in reducing the burden of this disease.

Lilian Hoffecker, Ph.D., M.S.

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Research Interests
I am a research librarian at the University of Colorado Health Sciences Library, a position I have held since 2003. One of my primary responsibilities is to search the medical literature in support of researchers preparing systematic reviews and practice guidelines. One of my recent publications as a searcher relates to opioid dose reduction, which appeared in the August 2017 issue of the *Annals of Internal Medicine*. I currently am involved in projects with the American Congress of Rehabilitation Medicine and with the Campbell Collaboration. I also am interested in scholarly communication. I have presented and published on research relating to the role of language and how translation from English to other languages affects visibility of research information. I also have published articles on open access and its role in making research information accessible. My most recent research project relates to the visibility of publications translated into Arabic, French, Chinese, and Japanese.

Michelle M. Hospital, Ph.D., M.S.

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Research Interests

I am the associate director of research and development of the Florida International University (FIU) Community-Based Research Institute (CBRI) and a research associate professor of the Robert Stempel College of Public Health & Social Work at FIU. I also currently serve as the Chair of the FIU Health Sciences Institutional Review Board. I have a Bachelor of Business Administration (B.B.A.) from the University of Miami, with a concentration in accounting. I received an M.S. in counseling psychology and a Ph.D. in applied life-span developmental psychology at FIU. I am also a licensed mental health counselor in the state of Florida. I completed my postdoctoral training in advanced statistical analyses, including structural equation modeling and growth curve modeling, as well as focusing on national weighted longitudinal data sets.

My colleagues and I at CBRI have been awarded more than $50 million in extramural grant funding from federal agencies (e.g., National Institute on Drug Abuse, National Institute on Alcohol Abuse and Alcoholism, National Institute on Minority Health and Health Disparities [NIMHD], Substance Abuse and Mental Health Services Administration) and private foundations (e.g., Aetna Foundation, Ware Foundation). We have partnered with numerous community organizations, including Miami–Dade County Public Schools, Banyan Health Systems, Citrus Health Network, the United Keetoowah Band of Cherokee Indians, the Choctaw Nation, Gang Alternatives, Miami Music Project, Dranoff 2 Piano Foundation, PIANO SLAM, Stable Place, His House, and SOS Children's Village.

I have extensive experience conducting school- and community-based prevention and intervention research. My clinical and research interests primarily have been centered on the reduction of risk behaviors and the promotion of well-being among racially and ethnically diverse youth. I have served as the principal investigator of multiple community-based research studies evaluating the impact of positive youth development programs (e.g., music education, mindfulness, yoga, equine-facilitated psychotherapy) among at-risk urban youth. I have served as a co-investigator for more than 10 NIH and other federally funded grants, including multiple R01 randomized, controlled trials. I was the primary internal evaluator for a multiyear National Science Foundation Organizational Change for Gender Equity in STEM Academic Professions (ADVANCE) grant and served as an expert consultant for the Health Communications Department at the Università della Svizzera italiana, Lugano, Switzerland. I am also currently the core leader of the Community Core and a co-leader of South Florida's first NIMHD Health Disparities Research Center at a Minority Institution.

Chinaemere Igwebuike, Ph.D.

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Research Interests
My research interests revolve around describing mechanisms of cell death during acute kidney injury (AKI) and identifying possible therapeutic maneuvers that can be used to mitigate cell dysfunction. My current research uses a gentamicin-injury model and genetic screening to identify targetable mechanisms of cell death. Gentamicin is a notable nephrotoxic antibiotic that causes AKI primarily by targeting the proximal tubule epithelial cell. Prior publications have described a multi-organelle form of proximal tubule cell injury that involves mitochondrial and endoplasmic reticulum dysfunction. My specific research interest is describing this Cross-Organelle Stress Response (CORE) and testing whether CORE mitigation is an effective therapeutic option. Additional research interests include examining the socioeconomic factors that make certain populations more susceptible to kidney disease and identifying markers of acute kidney injury.

Tamara Isakova, M.D.

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Research Interests
I study disordered mineral metabolism in patients with chronic kidney disease (CKD).

I first appreciated the burden of chronic kidney disease as a third-year medical student. My subsequent clinical training afforded many opportunities to see firsthand the scope of the problem. World-class physician–scientists mentored and inspired me to dedicate my career to clinical research. I investigate novel mechanisms underlying the development of adverse clinical outcomes in patients with CKD. Disordered mineral metabolism is highly prevalent in patients with CKD, and it contributes to the pathogenesis of cardiovascular disease and progression of CKD to end-stage kidney disease in the high-risk CKD population. By honing in on mechanisms that initiate disordered mineral metabolism in CKD, I aim to identify therapeutic targets to advance into clinical trials. Through fulfilling this scientific objective and by mentoring trainees and early-stage investigators and leading research training programs, I hope to contribute to improved clinical outcomes in patients with CKD.

Renato Jensen

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Research Interests
I currently am interested in the molecular mechanisms of diabetes. I have been working on diabetes research under endocrinologist Dr. Marcelo Correia at The University of Iowa's E. Dale Abel Laboratory for about a year. The research I am personally involved with seeks to investigate the metabolic effects of skeletal muscle–specific deletion of a protein involved in mitochondrial fission called dynamin-related protein-1 (DRP1) in a mouse model. The skeletal muscle of type 2 diabetics exhibits mitochondrial dysfunction associated with mitochondrial fragmentation. Better understanding the role of DRP1 in this observation, as well as its effects on diabetes and metabolism, potentially could be of therapeutic value.

Alton Johnson

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Research Interests
My research focus is diabetic foot management, prevention, and awareness. I currently am working with industry to develop patient-monitoring devices to better to understand the diabetic foot. Currently, I am writing a protocol to monitor glucose levels and healing for patient with chronic diabetic foot ulcerations. I also have worked on projects in an attempt to understand the increased prevalence of diabetes among minorities in the United States. Lastly, I currently am writing a protocol on a medical device that can decrease healing times in diabetic foot ulceration using nanotechnology.

Abdul Qudus Kawsary, M.D.

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Research Interests
I very much am interested in working as a researcher in the field of nephrology.

The initiation of maintenance dialysis reflects an interplay between the care practices of physicians, sources of momentum for initiation, and physician–patient interactions, according to a study published online in *JAMA Internal Medicine*. The findings suggest opportunities to improve communication between patients and physicians and to better align these processes with patients' values, goals, and preferences.

Tasneem Khambaty, Ph.D.

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Research Interests

My research centers on the primary prevention and management of diabetes and related cardiometabolic conditions (e.g., metabolic syndrome, cardiovascular disease), particularly among at-risk populations. My primary interests lie in the examination of psychological (e.g., depression, anxiety) and cognitive risk factors for the development of diabetes, with the intention of translating epidemiological findings into practical, culturally sensitive psychosocial interventions that can be implemented easily in clinical settings (e.g., primary care). I particularly focus on identifying psychosocial determinants of racial and ethnic disparities in cardiometabolic disease and have worked closely with data from the Hispanic Community Health Study/Study of Latinos. I am committed to producing innovative and clinically relevant research, ultimately reducing the burden of chronic diseases associated with psychological factors, and improving long-term public health and patient care.

Nicole Kim, M.D., M.P.H.

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Research Interests

My research interests include minimizing health disparities in viral hepatitis, chronic liver disease, and transplant hepatology, particularly for immigrant and underserved populations. I am interested in community-based research and utilizing mixed methods to explore barriers to care and to promote equity in medical care. My prior projects have included studying the impact of workplace sexual harassment among migrant farmworkers in Washington State and hepatitis C linkage to care and treatment outcomes in an urban underserved population in San Francisco. I also am interested in improving transitions of care between liver specialists and primary care providers as task-shifting models continue to expand liver disease management.

Sheps King-McAlpin, M.D., Ph.D.

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Research Interests
The Potthoff laboratory studies fibroblast growth factor 21 (FGF21), an endocrine hormone that regulates energy homeostasis and insulin sensitivity. FGF21 has been shown to reduce adiposity and serum triglyceride levels, decrease blood glucose, and increase weight loss without decreasing food intake in obese rodent and primate models. Similar effects were observed in humans after the administration of an FGF21 analogue, LY2405319. FGF21 signals to tissues through a complex consisting of FGFR1 (FGF receptor) and B-klotho. B-klotho is an obligate co-receptor in that the tissue-specific effects of FGF21 are limited to the tissues expressing the co-receptor. B-klotho functions as a scaffolding molecule that allows FGF21 to interact with FGFR1. Unlike FGFR1, B-klotho is expressed in a limited number of metabolic tissues. I am working on identifying exactly which tissues express B-klotho, with a particular focus on skeletal muscle. We hope to learn more about the mechanism by which FGF21 regulates energy homeostasis. This mechanism is currently unknown.

Rebecca Klug, M.D., M.A.

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Research Interests
After completing 3 years of general surgery residency, I elected for placement in 2 years of research. My program consists of basic science and clinical and translational research. Thus far, my areas of study include obesity, metabolic syndrome, hepatic disease, and pancreatic cancer. Methods of investigation that I am involved with include animal studies, histological analysis, clinical studies, and epidemiological studies. I intend to continue research activities in these areas, as well as other digestive diseases.

Shilpa Krishnan, Ph.D., M.S.

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Research Interests
My research focuses on health services research and patient-centered outcomes using mixed methods. My work compares the effectiveness of rehabilitation outcomes following stroke hospitalization across post-acute care facilities; access to rehabilitation services among minorities; early detection of quality measures reported by Centers for Medicare & Medicaid Services, such as pressure ulcers; and the assessment of caregiver needs and outcomes, especially among minorities.

Victor Lamin, Ph.D.

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Research Interests
My research interest is to understand sex difference in vascular reactivity of the internal mammary artery conduit vessel used in grafting to circulating catecholamines in patients going through coronary artery bypass graft surgery (CABG) as a contribution to the worsening outcomes and increasing hospital mortality of female post CABG. Furthermore, to work out the mechanism of any observable sex difference in vascular response, I specifically am looking at (a) endothelial integrity, (b) nitric oxide, (c) prostanoids, and (d) receptors-mediated function using state-of-the-art techniques to study novel therapies to improve vascular endothelial and smooth muscle function.

Noemi Lansang, M.S.

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Research Interests

My research interests involve the geriatric population. I am very much interested in mashing up arts with physical rehabilitation. My last research work was on waltz dancing and the balance of older adults in the Philippines. Such interests also involve martial arts and physical rehabilitation and also music and movement therapies. I would like to promote individualized therapeutic regimen for older adults, as these people are unique in their presentations of conditions.

In the future, I also would like to explore other domains of research and touch on the application of physics in physical rehabilitation. My current interest is on the role of acoustics physics in movement therapies. I am also quite interested in psychology and its role in the success of implementation of physical therapy regimens and programs. I am also interested in prosthetics and amputation rehabilitation.

I am pretty much an "everything" kind of researcher. I like to explore the unknown in many aspects of science. If it is something interesting and something important to unfold, then I would want to be there to divulge it.

Charlene E. Le Fauve, Ph.D.

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Research Interests

I became the first senior advisor to the NIH Chief Officer for Scientific Workforce Diversity (COSWD) in December 2016. In this integral role, I support COSWD Dr. Marie Bernard by helping to lead NIH efforts to promote diversity, inclusiveness, and equity in the biomedical research enterprise through evidence-based approaches. Among my key responsibilities is managing a federal workforce program that aims to eliminate or reduce barriers in the recruitment, inclusion, retention, career advancement, and leadership development of biomedical researchers from underrepresented populations. I recently oversaw the design and implementation of three surveys during the COVID-19 pandemic related to its impacts on underrepresented groups in academic science. I was also a driving force behind the NIH Workplace Climate and Harassment Survey, part of a plan to eliminate sexual harassment in the NIH internal and external workforces.

I have more than 23 years of federal service in leadership and health scientist roles. I was previously with the National Institute of Mental Health, where I served as deputy director of the Office for Research on Disparities and Global Mental Health. Before that, I was senior policy coordinator at the U.S. Department of Health and Human Services. I have also held positions at the National Institute on Drug Abuse, the National Institute on Alcohol Abuse and Alcoholism, the White House Office of National Drug Control Policy, and the Substance Abuse and Mental Health Services Administration. I studied clinical psychology and behavioral medicine at the University of Georgia after completing my undergraduate education at Howard University.

Christine Liu, M.D., M.S.

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Research Interests
I am dedicated to improving the lives of older adults with kidney disease. Currently my research focuses on mobility, which is the ability to move safely and reliably from one place to another. In older adults, poor mobility strongly predicts future disability and death. Retaining mobility has been cited by older adults as fundamental to quality to life; yet many older persons with kidney disease, especially those with late-stage chronic kidney disease or outright kidney failure, have trouble just walking across the room or transferring to a chair. Dually trained in geriatric medicine and epidemiology, I also have significant expertise in older adult clinical trials, including safety trials of novel agents and intervention studies to reduce infections in older populations.

Sashi Kumar Makam, M.D.

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Research Interests
I am a board-certified internist in active clinical practice and Graduate of Harvard Medical School Global Clinical Scholars Research Training Program. I have been a principal investigator since 2007 and part of more than 125 phase 2–4 pharmaceutical-sponsored clinical trials. I am very interested in genomic studies for early cancer detection, virtual clinical trials in situations like the current pandemic, and hybrid clinical trials to ease patient travel to the site and increase in patient compliance and retention in the studies.

I work on educating and mentoring minority clinicians to become investigators, which ultimately increases patient participation from underrepresented communities for a wide variety of problems. I am also interested in encouraging clinicians in nonacademic institutions like mine (private practice) to engage in clinical trials.

Sandeep Mallipattu, M.D.

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Research Interests

Our research focuses on identifying mechanisms involved in the progression of chronic kidney disease. Specifically, our published work involves the essential role of the Krüppel-like factors (KLFs), a family of highly specialized transcription factors, in epithelial and endothelial cell biology. Our recent work highlights the transcriptional role of KLFs in the maintenance of the glomerular filtration barrier in the setting of focal segmental glomerulosclerosis and diabetic nephropathy. In addition, our laboratory is involved in understanding the mechanism(s) by which tubular injury contributes to kidney fibrosis. At Stony Brook Medicine, we continue many of these exciting studies and welcome any collaborative efforts.

Carol Mangione, M.D., M.S.P.H.

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Research Interests

I am the division chief of general internal medicine and health services research and distinguished professor of medicine and public health at the University of California, Los Angeles (UCLA). I hold the Barbara A. Levey, M.D., and Gerald S. Levey, M.D., Endowed Chair in Medicine and serve as executive vice chair for health equity and health services research at the David Geffen School of Medicine at UCLA. I am a professor of public health at the UCLA Fielding School of Public Health, co-director of the UCLA Resource Center for Minority Aging Research/Center for Health Improvement of Minority Elderly, and director of the workforce development program for the UCLA Clinical and Translational Sciences Institute (CTSI). My research focuses on the influence of health insurance benefit design and health system interventions on diabetes outcomes, diabetes prevention, and health disparities. In addition to authoring more than 300 peer-reviewed articles, I am a practicing primary care physician in the UCLA Faculty Practice Group, a member of the National Academy of Medicine, and vice-chair of the U.S. Preventive Services Task Force.

Pallavi Manral, Ph.D., M.S.

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Research Interests
Lupus nephritis (LN) is a complication of systemic lupus erythematosus (SLE) involving the kidney. SLE is an autoimmune disease and associated with presence of antibodies to self-antigens, including dsDNA, nuclear proteins, ribosomal proteins, and complement proteins. LN is more common in women of childbearing age and in people of African descent. Goodpasture disease is an autoimmune disease of glomerular basement membrane.

Rosa Manzo, Ph.D.

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Research Interests
My research focuses on the implementation of community-engaged research methodologies within underserved rural communities. More specifically, my research can be categorized into three main threads. The first focuses on how community-engaged methodologies are implemented in community-based interventions to address health disparities. The second thread involves the development of community-engaged initiatives to improve educational opportunities in underserved populations. The third thread focuses on the integration of community-engaged methodologies to develop culturally competent trainings for health care providers and *promotoras* (community health workers). Questions that are addressed by my research are: How can community-engaged methodologies increase the participation of rural, underserved populations in health- and education-related research? How can community-engaged methodologies lead to the development of community–university partnerships to address health disparities and educational inequities? How can culturally relevant approaches improve the training of health care providers and practitioners?

My research agenda has practical implications for the health care practitioners and researchers who seek to develop culturally relevant community health interventions that yield an increased engagement and retention of research participants and improved overall sustainability of interventions. Additionally, my research sheds light on the structural challenges that students in the San Joaquin Valley encounter in their educational pathway, which has implications for the development of academic and professional programming that leads to more inclusive models of premedical and medical education.

Boris Martinez, M.D.

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Research Interests
I am interested in health services research for underserved communities both in the United States and Latin America. I have had the opportunity to conduct research and collaborate with Maya Indigenous communities in Guatemala, working on expanding health services for chronic noncommunicable diseases, such as chronic malnutrition, diabetes, hypertension, chronic kidney disease, and cancer. I am also interested in the use of technology to connect community health workers with the health care system at large. Currently, I am focusing on the detection of cancer in Maya Indigenous communities and the psychosocial burden a new cancer diagnosis places on the lives of patients and their families.

Lashando Matthews

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Research Interests
My research interest lies in deciphering the underlying role of inflammation on chronic kidney injury. Renal injury has plagued societies for a vast number of years, with the onset unclear. With many theories of how the inflammatory cascade activates the mechanistic pathway leading to renal injury, I am interested in exploring the pathway leading from oxyradical stress to renal vascular cell apoptosis and subsequent renal injury.

Deidra McKoy

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Research Interests
I currently serve as the coordinator for a National Institute of General Medical Sciences R25 aimed at improving the statistical competency and research capacity of junior faculty and postdoctoral fellows in academic medical centers, with special emphasis on underrepresented minorities. The course, entitled the Applied Statistics in Biological Systems Short Course, has been running for 4 years and has trained 108 participants so far, half of whom are racial or ethnic minorities. More information about the course can be found at http://www.asibs-statistics.com.

Ketrell McWhorter, Ph.D., M.B.A.

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Research Interests
Using a life-course approach, my research investigates racial, ethnic, and socioeconomic disparities in perinatal and early childhood outcomes (e.g., birth weight, infant mortality, preterm birth, and pediatric obesity) and later life metabolic disruption (e.g., obesity and type 2 diabetes) by integrating social, environmental, and lifestyle (e.g., sleep) factors with biological mechanisms. My current research includes integrating upstream factors of the physical and social environment into studies exploring biological mechanisms to more comprehensively investigate the biological underpinnings of disparities in later life cardiometabolic health. My future research will involve examining the contribution of "food/health deserts" and health literacy to disparities in obesity and diabetes outcomes among racial and ethnic minorities in rural communities. It also will investigate how noninvasive interventions may mitigate these disparities. This approach will help identify modifiable behavioral factors to advance disparities research and promote optimum health in under-resourced populations.

Portia Mira, Ph.D.

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Research Interests

My research seeks to expand the frontiers of microbial evolution through innovations in technology and analytical tools. I combine microbiology, evolutionary genetics of antibiotic resistance, and mathematical models. I focus on two main areas: (1) the role of environmental antibiotics on the evolution of antibiotic resistance and (2) how increasing levels of resistance can impact temperature response and drug interactions.

The role of environmental antibiotics on the evolution of antibiotic resistance. Through my dissertation work, I have shown that sub-inhibitory concentrations of antibiotics, such as those commonly found in the environment (i.e., hospital effluent, wastewater, and agriculture), select for antibiotic-resistant mutations more than lethal concentrations of antibiotics. Using the TEM-beta-lactamase gene as a model system, I found that sublethal concentrations of antibiotics can select for every possible genotype within the *TEM-50* and *TEM-85* beta-lactamase resistance genes. Using this system and bacterial growth rates as a proxy for fitness, I developed a mathematical model—TimeMachine—that uses bacterial growth rates from the variant genotypes and cycles through various sublethal antibiotic treatments. Through this work, I have shown that antibiotics at low concentrations can theoretically be used as selective pressures to push resistant bacteria to more susceptible states.

Explore how increasing levels of resistance can impact temperature response and drug interactions. In collaboration with mathematicians, I investigate the impact of bacterial cell size on the minimum inhibitory concentrations (MIC). Supported by previous theoretical frameworks that use bacterial cell sizes to predict features of cellular function, we have shown that the MIC also can be predicted, given bacterial cell sizes. Leading from this project, I developed 13 adapted resistance libraries for both *Escherichia coli* and *Staphylococcus epidermidis*. These libraries will expand my research program because I have captured resistance as it is evolving over time, leaving many questions open pertaining to genetics, synergy (either gene–drug or drug–drug interactions) and temperature responses. I also incorporate whole-genome sequencing using the MinION nanopore sequencer, which will allow us to explore genetic and mechanistic impacts of antibiotic resistance.

Carmen Monico, Ph.D., M.S.

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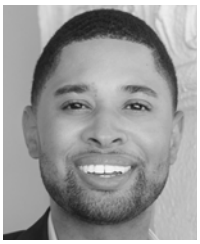
Research Interests

My scholarship has included global migration, human trafficking, and global and community engagement locally and internationally. I conducted a bilingual and transnational dissertation on illegal adoptions from Guatemala and have published extensively on intercountry adoption. I have served as an international expert and conducted research and teaching in Guatemala with the Universidad del Valle de Guatemala as a U.S. Fulbright Scholar and with the Universidad de San Carlos de Guatemala as a Rotary Foundation Research Scholar.

As a minority scholar in the South and at one of the largest historically Black colleges and universities in the United States, I am seeking to anchor my research agenda on health disparities among immigrants and refugees in North Carolina. I am interested in conducting research on the implementation of trauma-informed and resilience-focused interventions. I am a member of the Center for New North Carolinian Scholars and have opportunities for collaboration with other seasoned researchers.



Derrick J. Morton, Ph.D.

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Research Interests

The primary research goal of my laboratory is to study the fundamental mechanisms of post-transcriptional regulation of gene expression, with an emphasis on RNA processing factors mutated in human disease. Throughout my scientific career, I have been fascinated by aspects of gene dysregulation in disease, specifically the post-transcriptional activities of the RNA-regulatory exosome complex in human neurological disease. In my laboratory, we have taken the strategy of coupling *in vitro* molecular and biochemical assays with *in vivo* genetic studies and multi-omic approaches to understand the different aspects of post-transcriptional regulation of RNA. Our focus ranges from defining tissue-specific roles of RNA processing, surveillance, and decay machinery to how defects in essential and ubiquitous RNA processing factors cause tissue-specific disease.

Stanford Mwasongwe, M.P.H.

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Research Interests
My research focuses on the prevention and management of chronic diseases, specifically hypertension, cardiovascular disease, and chronic kidney disease (CKD). I also have an interest in examining how social environmental determinants factors (e.g., neighborhood characteristics) and genetic factors influence chronic disease prevention and management. Specifically, I am interested in the association between neighborhood characteristics and ambulatory blood pressure phenotypes (sustained hypertension, white-coat hypertension, masked hypertension, etc.) and CKD progression among participants in the Jackson Heart Study. I also hope to investigate the role of nontraditional factors, such as biomarkers and early identification of people who are at increased risk for CKD development. More recently, I became an early-stage investigator with the Jackson Heart Study Hypertension and CKD Working Groups.

Devika Nair, M.D., M.S.

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Research Interests
My research interests center around understanding mechanisms of and developing interventions to treat cognitive impairment and frailty in patients with non-dialysis-dependent chronic kidney disease. I am also interested and developing expertise in patient and community engagement, as well as physical and psychological symptom burden. I use qualitative and quantitative methods and patient-reported and biobehavioral outcomes and analyze epidemiological cohort data.

Ted Kheng Ng, Ph.D.

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Research Interests
I am a translational neuroscientist with expertise in aging and cognition, utilizing techniques employed across the bio-psycho-social science domains. The two main themes of my research program are (1) investigating the determinants of cognitive impairment and aging from a holistic bio-psycho-social perspective and (2) examining the effects of randomized controlled trials on psychosocial interventions. Key areas include randomized controlled trials, mindfulness intervention, blood and salivary biomarkers, cognitive impairment, geriatric psychiatry, and loneliness and social connectedness.

Bin Ni, Ph.D.

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Research Interests
I have a broad background in pharmacology, toxicology and translation study, with specific training and expertise in brown and beige fat activity investigations and deep metabolic phenotyping in calorie overload–induced metabolic disorder rodent models. My research interest is focused on exploring the protection role of adipose tissue angiogenesis factor against postmenopausal metabolic disorders through whole-body metabolism (energy balance), substrate utilization, body composition, glucose homeostasis, insulin resistance, liver steatosis, cardiology function outcome, tissue morphological and histological change characterization; identifying the function of tyrosine kinase in brown adipose tissue activity and beige adipose tissue recruitment regulation; and investigating the cellular and molecular mechanisms that underlie obesity and diabetes via combining biochemical, pharmacological, and genetic approaches.

Stephanie Ogando, M.P.H.

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Research Interests
I am currently involved in the Study of Women's Health Across the Nation (SWAN), a multisite, multiethnic, community-based, longitudinal epidemiologic study initiated in 1996–1997 that enrolled women ages 42–52 who were pre- or early perimenopausal at baseline. Participants were recruited at seven sites, each enrolling white women and women from one additional racial or ethnic group (Black, Chinese, Hispanic/Latinx, or Japanese). Currently in its sixth phase, the goal of SWAN is to determine the extent to which midlife health, and specifically the menopause transition, affects successful aging in women.

Mark Okusa, M.D., M.S.

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Research Interests

Project 1: Pannexin 1 (Panx1) and Acute Kidney Injury (AKI). Panx1, a channel able to release large amounts of ATP to the extracellular space, regulates vital processes, including, but not limited to, ion transport, blood pressure, and immune cell activation through purinergic P2Y and P2X receptor activity. Pharmacological inhibition of Panx1 or global, endothelial, and epithelial tissue specific deletion of Panx1 protects mice from ischemia-reperfusion injury. In cultured cells, Panx1 deletion or overexpression leads to reduced or increased injury, respectively. Therefore, blocking Panx1 is a promising therapeutic strategy, and research centered around ubiquitously expressed pannexin 1 may contribute not only to the field of nephrology, but also to development of a therapeutic strategy against other acute organ dysfunctions. Project 2: Ultrasound (US) for Non-Invasive Prevention of Acute Kidney Injury. This project focuses on a novel approach to modulate inflammation through neural control of inflammation and acute kidney injury; a simple US-based protocol that reduces tissue and systemic inflammation and prevents ischemia-reperfusion injury (IRI) in mice. This effect was a dependent affect which appears to be through the activation of the splenic cholinergic anti-inflammatory pathway (CAP). Our studies will define US characteristics to demonstrate a biomechanical effect to protect kidneys from IRI, define mechanistically the contribution of the CAP to protection from AKI through a unique optogenetic approach to specifically stimulate or silence splenic innervation, and establish the efficacy of US in relevant models of AKI, including IRI and septic AKI in mice and AKI in pigs to enable transition to clinical trials in humans. Concepts and therapeutic principles could be pertinent to sepsis, colitis, myocardial ischemia, and arthritis. Project 3: Sphingolipids in Acute Kidney Injury and Disease Progression. Regardless of the cause of injury, a stereotypical response leads to interstitial fibrosis. A key feature is the activation of extracellular matrix-producing myofibroblasts. Sphingosine 1-phosphate (S1P), a pleiotropic lysophospholipid that is involved in diverse functions—such as cell growth and survival, lymphocyte trafficking, and vascular stability—has profound effects on the immune system and kidney injury. S1P is the product of sphingosine phosphorylation by two sphingosine kinase isoforms (SphK1 and SphK2) that have different subcellular localizations. We observed that $Sphk2^{-/-}$ mice had markedly attenuated renal fibrosis compared with $Sphk1^{-/-}$ or WT mice and marked tissue elevation of interferon gamma. These findings led us to focus our effort on the specific role of SphK2 and determine whether intranuclear SphK2 regulates tissue fibrosis.

Perla Ontiveros-Angel

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Research Interests

I am interested in stress and anxiety disorders, post-traumatic stress disorder, health disparities, racial disparities, adolescence, depression, metabolic syndrome, preclinical models, rodents, rats, magnetic resonance imaging, diffusion-tensor imaging, immunohistochemistry, vulnerabilities, resilience, systems biology, bioengineering, and principal component analysis.

Itunu Owoyemi, M.D., M.B.B.S.

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Research Interests

My research interests include the following: (1) Kidney transplantation and disparities, with particular interest in improving the number of living donor kidney transplant outcomes in minorities: There is a wide knowledge gap in the process of living donor kidney transplantation among patients with end-stage kidney disease and their caregivers. My aim is to study barriers to living donor kidney transplantation in minorities and devise strategies to address these barriers. (2) Hematological malignancies and kidney transplantation: I am currently doing an onco-nephrology fellowship and am in the process of studying outcomes of patients with such hematological malignancies as sickle cell and multiple myeloma. Most hematological malignancies require bone marrow transplantation. Although the benefits of chimerism to achieve tolerance in kidney transplant recipients are being explored, I am interested gathering data to understand the outcomes in minorities with hematological disorders, such as sickle cell disease, and malignancy, such as multiple myeloma. (3) Safety and efficacy of immune checkpoint inhibitors in solid organ transplantation: Solid organ transplant recipients routinely are excluded from immunotherapy trials, resulting in limited data for this population. My current research involves looking at immunosuppression management in these patients while getting immunotherapy to obtain information on risk factors that predispose transplant patients to allograft rejection.

Ankit Patel, M.D., Ph.D.

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Research Interests

My research interests rely on developing and utilizing existing *in vitro* models to study kidney physiology. Our understanding of kidney physiology has been built on the seminal experiments done on toads, salamanders, rabbits, rats, and mice via tools such as microperfusion, micropuncture, and direct electrical recordings via patch clamp. I hope to be able to study tubular function in some *in vitro* human samples to better define and characterize tubular transport in human renal epithelia. Previous studies have found some key differences in angiotensin II signaling in proximal tubules between humans and rats or mice. I am interested in developing a collecting duct cell line via directed programming from induced pluripotent stem cells working with collaborators at the Harvard Stem Cell Institute. The hope then will be to use an array of bioengineered devices to study the function of the human collecting duct with eventual hope of impacting development of novel therapeutics. Hypertension is found to disproportionately affect the African American population, along with kidney disease. A better understanding of sodium transport properties from individual patients may allow us to detect some of the racial differences better.

Gregory Lance Peck, D.O., M.P.H.

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Research Interests

My goal is to decrease preventable mortality currently associated with surgery through research conducted at the population level, with a focus on variables that precede the need for deadly emergency surgery. Depending on the circumstance, reaching my goal might occur by reducing the need for surgery of any type, if or when preventive or medical therapies have better mortality outcomes than surgery (a primary prevention), or shifting emergency surgery to elective surgery if or when elective surgery has better outcomes than emergency surgery (secondary prevention).

The purpose of my currently proposed program of research will be to take advantage of a natural population-level experiment to test some of the above assumptions. I will seek to explore and ultimately modify etiologic factors that lead to patients' requiring surgery in an emergency situation. My specific application will be symptomatic gallstone disease, the most common and costly digestive disorder requiring surgery in the United States, and one that can be treated medically, with elective surgery, or with emergent surgery.

Luis Perez, B.S.N.

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Research Interests

In the long term, my research goals are to become a clinical registered dietitian involved in research at an academic, governmental, or research institution. I have a major interest in working with human subjects in underserved and underrepresented clinical populations, such as those with diabetes and cardiovascular disease. My clinical in-center nutrition experience started at the beginning of my undergraduate degree in nutrition at the University of Colorado and continues at the University of Illinois working with outpatient individuals on maintenance hemodialysis. At the University of Illinois Urbana–Champaign, I currently am undergoing graduate training while investigating the role of nutrition and physical activity in the health of individuals with chronic kidney disease on hemodialysis. This research involves the principles of health behavior change and requires collaboration with renal dietitians, nephrologists, and nurses. I have worked on an intervention to improve the nutrition education and literacy in patients with end-stage renal disease. Furthermore, this long-term research employs multifactorial approaches to target many patient behaviors while reducing barriers to eating healthy and following the renal diet. Our research also combines physical activity interventions and nutrition to increase patients' exercise inside and outside of the dialysis clinic to improve physical function. My thesis research also is focused on the home delivery of renal meals to patients on hemodialysis. This approach is designed to bypass many of the barriers that exist in counseling approaches for patients with chronic disease, multiple comorbidities, and complex socioeconomic factors. I also am studying the implications of non-osmotic sodium storage in dialysis patients with an experimental sodium magnetic resonance imaging coil. Patients on hemodialysis often have little to no urine production and serve as a complex and unique model to study sodium and fluid balance. Overall, I am very interested in the general fields of nutritional intake and fluid/electrolyte balance.

Josh James Peterson

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Research Interests
So far, I am interested in diabetes research and, more specifically, how the mitochondria are affected and change because of diabetes or the changes to them that may cause diabetes. I am interested in the relationship between the endoplasmic reticulum (ER) and the mitochondria and how ER stress can lead to changes in that relationship in diabetic models.

More specifically, I have been a part of a group that is looking at the protein DRP1 in skeletal muscle and how it influences insulin resistance and glucose tolerance, as well as the mitochondria dynamic changes that occur because of the depletion of DRP1.

Martin Pollak, M.D.

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Research Interests
My laboratory studies the molecular and genetic basis of kidney disease in humans. We are interested in understanding genes and gene products that, when altered, cause human kidney disease. My laboratory is experienced in human genetic methods, as well as cell-based studies of podocyte biology and the development and analysis of animal models of kidney disease. My laboratory has identified several focal segmental glomerulosclerosis genes and continues to study the mechanisms by which these gene alterations caused human disease by a variety of experimental approaches. For the past 11 years, understanding the genetics and biology of *APOL1*-associated kidney disease has been a major focus of my laboratory's efforts. Two variants in the *APOL1* gene that are common in individuals of recent African ancestry are a major contributor to the racial disparity in rates of kidney disease. We are using a variety of approaches to try to connect *APOL1*-associated kidney disease risk with disease mechanisms to make progress in reducing the impact of this common genetic factor on the risk and progression of kidney disease and kidney failure.

Claire Pomeroy, M.D., M.B.A.

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Research Interests

I am president of the Albert and Mary Lasker Foundation. I serve as chief executive officer of the Foundation and am responsible for advancing the Foundation's mission to "improve health by accelerating support for medical research through recognition of research excellence, advocacy, and education."

An expert in infectious diseases, I am a long-time advocate for patients, especially the underserved and those with HIV/AIDS. I passionately support ongoing investment in the full range of research. I have a special interest in public health and health care policy, with a focus on the importance of the social determinants of health. I have published more than 100 articles and book chapters and edited three books.

I serve on the Board of Trustees for the Morehouse School of Medicine and the Board of Directors for the Science Philanthropy Alliance, iBiology/Science Communication Lab, and the Center for Women in Academic Medicine and Science. I also serve on the Board of Directors for the Sierra Health Foundation, Haemonetics Corporation, and Becton Dickinson & Company/embecta, positions for which I receive compensation.

I was inducted into the National Academy of Medicine in 2011. I received an honorary Doctor of Science degree from University of Massachusetts Medical School in 2016.

I received bachelor's and medical degrees from the University of Michigan and completed my residency and fellowship training in internal medicine and infectious diseases at the University of Minnesota. I earned an M.B.A. from the University of Kentucky. I have held faculty positions at the University of Minnesota, University of Kentucky, and University of California (UC) Davis. I was chief of infectious diseases and associate dean for research and informatics at the University of Kentucky. I joined UC Davis in 2003 as executive associate dean and served as vice chancellor and dean of the School of Medicine from 2005 through 2013. I became president of the Lasker Foundation in June 2013.

Nabin Poudel, Ph.D.

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Research Interests
My long-term interest involves improving our understanding of the pathophysiology of human diseases, identifying novel therapeutic targets, and developing proper disease models. During my academic training, I got extensive training and research experience in diverse field of biochemistry, molecular biology, genetics, renal physiology, pulmonary physiology, and extracellular matrix biology. I have experience with animal models, in vitro models, gene manipulation, RNA and protein analysis, and physiology. As a veterinary medicine student, I gained a deeper understanding of physiology, biochemistry, pathology, genetics, and various species-specific differences in progression/resistance of a disease. As a Ph.D. student, I was involved in investigating extracellular matrix proteoglycans and their role in tissue homeostasis, including renal, pulmonary, and development biology. During my postgraduate research, with international collaborative work, we identified and characterized mutations causing Spondylo-ocular syndrome, a rare genetic mutation that affects development of multiple organ systems. Since our manuscript, there have been multiple reports of defective proteoglycan biosynthesis as a cause of developmental defects involving multiple organ systems, including the musculoskeletal, connective, cardiovascular, and sensorineural system. My current research involves identifying the underlying molecular mechanism for development of acute kidney disease. More specifically, I am investigating roles of Pannexin 1 (Panx1) channels in modulating acute kidney injury. My research focuses on cellular effects of Panx1 deficiency, as well as the impact of altered Panx1 expressions in tissue microenvironment during acute kidney injury. My research also focuses on assessing potential of targeting Panx1 as a therapy for acute kidney injury.

Temiloluwa Prioleau, Ph.D.

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Research Interests
My research interests are in digital health, wearable technology, and data science, with a focus on developing human-centered computing solutions that enable personalized health. I am passionate about the prospect of digital technologies that enable continuous sensing of people's physiology, daily activities, and behaviors for the goal of informing health management, treatment, and recovery. Presently, I lead research efforts on developing computational solutions for improved management of chronic conditions, such as diabetes. Example projects include (1) developing digital biomarkers of glycemic control, (2) developing algorithms for uncovering hidden patterns of management, and (3) integrating continuously sensed data to contextualize, intervene, and mitigate adverse glycemic events. My long-term research vision is to permeate into other health domains that also have a large footprint in our society, such as cancer and cardiovascular disease.

Marpadga A. Reddy, Ph.D.

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Research Interests

The major focus of my research is to understand the molecular mechanisms involved in the pathogenesis of diabetic vascular complications. In the early stages of my career, while working at prestigious institutions in the United States (Duke University and Children's Hospital Los Angeles), I contributed significantly toward understanding signaling mechanisms involved in oncogenesis and host–microbial interactions. In the past decade at City of Hope, I have examined mechanisms involved in the pathogenesis of diabetic vascular disease and diabetic nephropathy. These studies provided significant insights into the signaling, epigenetic, and non-coding RNA (miRNA and lncRNA)–dependent mechanisms involved in enhanced pro-inflammatory, -atherogenic and -fibrotic responses of monocytes and macrophages, vascular smooth muscle cells (VSMC), and renal mesangial cells in cell culture and diabetic animal models. Key findings include the dysregulation of Src-NF-kB-CREB signaling, epigenetic histone modifications and histone methyl transferases by high glucose, AGEs and oxidized lipids, role of persistently altered epigenetic and miRNA-dependent mechanisms in "metabolic memory," and demonstration that conventional therapies do not reverse all the diabetes-induced epigenetic mechanisms involved in diabetes complications. My recent studies identified the role of novel enhancer-lncRNA-dependent mechanisms in vascular inflammation, characterized diabetes-induced changes in monocyte and macrophage transcriptomes, and for the first time demonstrated the role of diabetes-induced lncRNAs in pro-inflammatory phenotype of macrophages. Currently, I am studying transcription mechanisms involved in the dysregulated expression and function of diabetes-regulated lncRNAs, including interaction with enhancers and transcription regulators using state-of-the art proteomics, transcriptomics, and genome-editing approaches to develop novel inhibitors for the diabetes-induced monocyte and macrophage dysfunction and metabolic memory.

Yuvaram Nellore Vilambi Reddy, M.D., M.P.H.

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Research Interests

I am an instructor of medicine at the University of Pennsylvania; the director of diversity, equity, and inclusion for the Renal-Electrolyte & Hypertension Division; a core investigator at the VA Center for Health Equity Research and Promotion (CHERP); and a staff nephrologist at the Corporal Michael J. Crescenz Department of Veterans Affairs Medical Center. I am passionate about improving home dialysis use through projects grounded in implementation science and health services research.

I currently am conducting a mixed-methods study to identify major home dialysis barriers (the IM-HOME study). Additionally, I am evaluating the health equity impact of the End-Stage Renal Disease Treatment Choices Model on social determinants of health for patients with kidney failure.

Luiza Reopell

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Research Interests
In my current role, I am a clinical research coordinator in the Department of Endocrinology at my institution. I am interested in research regarding diet and lifestyle on diabetes and heart conditions. I am also interested in looking at how different medicines affect these conditions, particularly in ethnic minorities. One of my current research projects is looking at how a U.S. Food and Drug Administration–approved medicine used for blood pressure will affect blood sugar levels in African Americans. These issues are important because minorities are often left out of clinical research trials, and therefore we can not always assume or know the efficacy of certain drugs on these populations, which is why I am interested in this area of research.

In regard to diet and lifestyle, I am very interested in studying how different diets and diet interventions may affect diabetes and cardiovascular outcomes in different populations, particularly African Americans, Latinx, and women. Furthermore, I think it would be interesting to look at the combination of diet, lifestyle, and physical exercise, as well as their effects on different outcomes in these populations.

Glenda Roberts

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Research Interests
The Kidney Research Institute is a collaboration between Northwest Kidney Centers and UW Medicine focused on developing early detection, prevention, and treatment of kidney disease and its complications. We bring together scientists in clinical medicine, pharmacology, genetics, pathology, psychology, education, and physiology and work closely with basic scientists in bioengineering, biochemistry, immunology, genomics, and other disciplines. Since it launched in 2008, the Kidney Research Institute has received more than $100 million in grant support and generated more than 900 peer-reviewed publications. It currently has more than 50 active, funded research studies underway. The Kidney Research Institute operates through multidisciplinary teams of researchers. The teams work on studies and clinical trials designed to lessen the burden of cardiovascular disease for dialysis patients, detect and treat diabetic kidney disease complications, investigate lifestyle factors that prevent kidney disease complications, and determine the ways in which genetics play a role in kidney health. The University of Washington (UW) has long been the place for kidney research. UW is the home of the first dialysis access that made maintenance dialysis possible in this country and was integral in establishing the first outpatient dialysis program in the world. This position directly supports a research program that is important to maintaining UW as a leader in improving the lives of patients with kidney disease. My research program involves developing a study to assess KRI's effectiveness at recruiting and developing underrepresented minority students in the field of nephrology and kidney research.

Mark Roltsch, Ph.D.

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Research Interests
I received my Ph.D. in exercise physiology from the University of Maryland. As a postdoctoral researcher at Howard University Cancer Center, I investigated the physiological and biochemical mechanism by which regular physical activity interventions reduce cancer risks. In 2005, I joined the NIH as a scientific review officer in the National Heart, Lung, and Blood Institute (NHLBI) and rose to deputy chief of the Clinical Trials and Training Branch. In 2010, I moved to the Division of Cardiovascular Sciences as a program director in the Office of Research Training and Career Development. While at NHLBI, I managed a portfolio of 283 grants worth more than $150 million. In 2012, I moved to St. Mary's University as the executive director of the Office of Academic Research and Sponsored Projects. In November 2015, I joined the University of West Florida as the assistant vice president for research and the director of research and sponsored programs. I also have traveled around the United States, giving grant-writing workshops at such universities as Stanford, Harvard, and Johns Hopkins. I am now a health science office for the U.S. Department of Veterans Affairs in the Office of Research and Development (ORD). As a member of this Office, I am working in clinical science services, managing awards and reviews related to lung, skin, and other cancers. I lead the review of the Barnwell Award and head the Career Development Program for Clinical Science and Biomedical Laboratory Services. I am also the co-director of the ORD Diversity, Equity, and Inclusion Working Group.

Mark Rosenberg, M.D.

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Research Interests
Medical education outcomes research with emphasis of linking educational outcomes to the clinical outcomes of graduates. Previous research performed by me has focused on the pathophysiology of progression of kidney diseases and on kidney regeneration. I also am dedicated to the research and career development of nephrology investigators. I will be attending the NMRI meeting as current President of the American Society of Nephrology (ASN), which is the major nephrology society for kidney health professionals and researchers. Projects for which ASN is involved include the Kidney Health Initiative and KidneyX.

Beryl Samuels, B.S.N.

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Research Interests
I am interested in diabetes- and obesity-related research because, in the past several years, there has been a disturbing increase in the prevalence of diabetes and obesity both globally and in the United States. This disease is considered to be a chronic, debilitating, incapacitating condition with severe pathological effects. Diabetes is not only a debilitating disease but also very costly. Researchers have observed that hospital stays for diabetes cost more than for people without diabetes, for example. For me, diabetes is more than just an isolated disease to be studied and researched. I have a particular, personal interest in diabetes because this disease has plagued every one of my family members from generation to generation—grandparent, parents, and siblings. I have witnessed firsthand the debilitating and maiming effects of this disease on my family members, especially my mother, who is afflicted with varying diabetes- and obesity-related illnesses, ranging from blindness to cardiovascular issues. As a result, I have developed a deeper interest in diabetes- and obesity-related research with the hope of gaining a knowledge base that will help improve the lives of patients and the community. Usually, people with type 2 diabetes are overweight at the time of diagnosis. Obesity coalesced with diabetes can lead to a spiral of comorbidities (i.e., hypertension, hyperlipidemia, and so forth). I have an interest in investigating not only the clinical aspects of diabetes and obesity but also the genetic, metabolic, and hormonal aspects. Furthermore, I am hoping to gain insight into the relationship of obesity to neuroscience, patient education and patient-related diabetes, lifestyle, and health outcomes. There are many diabetes management techniques and protocols that are now irrelevant and even obsolete. It is through continued research and investigations that we increase our knowledge about new technologies to identify biomarkers that will help prevent, diagnose, or manage diabetes and can modify present techniques and protocol and develop new ones. It is my hope that my contribution to this diabetes and obesity research will help increase my knowledge and, ultimately, improve the lives of patients and the community at large.

Anawin Sanguankeo, M.D., M.P.H.

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Research Interests
One of my primary research interests is chronic kidney disease and obesity. One of my project's objectives is exploring the relationship between various parameters of obesity and albuminuria. The answer to this question may help physicians to recognize the role of abdominal obesity on obesity-related glomerulopathy, rather than primarily focusing on body mass index. I am currently performing an analysis on data from the National Health and Nutrition Examination Survey to explore the issue in the U.S. population. A second area of interest for me is the efficacy of statins in chronic disease. One of my research topics that I believe would be very useful for nephrologists and their patients is a study investigating the role of statins on renal outcomes in patients with chronic kidney disease. A recent meta-analysis that I performed showed that high-intensity statins slowed the decline of renal function in these patients. Findings from this research may have clinical usefulness and lead to further investigation.

Stephanie Santana, M.D.

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Research Interests

Disparities based on race and ethnicity are widely prevalent in health care, and a significant variability in morbidity and mortality persists for children with congenital heart disease. We have known for at least two decades that outcomes differ based on race and ethnicity. Several observational studies have identified consistent relationships between race and ethnicity and adverse outcomes, including in-house mortality, postoperative complications, and prolonged length of stay. These studies often are limited, unfortunately, by sample size and are usually secondary analyses of clinical studies. One plausible explanation is that much of the variance in racial and ethnic disparities seen in this unique population is due to differences in socioeconomic status (SES)—that a child's home environment, community, and family's financial status play a larger role in their survival and likelihood of thriving after cardiac surgery. Focusing on these aspects of a child's health will allow a better understanding of the role that SES plays on postoperative outcomes. Additional studies will establish a foundation for future research that may identify potentially modifiable risk factors that could be mitigated to improve outcomes—including, but not limited to, improving resource utilization, reducing costs, allocating resources at the inpatient level, allocating resources to high-risk communities, performing community outreach, and providing financial and language services—all while maintaining quality of care. A variety of registries and databases specific to congenital heart disease were created and designed to capture different aspects of a patient's health status and medical care. One of the challenges of having such an abundant amount of data, all stored and collected by different health networks, is choosing the best source of information to answer a researcher's question. Depending on the type of clinical question and by the nature of the registry's or database's composition, it would improve a study by using linkage programs make the data more complete. This method allows researchers to look beyond the immediate operative period and extend their search into the circumstances surrounding a child's environment and how it influences their outcomes. The ability to link clinical registries and administrative databases may offer a solution by providing a more comprehensive dataset, adding power to the study, and providing the potential to offer more insight into these disparate outcomes.

Silvi Shah, M.D., M.S.

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Research Interests

My career path has been guided by my strong desire to become an independently funded investigator. I completed my internal medicine residency at the University of Buffalo (2010–2013), nephrology fellowship at the Cleveland Clinic Foundation (2013–2015), and a transplant nephrology fellowship at the University of Alabama at Birmingham (2015–2016). Because of my strong desire to develop a research career, I joined the Division of Nephrology at the University of Cincinnati as Assistant Professor of Medicine in the clinical investigator track with 50% protected research time.

My research interests lie at the intersection of health disparities in patients with kidney disease, with a special focus on race and sex disparities. Within 6 months of my joining the faculty, the University of Cincinnati's Department of Internal Medicine named me a Junior Pilot Faculty Awardee to study vascular access disparities in patients with end-stage kidney disease. At Cincinnati, I have established a mentoring relationship with an outstanding team of investigators.

I have published seven first-author research articles related to health disparities, women's health, and clinical outcomes in patients with kidney disease, showing sex and racial disparities in predialysis hospitalizations and mortality in patients undergoing dialysis.

Jenny Shen, M.D., M.S.

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Research Interests

After various experiences in research and medicine, I have tailored my education and training toward a career in clinical research in nephrology. My clinical training opened my eyes to the poor outcomes of patients receiving maintenance dialysis, especially those of racial and ethnic minorities. It gave me a new appreciation for the burden and potential harm posed to patients by the multitude of medications meant to improve their health. Thus, I am focused on improving outcomes in patients receiving dialysis, particularly those from minority groups, with an eye toward optimizing the safe and effective use of medications. I have submitted a research proposal that focuses on understanding the differences in medication adherence across different races and ethnicities and am also interested in the role race plays in the selection of renal replacement therapies.

Pamela Shiao, Ph.D.

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Research Interests

Our goal of conducting family epigenetics intervention research is to improve health outcomes in vulnerable populations by integrating scientific knowledge about polymorphism mutations and disease risks for key genes in the methylation pathways and useful interventions. I have a broad background in health care, with specific training and expertise in human-subjects research and big data analysis on human genome and epigenetics research for various health conditions, including cancer. As a principal investigator, co-investigator, and collaborating member on several university- and NIH-funded grants, I have successfully administered more than 15 funded related projects (e.g., staffing, research protections, budget), collaborated with other researchers, and produced more than 130 peer-reviewed publications. As a senior investigator, I mentored more than 20 teams to conduct meta-analysis projects based on human genome discoveries and epigenetics research through workshops and seminars and directed and mentored more than 20 presentations at national and international conferences in the past 3 years. Furthermore, I established and am leading 12 teams, and we are integrating big data analytics with multidisciplinary international collaborations for world-class population health. As an experienced investigator who has a funding history of multiple NIH grants, I currently am leading two prospective human-subjects community-based research programs focusing on genomics and bioinformatics: one for family epigenetics in cancer prevention and another for family epigenetics intervention to reduce inflammation in complex chronic health conditions.

Stacey Simon, Ph.D.

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Research Interests

I am a pediatric sleep psychologist with research focused on mechanisms underlying the negative cardiometabolic consequences of insufficient sleep and circadian misalignment in adolescents. Short sleep duration and circadian misalignment are believed to contribute to health problems, including obesity and IR. Adolescence is a time of chronic short sleep duration and a propensity for delayed circadian phase. However, imposed early school start times mean that adolescents often are unable to avoid going to bed late, yet are woken early in the morning during their biological night and out of synchronization with their circadian rhythm. Yet, a gap remains with little information on the relationship between sleep and circadian rhythms and health in adolescents.

Timothy Simon, M.S.

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Research Interests
I am interested in studying multiple facets of neuroscience, including neuroinflammation, cognition, affect science, neurodegeneration, and the gut–brain axis. Currently, I am focused on researching biomarkers and neural circuitry in the brain that develops after adolescent trauma and how these variables correlate with obesogenic behaviors. Along with this, I want to become equipped with more tools to examine these topics, such as magnetic resonance imaging (MRI)/diffusion tensor imaging (DTI), behavioral assays, and microbiome informatics. The MRI/DTI techniques will be useful when mapping the neural circuitry in posttraumatic stress disorder. The behavioral assays will help measure the outward functional changes induced by the molecular modulations. Finally, the microbiome informatics is an extremely useful tool in meticulously categorizing microbes involved in the gut–brain axis.

Joseph Siu, Ph.D.

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Research Interests
My primary research area is physical therapy and biomechanics, focusing on elderly populations and minorities. It includes fall prevention in aging, rehabilitation, and intervention. I am interested in studying the mechanism of human balance control and locomotion and developed an exercise training program for community-dwelling older adults, aging minorities, and patients with movement disorders or challenges. For instance, our research team developed a Tai Chi program for the local Latino community to improve their functional health and to increase their social engagement. I also am studying motor skills learning in human performance. My research team utilizes simulation technology to develop a training platform for patients or novices. The training platform includes mobile devices or telehealth delivery.

Matthew A. Sparks, M.D.

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Research Interests

My laboratory is interested in understanding how both the renin–angiotensin and prostanoid systems regulate blood pressure by altering blood flow to the kidney. We use a combination of physiologic and molecular techniques in genetically modified mice to probe questions about how changes in the microcirculation in the kidney alter sodium excretion. The overarching goal of this research is to identify novel mechanisms to target drug therapy for patients with hypertension. My research has been funded by the U.S. Department of Veterans Affairs Office of Research and Development and the American Heart Association. We also explore the link between pulmonary hypertension and chronic kidney disease.

Tiahna Spencer

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Research Interests

Pain is common in patients with fibrous dysplasia (FD); however, the mechanisms and presentation of pain is poorly understood. Retrospective studies have shown that pain in FD presents along a broad spectrum, responds variably to treatment, and does not correlate with FD disease burden. Pain may be generally conceptualized into two categories: nociceptive pain (associated with actual or potentially tissue damaging stimuli) and neuropathic pain (caused by dysfunction of the somatosensory nervous system). The contribution of nociceptive versus neuropathic pain in FD has not been determined, and it is unknown whether differences in pain type might explain variabilities in the presentation and response to treatment.

Ora L. Strickland, D.Sc., Ph.D.

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Research Interests

An internationally known specialist in nursing research, measurement, evaluation, maternal and child health and parenting, I frequently am called upon as a consultant nationally and internationally, and I have presented more than 250 lectures, speeches, and workshops. I was the first researcher in the United States to track and document the symptoms of expectant fathers. My research on expectant fathers has been featured in more than 80 newspapers (including *The Washington Post* and *Chicago Tribune*) and on more than 1,200 radio stations internationally. An Associated Press story about my NIH-funded study of premenstrual syndrome appeared in numerous newspapers across the nation and has been featured on three television news programs. I was one of the study designers and an Emory University site principal investigator for the Women's Health Initiative, which studied 168,000 postmenopausal women nationally over the course of 9 years. I have discussed my research on national television shows, including on NBC's "Frank Field's Health Field Show," "Straight Talk," and ABC's "Nightly News with Peter Jennings." In addition to contributing to professional journals, I have written or contributed to 22 books.

I am the founding editor and served as senior editor of the *Journal of Nursing Measurement* for 20 years. I have been on the editorial boards or panels of *Advances in Nursing Science, Research in Nursing and Health, Nursing Outlook,* the *Journal of Professional Nursing, Scholarly Inquiry for Nursing Practice: An International Journal,* the *Encyclopedia of Nursing Research, Health Care for Women International, Nursing Leadership Forum,* and the *American Journal of Public Health*. I initiated the Nursing Citation Index, which was subsequently integrated into CINAHL, a leading nursing search engine, and I was one of the founders of the NIH's National Institute for Nursing Research. My many professional activities have included serving as a member of the Advisory Committee to the Director of the NIH, a member of the NIH National Advisory Council for Nursing Research, chairperson of the Board of Directors of the *American Journal of Nursing* Company, a member of the U.S. Congressional Black Caucus Health Brain Trust, and a health policy congressional intern to former U.S. Congressman Ralph Metcalfe (D-Ill.).

Julie Stutzbach

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Research Interests

I am an experienced and driven physical therapist (PT) and Ph.D. candidate at the University of Colorado Anschutz Medical Campus (UC-AMC). My background in research and clinical work plays a pivotal role in contributing to ongoing, large-scale clinical trials at UC-AMC, as well as developing and implementing behavior-change interventions and mixed-methods studies related to physical activity. My predoctoral work focuses on improving physical activity for older adults following a hospital stay. I am playing a key role in a large randomized clinical trial on implementing and evaluating the effectiveness of a high-intensity, multicomponent intervention in the home health setting for older adults. My responsibilities are to recruit patients, guide research PTs through our protocol, collect quantitative and qualitative data, develop new lines of inquiry, and apply our findings to educate patients and clinicians.

Phildra J. Swagger, Ph.D., M.B.A.

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Research Interests
The two overall aims of my project are (1) to learn what African American, Caribbean, and Hispanic/Latino adults deem important when deciding to engage in health-related research and (2) to enroll diverse individuals into a statewide registry, which is important and needed throughout the state. Specifically, the study explored how intergenerational influence—defined as the influence of one generation on another in terms of the transfer of skills, attitudes, preferences, values, and behaviors—can be leveraged to recruit and retain older diverse adults into clinical research.

Amanda Brown Tortorici, M.S.

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Research Interests
My research study will assess the dietary phosphorus intake and sources of dietary phosphorus among prevalent hemodialysis patients and within different races and ethnicities. The most prominent public health consequences of failing to properly adhere to low dietary phosphorus recommendations include higher levels of serum phosphorus and increased mortality and disease. This project has the potential to inform nutrition education materials, which would allow dietitians and other health care professionals to provide efficient and culturally sensitive nutrition counseling to dialysis patients to improve their phosphorus control.

Grecia Vargas, M.S.P.H.

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Research Interests
Health disparities, minority health and health disparities, kidney donation, kidney transplantation, health policy and management, health policy, health services and research, health services, racial and ethnic disparities, Latino health paradox, nondirected kidney donation, living kidney donation, mixed-methods research, qualitative study methods, faith-based collaborations, community-based participatory research.

Rajkumar Venkatadri, Ph.D.

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Research Interests
The long-term goals of Sharma laboratory have been to identify, develop and test novel therapeutics and intervention strategies for such debilitating diseases as autoimmunity, acute kidney injury and chronic kidney injury. Our translational research projects employ several animal models to investigate disease progression and interventions. (1) Il233 regulates mitochondrial function and WNT signaling for lupus glomerulonephritis remission. We showed that the hybrid cytokine IL233 induced persistent remission in ongoing lupus glomerulonephritis (GN) in NZM2328 mice. The progression of GN in NZM2328 involves stages of acute (aGN), transitional (tGN) and chronic GN (cGN). As a means to further understand the mechanisms involved in IL233-rendered protection, we are currently investigating modulation of mitochondrial function and canonical Wnt signaling that is understudied in the setting of aGN to cGN progression, utilizing both *in vitro* and *in vivo* approaches. (2) Autoimmunity in the TREX1 D18N murine model stems from dysregulated T follicular helper cell–Germinal center B cell response. Mutations in the three prime repair exonuclease (TREX1) have been identified in patients with autoimmune syndromes, including Aicardi-Goutieres syndrome (AGS), Cree encephalitis, familial chilblain lupus (FCL), and retinal vasculopathy with cerebral leukodystrophy (RVCL), as well as in a subset of patients with systemic lupus erythematosus. The TREX1 enzyme degrades extra-nuclear dsDNA, which may be a trigger for lupus-like inflammatory disease; however, the mechanisms of immune activation are poorly understood. Our current research efforts are aimed at investigating the status of T-helper cell (Th) dysregulation viz the status of T follicular helper cell (TfH) and germinal center phenotype (GC) B cell responses as a mechanism of autoimmunity triggered by defects in TREX1 utilizing a novel mouse model created to mimic a mutation (D18N) identified in the active site of TREX1 in human patients.

Junie Paula Warrington, Ph.D.

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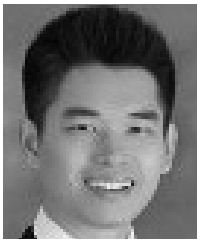
Research Interests
The Warrington laboratory is interested in elucidating the neurovascular mechanisms contributing to preeclampsia- and eclampsia-related neurological abnormalities affecting pregnancy, postpartum, and offspring neurological health. Our team utilizes preclinical animal models to induce reduced utero-placental perfusion and assess the neurovascular and cognitive changes in the mother and offspring. Several potential mediators are being investigated, including pro-inflammatory cytokines and antiangiogenic factors shown to be secreted by the placenta and circulate at increased levels in the maternal circulation. We also have an active research program geared toward identifying different contributors to increased seizure susceptibility, affecting pregnancy and preeclampsia-like conditions.



Karn Wijarnpreecha, M.D.

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Research Interests
I am interested in gastroenterology and hepatology research. I have published many meta-analysis studies in the gastroenterology and hepatology field. I am focusing on nonalcoholic fatty liver disease (NAFLD), viral hepatitis, liver transplantation, obesity, gastrointestinal disease, and epidemiological studies. My current research is focusing mainly on the independent factors to predict the mortality among patients with NAFLD by using population-based data (National Health and Nutrition Examination Survey).

Michelle Williams, Ph.D., M.P.H., M.S.P.H.

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Research Interests
Cancer causes a substantial public health burden in the United States and developing countries. Evidence shows that the development of several types of cancer—such as breast, colon, and cervical—are associated with lifestyle behaviors, including poor diets and lack of screening. People who are racial or ethnic minorities, have a low socioeconomic status, and live in geographically isolated communities experience significant cancer health disparities, such as higher rates of cancer-related morbidity and mortality. My career goal is to conduct research aimed at investigating the social and cultural determinants of cancer health disparities that will lead to the development, implementation, and dissemination of culturally relevant interventions for cancer prevention and control. My research interests are driven by my desires to (1) understand how social and cultural factors influence health behaviors and (2) develop culturally relevant health communication interventions aimed at eliminating cancer health disparities. I particularly am interested in research regarding the following: dietary interventions, sociocultural determinants of health, cancer health disparities, cancer prevention and screening behaviors, health outcomes, and global health.

Huichun Xu, M.D., Ph.D.

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Research Interests
I am interested in discovering genetic variants and epigenetics regulation mechanisms that are associated with susceptibility to complex diseases, particularly stroke and its risk factors, such as diabetes and atherosclerosis, as well as the efficacy of treatment and prevention for complex diseases. My research will contribute to personalized medicine in the -omics era. Methodologies involved in my research include, but are not limited to, genome-wide association studies, gene expression profiling studies using microarray or RNA-seq, genomic DNA methylation profiling, and bioinformatics pathway analysis.

Astrid Zamora, M.P.H.

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Research Interests

My research interests lie at the intersection of environmental and nutritional science, with a focus on developing a comprehensive understanding of the associations between nutrient–toxicant exposures and population-level health outcomes. Both academically and professionally, I have had many opportunities to marry the fields of environmental health and nutrition. However, my passion for studying and bridging gaps in knowledge on the impact that chemical exposures have on population health—in particular, the health of vulnerable populations—was born out of personal experience. An urgency for understanding the impact of toxicant exposure began upon observing my farm-working grandparents be chronically exposed to pesticides as they toiled the agricultural fields to produce high-quality produce for the rest of the country. This experience led me to study at the University of California (UC), Davis, a premier leader in environmental and agricultural sciences. Throughout my undergraduate studies at UC Davis, I conducted research on the impact of maternal alcohol consumption and vitamin D status among pregnant women, resulting in a poster presentation at an undergraduate research symposium. Prior to my graduate training, I led a team in establishing a molecular nutrition laboratory within the research and development sector of Bayer CropScience. After my time at Bayer CropScience, I worked along researchers at the California Environmental Protection Agency developing methods to analyze per- and polyfluoroalkyl substances and persistent organic pollutants in maternal serum and drinking water. Currently, in my graduate training at the University of Michigan, I am building on my previous work in the fields of nutritional sciences and environmental health by applying epidemiological methods to study the relationship between nutrient–toxicant interactions and population health outcomes—in particular, sleep and cardiometabolic health outcomes. My current research projects include investigating the association between parabens and metabolic syndrome among women in midlife; findings from this project were submitted as a first-author abstract to the Society for Epidemiologic Research. Future projects include examining the association of toxin exposure, dietary intake, sex steroids, and sleep health among adolescent girls, adolescent boys, and women in midlife. Under the guidance of Dr. Karen Peterson, a groundbreaking researcher in the fields of nutrition and environmental health and investigator on several NIH-funded grants, I am receiving high-level academic and research training that will not only support the completion of my doctoral dissertation, but also provide a strong foundation for my long-term career goal of becoming an academic researcher. As a low-income, first-generation minority college student, I understand the value of higher education and the importance of conducting this doctoral research on toxicants and health, which may have major implications for low-income and minority groups.

Preeti Pushpalata Zanwar, Ph.D., M.P.H., M.S.

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Research Interests

My overall research interests are in modeling health care costs and counts, in health disparities and cognitive aging, and vaccination status and COVID-19 outcomes. My recent work is guided by a health disparities conceptual framework that employs multiple domains and levels of influence over the life course to examine the impacts of early risk factors on later-life health outcomes.

My research projects have examined intersectional disparities in access to preventive care (including cancer screenings) by disability and race and ethnicity; socioeconomics and cultural pathways to cognitive aging in developing countries; and inequities in COVID-19 vaccine uptake in vulnerable health disparity populations and their implications for epidemiological and economic outcomes, including hospitalizations, long COVID, and COVID-19 mortality. Another project has examined differences in health care costs of obesity-related multimorbidity (diabetes, hypertension, coronary heart disease, or stroke) in white versus Black middle-age and older community living adults in the United States. As a visiting research scientist at the Houston Methodist Research Institute, I led the research design and writing of the proposal to assess clinical and economic impact of providing endocrinology and nephrology multispecialty care by Methodist Hospital fellows to underinsured minority populations cared for at the Montrose Legacy Clinic, an integrated medical home in Houston, Texas. My doctoral research examined the effects of obesity on health care utilization and costs in adults with kidney disease, and my laboratory research at Baylor College of Medicine investigated short- and long-term outcomes of polyomaviral infections in kidney, lung, and heart transplant recipients.

I have served as a health economics consultant to multiple faculty, including at the MD Anderson Cancer Center. I have working experience with Medicare claims data, the nationally representative Medical Expenditure Panel Survey, and cross-nationally harmonized and nationally representative global aging survey data sets. I am proficient in Stata Statistical Software and fluent in Hindi language.

I have authored 32 scholarly peer-reviewed papers/abstracts and given 47 invited presentations (15 oral) at national and international scientific conferences. My research has been published in *BMC Health Services Research,* the *Journal of Clinical Virology,* and *Transplantation,* among others, and has been cited more than 500 times. Twitter: @PreetiZanwar

National Institute of
Diabetes and Digestive
and Kidney Diseases