2019
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 Islanders—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, kidney, urologic, and hematologic diseases. An important component of this network is the promotion of two-way communication between NMRI members 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.

NIDDK Executives

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 600 employees and a budget of $2.0 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 200 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, 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), 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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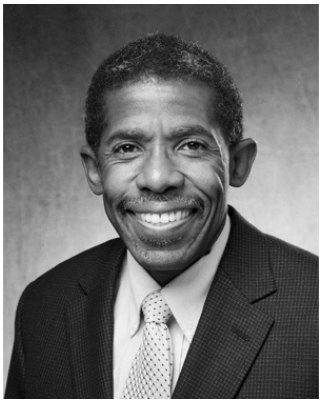
Research Interests
In Nigeria, hepatitis C virus (HCV) infection is primarily spread through injection drug use. There is an urgent need to improve access to care for HCV among persons with opioid use disorders who inject drugs. The purpose of our study was to determine the prevalence of HCV, patient characteristics, and receipt of appropriate care in a sample group of patients treated with buprenorphine for their opioid use disorders in a primary care setting.



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Research Interests
My research is focused on understanding the molecular mechanisms that are responsible for cardiovascular complications in diabetes. We have specifically focused on the role of altered insulin signaling, autophagy, and mitochondrial oxidative stress.

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Research Interests
My current research focuses primarily on elucidating signal transduction pathways in the kidney that are involved in the physiology and pathophysiology of renal hemodynamics. We utilize an integrative approach—including techniques drawn from cell and molecular biology, physiology, and pharmacology—to investigate regulatory proteins, ion channels, and G protein-coupled receptors that regulate renal vascular and glomerular functions.

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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.

Samuel Adunyah, Ph.D.

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Research Interests
My areas of interest include elucidation of cytokine and chemokine receptors signaling, as well as roles of cytokines in cancer cell proliferation, differentiation, and apoptosis. In addition, I am interested in cancer health disparities research and addressing the issues that contribute to cancer health disparities. I also collaborate in many research projects that focus on understanding the biological factors and pathways that contribute to disparities in breast, colon, and ovarian cancer.

Rodrigo Aguilar, M.D.

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Research Interests
In my postdoctoral fellowship, I studied how megakaryocytes regulate osteoblasts, as well as the interactions between these cells and osteal macrophages (osteomacs) in bone formation. Because osteomacs and bone marrow-derived macrophages are both $CD45^{+}F4/80^{+}$ hematopoietic lineage cells, we characterized the functional differences between these cell types. Currently, my interest includes osteocytes and the Panx1 channel. Preliminary evidence suggests that its activation by caspases can be blocked with a pharmacologic inhibitor. This inhibition reduces aging-related bone phenotype. Panx1 also is responsible for the secretion of a chemokine agent called high-mobility group box protein 1 (HMGB1) involved in bone resorption. I have been using molecular cell biology and biofunctional assays with *in vitro* and *in vivo* models. These studies will provide preclinical evidence for the therapeutic potential of Panx1 inhibitors to reduce osteoclastogenesis and osteocytes apoptosis.

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Research Interests

Age-related diseases have dramatically increased around the world, resulting in increasing health expenditure and demand in more health care and highlighting health systems limitations. Circulating osteoprogenitor (COP) cells have gained increasing prominence in musculoskeletal research. My research explores the role of COP cells in age-related diseases, such as osteoporosis, sarcopenia, and frailty. In the process, we have developed a new flow cytometric methodology to quantify COP cells and lamin A, a structural protein of nuclear membrane. Lamin A is an important component of COP cells that showed a strong association with frailty and disability. We demonstrated that quantification of lamin A expression in COP cells is a feasible and reliable diagnostic method, with potential clinical applications in humans. Our current projects are studying COP cells in obese patients with type 2 diabetes at Sunshine Hospital in Melbourne, Australia. Additionally, we are investigating the process of mesenchymal-like stem cells in circulation (COP cells-like) in relation to glucose level. This diagnostic method offers a valid and potential tool to diagnose osteosarcopenia and predict frailty and disability in older and obese adults with diabetes.

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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 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. 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 cytosolic phospholipase A2α (cPLA2α) and 20-hydroxyeicosatetraeonic acid (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 inhibition or gene disruption of cPLA2α as a mechanism that confers protection against chronic kidney injury, such as obstructive nephropathy. A second project focuses on the role of the ω-hydroxylase metabolite of arachidonic acid 20-HETE in obstructive-induced kidney injury. Thus, my laboratory proposes 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 new, novel, stable ω-hydroxylase analogs, antagonists, and inhibitors and their roles in renal inflammation, apoptosis, and fibrosis.

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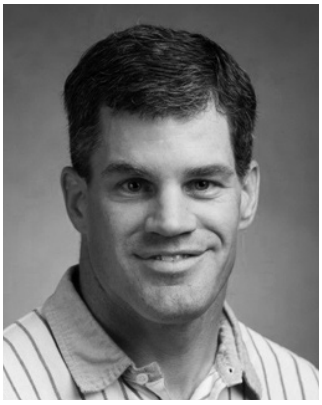
Research Interests
My research interests include obesity, quantitative genetics, clinical trials, and statistical and research methodology. In recent years, my work has been heavily involved in studying the relationships among body weight, body composition, caloric intake, and changes thereof with longevity in animal models and humans. I also study (1) the genetic and environmental influences on obesity and related traits; (2) statistical methods for genetic and epidemiologic studies; (3) design, implementation, and analysis of randomized controlled trials for weight loss; and (4) research integrity. In addition, I have served as principal investigator or co-principal investigator for more than a half-dozen successful NIH R13-funded conferences, edited five books, initiated four successful NIH-funded T32 training programs as a principal investigator, and served as the director of several NIH- and National Science Foundation–funded national short courses on statistical methods and on obesity.

Matthew Allison, M.D., M.P.H., FAHA



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Research Interests
My research focuses broadly on the epidemiology and prevention of cardiovascular diseases. In this regard, we are examining the associations between atherosclerotic calcification of the renal arteries and both kidney function and blood pressure regulation in the Multi-Ethnic Study of Atherosclerosis. This includes studies on the spectrum of chronic kidney disease. We also are examining differences by race and gender.

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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 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. I am currently investigating the roles of genetic variation and epigenetic modifications in the one-carbon metabolism pathway on risk for hepatocellular carcinoma development in patients with nonalcoholic fatty liver disease. In this project, we are testing the hypotheses that (1) inherited genetic variants, (2) acquired modifications to DNA, and (3) metabolic molecules of the one-carbon pathway play significant roles in hepatocellular carcinoma development in persons with nonalcoholic fatty liver disease. Findings from this research are expected to yield novel insights into the one-carbon metabolism pathway as a previously underrecognized and potentially modifiable contributor to hepatocellular carcinoma development.

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Research Interests
Our gastroenterology laboratory is investigating the molecular mechanisms governing cellular proliferation, including epigenetic and genetic influence during oncogenic transformation and tumorigenesis. The long-term goals include the identification and characterization of epigenetic factors, such as DNA methylation, miRNA, and histone modifications that play a central and direct role in the initiation and/or progression of human cancers, specifically gastric and colon cancers. This includes research on chromatin modification through methylation or acetylation of genes/histones that may play critical roles in the regulation of transcription of many genes, leading to alteration of cell function and cell cycle. In addition, the detection of DNA methylation biomarkers for both early detection and prognosis is part of our interests using next-generation sequencing. We have recently detected several epigenetic biomarkers that are hypermethylated significantly in tumors in African Americans compared with Caucasians. My translational/clinical research focuses on the African American population, investigating genomic instability and gene silencing in patients with adenoma and colorectal cancers. This is a critical step for the understanding the onset of cancer progression in African Americans, with the goal of tackling the health disparity in this population.

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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; the 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 and consistently am ranked as one of America's Top Doctors. 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.

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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

My research interests include (1) using brain functional magnetic resonance imaging 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; and (5) using holistic methods—such as traditional Indian medicine, cross-cultural healing methods, and storytelling—to improve health disparities in American Indians.

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Research Interests

My research is broadly concerned with investigating psychosocial aspects of the sickle cell disease experience. As a social/health psychologist, I am particularly interested in the ways that psychological and social factors influence a range of physiological outcomes. My current program of research—supported by the National Heart, Lung, and Blood Institute—examines clinical implications of sickle cell disease stigma. I have published seminal findings that underscore the multidimensional nature of stigma among adults with sickle cell. I also am developing a series of studies that explore potential mechanisms through which stigma is related to dietary behavior and nutrient intake among patients with sickle cell disease. Although biomedical advances have improved treatment options significantly and resulted in an increased life expectancy of adults with sickle cell disease, the data also suggest a concomitant increase in obesity and overweight in this population. Very little research addresses this problem, and I am well positioned to make a significant scholarly contribution to this area. Thus, I am interested in becoming a member of the NMRI to (1) learn more about state-of-the-art research in the stated areas of interest; (2) build upon my expertise in hematologic diseases; and (3) develop high-impact collaborations with researchers whose interests and expertise complement mine.

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Research Interests

My broad research interest is in racial, ethnic, and socioeconomic disparities in health and disease outcomes. Specifically, I am interested in developing and testing interventions to decrease disparities in health outcomes. As a means of decreasing disparities in outcomes, I would like to investigate strategies to improve the quality of health care received by underserved groups, specifically African Americans, Hispanics, other minorities, and low-income individuals who are disproportionately affected by chronic diseases (i.e., diabetes, hypertension, and chronic kidney disease). I also am interested in investigating underlying causes of disparate outcomes—be they patient, provider, or system factors—to inform interventions. In my current position with the Center for Clinical and Translational Sciences, I am working to establish a Clinical Research Unit in an indigent health care facility, assisting the clinicians at the forefront of care for these patients in the development and implementation of research, including translation of clinical trial findings to the patient care setting. In this position, I plan to encourage and collaborate with clinicians on projects aimed at improving the quality of care for patients with highly prevalent chronic diseases like diabetes, hypertension, and renal disease. I realize the potential of my current position to have an impact on disparities and, as such, I plan to maximize this opportunity to explore strategies to improve chronic disease outcomes in this underserved population. I have recently received the Eugene Washington Engagement Award from Patient-Centered Outcomes Research Institute, and my goals are to use this funding to educate patients and other nonscientist stakeholders on the research process, enabling them to collaborate as partners with research investigators, and to establish the infrastructure for patient-engaged research in a safety-net health care system.

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Research Interests

My research focuses on clinical and translational investigations of the mechanisms by which diabetes in pregnancy may promote subsequent maternal cardiovascular disease risk. My research efforts have been funded by the National Institutes of Health/National Institute of Diabetes and Digestive and Kidney Diseases, the Robert Wood Johnson Foundation Harold Amos Medical Faculty Development Program Award, and the Massachusetts General Hospital Multicultural Affairs Office and Executive Committee on Research Physician Scientist Development Award.

Ernesto Bernal-Mizrachi, M.D.

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Research Interests

The long-term goal of the research program in my laboratory is delineating the signaling pathways that regulate the development, growth, and death of islet β cells. This work established Akt signaling as a major regulator of β-cell mass, growth, and function. Further experiments have delineated critical Akt downstream targets by identifying Tsc2/mTOR signaling as an important component in modulation of cyclin D2, proliferation, β-cell mass, and carbohydrate metabolism *in vivo*. Current projects on this area are focused on understanding how mTOR signaling modulates short- and long-term responses in β cells. In addition, my laboratory explores the significance of mTOR signaling in β-cell development with particular interest in determining how fetal nutrient supply regulates the susceptibility to develop diabetes later in life. Finally, the initial studies related to the role of Akt in β-cells have evolved to explore the role of this signaling pathway on regulation of plasticity with especial focus on how this pathway could be used to convert acinar or ductal cells to functional β cells. These studies positively affect treatment of human diabetes, because they uncover potential targets to develop new pharmacologic agents designed to augment survival and proliferation of β cells *in vivo* and *in vitro*.

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Research Interests

My research interests include obesity and depression in African American women. I am investigating the use of faith-based institutions to prevent and reduce the health risks associated with obesity. By providing culturally relevant health education programs in the community of the church, African Americans are empowered to change health behaviors and, ultimately, to reduce health disparities.

Christian Bolanos, M.D.

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Research Interests
I completed the first year of my nephrology fellowship, which was predominantly clinical training. During my current second year of fellowship, I am dividing my time between clinical and research duties. I am interested and currently working on two projects with my mentor, Dr. Tammy Sirich, in uremic solutes. Thus far, my research training has been exceptional. I have learned about patient recruitment and institutional review board processes, as well as proper sample collection and storage. I am starting to learn about the analytical techniques used in Dr. Sirich's laboratory to measure solute levels, such as liquid chromatography and mass spectrometry.

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Research Interests
I am interested in researching the effects of vitamin D deficiency on patients with multiple sclerosis (MS). MS is a severe demyelinating disease of the central nervous system, affecting young adults by producing a progressive neurological dysfunction. A high number of patients with MS have vitamin D deficiency/insufficiency.

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Research Interests
My main research is in the field of cancer research in minority patients. We are conducting genomic, epigenomic, and microbiomic studies to establish the specifics of this disease in African Americans. We also are assessing the gut microbiome features in patients with sickle cell disease, along with the dynamics of the gut microbiome in obese and lean subjects, in response to different diets with high and low fiber contents.

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Research Interests
My research program focuses on sex differences in diet-induced obesity, especially the role of ovarian hormones and aging in central and peripheral inflammation. My long-term research goal is to understand the mechanisms involved in the anti-inflammatory effects of ovarian hormones and their neuroprotective actions. By elucidating these mechanisms, a greater understanding of the consequences of the increased inflammation that occurs in postmenopausal women, particularly in relation to their risk for metabolic syndrome, will be achieved. The central hypothesis is that ovarian hormones decrease inflammation by blocking signaling through the IKKβ/NFκB pathway, which prevents increased expression of pro-inflammatory cytokines. This hypothesis is based on studies that demonstrate that (1) estradiol and progesterone decrease inflammation, (2) female rats and mice in some paradigms are resistant to diet-induced obesity, and (3) a link exists between inflammation in the hypothalamus and obesity. With a dramatic increase in the prevalence of obesity worldwide, the medical conditions associated with obesity now constitute a significant burden on public health. At the same time, the mechanisms responsible for activating inflammatory pathways in obesity are poorly understood. Although it is increasingly recognized that inflammation is an important factor in the incidence of type 2 diabetes and obesity, it is not clear how dysfunctional signaling in the hypothalamus can lead to obesity and its associated problems. Symptoms of metabolic syndrome, including insulin resistance and increased visceral obesity, begin appearing in many postmenopausal women as ovarian hormones decrease. Even in women who do not gain weight after menopause, fat shifts from a subcutaneous location into the abdomen. One goal of the laboratory is to establish animal models of these processes, using aging female rats to dissect specific mechanisms involved in postmenopausal weight gain, fat depot shifts, and inflammation.

Marino A. Bruce, Ph.D., M.Div., MRSC

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Research Interests

I am a social and behavioral scientist who is interested in the integration of the full range of determinants influencing chronic kidney disease and cardiovascular disease risks among African American males across the life course. NIH has been a major supporter of my work through 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 administrative supplement. It is noteworthy that I am one of a few sociologists who has published in each of the leading journals in nephrology. I also am an ordained Baptist Minister, with two decades of experience serving in multiple African American churches. My current program of research examines how faith has implications for biopsychosocial pathways, linking stress to disease risk and progression among African American men during the mid- and late stages of life. I am also a science director for two research training and mentoring programs designed to increase the pool of investigators from underrepresented backgrounds. I have more than a decade of experience working with early-career faculty and investigators to establish and maintain programs of research in a variety of academic settings. I am committed to leveraging the strengths of the research and faith communities toward improving the health of disadvantaged and disenfranchised males, their families, and other related populations.

Gregory Buck, Ph.D.

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Research Interests

My research areas involve the effects of methicillin-resistant *Staphylococcus aureus* on Hispanic and Caucasian populations with diabetes. This project is done in collaboration with Christus Spohn Memorial physicians. We are examining gene regulation in *Vibrio vulnificus* under stressful environmental conditions; the antibacterial components of extracts from herbal plants used in south Texas and northern Mexico; DNA repair in enteric bacteria, such as *Escherichia coli* and *Enterobacter aerogenes*; and the effects of amino acid surfactants and nanoparticles on Gram-positive and Gram-negative bacteria.

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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.

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Research Interests
Broadly, my research interests include the prevention of disordered eating and obesity in children and adolescents. Specifically, I am interested in the complex interplay among weight status, demographic characteristics, psychological comorbidities, and associated risk factors, with a special interest in underserved groups.

Sherri-Ann M. Burnett-Bowie, M.D., M.P.H.

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Research Interests

My research is focused on defining the physiology of the mineral metabolism hormone FGF23; defining the relationship between vitamin D deficiency and insulin resistance; and studying novel therapies for osteoporosis.

Theodore Busby

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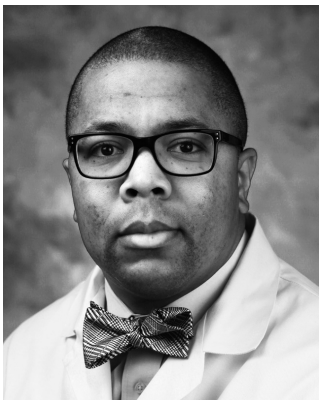
Research Interests

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. To do so, we dissected the protein-protein interactions and dose dependency of the core, noncatalytic subunits of the MLL/Set1 complex within multiple leukemia and lymphoma models.



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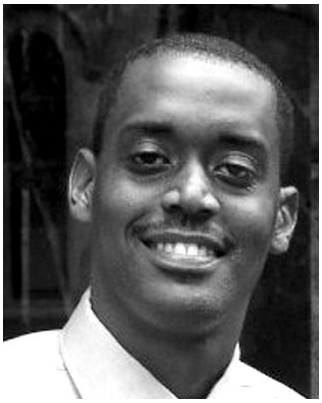
Research Interests

I am an active basic science and clinical researcher. In addition to publishing scientific papers and presenting at numerous academic meetings, I serve as both a peer reviewer for various foot and ankle journals and as an abstract reviewer at many scientific/research meetings. I also have served on various organization committees. My research focuses on foot and ankle disorders, diabetic bone healing/limb salvage, biomechanics, and clinical epidemiology.



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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 currently are not 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

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.

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Research Interests

I am currently an instructor of medicine at the Cardiology Division and senior scientific consultant at the Nephrology Division of the Massachusetts General Hospital, where I have been since 2013. Additionally, I serve as an external scientific consultant to the laboratory of Pharmacology and Toxicology at Massachusetts College of Pharmacy and Health Sciences. I have 15 years of training and research experience in biomarker discovery in multiple fields of research—including the cardio-respiratory system, rare diseases, and drug discovery—and have proven expertise in basic, translational, and preclinical and clinical research. I am experienced in *in vitro*, *in vivo*, and *ex vivo* experimentation. I have conducted research at well-renowned and educationally acclaimed universities and hospitals on three different continents (South America, Europe, and North America). I am specialized in diseases affecting the lung, kidney, liver, and vascular tissues. I acquired strong expertise in molecular processes involving fibrotic processes, such as the canonical and noncanonical TGFB signaling pathway, proliferative and inflammatory pathways, extracellular matrix (ECM) dynamic, and BMP pathway. I am experienced in construction of fluid and tissue banks for functional genomic studies and skilled in modeling disease processes in animals and mammalian cells *in vitro*. My research interests include hypertension, aging, metabolism, stroke, lung/liver/kidney fibrosis, lung cancer, chronic obstructive pulmonary disease, vascular stenosis, atherosclerosis and calcification, fatty liver disease, tissue and fluid-biomarker discovery, gene-based therapy, and pharmacogenomics.

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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

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/ethnic differences in diabetes complications, and (3) social determinants of diabetes risk. A list of my published work is available at www.ncbi.nlm.nih.gov/sites/myncbi/april.carson.1/bibliography/44238538/public/.

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Research Interests

My program of research addresses three main areas of health promotion, including (1) assessing the efficacy of nutrition and physical activity/exercise interventions on chronic disease risk factors and health outcomes, (2) translating evidence-based lifestyle interventions into real-world settings, and (3) developing sustainable strategies to promote health and reduce the burden of chronic diseases across the lifespan. This research focuses on vulnerable populations, with particular emphasis on those ethnically diverse, suffering from debilitating chronic conditions, and socioeconomically disadvantaged. My current funded research focuses on health and wellness in settings that promote sedentary behavior, self-management interventions for older adults, factors influencing physical activity behavior in frail older adults, and community-based intergenerational nutrition and physical activity interventions among underrepresented families. Funding for this study has been received from the Brookdale Foundation, International Life Sciences Institute, National Institutes of Health (National Institute on Aging, National Institute of Nursing Research, National Institute of Diabetes and Digestive and Kidney Diseases), National Space and Biomedical Research Institute, corporations, and foundations. My research findings have been widely published and referenced. They represent a collaborative effort of a transdisciplinary team of investigators, students, and fellows. My research has contributed to advancing the field of healthy aging by providing evidence on the benefits of resistance exercise for multiple health outcomes and disease conditions. More importantly, the knowledge acquired from my evidence base research has informed the development of real-world community-based interventions and guidelines that bridge the gap between research and practice.

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Research Interests

I am Professor of Pediatrics in the Department of Pediatrics at the University of Minnesota, Division of Pediatric Nephrology, and Clinical Research Medical Director for the Department of Pediatrics. My clinical research interests are cardiovascular disease in children with kidney disease, kidney transplants, pediatric dialysis, and pediatric kidney transplantation.

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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.

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Research Interests

I am interested in health disparities research related to diabetes complications among adults and children. I also am interested in mental health disparities within this population. I envision the culmination of my research as being able to create sustainable and manageable community-based interventions, strategies, and services that positively impact health outcomes for these populations while simultaneously working toward health policies that support opportunities and accessible means to health and health care for low-income and vulnerable populations. I also am interested in community-based interventions and strategies and their impact on health outcomes within a community setting and environment.

Marc Cook, Ph.D., M.S.

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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 (e.g., hypertension) and reveal how interventions targeting gut health can suppress and reverse these conditions to advocate for adjunct treatment strategies, particularly in African Americans. My belief is that basic and applied research must incorporate mechanistic approaches consistently to explain the benefits and have a greater clinical impact. My experience as a research exercise physiologist includes actively participating in designing and managing externally funded exercise research studies (aerobic and resistance exercise) in animal models of disease (+10 years of experience) and humans (+15 years of experience). My clinical exercise experience at the Cleveland Clinic Lerner Research Institute includes managing and performing exercise studies on older individuals and clinical populations with type 2 diabetes, congestive and congenital heart failure, cancer, and liver disease, including patients who have undergone bariatric surgery (vastly including minority populations). My graduate and postdoctoral translational research work has encompassed interventions in animal models of inflammation (published work), human vascular health (published work), and *in vitro* racial disparity studies (endothelial cell culture; publications under review/in writing phase) that have provided a backdrop outlining some of the beneficial anti-inflammatory effects of exercise training in the gut and vasculature, respectively. My research niche has developed by merging my predoctoral and postdoctoral experiences to include intensive racial disparity research involving the interaction of gut microbial dysbiosis, circulating biomarkers of gut health (short-chain fatty acids), endothelial/vascular function (*in vitro* and *in vivo*), and their relationship to cardiovascular disease (e.g., hypertension) and risk for cardiovascular disease with vascular components (e.g., preventable cardiomyopathy, heart failure, stroke, metabolic, and kidney disease).

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Research Interests

I am a research scholar in Dr. Dale Abel's laboratory. My research is centered around 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 during a high-fat diet. 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 secretion of myokines.

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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.

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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 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. They 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 the 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 of identifying key mediators, events, and biomarkers that can potentially serve as powerful diagnostic markers or developing new treatment therapies for this debilitating disease that affects millions of people worldwide, and to head toward individualized patient therapy.

Sam Dagogo-Jack, M.D., Ph.D.

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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 span translatable and transformative investigations into the metabolic features and bioenergetics of human liver diseases, including nonalcoholic fatty liver disease, nonalcoholic steatohepatitis, cirrhosis, and hepatocellular carcinoma. I have contributed to preclinical studies that characterized cancer models with magnetic resonance spectroscopy and imaging and have investigated novel therapeutics for its translation into the clinic. My goals are to develop MRS/I techniques and data analysis tools for *in vivo* applications into human liver diseases.

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Research Interests
My work investigates the mechanisms that underlie metabolic disorders. I have gravitated to the area of extracellular matrix (ECM) biology in pursuit of answers related to the contribution of molecular events in the etiology of disease states. My work uses molecular biology, biochemistry, and bioinformatics approaches to investigate the dynamic function and interaction of ECM components, such as Goodpasture antigen-binding protein (GPBP), in the development of renal disease.

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Research Interests
I am a human molecular geneticist and have experience in monogenic and complex genetic disease research. My research is focused on identifying genetically and epigenetically regulated cellular and molecular mechanisms of insulin resistance, obesity, and type 2 diabetes. Determining molecular mechanisms underlying ethnic disparities in these common metabolic diseases is a key area of my research projects funded by the National Institutes of Health and the American Diabetes Association. As a principal investigator of a multidisciplinary research team, I lead studies in human participants and cell culture models and have implemented integrative genomic and systems biology approaches to defining genetic and epigenetic regulators of insulin sensitivity in African Americans and individuals of European ancestry. The knowledge gained through my research projects will help in the future development of novel precision medicine approaches to prevent and treat type 2 diabetes.

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Research Interests

My main research interest is studying the role of insulin-like growth factor 2 (IGF-2) in breast cancer and diabetes on health disparities among African American (AA) women. My laboratory has published on IGF-2 actions in the development, progression, and metastasis of breast cancer among AA women. A current emphasis in my laboratory is to determine the mechanisms that link IGF-2, diabetes, and the breast cancer survival disparity observed among AA women. A recently published observation linked IGF-2, diabetes, and breast cancer in a series of studies that integrated *in vivo* cell analyses with breast cancer tissues from AA women. In addition, my laboratory is focusing on the mechanisms of IGF-2 regulation of the mitochondria at the intersection of breast cancer and diabetes. Furthermore, my team is investigating how dietary supplements and anti-inflammatory drugs regulate IGF-2 to prevent cancer. In so doing, my research team integrates the cellular and molecular *in vivo* studies performed in established breast cancer cell lines with animal model studies and tumor tissue analyses to advance the translational significance of the research.

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Research Interests

My research interests include the use of tailored health information technology (IT) platforms—such as mobile phones, websites, and telemedicine—in kidney disease care to engage patients and improve patient safety in kidney disease. The use of novel health IT tools may be a means to eliminate information barriers and mitigate the disparate outcomes noted in minorities with kidney diseases. My colleagues and I have developed and tested a medication inquiry system on several IT platforms that provides guidance on the safety of medication usage in patients with chronic kidney disease (CKD) to improve patient education regarding potential medication errors in CKD. We also have studied the patients' use of an educational website that provides information on CKD-relevant safety concerns. My current research explores the relationship between eHealth literacy and patient safety in CKD and is funded by a Mentored Patient-Oriented Research Career Development Award (K23 099385) from the National Institute of Diabetes and Digestive and Kidney Diseases. I also am the co-principal investigator of an R01 clinical trial examining the effectiveness of a telehealth intervention to improve kidney function in high-risk primary care patients with diabetic kidney disease. I also am performing a pilot study of a tablet-based educational intervention for hospitalized survivors of acute kidney injury and a qualitative study examining factors associated with optimal patient-centered acute kidney injury care.

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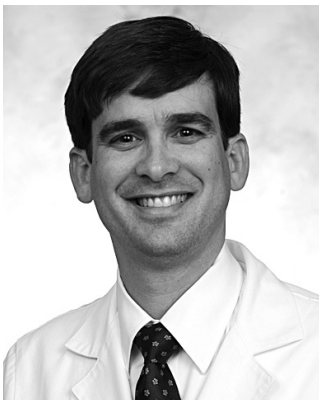
Research Interests

My research interests are diverse and include understanding links between bone/mineral metabolism and cardiovascular risk in patients with diabetes, as well as improving care in pediatric diabetes by personalizing treatments and endpoints. I also have interests in translational research, 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.



Alejandro Diez, M.D., FASN

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Research Interests

My main area of interest is kidney transplantation. My current research focuses on recipient clinical outcomes after kidney donation and transplantation of difficult-to-match recipients who require kidney transplantation.

Karen Margaret Tabb Dina, Ph.D., M.S.W.

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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. In addition, I am conducting mentored research as an early-career investigator on the Hispanic Community Health Study/Study of Latinos, a multisite epidemiological study on depressive symptoms and chronic health problems (e.g., MetS and diabetes) among women. Accordingly, the National Institute of Diabetes and Digestive and Kidney Diseases is the most appropriate Institute, given my current and future research interests.

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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 a 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 contributes to the poor PAD outcomes seen in individuals with diabetes.

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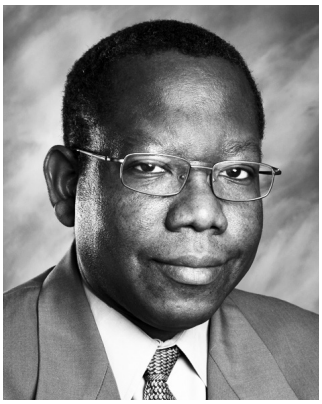
Research Interests
The goal of my research program is to determine the functional role of the extracellular matrix (ECM) in liver disease and cancer. My long-term interests are aimed at developing novel diagnostic and therapeutic options for treating advanced liver disease and cancer based on targeting remodeling events involving the ECM. We are particularly focused on determining the interaction between an important liver ECM molecule, type XVIII collagens, and hepatocyte integrins. We have found that this interaction is critical for cell survival. We are hopeful that our studies will yield important information regarding how the ECM modulates cellular phenotype during the injury response and the complex milieu of the tumor microenvironment. Additionally, we have initiated a project that seeks to establish the role of tumor-associated macrophages in angiogenesis and vessel remodeling during hepatocellular carcinoma (HCC). The aims for this project are to identify robust markers and the genetic signature of pro-angiogenic macrophages in the HCC tumor microenvironment and, ultimately, to validate this cell population as a target for therapeutic interventions. To conduct our studies, my group relies on genetic and chemically induced mouse models of liver injury and HCC, as well as modern techniques in tissue imaging, cell biology, biochemistry, and molecular biology.



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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.

Mayra L. Estrella, Ph.D., M.P.H.

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Research Interests

I earned a Master of Public Health in Biostatistics from the University of Puerto Rico and a doctoral degree in Community Health Sciences from the University of Illinois at Chicago School of Public Health. My experience includes collaborating with Hispanic/Latino communities in Chicago addressing a range of public health issues (e.g., diabetes and access to health care among adolescents and adults). Currently, I am a postdoctoral fellow in the T32 Training Program in Cardiovascular Disease (CVD) Epidemiology and Related Chronic Diseases in Minority Populations at the University of Illinois at Chicago Institute for Minority Health Research. In general, I am interested in exploring the persistent burden of CVD and related chronic conditions among Hispanics/Latinos using data from the landmark Hispanic Community Health Study/ Study of Latinos.

More specifically, I am interested in the investigation of factors associated with favorable cardiovascular health among Hispanic/Latino adults and adolescents. I am examining the prevalence of volunteering (a social capital indicator) and its association with low cardiovascular risk among Hispanics/Latinos. Finally, I am also interested in exploring the interrelationships of multiple factors (e.g., neighborhoods, psychosocial, and behavioral) that contribute to disparities in the high burden of CVD risk factors between Puerto Ricans and other Hispanic/Latino groups. In the long term, I would like to focus on better understanding the neighborhood-level factors that influence disparities in CVD risk factors among Hispanics/Latinos to inform the development of multilevel interventions.

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Research Interests

I have a strong clinical interest in taking care of pediatric patients with inflammatory bowel disease (IBD). I am interested in pediatric IBD, specifically issues of transition of care to adult gastroenterology and outcomes research. I established the pediatric IBD clinic and the pediatric IBD transition clinic at The Pennsylvania State University Hershey Medical Center. Establishing the clinic involved recruiting personnel—including a nutritionist, social worker, and clinical psychologist—to participate routinely in the clinic. These clinics serve as a resource for patients and the pediatric gastroenterology providers, as well as a source for IBD research patients, including an enrollment area for the Improve Care Now network (an international pediatric IBD consortium). I have been trained in methods of clinical investigation and apply that knowledge to designing and implementing studies in this population. Currently, I am studying factors that affect pediatric IBD transition to adult IBD care. In addition, I am part of the Rising Educators Academics and Clinicians Helping IBD committee for the Crohn's and Colitis Foundation of America.

A. Celeste Farr, Ph.D., M.P.H.

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Research Interests

My goal and passion remain to encourage health care equity and eliminate health disparities among African Americans. My research goal is to reduce obesity and diabetes in the African American community, first through prevention of diabetes in women and later through teaching the women how to affect the health of their families through lifestyle changes, such as diet changes, increased exercise, and improved nutrition. Because both obesity and diabetes transcend socioeconomic status, I plan to begin my work with women who are a bit more resource-rich by working with suburban, predominantly African American churches, and with graduate chapter sorority members. Eventually, I would like to work with more resource-challenged women and help them navigate their situations to successfully reduce obesity and diabetes. Obesity and diabetes are increasing rapidly within the African American community, but clearly both can be prevented. I want to be among those who show people how to protect and improve their health.

Johnny Figueroa, Ph.D.

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Research Interests
There is a critical unmet need to build a new framework for minority mental health promotion and disease prevention. Emerging evidence from my laboratory supports that neuroimaging and behavioral neuroscience can contribute to unmask the childhood roots of obesity. My laboratory focuses on the hippocampus, a brain region required for optimal cognitive and emotional function, as well as resilience. Studies from my laboratory address two critical questions: (1) how traumatic stress during adolescence modulates stress resilience to the consumption of obesogenic diets and metabolic imbalances and (2) how the hippocampus is a target for both the negative impact of stress and the positive effects of cognitive enhancers that restore metabolic function. I have a broad background in neuroscience and specific expertise in molecular biology, electrophysiology, imaging, endocrine physiology, cognition, and behavior.

Gregory L. Florant, Ph.D.

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Research Interests
My research interest is in the area of energy metabolism. In particular, I am interested in studying animal models that can help us understand obesity, diabetes, and food intake. I study mammals that hibernate because they undergo dramatic body mass cycles that are primarily based on fat storage and utilization. In addition, I work on hormone cell signaling in fat and muscle cells because this is an important part of how nutrients are used.

Christopher Fraker, Ph.D.

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Research Interests

As a patient with type 1 diabetes (T1D) for the past 32 years, I became interested in research efforts directed at curing the disease, either through methods to correct the immune system deficiencies in patients or through biomaterials applications to improve curative cell transplant therapies. As a bioengineer, my focus has become immune engineering, using materials to alter immune response and enhance the delivery of cell-based therapies. Most of my efforts over the last 15 years as a biomedical engineer have been focused on the application of perfluorocarbons in cell and tissue engineering. Initially involved in organ preservation using perfluorocarbons, I extended this work to platforms for gas-permeable culture to improve stem cell differentiation into insulin-producing cells for cell replacement therapies and nanoemulsion platforms for drug delivery and enhanced oxygen transfer. This work has blended well with laboratory efforts in cell encapsulation. In addition to bioengineering work, I have begun looking into immune and viral responses in the development of T1D. With collaborators, I am examining the role of the innate immune system and improper viral responses as an initiator of disease, much different from the downstream players (cytotoxic T cells) in tissue destruction, which is the main focus of most T1D immunology researchers. Additionally, we are examining potential metabolic factors in the onset of not only type 1 but also type 2 diabetes and other autoimmune pathologies.

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Research Interests

The incidence of type 2 diabetes mellitus (T2DM) has increased rapidly in youth subsequent to the rise of childhood obesity. Progress in this field has been hampered in three ways: (1) a small, unevenly dispersed pediatric endocrine workforce relative to its growing patient base; (2) the lack of U.S. Food and Drug Administration-approved pharmacotherapies for treatment; and (3) scant empirical evidence for pediatric lifestyle and disease management. Specifically, I am interested in understanding how current care delivery systems can be enhanced to support youth in managing their diabetes without the need for continuous intervention by pediatric endocrinologists; in finding new therapeutic options for youth with chronic conditions, such as T2DM; and in reducing barriers that hinder engagement in healthy lifestyle practices and diabetes self-management, especially for racial/ethnic minority youth. These three areas form the core of my current research program and my future research plans.

Through doctoral and postgraduate training, I have mastered a cadre of advanced statistical and pharmaco-economic methods that I incorporate into my research, including cost-effectiveness analysis and decision modeling, comparative effectiveness, and categorical and longitudinal data analysis. For the next 3 to 5 years, I have planned research projects that will evaluate medication use and outcomes, factors influencing disease severity and decline, and novel systems that support disease self-management in youth with T2DM. Longer term, my primary research goal is to develop and disseminate targeted, theory-driven interventions to enhance lifestyle behaviors in youth with chronic conditions like T2DM.

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Research Interests

My long-term career goal is to mitigate diabetes-related health disparities and improve health behaviors and metabolic health outcomes among American Indians (AIs). I hope to take advantage of findings from observational studies to develop targeted interventions that improve metabolic health in this underserved population. My career goals require a translational approach, bridging epidemiology, the social determinants of health, health behaviors, and health disparities research with community-based interventions and health promotion. The burden of diabetes and its risk factors in AI communities is striking. AIs are 60% more likely to be obese and 200% more likely to have diabetes than non-Hispanic whites of similar age. Identifying effective interventions for lowering diabetes risk among AIs is critical. Despite a large body of evidence that demonstrates the ill effects of a poor diet, physical inactivity, and obesity on risk of diabetes, diet and physical activity education and health promotion programs have not led to improvements in metabolic outcomes for AIs. This may, in part, be due to an inadequate understanding of the social factors that contribute to these health behaviors and diabetes risk factors. Having identified activity and diet as the primary behavioral factors associated with diabetes and its risk factors, it is essential to better understand the social-contextual determinants of these behaviors and risk factors to inform the development of effective interventions. As part of my KL2 award agenda, I will spend the next 4 years working on a project to better understand the social determinants of diabetes and its risk factors among AIs. I will (1) develop expertise in understanding social-contextual determinants of physical activity, diet, and obesity-related metabolic risk factors among AIs; (2) gain proficiency in all components of health promotion interventions/randomized trials, including design, implementation, and evaluation; and (3) integrate data on social determinants of health, physical activity, and nutritional and diabetes epidemiology to inform the development of a targeted diabetes-related health intervention for AIs using a translational approach. The project takes advantage of data already collected from 3,665 individuals who participated in the Strong Heart Study (SHS). Additionally, we will utilize the existing SHS infrastructure (SHS field center, SHS participants) in South Dakota to perform feasibility/pilot work needed to better understand ways to develop and implement a sustainable intervention focused on health behaviors and the prevention of diabetes and its risk factors.

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Research Interests

I have gained interest in calcium-related disorders with recent research in calciphylaxis. My first retrospective study using a national inpatient sample group was in calcific uremic arteriolopathy. Lately, I have found new interest in onconephrology, a field that is growing inside the field of nephrology. My father was diagnosed with lymphoma, and when it recurred it had invaded both kidneys. It is an overwhelming time for both the patient and the family when cancer recurs, even worse if renal failure or dialysis comes into the picture. Every year, new medications and therapies to fight cancer are being developed, but with these new treatments, new complications come into play. Currently, I am working on the adequate volume expansion in patients undergoing dialysis who develop severe sepsis. Patient in dialysis are usually excluded from most studies that make it to guidelines. For this reason, much is not known on how we should approach specific treatment in this population. The aim of the study is to assess the outcome and adverse effects of the recommended fluid resuscitation for severe sepsis in patients on dialysis. Moving forward, I would like to be involved in research related to the Hispanic population. There is a growing interest in chronic kidney disease of unknown origin. With the technologies available to date, I believe that we should discover the cause of this disease in the next decade. I am hopeful that research in nephrology will continue to grow, particularly in the Hispanic communities. My goal is to conduct research and collaborate with nephrologists in Central America.

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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., RN, FAHA, CDE

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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, and cognitive impairment; and (2) community diabetes self-management education programs. My studies have focused on differences in metabolic syndrome, insulin resistance, and its correlations 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 impairment.

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 in evaluating 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 endure 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 control subjects. We have been evaluating mitochondrial function *in vivo* using 31P magnetic resonance spectroscopy. We also have used *in vitro* and *in vivo* techniques to measure markers of mitochondrial function and mitochondrial content.

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Research Interests

My current research focuses on establishing, improving, and maintaining sustainable ambulatory care services in a pharmacist-led primary care clinic. Areas of focus include prediabetes, diabetes, obesity, dyslipidemia, and hypertension. My research is focused not only on the provision of medication therapy management, but also on patient education services that improve self-care behaviors and overall health. Another facet of this work is improving the education of pharmacy and Doctor of Osteopathic Medicine (DO) students in the realm of patient education and disease state management in the ambulatory care setting. The goal of this research is twofold: (1) to establish models of ambulatory care practice for implementation in a variety of settings and (2) to enhance the education and experience of pharmacy and DO students in order to prepare them to operate independently in an ambulatory care setting.

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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.

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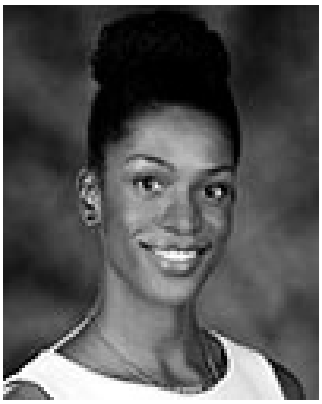
Research Interests

I am a first-year nephrology fellow at Stanford University, with an anticipated fellowship completion date of June 30, 2021. As a physician in Guatemala, I assisted with clinical research involving patients with chronic kidney disease in the largest referral hospital in Guatemala City. We conducted a cross-sectional study to characterize those patients with chronic kidney disease of unknown origin (CKDu) in the inpatient setting. In the United States, using the Nationwide Inpatient Sample (NIS) database, we analyzed hospitalization and outcome trends of patients with hepatorenal syndrome. In 2018, using the NIS database, we described the trends and characteristics of calciphylaxis in the U.S. inpatient population. The goal of this work is to describe the risk factors and outcomes in special populations of patients with kidney disease. My career goal is to become an academic nephrologist who excels in clinical research, with focused interest and expertise in tubulointerstitial kidney disease and CKDu.



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/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/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.

Senta K. Georgia, Ph.D.

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Research Interests
My laboratory investigates how pancreatic beta cells differentiate during organogenesis, how they increase their cell numbers during normal growth and in response to metabolic stress, and how they can be regenerated as a cellular therapy for patients with diabetes. I am specifically interested in how DNA methylation mediates tissue-specific gene expression patterns that define beta cell identity.

Nasra Giama, D.N.P., RN, PHN

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Research Interests
My primary research interests center around health promotion, research participation and inclusion, and determinants affecting the health of minority communities. Specifically, I am involved with research studies on hepatitis B and C and liver disease among immigrant and refugee communities, as well as identifying opportunities to intervene at the individual, community, and system levels. I also am interested in adolescent health and examining the relationship between educational attainment and health.

Sherita Hill Golden, M.D., M.H.S.

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Research Interests

My primary research interest centers around identifying endocrine risk factors associated with the development of diabetes and cardiovascular disease through the incorporation of measures of hormonal function into the design of clinical trials of cardiovascular risk modification, observational studies of incident cardiovascular disease and diabetes, and studies evaluating diabetic complications. My research explores the role of hypothalamic-pituitary-adrenal (HPA) axis biomarkers in type 2 diabetes pathogenesis. I have made fundamental discoveries regarding hormonal determinants of the association between depression and type 2 diabetes, specifically HPA axis activation. My investigation demonstrating a bidirectional, longitudinal association between depression and type 2 diabetes spawned international collaborations to explore biological mechanisms. I also have studied other molecular epidemiology aspects of type 2 diabetes, demonstrating that endogenous sex hormones in post-menopausal women are associated with atherosclerosis, insulin resistance, and incident type 2 diabetes. I serve as the principal investigator of the Johns Hopkins site of the Diabetes Prevention Program Outcome Study. My health services research focuses on understanding and eliminating diabetes health disparities, as well as implementing and evaluating systems interventions to improve patient safety and quality of care in hospitalized patients with diabetes.

Gabriel Gonzalez, Ph.D.

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Research Interests

I am a research scientist and an instructor of medicine in the laboratory of Dr. Natasha Frank at Brigham and Women's Hospital, Harvard Medical School. My research is focused in the area of stem cell and cancer biology and regenerative medicine. Mouse models are used to study the role of ATP-binding cassette subfamily B member 5-positive cells during organogenesis and how they contribute to eye, gastrointestinal tract, and skin development, as well as cancer initiation. Throughout my research experience, I have been afforded the opportunity to characterize the population of adult stem cells capable of (1) maintaining tissue homeostasis and (2) assisting tissue regeneration. My research interests also are focused on investigating the mechanisms within this model system that when altered could lead to cancer initiation.

Eddie L. Greene, M.D.

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Research Interests
My research interests include (1) the pathophysiology of chronic kidney disease (specifically the biology of fibrosis-inducing signaling cascades in renal tubule cells and in the renal mesangium), (2) the evaluation and management of cardiovascular comorbidities in patients with chronic kidney disease, and (3) the pathophysiology of renal malignancies.

Raquel Charles Greer, M.D., M.H.S.

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Research Interests
My research focuses on identifying and addressing modifiable factors to improve the health of patients with chronic kidney disease and to narrow ethnic/racial disparities in clinical outcomes. I am specifically interested in improving the care that primary care providers deliver to patients with chronic kidney disease and improving awareness and knowledge of chronic kidney disease among ethnic/racial minorities.

Absalon D. Gutierrez, M.D.

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Research Interests

My research focuses primarily on the effects of glucagon-like peptide-1(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. Leading to the development of our current study, we investigated the role of GLP-1 analog therapy on free fatty acid-induced inflammatory signaling, triglyceride metabolism, and endothelial dysfunction. For our 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. 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 is mediated through diminished availability of arginine for nitric oxide synthesis, which in turn impairs insulin secretion. As one of five study sites in our medical device study, the goal of this clinical trial is to demonstrate the safety and effectiveness of the fractyl duodenal mucosal resurfacing procedure in improving glycemic control, using the Revita™ System compared with a sham procedure.

Arthur Gutierrez-Hartmann, M.D.

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Research Interests

The main focus of my laboratory is to determine the role of Ras/MAPK signaling and Ets transcription factors in epithelial cell development and tumorigenesis, with a focus on pituitary and mammary model systems.

Jenaqua Hairston

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Research Interests
Cardiovascular disease is the leading cause of death worldwide. Although cardiovascular disease events have declined in recent years, a disparity in its prognosis persists. People of African descent develop cardiovascular diseases at greater rates and are more susceptible to deaths from adverse complexities with the disease than other racial ethnic groups. In addition to socioeconomic status to consider, people of African descent exhibit a higher prevalence of genetic ablations related to cardiovascular disease risks. This finding indicates that there are differences in the biology of cardiovascular disease development, which remains unclear. My research interests aim to elucidate the mechanisms of cardiovascular disease development, progression, and prevention in disproportionately affected groups.

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Research Interests
I am a geriatric nephrologist, and my studies involve the use of administrative data and qualitative methodology to develop preliminary data to inform the design of interventions that improve the quality of care and quality of life in older adults with advanced kidney disease. I am particularly interested in the mechanisms of functional decline and how it informs dialysis decision making in older adults. Additional areas of interest include health disparities, nursing home management of patients with end-stage renal disease, and fracture prediction and management in older adults with kidney disease.

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

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Research Interests

I am board certified in internal medicine, gastroenterology, and preventive medicine and currently serve as the director of the gastrointestinal (GI) program within the Division of Digestive Diseases and Nutrition (DDN) at NIDDK. I also am the project scientist for the NIDDK Gastroparesis Consortium, as well as the Irritable Bowel Diseases Consortium. I received my medical degree from Howard University and pursued a combined internal medicine residency/preventive medicine program through a U.S. Public Health Service (USPHS) training program. I subsequently received my master's degree in public health from the Bloomberg School of Health at Johns Hopkins University. After completing my residency, I received further training at the Department of Medicine at University of Maryland as a GI fellow. Upon completion of my fellowship, I served as faculty at the USPHS Hospital Baltimore and served as faculty at the University of Maryland and the Baltimore Veterans Administration Hospital. Before joining the NIH, I served in the Office of the Surgeon General, USPHS, where I served as a staff physician on the landmark U.S. Department of Health and Human Services Task Force on Black and Minority Health. In late 1987, I joined the extramural program at NIH/NIDDK as Program Director in the DDN, where I have been instrumental in fostering basic and clinical research in gastroenterology. Active in several professional organizations—such as the American Gastroenterological Association, National Medical Association, and the American College of Gastroenterology—I have been active in promoting diversity in the makeup of these organizations and in eliminating health disparities in colorectal cancer screening, as well. My research areas of interest include GI motility disorders, functional bowel disorders, and inflammatory bowel disease, as well as clinical trials in fecal incontinence.

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

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Research Interests

Through a resident-led health committee initiative, I am engaged in collaborative relationship building with the University of the District of Columbia, the District of Columbia Housing Authority (DCHA), and various health-related agencies across the District of Columbia to encourage the active participation of DCHA residents in conducting research and surveillance that will contribute to reducing health disparities, especially in the area of obesity-related diseases. I will continue to explore the metabolic syndrome and will examine various approaches to reducing its negative impact on the health of minority populations. I am working to expand research opportunities among undergraduate students in the areas of nutrition and related sciences. My past research includes a Robert Wood Johnson Foundation Active Living Research-funded project titled "The Availability of Healthy Foods, BMI, and Dietary Patterns in Urban Adolescents." In this project, we examined the associations among adolescents' perceived and objective availability of healthy foods, the physical environment, and body mass index. I also completed a study titled "The Relationship of Low Birth Weight and Current Obesity to Diabetes in African American Women."

Patricia C. Heyn, Ph.D., FGSA, FACRM

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Research Interests

My research is on the effects of exercise on selected metabolic, functional, and health outcomes of individuals with complex health and chronic diseases, as well as older adults. I have a particular interest in understanding the effects of physical activity (PA) on cognitive function and its association with metabolic syndrome and diabetes. My investigations include the PA associations between lifestyle behavior, sex hormones, diabetes, and obesity on cognitive function. I have extensive experience in evaluating cognitive and physical training in older adults with cognitive impairments, including individuals with Alzheimer's disease, stroke, and intellectual disabilities. My current studies include patient-reported outcomes methods and health services research evaluation.

Alethea Hill, Ph.D., M.S.N., ANP-BC

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Research Interests

My research interests are prediabetic states and type 2 diabetes as a risk equivalent for cardiovascular disease. In addition, I am interested in the gender and racial/ethnic differences that exist when predicting the risk of type 2 diabetes and prediabetic states among African American women. I began my research career working with community and faith-based organizations focusing on diabetes self-management education and risk awareness projects. I plan to expand my research interest to investigate the associations between sleep duration/hygiene, dyslipidemia, and diabetes among African American populations.

Jonathan Himmelfarb, M.D., FASN

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Research Interests

My research interests involve metabolic complications of kidney disease, including chronic kidney disease, end-stage renal disease, and acute kidney injury. In particular, I have focused on understanding how the loss of kidney function contributes to increased oxidative stress, inflammation, insulin resistance and endothelial dysfunction, and ultimately cardiovascular risk in kidney disease. I also have been involved in creating statewide, community-based research into health care disparities related to chronic kidney disease and evaluating novel approaches to renal replacement therapies.

Antentor Hinton, Jr., Ph.D.

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Research Interests
I am the first recipient in my family to receive a Ph.D. Additionally, I am an African American male post-doctoral research fellow at the University of Iowa. I would like to make seminal contributions to the field of diabetes, with a focus on how mitochondrial metabolism influences the pathology. In the future, I hope to combine my experiences in neurogenic hypertension (Ph.D.) and mitochondrial metabolism (postdoctoral) to dive deeper into what metabolism changes happen in neurons that lead to hypertension. Furthermore, I hope to use the resources of my future grants to develop several advanced technologies that would improve current equipment for respiration and control the rate of neuronal motor movement; thus, this technology would improve upon designer receptor exclusively activated by designer drugs (DREADD) so that I can explore mitochondrial metabolism in hypertension.

Sula Hood, Ph.D., M.P.H.

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Research Interests
My research agenda has a strong emphasis on addressing chronic disease health disparities in ethnic minorities and disadvantaged populations and focuses on the development of community-based interventions to increase social support, peer support, and health communication as critical strategies for promoting chronic disease prevention, coping, and self-management. My disease topics of primary interest include diabetes, cancer, lupus, and sickle cell anemia. My most recent work has been done in collaboration with African American families to incorporate health promotion activities at black family reunions. In particular, my current line of research is focused on identifying patterns of communication about health in African American families and developing culturally sensitive strategies to (1) promote awareness of the importance of family health history sharing among African Americans and (2) increase family health history sharing and collection in African American families. My research utilizes mixed methods, incorporating both qualitative and quantitative methodology, including social network analysis.

Lina Huerta-Saenz, M.D.

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Research Interests

I am pediatric endocrinologist and a junior physician-scientist. My current 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, (2) pre-diabetes treatment, and (3) how to decrease the current health disparities in pediatric medical care. 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) as a measure to translate this assessment into specific therapeutic actions for these children and families. Now, I am working on designing specific nutrition interventions to increase the survival rate of the remaining beta cells in children and youth with early onset type 1 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 also expect the results of my research studies can contribute to our current understanding about the progression of this disease and design different treatment interventions than the current ones available, especially for those children/youth with diabetes who still have remaining beta cell function.

Marja M. Hurley, M.D.

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Research Interests

I am an internationally recognized expert in the field of bone biology, particularly in the area of anabolic growth factors and their impact on bone growth and metabolism. I am a physician-scientist who is recognized nationally and internationally as the expert in the role of fibroblast growth factor-2 (FGF2) in bone. I have made seminal observations on the importance of FGF2 in maintaining bone mass in mice, as demonstrated by my publication in the premier *Journal of Clinical Investigation* on the bone phenotype in FGF2 mice and subsequent publications in the *Journal of Biological Chemistry*, *Journal of Endocrinology*, and *Journal of Bone and Mineral Research*. I have co-authored papers in the *Proceedings of the National Academy of Sciences* and *Nature Medicine*. I also have demonstrated that FGF2 is highly regulated by bone morphogenetic protein, an agent approved by the U.S. Food and Drug Administration (FDA) for fracture repair in humans. In addition, my laboratory was the first to demonstrate that FGF2 expression in bone cells is increased by parathyroid hormone (PTH), the only anabolic agent approved by the FDA for osteoporosis treatment in the United States, and further demonstrated that the anabolic response to PTH is impaired in FGF2 mice. Of potential translational/clinical relevance, I published a seminal paper demonstrating that the anabolic effect of PTH in humans is associated with increased serum levels of FGF2. More recently, I have demonstrated a novel role for the nuclear isoforms of FGF2 in phosphate homeostasis and was recently awarded a grant from the National Institute of Diabetes and Digestive and Kidney Diseases to study the potential role of these isoforms in human disorder X-linked hypophosphatemic rickets. My outstanding research contributions, including seminal work on the role of FGF2 in bone, have resulted in funding by the National Institutes of Health for well over 20 years. This has resulted in a profusion of high-quality publications that includes papers in the *Journal of Bone and Mineral Research*, *Journal of Endocrinology*, *Journal of Biological Chemistry*, and *Journal of Clinical Investigation*, among other leading journals. I have developed a number of new genetic murine models that have greatly advanced our understanding of the complex effects that multiple FGF2 isoforms exert on osteoblast commitment, differentiation, and function.

Tod Ibrahim

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Research Interests

I focus on advancing the mission of the American Society of Nephrology (ASN) to lead the fight against kidney disease by educating health professionals, sharing new knowledge, advancing research, and advocating the highest quality care for patients. Through a collaboration with leading workforce investigators from The George Washington University, ASN is conducting research on the nephrology workforce and an analysis of the current job market, including a survey of fellows and their perceptions of the job market and the specialty of nephrology.

Takaharu Ichimura, Ph.D.

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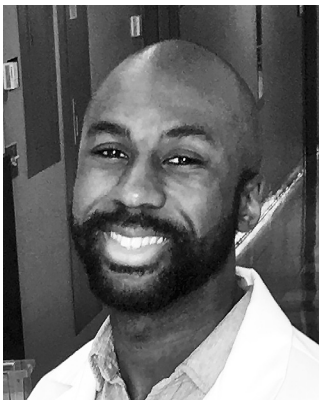
Research Interests

I have been working on the following research fields: (1) characterization of kidney injury molecule-1 (KIM-1), which is a molecule that functions as a cell binding receptor—as well as phagocytosis and scavenger receptor—and also modulates cytoprotection and inflammatory response; and (2) functional characterization of activated macrophage molecule membrane protein Gpnmb. My 78 publications on Google Scholar (as of January 27, 2019) have been cited a total of 5,481 times during the period 1988–2019, with an h-index of 26 and h10-index of 36. My 1998 article published in the *Journal of Biological Chemistry* has been cited 1,052 times. During my thesis study, I characterized the expression of a group of genes and proteins belonging to the families of fibroblast growth factors and their receptors in nephrotoxicant-injured and regenerating rat kidneys. I extended analysis of the growth factor and receptor gene expression to the developing rat kidneys in embryo using RNA *in situ* hybridization technique. I also analyzed the production of the fibroblast growth factor-like activities in transformed rat renal proximal tubule cells in culture. I also applied immunohistochemical technique for detecting the nephrotoxicant protein adducts *in situ*. My immunohistochemical analysis for detection of a protein-adduct from my Ph.D. thesis study was used for a figure in the textbook *Atlas of Kidney Disease*. As a postdoctoral fellow, I cloned renal injury–related genes, KIM-1—also known as Tim-1—and gpnmb, which are type 1 membrane proteins and highly upregulated in injured kidneys, during my postdoctoral training. I used representational difference analysis (RDA) subtraction as a cloning strategy in this project. I observed high levels of both mRNA and protein expression of both genes, as shown by several different analytical techniques, including RNA *in situ* hybridization. I also found that the KIM-1 mRNA was upregulated in some human renal cell carcinoma tissues. I produced expression constructs for human Ig Fc-tagged soluble human and rat Kim-1 proteins for application to FACS analysis of KIM-1 protein binding to various types of cells and administration to rats. I led a project for the generation of kim-2 knockout/gal-4-knockin mice. Now, KIM-1 is a well-recognized kidney injury biomarker; a search of PubMed by the term "Kim-1" or "Tim-1" gives 1,034 papers. A Google Scholar search of the term "kidney injury molecule -1" has given 59,100 results (as of June 23, 2017).

While working in my current position, I described Kim-1 protein expression in various types of nephrotoxicant-induced renal injury models, including the detection of Kim-1 protein as a biomarker in the urine samples collected from toxicant-treated rats. I found that KIM-1 protein is a novel receptor that mediates phagocytosis of apoptotic cells and a scavenger receptor for low density lipoproteins to the KIM-1 expressing LLC-PK1 renal epithelial cells. This work was reviewed two times in "Faculty of 1000" (FFa scores = 12 and 8).



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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 than 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.

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Research Interests

I study the vascular microenvironment to identify molecular and cellular signaling networks that modulate, inhibit, and promote blood vessel formation. I combine this with systems biology approaches to identify promising therapeutic targets. My goal is to unravel the molecular complexities governing blood vessel formation, which has the potential for treatment of more than 70 diseases, including breast cancer and some cardiovascular diseases.

Claire Townsend Ing, Dr.P.H.

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Research Interests

I have a personal and career-driven passion for advancing our understanding of and ability to address health disparities. My long-term career goal is to advance to full professor, recognized as an international expert in addressing the multilevel determinants of cardiovascular health in Native Hawaiians and other indigenous peoples. I plan to have an established, independently funded (i.e., R01 level) research program through which I am able to teach, mentor, and develop the next generation of scholars and researchers in Native Hawaiian and indigenous health. I am committed to continuously developing community-academic partnerships to examine multilevel determinants of health; enabling communities, researchers, and policymakers to effectively address these determinants; and improving the health of Native Hawaiians and other indigenous peoples. The knowledge gained from my research will lead to a better understanding the dynamic interaction of multilevel determinants of cardiovascular health in Native Hawaiian and indigenous communities and the development of sustainable programs and policies to address them. To achieve this long-term goal, I have identified several short-term research objectives, which are to improve my knowledge and skill to (1) identify and measure multilevel determinants of cardiovascular health in Native Hawaiians, (2) use system science methodologies to examine the structure and impact of multilevel determinants of cardiovascular health, and (3) identify potential targets for multilevel interventions to improve cardiovascular health in Native Hawaiians. To meet these research objectives, I have identified several funding opportunities.

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 that muscle/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 (AAs) on bone marrow mesenchymal stem cell (BMSC) function. Our data demonstrate that AAs 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 AAs are not just fuel, broken down to provide ATP for cell function, but rather AAs 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

My research focuses on investigating how the attributes of neighborhood, housing, and work conditions affect sleep health (i.e., insufficient sleep duration and inadequate sleep quality) and cardiometabolic dysfunction (e.g., obesity, type 2 diabetes or cardiovascular disease) in underresourced populations. In addition to identifying the biological mechanisms by which factors in the physical, chemical, and social environments affect health and contribute to health inequities, I am interested in the translation of epidemiologic findings into novel environmental interventions, policies, and practices that address structural-, macro-, and individual-level barriers to achieving and maintaining optimal health.

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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. My ongoing research goal is to assess the impact of a cultural adaptation on the success of a weight management program.

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Research Interests

My research focuses on the viscous and elastic behavior of sickle erythrocytes and its impact on microcirculatory blood flow and vaso-occlusion in sickle cell disease, including the clinical complications of sickle cell disease and its diagnosis and management; morbidity and mortality in hemoglobin disorders; clinical features of thalassemia minor and its diagnosis; and identification and biochemical characterization of novel hemoglobin variants.

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Research Interests

The standard of care for patients with end-stage renal disease (ESRD) is lifelong hemodialysis (HD) treatments at a frequency of three times per week, with 63% of prevalent ESRD cases undergoing HD in 2016. Life expectancies for patients with ESRD have improved little in the past two decades, with almost no change (<1-year increase) for those 50 years of age and older. To improve both health outcomes and the quality of life for those on HD, my laboratory is working on technologies to enable portable or wearable HD. Such advances would not only provide lifestyle benefits in the form of mobility and convenience, but also should improve treatment outcomes by enabling more frequent or continuous dialysis and minimizing extracorporeal blood circuit volumes. Ultimately, these systems would include a plasma filter, followed by an active filter that uses cultured cells, and could include inline metrology of blood components. The goal of my laboratory is to develop microelectromechanical systems (MEMS) technologies and devices for medical sensors, diagnostics, and therapies. I successfully led a team through proof-of-principle small-animal dialysis experiments and put devices with nanoporous membranes, developed at UR, in "head-to-head" competition with conventional hemodialysis membranes in a small-format system. My current research focuses on exploiting the properties of ultrathin nanoporous membranes to enable portable/wearable hemodialysis devices for renal replacement therapy. My group is developing an *in vitro* benchtop, large-animal model simulator and has experience with microdialysis, small-format device hemodialysis, uremic toxin metrology, and Finite Element Analysis (FEA) modeling. In the next 3 years, I will improve benchtop tests and techniques to help bring compact dialysis devices from benchtop to clinical trials, reducing the number of animals used in preclinical trials. I will investigate basic research questions regarding hemodialysis, ESRD, AKI, and other kidney disorders through the development of more efficient HD devices and microfluidic based diagnostic and benchtop tools. Benchtop tools may include nephron on a chip, kidney on a chip, and a benchtop model of the human vasculature, including urea compartments and kidneys. My research laboratory will investigate toxin detection, biomarkers, and therapeutic techniques (white blood cell programming) through the application of these tools. Such a benchtop model would be used to demonstrate and compare competing RRT devices and explore biological questions difficult to isolate in a clinical environment or animal model. I will leverage my current and prior research (dealing with murine cochlea infusion via MEMS devices) and gain the knowledge and experience needed to develop a research team capable of addressing a variety of project in biomedical engineering using MEMS and systems engineering. These projects will include both clinical devices, as well as advancing the state of the art in benchtop and preclinical devices to aid in the translation of novel biomedical discoveries.

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Research Interests

I have focused my research career on common conditions seen in primary care, such as hypertension, obesity, cardiovascular disease, and kidney disease. As an Alaska Native academic general internist, I have sought to better understand the epidemiology of these conditions among American Indians and Alaska Natives. Additionally, I am interested in patient education and educational interventions. I was funded by an NIDDK K23 career development grant to assess chronic kidney disease (CKD) knowledge and awareness among American Indians and also was co-principal investigator (PI) on an NIDDK R34 grant at the Cleveland Clinic to assess the effectiveness of a CKD patient navigator, an enhanced personal health record, both, or usual care on CKD patient outcomes. I work with studies that focus on native health, such as the Western Alaska Tribal Collaborative for Health Study. I am the current PI for the Dakota Center funded by the National Heart, Lung, and Blood Institute of the Strong Heart Study/Strong Heart Family Study.

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Research Interests

My research interests include perceived stress, women's health, midlife women's issues, stress reduction, aging, symptom experience, and long-term health outcomes. My research uses mixed methods to understand the unique stressors affecting midlife women and the effects of chronic stress on long-term health outcomes, symptom expression, and aging. I am interested in the clinical expression of stress as demonstrated by physiological and genomic biomarkers and symptom experience. Recent publications include "Bladder Symptoms in the Early Menopause Transition," published in the *Journal of Women's Health* (2016) and "A Qualitative Understanding of Midlife Sources of Stress and Support in African American Women," published in *The Journal of the National Black Nurses Association* (2016). I have recently concluded another descriptive study of the stress and stressors affecting midlife African American women in Cincinnati with plans for publication and continued research based upon the findings. My clinical experience, expertise, and interests include primary care, health promotion, community health, and vulnerable populations.

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Research Interests

I currently hold a postdoctoral scholar position at Duke Human Vaccine Institute where I am characterizing a special subset of T cells, called T-follicular helper cells, in an effort to identify targets for HIV vaccine development. For my Ph.D. thesis at the University of Rochester Medical Center (URMC), I worked on developing a model to study a serious condition in HIV-positive individuals called HAND (HIV-associated neurocognitive disorder). HAND occurs as a result of the blood-brain barrier's (BBB) integrity changing, thereby increasing BBB permeability. The BBB is a tightly regulated unit permeable only to necessary molecules, such as calcium and immune surveillance lymphocytes. This research is an extension to the predoctoral thesis work I did under the guidance of Dr. Sanjay Maggirwar. Individuals with HIV have a 52% chance of developing HAND, and currently, no therapies are available. To develop treatments, the underlying mechanisms of HAND must be identified, but because HIV naturally infects humans, an animal model is critical. Thus, my graduate work centered around overcoming that restriction challenge. In summary, I developed and characterized a mouse model in which mice infected with mouse-specific HIV recapitulated neuropathologies reported in humans living with HIV. I went on to identify that activated platelets play a major role in HAND—mice treated with anti-platelet treatments did not develop HAND or exhibited BBB dysfunction. In addition to this project, I collaborated with a pediatric oncologist at URMC to study the role platelet activation plays in sickle cell anemia. I initiated this collaboration, devised the approved protocol to work with human subjects, and performed all the experiments. Prior to my doctoral program, I had done research on identifying genes differentially expressed in shrimp infected with infectious haematopoietic necrosis virus. In the future as faculty, I want to continue my studies on HIV and platelet activation, as well as autoimmune diseases.

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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.

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Research Interests
My research is focused on understanding risk factors in the development of obesity and type 2 diabetes in diverse populations. My group examines classical risk factors for diabetes and obesity, including physical activity, dietary intake, smoking, cholesterol, blood pressure, and adiposity and potential racial/ethnic differences. We also examine the role of novel risk factors, including adrenal hormones and the hypothalamic-pituitary-adrenal axis—specifically aldosterone and cortisol—in the development of diabetes and obesity using data from longitudinal observational cohorts, including the Multi-Ethnic Study of Atherosclerosis, Jackson Heart Study, Coronary Artery Risk Development in Young Adults Study, and Reasons for Geographic and Racial Differences in Stroke. The hypotheses generated using epidemiological approaches are used to design and execute detailed metabolic clinical studies to uncover explanatory mechanisms as potential targets for prevention of diabetes and obesity.

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Research Interests

My research focuses on the impact of nutrients on immune cell function and ultimate impact on obesity and associated metabolic disorders. Nonalcoholic steatohepatitis (NASH) has become a common disorder associated with obesity and diabetes. Currently, my research focuses on understanding the role of hepatic T lymphocytes in the development of NASH under obese and hyperlipidemic conditions.

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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 easily implemented in clinical settings (e.g., primary care). I particularly focus on identifying psychosocial determinants of race/ethnicity 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 and ultimately reducing the burden of chronic diseases associated with psychological factors and improving long-term public health and patient care.

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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.

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Research Interests
My principal interests are in chronic disease management, continuing medical education, quality improvement, and providing health care to underserved populations. My research activities include cardiovascular disease risk factors in patients with chronic kidney disease (CKD), health literacy assessment, the impact of modifying patient education programs on health outcomes, and the effect of modified clinical visits on health outcomes and access to health care. As health care payment models change, implementation of chronic care management teams will play an integral role. I am interested in studying the impact of patient-centered medical homes on care delivery and reduction of health disparities in patients with CKD.

Carlos Linares Koloffon, M.D.

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Research Interests

My research interest focuses on the transectoral areas of cardiovascular disease, chronic kidney disease, and the social determinants of health. I also found fascinating the particular interest in pulmonary hypertension and endothelial function at a basic science research level. Because many contemporary health problems are affecting the population open gaps in the society, 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

With three decades of clinical research and leadership in graduate training programs, I am committed to the development of the next generation of academic and translational researchers. As the program director for the Master's of Science in Clinical Research Program (MSCR) at MUSC, 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 do so—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 stroke and stroke prevention 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 literature review, team science, and clinical research methodology. I also am involved in the recruitment of students for academic and research programs, including the South Carolina Clinical and Translational Research Institute (SCTR); Predoctoral Clinical and Translational Research Training Program (Associate Director); Training Director for the Neurological Emergencies Treatment Trials Network Statistical and Data Management (NETT); 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 NIH/NIDDK Minority Research Investigators Network. I am currently leading the Division of Translational Neurology and Population Studies, which includes objectives and aims consistent with the 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. Furthermore, with more than two and a half decades of training students, residents, fellows, and junior faculty, my commitment to the education mission is evident. Finally, as the immediate past president of the World Hypertension League, I am committed to the theme of developing global teams of clinical investigators.

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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 the 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 have shown previously 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 are currently 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 are examining the capacity of gut bacteria composition to modulate immune system functions that promote type 1 diabetes onset.

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Research Interests
I am a clinical/developmental tenured Associate Professor. My research and scholarship interests are concentrated in the areas of evidence-based practice, with a focus on black women and gender issues, alcohol, depression, and other psychiatric illnesses, domestic violence, health disparities, and community participatory research. My current research is focusing on cardiovascular illnesses.

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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 because 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 affect 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). In turn, LH and FSH 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, 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.

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Research Interests

My research interest is to investigate the involvement of DNA in glycoxidation reactions, having implications in diseases such as diabetes, mutation of DNA, synthesis of proteins such as insulin, and cancer. It is widely believed that DNA is involved in complications arising out of obesity, diabetes, and other age-related diseases. Initial experiments were designed to identify uniquely modified DNA nucleosides (CMdA and CMdC) from *in vitro* reactions, followed by experiments to detect the presence of the same in calf thymus and human serum DNA. Our work describing detection of carboxymethyl-2'-deoxyadenosine (CMdA) and carboxymethyl -2'-deoxycytidine (CMdC) was already reported. Our current research is to develop a method for quantification of modified DNA nucleosides using spectrophotometer, high-performance liquid chromatography and liquid chromatography with tandem mass spectrometry. These results will indicate the severity and age/obesity dependency of DNA modification in relation to diabetes and other age-related diseases. We hope that continued research in this area will lead to the discovery of a biomarker for diseases that result from complications in diabetes, such as blindness, renal failure, coronary heart, and Alzheimer's diseases.

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Research Interests

Our group focuses on primary immune deficiency disorders (PIDDs). There are more than 140 of these complex conditions. People with PIDDs are born with immune systems that are not working properly or that are missing needed parts. This makes them more open to serious infection and illness. Our laboratory offers the newest and most thorough testing to identify these disorders and their causes. This allows us to use what we learn to provide the most advanced care for people with PIDDs, developing a one-stop screening panel for all known immunodeficiency genes, including the 20 or so genetic defects that cause severe combined immunodeficiency and a few hundred more that result in other immunological problems.

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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 am currently 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.

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Research Interests

The prevalence of diabetes continues to increase, with approximately 30.3 million adults affected by diabetes in 2017 and approximately 1.5 million new cases of diabetes yearly. More than 300,000 deaths yearly are attributable to diabetes and diabetes-related complications. Approximately 65% of deaths among patients with diabetes are attributed to cardiovascular disease. Many patients with diabetes develop atherosclerosis, which may be asymptomatic; however, the presence of diabetes is a cardiovascular equivalent and has been associated consistently with decreased survival. The shared pathophysiology of diabetes and atherosclerosis makes biomarkers attractive to identify patients at higher risk of cardiac events. We propose to use novel multiplex proteomic profiling to evaluate inflammation and lipid biomarkers as predictors of coronary atherosclerosis among patients with diabetes.

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Research Interests
My current research leverages structured and unstructured data, such as clinical notes, to identify readmission risk factors that can be used to predict patient readmission rates and to improve transitional care management, with the objective of reducing readmission rates and racial disparities in readmission rates among kidney transplant recipients. My long-term research objectives are to identify, test, and implement innovative and "learning" models of care that improve patient outcomes and eliminate racial disparities in health outcomes.

Gayenell Smith Magwood, Ph.D., M.S.N., RN, FAHA, FAAN

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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.

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Research Interests

The goal of my current research efforts is to identify the risk and protective factors for biliary tract cancer (BTC), both epidemiologically and genetically. I also am interested in the molecular characterization of these malignancies. At present, I am conducting a nationwide Swedish population-based cohort study investigating if the use of aspirin, other nonsteroidal anti-inflammatory drugs, metformin, and/or statins decrease the risk of BTC and death. This project forms part of an ongoing collaboration between Mayo Clinic and Karolinska Institutet. The data for this project were collected from the Swedish Registries. Our database comprises 5.7 million adult individuals with virtually complete enumeration of the use of these medications. Subsequent studies will explore the gene-environment interactions influencing the preventive effect of the previously mentioned agents. In addition to offering insight into the underlying mechanism of cholangiocarcinogenesis, understanding the relationship between genetic markers and the use of these drugs can help identify subgroups that may preferentially benefit from the chemopreventive use of these agents. These studies will be tightly linked to the genome-wide association study (GWAS) that my mentor, Dr. Lewis R. Roberts, is leading. This is the first GWAS on BTC with sample sizes large enough to have a reasonable expectation of finding significant effects with statistical confidence. Our studies have the potential to illuminate the key pathways for the oncogenesis of biliary cancers and to facilitate the development of novel therapeutic approaches.

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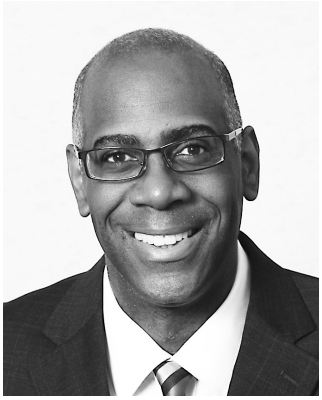
Research Interests

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



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Research Interests

My research interests include cross-cultural communication, especially as it relates 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 OSU College of Medicine biomedical scientist program leadership in submitting the National Institute of General Medical Sciences (NIGMS) R25 Request for Application to create a postbaccalaureate program to enhance diversity of students entering the Ph.D. biomedical scientist training program called Discovery PREP.

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Research Interests

I trained in molecular endocrinology at Northwestern University, where my research was focused on gene regulation in the growth hormone axis. Specifically, I studied transcriptional regulation of the growth hormone-releasing hormone receptor gene and post-transcriptional modification of the receptor. After completing my Ph.D., I transitioned to a career in scientific and health associations, working first as a grant writer for continuing medical education programs at the Endocrine Society. During my tenure at the Endocrine Society, I became responsible for scientific program development for the organization's annual conference. From there, I took a position leading the professional development and publications for a small public health association before starting my current tenure with the American Diabetes Association (ADA) in 2014. At ADA, I serve as Vice President of Research and Scientific Programs. I oversee our grant-funded research programs, research communications, research policy, new grant development, research symposia, and national scientific and health care achievement awards. I also maintain external relationships related to the Association's research programs, helping make scientists aware of our funding opportunities and other ways to be involved with the organization and the diabetes community. I am the staff liaison to our volunteer-led Research Policy Committee, which helps shape organizational priorities and policies related to research funding. One of our key priorities is to increase the diversity and inclusion of investigators, volunteers, and research topics we support to better reflect the community of people with diabetes. Sharing the funding and volunteer opportunities with the Network of Minority Health Research Investigators is important to achieving that goal.

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Research Interests

My research interests are in using a life-course perspective to investigate racial, ethnic, and socioeconomic disparities in perinatal and early childhood outcomes (e.g., birth weight, infant mortality, preterm birth, and childhood obesity) by integrating social and lifestyle (e.g., sleep) factors with biological mechanisms. I also seek to integrate 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. This approach will help to identify modifiable factors in under-resourced populations to address disparities and promote optimum health. My most recent project involved examining the association between traumatic childhood experiences with sleep characteristics in adulthood.

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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 utilizing 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 coregulation 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 Network of Minority Health Research Investigators program.

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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 have 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, while the annual cost of $92 was likely 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 3 years. However, there were no demographic data associated with the weight change data of the study; therefore, I was unable to determine if the program was effective in low-income or minority populations. With my K01 from the National Heart, Lung, and Blood Institute, I have continued a more in-depth evaluation to estimate the reach and effectiveness of the program among low-income and minority populations. I also have completed a pilot study of TOPS in the African American community. These are the specific aims for my K01: (1) assess the reach of the TOPS into low-income and minority communities using geographic information systems, (2) determine the effectiveness and differential effectiveness among chapters over 7 years, and (3) identify the key characteristics that influence the implementation of TOPS chapters based on the differential effectiveness to develop interventions to maximize all chapter performance.

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Research Interests

My current research program is NIH-funded and focuses on understanding the role of monocytes in calcium oxalate kidney stone disease. In particular, my laboratory is evaluating the significance of mitochondria, oxidative stress, and inflammation in stone disease using experimental models and clinical samples. We also have an active study investigating the role of dietary oxalate on immune response and crystalluria in humans. It is my hope that our research will provide relevant scientific information to help understand, prevent, and/or treat urological disorders.

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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 (over $2 million as principal investigator; $1.1 million as a co-investigator) funded by the National Institutes of Health (NIH), Department of Defense (DoD), and the 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 (honors) and Master's degrees in educational psychology, I joined the department of psychology at the University of Khartoum in Sudan as a lecturer. During this time, I taught several undergraduate courses and supervised undergraduate research required for the completion of bachelor 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 Mount Sinai School of Medicine to continue my postdoctoral training. As a postdoctoral research associate and a senior project manager at Mount Sinai School of Medicine (2006–2009), I developed strong expertise in developing and evaluating multimedia intervention 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, Mount Sinai School of Medicine, 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 principal investigator or a co-investigator on several previously funded grants (NIH, DoD, and ACS).

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Research Interests
My interest is in the study of polycystic ovary syndrome and how it relates to metabolic abnormalities.

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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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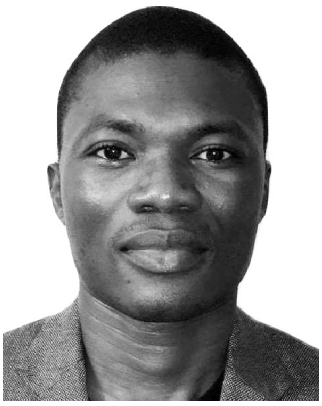
Research Interests

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

I am very interested in a research project involving the understanding of molecular pathogenesis underlying hepatocarcinoma and cholangiocarcinoma to identify new molecular targets for more effective treatment. The development of biomarkers for early detection of hepatobiliary cancers and the monitoring of patients at high risk for active hepatitis infection is key. I recently started a project with our collaborators in West Africa to study factors at the gene level (p53 mutations) that could explain the early onset of liver cancer in Africans and populations of African descent.

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Research Interests

I have spent the last 6 years studying patients at high risk of acute kidney injury (AKI). As a resident, I was awarded with the Henry Ford Hospital Graduate Medical Education Resident Research Grant to construct a large database of sepsis patients admitted to the intensive care unit, combining administrative databases and biomedical informatics resources. I founded the AKI in Critical Illness study group to examine AKI-related outcomes in these critically ill patients. This work resulted in several first-author publications and regional and national research awards. During my fellowship, I discovered the ongoing experimental research in Klotho biology and AKI at the University of Texas Southwestern Medical Center and was intrigued by the preclinical studies characterizing AKI as a state of Klotho deficiency and postulating the potential biomarker and therapeutic candidacy of Klotho in kidney disease. I was awarded with the Ben J. Lipps Research Fellowship Grant by the American Society of Nephrology to study the role of Klotho in human AKI and determine the time profile of urine Klotho levels in adults who develop AKI. This award allowed me to construct a 2-year mentored research plan that included research didactics, team science interactions, mentoring of junior trainees, and the completion of a Master's of Clinical Sciences, in addition to the implementation and execution of my study. Our first study has confirmed that human AKI is a state of Klotho deficiency based on lower urine Klotho levels in patients with AKI in comparison to those without AKI. My experience with observational AKI data and my intensive didactic coursework have suited me with necessary knowledge and tools to design and conduct high-quality clinical and translational AKI research. I understand the complexity of the AKI syndrome for diagnosis, prognosis, and therapeutics, as well as the current limitations to successfully translate bench experiments into clinical practice. My hands-on experience with prospective data and biobank development has further suited me with the expertise to implement high-quality research. Most important, my commitment to a clinical and translational research career is bona fide and genuine.

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

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Research Interests

My research interest is primarily in the area of diabetic kidney disease. My basic science work involves investigating and assessing the pathophysiologic mechanisms and morphometric analyses of diabetic kidney disease with the goal of finding novel biomarkers and therapeutic targets. My research projects involve (1) the delivery of a novel agent using vault nanocapsules for the treatment of diabetic kidney disease and other kidney diseases; (2) a genetic clinical study to identify susceptibility genes responsible for diabetic kidney disease and their linkage relationships in ethnic populations; and (3) the identification of biomarkers for the early diagnosis and management of patients at risk for the development and progression of diabetic kidney disease. Some of our studies include the use of animal models of human diabetic kidney disease and morphometric analysis by light and electron microscopy to accurately assess structural changes related to disease progression in the kidney.

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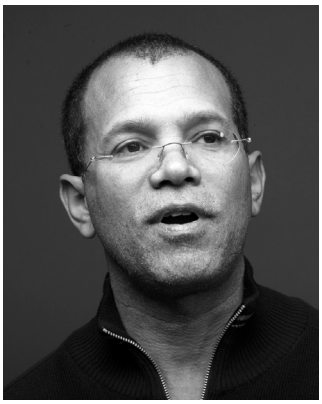
Research Interests

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% 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 creating bubbles, cells can be seeded in nanoliter volumes of culture media at rates of 100–300,000 nanocultures in 10 minutes. 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—that 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 one hour if the current is 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

My research interests focus on hypertension and chronic kidney disease in African Americans. Other research areas include the role of vitamin D and oxidative stress in health disparities and enhancing community-academic partnerships. I have extensive experience in patient recruitment and retention and community-partnered research within the South Los Angeles community. I was the Charles Drew University 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. I also am active in high school student biomedical summer research.

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Research Interests

My research focus is on diabetes mellitus, obesity, growth hormone, and vitamin D physiology. I am currently the principal investigator on a randomized, double-blind, placebo-controlled trial of adjunctive vitamin D therapy on the duration of partial clinical remission in children and adolescents with type 1 diabetes. My recent paper was the first to characterize a predictive model for lack of partial clinical remission in children with new-onset type 1 diabetes. This work, which has been described as an important discovery, was featured in the American Diabetes Association News Brief. My other recent publication (https://t.co/9ioDftR7qJ), the first to describe a high prevalence of vitamin D deficiency in irritable bowel syndrome (IBS) in children, has led to a call for routine screening for vitamin D deficiency in patients with IBS.

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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, including research on diabetes mellitus, acute respiratory distress syndrome, and hepatitis B. I am currently a nephrology fellow, starting to work on a project on hyponatremia and research involving kidney disorders.

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Research Interests
My research focuses on lipid metabolite-induced insulin resistance in skeletal muscle and adipose tissue.

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Research Interests
I am currently studying the role of endothelial cells in atherosclerosis development and progression. My overall focus is on cardiovascular diseases. My disparities research is related to apolipoprotein E (apoE), which is involved in cardiovascular and brain-related functions. Individuals with the apoE4 isoform are significantly more susceptible to the morbidity and mortality related to atherosclerotic heart disease and stroke compared with the common apoE3 isoform.

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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.

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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. Currently, I am working on a K23 proposal to study the association of epilepsy and cerebral palsy as a side complementary study of a bigger longitudinal study, already funded, called Cerebral Palsy Adult Transition Longitudinal Study at the Center for Gait and Movement Analysis in the Children's Hospital Colorado. The main work will focus on gait alterations and cardiometabolic syndrome attributed to inactivity and nutritional changes attributed 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 on identifying biochemical markers for early detection of complications associated with diabetes, and (2) the hypoglycemic and hypolipidemic properties of some medicinal plants in animal models of diabetes, the effects of medicinal plant preparations for the treatment of type 2 diabetes (T2D) using *in vitro* models, how thermotherapy affects miRNA and HSP70 gene expression in healthy and T2D human skeletal muscle cell line models, and how thermotherapy influences markers of oxidative stress and inflammation.

Rudy 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 have recently adopted -omic approaches to help us better identify novel signaling pathways and networks associated with our interventions and perturbations.

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Research Interests
My research interests include type 2 diabetes mellitus, obesity metabolism, and race/ethnicity.

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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.

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Research Interests

The focus of my research is understanding the mechanisms involved in the infection, disease progression, and eventual malignant transformation of liver cells caused by hepatitis B viral integration. We are exploring the role that certain genes (mainly in the Wnt/B-catenin pathway) play, as well the host immune response, in this malignant transformation of infected liver cells. Minnesota is home to a large African—and to a lesser extent, Asian—immigrant community, which is disproportionately affected by hepatitis B virus and hepatitis C virus infection and its disease burden. By working with these communities through education, screening, and improved access to medical care, we are helping to bridge the health disparity gap that separates these communities from the rest of the population in Minnesota. Born in western Africa (Ghana), I obtained my medical degree from Istanbul University (Cerrahpasa) before completing my residency in internal medicine at the Michigan State University/McLaren Program in 2007. After board certification, I went into basic research as a research fellow under an NIH/National Cancer Institute minority supplement at the Mayo Clinic in Rochester, Minnesota. I currently perform clinical duties in hospital medicine within the Mayo Clinic Health System and at the same time continue my basic research at the main campus under my mentor, Dr. Lewis Roberts. Our laboratory is part of the NIH-sponsored Mayo Clinic–University of Minnesota Clinical Center Consortium of the Hepatitis B Research Network.

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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.

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Research Interests
My research interests include the regulation of bone mass and metabolism by gonadal steroids; the application of *in vivo* nuclear imaging to study the expression and function of specific molecules; and disease pathogenesis, including diabetes and neoplasms.

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 m 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

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.

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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.

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Research Interests

My mission is to help communities achieve health equity, with a special interest in research workforce development in underserved populations. I am interested in the epidemiology of chronic disease (including oral cancer, diabetes, cardiovascular disease, and obesity) risk in underserved populations. I focus on a variety of exposures, including areca (betel) nut chewing, alcohol, tobacco, diet, physical activity, sleep, and stress. I use the results of my studies to refine health messages and develop appropriate intervention strategies. My most recent intervention is the Betel Nut Intervention Trial, funded by the National Cancer Institute. The trial will test a cessation program on helping betel nut chewers to quit chewing. My other program, recently funded by the National Institute on Minority Health and Health Disparities, will help to establish the baseline of a generational epidemiologic cohort to study the burden of cardiometabolic diseases in Guam and Pohnpei. The program will be sustained through the institutionalization of the research into the curriculum of the public health programs at both the University of Guam and the College of Micronesia–FSM.

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Research Interests

My research focuses on the prevention and treatment of type 2 diabetes and obesity among Latinos. I am the program director for a community-based diabetes prevention program for Latinos, and I conduct research on clinical program implementation. I also am interested in mechanisms for insulin resistance and adipose tissue dysfunction.

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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% of the general population in the United States and up to 70% of obese adults and 50% 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 focuses on a system-based intervention to address gaps in the management of diabetes and dysglycemia in the hospital setting. This work is inherently translational and employs advanced information technology through electronic health records to promote and test standards of care. Through the use of our validated Diabetes Clinical Decision Support Tool, we will assess the impact of various modalities of decision support in the management, documentation, and continuity of care domains of practice, and their associated clinical and economic endpoints related to inpatient diabetes.

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Research Interests

My research bridges tissue remodeling and systems biology. Tissue remodeling involves the activation of proteases, enzymes capable of degrading the structural proteins of tissue and organs. The implications of the activation of these enzymes are applicable to many different diseases, and the Platt Laboratory targets sickle cell disease and cancer metastasis. Mathematical models used by the Platt Laboratory add value to experimental systems by explaining phenomena difficult to test at the wet laboratory bench and to make sense of complex interactions among the proteases or the intracellular signaling changes leading to their expression.

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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 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.

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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 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 versus 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 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.

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

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Research Interests

As a biocultural applied medical anthropologist and a social and behavioral scientist, I investigate minority health and health disparities among individuals with chronic disease comorbidities. I have a specific interest in functional health status, symptom management, patient-centered health outcomes, and health-related quality of life among individuals with diabetes, HIV, gastrointestinal symptom disorders, and pain. I have research training as a Fellow of the Summer Institute on Aging Research, Fellow of the RAND Summer Institute on Aging Research, Fellow of the Health Equity Leadership Institute, and the National Institute on Minority Health and Health Disparities (NIMHD) Health Disparities Summit. I am a Disparities Research and Education Advancing the Mission (DREAM) Fellow with the NIMHD. The DREAM is a (K22) Career Transition Award funded by the NIMHD. The award supports intramural and extramural career training and development in health disparities research.

Gerald Alphonse Rameau, Ph.D.

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Research Interests

We examine the mechanism by which the transmission of information across neural synapses regulates the trafficking of glucose transporter type-3 (GLUT3). We hypothesize that neural activity regulates glucose levels by regulating the expression of cell surface GLUT3. We showed that activation of the N-methyl-D-aspartate receptor (NMDAR) increases glucose uptake through increased expression of cell surface GLUT3. This mechanism is dependent on the nitric oxide and cGMP-dependent kinase pathway. This also confirms the findings that increased brain activity is associated with increased glucose uptake in brain tissues. However, the mechanisms by which neural activity regulates neural glucose uptake and GLUT3 trafficking are unknown. We are testing whether GLUT3 structural motifs interact with the endosomal sorting machinery in dendrites and the regulation of GLUT3 location at synapses or at extrasynaptic sites. Our goal is to gain a molecular view of GLUT3 trafficking and the concerted chain of events, mediating the interplay between NMDAR-mediated signal transduction and the expression of cell surface GLUT3. To do so will require the development of next-generation approaches and sensitive physiological models to elucidate rigorously the mechanisms by which neural activity induces the trafficking and cell surface expression of GLUT3. These studies are important for understanding the role of GLUT3 in neurons and are relevant for health and diseases of the central nervous system and peripheral nervous system.

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Research Interests

We are particularly interested in light chain amyloidosis, a misfolding disease characterized by the deposition of monoclonal immunoglobulin light chains as amyloid fibrils affecting several organs, causing dysfunction. Understanding the protein misfolding and aggregation mechanisms will help us to understand these diseases and will guide us in designing therapeutic strategies to overcome the amyloid phenomenon. By exploring the role of folding kinetics, misfolding pathways, and stability, it is possible to understand the mechanisms of amyloid formation in light chain amyloidosis, leading to the prediction of the behavior of other amyloid diseases, with the ultimate goal of intervening to prevent progression of the disease.

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Research Interests

My research is in developmental programming of type 2 diabetes (T2D). My work has shown that parental exposure to polychlorinated biphenyls (PCBs) and bisphenol A (BPA) in mice has negative repercussions regarding metabolic health of offspring. Specifically, maternal exposure to PCB increases the fat mass:lean mass ratio in offspring and impairs glucose tolerance. Paternal BPA exposure has sex-specific effects on offspring glucose tolerance, but the timing of exposure is critical. If fathers are exposed for 12 weeks, representing the time needed to complete two cycles of spermatogenesis, and mated to unexposed dams, offspring have measures of glucose tolerance and body composition comparable to controls. However, if BPA exposure occurs only during fetal and neonatal period via maternal consumption of BPA, then the sires produce offspring with impaired glucose tolerance. Only the female offspring are affected. Moreover, by sequencing the small non-coding RNAs in the sperm of BPA exposed sires, we find that microRNAs and tRNA-derived fragments (tRFs) are present at different levels compared to controls. Many of these same miRNAs and tRFs are differentially expressed in other models of paternal programming of diabetic phenotypes in offspring, such as paternal low protein and paternal high-fat diet consumption. In another project, I use bilateral uterine artery ligation in the rat to model placental insufficiency, which is the leading cause of intrauterine growth restriction (IUGR) in developed nations. IUGR nearly doubles the risk of developing T2D in adulthood. Using this surgical model, we have found that IUGR islets are particularly susceptible to *in utero* perturbations and exhibit diminished blood vessel density, mitochondrial dysfunction, reduced beta-cell mass and abrogated glucose-stimulated insulin secretion (GSIS). Recently, through RNA sequencing, I have discovered that IUGR islets have increased expression of hyaluronan (HA) synthase with concomitant peri-islet accumulation of the extracellular matrix component HA. HA levels are increased in the systemic circulation in humans with T2D and genetic mouse models of T2D. Additionally, adipose and skeletal muscle HA is increased in T2D animal models and contribute to insulin resistance and hyperglycemia. However, my research is the first to show that islet-associated HA is increased in a model of T2D. My future studies will investigate whether islet-associated HA participates in islet pathogenesis in our IUGR model and elucidate the mechanism by which HA impairs islet function.

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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, working at prestigious institutions in the United States (Duke University and Children's Hospital Los Angeles) contributed significantly toward my understanding signaling mechanisms involved in oncogenesis and host-microbial interactions. In the past decade at City of Hope, I 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 monocyte/macrophages, vascular smooth muscle cells, 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; the role of persistently altered epigenetic and miRNA dependent mechanisms in "metabolic memory"; and the 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, characterization of diabetes induced changes in monocyte/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/macrophage dysfunction and metabolic memory.

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Research Interests

I have a strong interest in researching factors that lead to the progression of acute kidney injury (AKI) to chronic kidney disease (CKD). Understanding the clinical relevance of AKI and identifying pathogenic mechanisms related to nonrecovery of renal function is pivotal to tackling the increasing rates of CKD and end-stage renal disease (ESRD). In collaboration with other investigators, we have studied critically ill patients retrospectively and assessed the effect of dyschloremia on the incidence of AKI and its effects on clinical outcomes. We also have researched factors associated with nonrenal recovery in patients with AKI who required dialysis (AKI-D). We found that approximately two-thirds of the patients with AKI-D who were discharged from the hospital with ongoing dialysis recovered renal function by the time of discharge from a long-term acute care facility. Furthermore, anemia and recurrent episodes of intradialytic hypotension were independently associated with non-renal recovery. Additionally, using a large inpatient data base, we identified that AKI is an independent predictive factor of venous thromboembolism among patients with CKD. Resources to deliver renal care are in dire need in less-developed regions where the burden of CKD/ESRD is greater. From my previous research experience with underserved communities in Peru, I learned that risk stratification of disease, early management, and patient education are important steps that improve health-related outcomes. One of my current research projects aims to describe the geographical distribution of CKD in Peru and report mortality rates by regions. Ultimately, I aim to identify social and clinical factors associated with higher rates of AKI and CKD in these populations.

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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 developed a strong scholarly path in the field of pharmacoeconomics and outcomes research, specifically in the areas of diabetes and clinical pharmacy services. I have had different roles in several research projects. I was a co-investigator and an intervention pharmacist in a completed randomized clinical trial evaluating the effect of pharmacist services on diabetes outcomes among the South Florida Latino population. I was a principal investigator in a randomized clinical trial evaluating the effect of text messaging aimed to improve medication adherence among diabetes patients. I was a data analyst for an American Association of Diabetes Educators–funded prospective cohort study evaluating the effect of a multilevel diabetes education team in patient medical homes on diabetes outcomes. I also was a leader in the development of multiple comprehensive primary research reviews on the clinical efficacy, safety, and cost-effectiveness of medical technologies in the diabetes population. These reviews advised the Colombian Health Regulatory Agency (Comision Reguladora de Salud) in the decision-making process for incorporating these technologies into their national public health program formulary. I was a main contributor and second author in a published meta-analysis evaluating the clinical effectiveness of an injectable diabetes drug. I was also a co-investigator and statistician in a retrospective study evaluating the effect of medication therapy management services delivered by a clinical pharmacist in an indigent clinic. I also have been a co-investigator in two systematic reviews of economic evaluations of clinical pharmacy services, one in which I was the first author (2001–2005 White Paper publication). More recently, I have published four studies evaluating the quality of antihyperglycemic, antihypertensive, and antidepressant regimens among Mexican Americans, whites, and African Americans with type 2 diabetes using the National Health and Nutrition Examination Survey (NHANES) database. I have demonstrated the ability to apply both my clinical and research training with the purpose of pursuing a clear research path in pharmacoeconomic and outcomes research in the area of diabetes and health services at the national and international levels. These are strong building blocks towards the pursuit of a strong scholarly career in my chosen field. I taught pharmacoeconomics for 5 years. I also designed an Applied Secondary Data Analysis elective course that teaches pharmacy students how to conduct a study using the NHANES data and SPSS. I am the National Pharmacy Honor Society Gamma Theta Chapter advisor.

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Research Interests

My research interests include studies of the molecular mechanisms of liver carcinogenesis; the development of biomarkers and clinical tests to improve the diagnosis and treatment of liver, bile duct, and pancreas cancers; and improvements in prevention, diagnosis, and treatment of hepatitis and liver cancer in Africa, as well as in immigrant African and Asian communities in the United States. My research has been funded by the National Institutes of Health, Robert Wood Johnson Foundation, Foundation for Digestive Health and Nutrition, and Cholangiocarcinoma Foundation. I have authored more than 300 articles, book chapters, abstracts, and letters.

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Research Interests

I am currently completing my fellowship in nephrology at Mount Sinai Medical Center in New York City, while also earning my master's degree in public health. My research interests include investigating the social determinants of health in our underserved populations. Hispanics, in particular, have a very high prevalence of diabetes and kidney disease. It is debatable whether this is attributed to genetics, environment (meaning habits/lifestyle), or poor education and limited access to health care. My goal is to remain in academic medicine and develop as a specialist and clinical researcher with a focus on health care disparities and chronic kidney disease. I would like to study the Hispanic population, in particular, and help elucidate the predominant driving force behind the increasing morbidity in this population. Understanding the roles played by nature versus nurture in this rapidly growing population has implications for the development of ethnically driven guidelines, public health initiatives, and controlling and properly allocating health care spending.

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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 the 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/intra-variability 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 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

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) is a human pathology characterized by the excess autonomous secretion of ALDO by the adrenal gland and is associated with severe cardio-renal damage. PA is the most common cause of secondary hypertension. Despite the prevalence of PA and its deleterious consequences, the molecular mechanisms that mediate the onset and progression of ALDO-mediated cardiac 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 and regulation of microRNAs in aldosterone-mediated cardiac and renal injury and dysfunction. MicroRNAs (miRNAs) are short endogenous noncoding RNAs that exert their biological effects by downregulating the expression levels of specific genes. Several microRNAs have been implicated in cardiovascular disease. However, the role of miRNAs in ALDO-mediated cardiac and renal injury and dysfunction remains largely unknown. We use animal experimental models of PA to elucidate the miRNAs regulated by excess ALDO in the cardiovascular and renal systems. Furthermore, we manipulate candidate target microRNAs by pharmacological or genetic means to elucidate the role of these particular microRNAs in the onset and progression of cardiac and renal injury triggered by excess ALDO. We aim to identify candidate miRNAs to manipulate them by pharmacological means to abolish or mitigate the deleterious cardiac and renal phenotype 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 ~50% of the cases. Current therapies are suboptimal; therefore, alternative or complementary pharmacological interventions and therapies are desperately needed for individuals suffering from APAP-induced ALF. miRNAs, as a family, have been implicated in liver zonation but no individual candidates have been identified. Moreover, APAP-induced ALF is a zonal pathological event. We aim to identify miRNAs that temporally disrupting liver zonation, beside other possible mechanisms, may be manipulated by pharmacological means 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 titled "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 is also 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

My primary research interest is the epidemiology of cardiovascular and metabolic complications of patients with chronic kidney disease. I am a principal investigator for the NIDDK APOLLO Network and the Kidney Precision Medicine Project. I also am an ancillary study investigator for the Chronic Renal Insufficiency Cohort Study and the Multi-Ethnic Study of Atherosclerosis. I am an investigator in the PERL study, which is a randomized trial of the effects of allopurinol on progression of diabetic nephropathy. I also direct the Latino Kidney Clinic at the Joslin Diabetes Center. I am currently the chair for the Minority Affairs Committee for UNOS. In 2017, I received two NIDDK awards: APOLLO Network U01 and Kidney Precision Medicine Project, Ug3/UH3. I recently collaborated on "Choice of Hemodialysis Access in Older Adults: A Cost-Effectiveness Analysis," published by the *Clinical Journal of the American Society of Nephrology* in June 2017.

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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 patho-physiology 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 Kidney X.

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Research Interests
The research interest of the laboratory focuses on understanding the molecular pathways that influence mitochondrial metabolism in response to diet and exercise to improve mitochondrial function and reduce the deleterious effects of the metabolic syndrome. Specifically, the laboratory studies the PGC-1 family of transcriptional coactivators and the molecular pathways they regulate in striated muscle to maintain normal mitochondrial function (including biogenesis, oxidative capacity and dynamics) and normal metabolic function. The laboratory utilizes a variety of molecular techniques, and cell-based assays, as well as genetically modified mouse models to understand the molecular mechanisms which control mitochondrial function. Projects in the laboratory revolve around the following areas: (1) the study of mitochondrial dynamics in response to exercise, (2) the effect of exercise on angiogenesis and mitochondrial metabolism, (3) the characterization of new regulators of mitochondrial metabolism in striated muscle, and (4) contribution of mitochondrial function to whole-body energy homeostasis.

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Research Interests
I am involved in ischemic-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 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 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 of TACE versus SBRT in the downstaging of primary liver tumors, with the endpoint 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.

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Research Interests

One of my primary research interests is chronic kidney disease and obesity. One of my project's objective 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.

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Research Interests

My research interests focus on autoimmune thyroid disease. During my training, I investigated the mechanism of expression of the alpha-subunit of thyroid stimulating hormone and the regulation of thyrotrope function and thyroid hormone receptor expression by thyroid hormone, and I also explored expression of the glycoprotein hormone alpha-subunit gene in solid tumors, specifically lung cancer. With my basic training in molecular biology research, I became interested in the genetic and epigenetic factors that predispose to autoimmune thyroid disease, which comprise a large part of my clinical practice as an academic endocrinologist. I have established collaborations to study the genetic and immunological processes leading to the development of autoimmune thyroid disease. I have participated in several grant proposals, one of which was successfully funded by the National Institute of Allergy and Infectious Diseases, now completed, resulting in at least two publications.

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Research Interests

My research focuses on health promotion and prevention of obesity-related chronic disease to improve health outcomes and reduce health disparities in underrepresented vulnerable populations, particularly Filipino and Latino Americans at high risk for developing diabetes and cardiovascular disease. To address these disparities, I employ a community-based participatory research (CBPR) approach to culturally adapted lifestyle interventions combining mobile health (mHealth) technologies to promote weight loss through increased physical activity and healthy nutrition. I incorporated various intervention strategies in my studies. First, given the rapid proliferation of digital mobile devices (e.g., smartphone, tablets, and accelerometers), such mobile technology has the potential to benefit lifestyle intervention delivery in many ways, including economy of labor, scalability of reach via real time feedback, and virtual social network support (Facebook). Second, my clinical experience and research with diverse at-risk populations highlights the importance of culturally adapting interventions to be relevant for the intended populations. By using such strategies, I have seen improvement in participant recruitment, engagement, and retention, particularly among hard-to-reach populations, such as Filipino and Latino immigrants. Moreover, I recognize the need to disaggregate racial populations (e.g., Asian, Hispanics and Pacific Islanders) by subgroups (e.g., Filipinos and Hawaiians) to emphasize the high prevalence of obesity, diabetes, and cardiovascular disease among certain subgroups that are often misperceived as low risk and subsequently overlooked in preventive health research. As both an experienced nurse researcher and clinical nurse practitioner, I have extensive knowledge and skills in project management, grant administration, and conducting CBPR preventive health research. These are capabilities necessary to develop and implement culturally relevant interventions for lifestyle behaviors change. My Philippine heritage, multicultural background, language skills (Spanish and Tagalog), and clinical experience have enabled me to effectively serve and interact with diverse racial/ethnic populations. In my capacity as principle investigator or co-investigator on four intervention research studies targeting Filipinos, Latinos, and Asian/Pacific Islanders, I demonstrated the capability to successfully recruit, engage, and retain hard-to-reach, underrepresented populations and to blend digital technology components (mHealth apps, pedometers, social media) with culturally adapted lifestyle health interventions. As one of few Filipino investigators, my plans are to continue research with underrepresented populations, particularly with Filipinos with one of the highest prevalence of obesity and diabetes with a dearth of preventive health research. More research is needed to identify effective interventions to improve health outcomes among Filipinos.

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Research Interests

My long-term goal is to use my molecular and lipid metabolism training and apply it to investigate how prostate cancer cells use lipids for growth and survival. My current project focuses on the role of the CPT1A enzyme in prostate cancer growth. CPT1A functions as a gatekeeper, mediating the entry of lipid into the mitochondria for oxidation and growth. I am using clinically safe drugs from the cardiovascular/obesity field to target lipid oxidation and elucidate metabolic weaknesses that can be exploited in the clinic for more effective imaging and therapeutic combinations.

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Research Interests

I am an Assistant Professor in the Department of Biology at High Point University (HPU) in High Point, North Carolina. I completed my Ph.D. in Biophysics and Biochemistry at Yale University and my B.S. in Biochemistry at the University of Miami. My contributions to science have come in the form of research breakthroughs in the study of several yeast proteins that coordinate vesicular trafficking pathways, including clathrin, auxilin, and Atg27. I use budding yeast to investigate the cellular compartments and proteins responsible for trafficking specific lipid membranes and membrane-associated proteins within the cell, particularly in response to conditions of stress. My laboratory is particularly interested in the identification and trafficking of cargo molecules and adaptors involved in the cellular process known as autophagy, a cellular self-eating process that helps cells cope with starvation and cellular damage. This involves the biochemical and genetic manipulation of budding yeast and observation of fluorescent cargo proteins trafficking throughout the cell. My laboratory is located at HPU—a primarily undergraduate institution. My laboratory is not only the home base for my research program, but also a place where undergraduate students receive one-on-one mentoring as they strive to develop their identity in science and research. At HPU, I primarily teach general education courses and upper-level cell biology courses with rigorous laboratory components. My research interests also include science pedagogy innovation and best practices. I am currently Co-Chair of the Minorities Affairs Committee of the American Society for Cell Biology.

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Research Interests

I am an established molecular epidemiologist with more than 27 years of health services research experience in clinical translational and community-based participatory research (CBPR) studies in minorities, including American Indians and Hispanics. I am the PI on the UNM Health Sciences Center component of the NIGMS-funded NM-INBRE (New Mexico IDeA Networks of Biomedical Research Excellence) grant and obtained an ARRA supplement to work with minority kids and young adults in educational intervention of lifestyle, diet/nutrition, and obesity in preventing chronic disease. In June 2017, as the PI, I completed a home-based kidney care (HBKC) pilot study funded by PCORI in Zuni Indians. This randomized controlled trial delivered by CHRs provided evidence that the HBKC intervention can have positive effects in patients with CKD. Based on our successful completion of the study achieving the outcomes as proposed, we received second PCORI funding to extend and validate the Zuni HBKC model. We currently are conducting randomized comparative effectiveness CKD care using telemedicine, Community Healthcare Representatives, and Point of Care technologies in four additional American Indian communities across New Mexico. I am now a program liaison for the Native Health Initiative funded through NM-INBRE (2019–2024) for next 5 years, with a focus on community outreach for diabetes and cancer across New Mexico. Finally, I am the PI on a pending R01 grant to be part of the Chronic Renal Insufficiency Cohort consortium, bringing together 500 Native Americans across New Mexico and Arizona.

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Research Interests

My current research is focused on the study of the mechanisms associated with the development and resolution of lung disease and injury caused by environmental stressors, with a particular emphasis on gender and inter-individual differences. My laboratory uses a combination of molecular biology, immunology, and endocrinology approaches to study hormonal regulation of pulmonary gene expression and function in response to environmental insults. A separate line of research of my laboratory is focused on the identification of miRNAs as non-invasive biomarkers for pediatric inflammatory lung disease. We currently are profiling miRNA signatures in tracheal aspirates from a cohort of pediatric patients receiving mechanical ventilation in our NICU and PICU. Our goal is to identify miRNA signatures that can serve as biomarkers for identifying children at risk for developing inflammatory lung disease (ILD). We are also interested in studying miRNA regulatory networks that will help us elucidate the molecular mechanisms involved in the development and progression of pediatric ILD, such as bronchopulmonary dysplasia and cystic fibrosis.

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Research Interests

My program of research is focused on public health management and clinical management of liver disease caused by hepatitis C virus (HCV) infection in mono-infected and HCV/HIV co-infected patients. HCV is the leading cause of cirrhosis, hepatocellular carcinoma, and liver transplantation in the United States and in most of the western world. Likewise, liver disease caused by HCV is the leading non-AIDS cause of death among those with HIV infection.
The goal of my research in this arena is to publish clinical and translational research to help health professionals improve health outcomes and extend life of those burdened with chronic HCV-associated liver disease. I aim to accomplish this goal by focusing my research efforts on populations heavily burdened with HCV, but often underresearched or underrepresented in liver research: HCV-infected persons with co-existing alcohol, substance use, and psychiatric disorders; HCV/HIV co-infected persons; and African Americans living with HCV.

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Research Interests

My primary research area is physical therapy and biomechanics, focusing on the elderly population and minorities. My research includes fall prevention in aging, rehabilitation, and intervention. I am interested in studying the mechanism of human balance control and locomotion and have developed a 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 uses simulation technology to develop a training platform for patients or novices. The training platform includes mobile devices or telehealth delivery.

Jevetta Stanford, Ed.D.

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Research Interests

My research interest focuses on racial differences in the clinical progression of low-risk prostate cancer, especially the role of diet in slowing clinical progression of prostate cancer while using active surveillance to manage the disease. My long-term research goal is to understand the role specific nutrients have in preventing the clinical progression of prostate cancer in black men. An emerging area of interest is to explore the role of diet in preventing the clinical progression of other low-risk cancers.

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Research Interests
My research interests include the pathophysiology of cognitive impairment in hepatic encephalopathy and sleep disorders associated with cirrhosis.

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Research Interests
My laboratory uses a multilevel approach to resolve the role of glucocorticoid hormones in hippocampal synaptic deficits in leptin receptor-deficient mice, a rodent model of insulin-resistant diabetes. We also study rats with diet-induced insulin resistance, which more closely resemble the etiology of diabetes in humans. These models are being characterized with regard to glucocorticoid-mediated changes in plasticity in the hippocampus, with the eventual goal of targeting the hippocampal corticosteroid signaling cascade to attenuate cognitive impairment in individuals with insulin-resistant diabetes.

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Research Interests

My research interests are in nutrition, botanicals, and diabetes prevention. Most of my research has focused on botanicals and their impact on improving metabolic syndrome risk factors. Specifically, we have found that consuming bioactives in blueberries for 6 weeks improved insulin sensitivity and endothelial function in an obese population with prediabetes and hypertension. In addition, I am interested in studying the effects of other botanicals, especially anthocyanin-rich foods, on improving metabolic syndrome risk factors.

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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 research at the University of Washington focuses on the cellular aspects of aging kidneys and chronic kidney diseases. Specifically, I use my training as a cell biologist to study how the epithelial cells of renal glomerular filtration units respond to various injuries. I am most interested in the mechanisms of when and how these responses either balance tissue homeostasis or result in fibrotic disease pathologies. Most recently, my work has contributed to the understanding of how regulation of mitochondrial structure can prevent age-induced glomerulosclerosis. 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 as a Research and Teaching Fellow at the University of Pennsylvania, where I performed my teacher training primarily in minority-serving institutions. During this time, I created a project designed to engage students enrolled in a traditional classroom setting through the biomedical research experience of hypothesis-driven experimental design and result interpretation. As I continue to develop my research career, I also intend to discover ways to expand on this outreach experience through collaborations with other researchers and educators.

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Research Interests

My research is in the area of biochemical endocrinology. My research studies are on the endocrine function of the placenta as it pertains to biochemical and molecular structure of mouse placenta lactogen and the regulation of secretion mPL. I also have studied and published on the hormonal control of mammary carcinogenesis and on the structure and regulation of expression of the growth hormone receptor. I am the author of 173 manuscripts and 13 book chapters.

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Research Interests

The goals of my research are to understand how interactions between lymphatic endothelial cells (LECs) and canonical immune cells shape immune responses to infections, cancer, and chronic inflammation. The following three areas of interest aim to expand the field of stromal cells in immunity by understanding the function of the lymphatic endothelium across tissues and systems. First, my discovery that lymphatic endothelial cells in the lymph node have the capacity to hold onto antigens for long periods of time to educate memory T cells led me to become interested in how the lymphatic endothelium interacts with immune cells. My data suggest that antigens disappear from the lymph node on the order of 4 weeks post-immunization or -infection. Antigen-specific T cells continue to divide 6–8 weeks post-immunization or infection in response to archived antigen. Thus, one of the remaining questions is how lymphatic vessels interact with immune cells outside of the lymph node in the tissue. As lymphatic vessels are also made up of LECs, it seems likely that there may be storage of antigen within the vessels in addition to antigen retention on lymph node LECs.

In addition to understanding the role of antigen retention by the LECs, we aim to understand the role the lymphatic vessels have in interacting with the immune system during breast cancer. Studies to evaluate the role of lymph node LECs within a tumor-draining lymph node, as well as tissue lymphatics, are currently underway in a collaboration with Traci Lyons, Ph.D., in the context of breast cancer and mammary gland involution. Our prediction is that increased lymphangiogenesis in Sem7a-expressing tumors affects not only tumor lymphatics, but also lymph node lymphatics.

Last, preliminary data—in collaboration with Matthew Burchill, Ph.D., and Hugo Rosen, M.D.—suggest there is a correlation between liver disease progression, lymphangiogenesis, and tertiary lymphoid structures. There is a significant gap in our understanding of both liver disease progression and the effect lymphangiogenesis has during liver disease. We found that there is an increase in the number of CD45+ lymphoid clusters from patients with liver disease and that these clusters are associated with increased disease severity as measured by increased fibrosis and clinical designation of liver function. Furthermore, these lymphoid clusters are highly associated with lymphatic vessels, and it seems likely that lymphatic vessels associated with tertiary lymphoid clusters are recruiting immune cells. Concurrently, it seems likely that the normal lymphatic vessels associated with the portal triad, which are important for lymphatic flow away from the tissue, may be damaged as a result of chronic inflammation caused by increased fat, cholesterol, or chronic infection.

Taken together, my work strives to answer questions regarding the role of the previously underappreciated lymphatic stroma in immune function. I expect the bridge between the lymphatic stroma and the immune system to be of utmost importance to future vaccine development, understanding of infection, cancer immunotherapies, and chronic diseases.

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Research Interests

My research is focused on delineating the structure-function relationships of photoreceptor cyclic nucleotide-gated (CNG) channels. Mutations in the cone genes *CNGA3* and *CNGB3* are associated with achromatopsia in humans and daylight-blindness in dogs. I work with ophthalmic veterinarians to investigate the molecular pathophysiology of inherited mutations in dogs, and our work leads to insights about the structure, folding, subunit assembly, and function of these channels. As Director of a MARC U-STAR training program, I am engaged in mentoring undergraduate students from underrepresented backgrounds for competitive Ph.D. programs in biomedical and behavioral science. I work with colleagues at Cuttington University in Liberia to help build their science, technology, engineering, and mathematics education training; their faculty; and on providing used laboratory equipment. In my role in the Professional Science Master's program, I teach a course on the ethics of biotechnology, encouraging students to analyze life-cycle impacts of drugs and chemicals, considering long-term epigenetic and transgenerational effects of endocrine-disrupting hormones, in particular.

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Research Interests

My research focuses on cancer epidemiology and cancer survivorship. Within cancer epidemiology, my interests are in gene-environment interactions that contribute to the development of gastrointestinal and gynecologic cancers. Within cancer survivorship, my research interests are in prevalent comorbidity among cancer survivors and behavioral interventions for chronic disease management. Currently, I am conducting a study titled, "IMPAACT: Improving Physical Activity After Cancer Treatment." The IMPAACT study is a collaborative effort with my colleagues in the Department of Health and Human Sciences and is also a research training opportunity for upperclassmen preparing to enter the allied health professions. The study connects epidemiology, exercise physiology, nutrition, and rehabilitation science and recruits participants from the racially and ethnically diverse cities within Los Angeles County. The study was designed 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 diabetes, cardiovascular disease, and osteoporosis among cancer survivors. The study also aims to improve cancer survivors' overall capacity to engage in physical activity by addressing fatigue, balance, muscle health, cardio-respiratory fitness, neuropathy, and psychosocial barriers to motivation. In addition to my focus on cancer epidemiology and cancer survivorship research, I also am heavily invested in drawing undergraduates from underrepresented backgrounds and underserved communities into science, technology, engineering, and mathematics research. I am a faculty mentor for the McNair Scholars Program at Loyola Marymount University and a Councilor for the Health Sciences Division of the Council on Undergraduate Research.

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Research Interests

My research interest is to develop oncolytic viruses for cancer therapy. I am very interested in continuing and getting the opportunity to use my extensive and diverse training, as well as research experience, to work toward building my career as an independent investigator involved in developing oncolytic viro-immunotherapy against liver cancer and other cancers and developing viral products that can be pushed forward to clinical trials. Mayo Clinic's extraordinary capacity for translational research will be the best asset for my career development in this field of study. I have extensive experience in virus research and the development of recombinant oncolytic virus vectors that can be used to treat cancers.

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Research Interests

I use an academic-community partnership research approach and a community-based participatory research model. My research focuses on (1) culturally sensitive health promotion and health care to prevent and reduce obesity, hypertension, type 2 diabetes, and colorectal cancer; (2) the integration of health promotion into medicine; and (3) community health empowerment to reduce health disparities that affect racial/ethnic minority and economically disadvantaged communities. My current research studies involve (1) developing and testing interventions to prevent and reduce obesity in at-risk communities; and (2) empirically examining the links between patient-centered, culturally sensitive health care and health outcomes among racial/ethnic minorities and the medically underserved. My health self-empowerment theory and Patient-Centered, Culturally Sensitive Health Care Model are widely used. I have more than 116 published refereed articles and one published book, and I have received more than $11 million in research grants. I am proudest of the fact that under my mentorship, 54 doctoral students have received their Ph.D. degrees and 50 graduate students have received their Master's degrees. Among my students, more than 40 percent are of racial/ethnic minorities.

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Research Interests

My research interests include nonpharmacologic strategies involving diet modification and weight management to reduce the risk of cardiovascular disease for adults with chronic kidney disease, hypertension, and resistant hypertension, with a focus on minority health. My long-term career goal as a clinical investigator is to reduce racial disparities for patients with chronic kidney disease and hypertension.

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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 key novel psychosocial factors on adherence in patients with kidney disease and will inform evidence-based, patient-centered innovative approaches to improve adherence and critical health outcomes in this patient population. I also have a special interest in health disparities in this patient population, especially those that are mediated by race. I have specifically assessed the impact of autonomy-based psychosocial factors mediated by self-determination theory, such as autonomous motivation and perception of providers' autonomy support on phosphate binder medication adherence and serum phosphorus control in patients undergoing dialysis, and discovered that these factors are strongly linked 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 useful targets for future intervention. Building directly upon these discoveries of potential pathways, I have tested the feasibility of motivational interviewing to improve these key autonomy-based psychosocial factors, medication adherence and bone mineral health in patients with end-stage renal disease through a National Institute of Diabetes and Digestive and Kidney Diseases F32-funded RCT. Through my Building Interdisciplinary Research Careers in Women's Health K12 award, as well as my recently funded NIH K23 award, I am focusing my research interests on identifying novel patient and provider-level psychosocial determinants of adherence among African American patients undergoing dialysis. I also intend to develop culturally sensitive strategies to improve dialysis treatment adherence among African American patients. Through community partnerships, I also have conducted formative research to understand barriers to chronic kidney disease screening in non-whites, especially those who are at risk for chronic kidney disease.

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Research Interests

I am interested in immigrant, refugee, and humanitarian health. Specifically, I am beginning to study viral hepatitis and the resulting liver pathology in the Somali American population. There is a significantly higher rate of liver cancer in Americans of African origin than in the U.S. population as a whole, and my work is aimed at better understanding why this population is disproportionally impacted.

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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 (CKD). The increasing prevalence of AKD in community and hospitalized patients, coupled with high rates of noncomplete 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 the signs and symptoms, comorbidities, and exposures associated with higher risk of AKI. From their risk profiles, we provided serum creatinine POC test 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.

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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 patients administered anesthesia. 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 be employed before, during, and after surgical procedures. Currently, there is a paucity of dosing guidelines in the pediatric population as most drugs administered to children are used off-label. This is particularly 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.

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Research Interests

The long-term goals of Sharma lab 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 erythematous. 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.

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Research Interests

Diabetes mellitus is the fastest growing pathology in the United States. By 2050, up to 30% of the U.S. population may be affected by this disease. We have continued to pursue research efforts jointly with Dr. Wolfgang Dillmann, Head of the Department of Medicine at UCSD, to examine the effects that diabetes has on cardiac structure and function. Our efforts focus on alterations that arise in both cardiac myocytes and fibroblasts. Several articles 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. A unique stereoisomer biology for flavanols also 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 (NIDDK and National Center for Complementary and Integrative Health) R01-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 were performed initially in patients with type 2 diabetes and heart failure using specially formulated chocolate from Hershey with highly promising results, and three studies were published. New studies have been implemented in subjects with hypertriglyceridemia with very favorable results (average drop in triglyceride levels of 75 mg/dL). In collaboration with University of California, Davis, clinician scientists, a recent study was completed in patients with Becker muscular dystrophy who were treated with epicatechin; very favorable results were observed, and several manuscripts are to be submitted soon on the subject. We also are investigating the effects that cacao flavanol (-)-epicatechin has on skeletal muscle structure and function in normal senile subjects affected by sarcopenia. This work is funded by the National Institute on Aging under an R21 grant, and we have generated preliminary data that are encouraging. 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 NIGMS-funded Institutional Research and Academic Career Development Awarded 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.

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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.

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Research Interests

Our laboratory studies the hemostatic-immune interface through the lens of the platelet-specific receptor Trem-like Transcript-1 or TLT-1. TLT-1 binds fibrinogen, and our current data suggest that this interaction regulates the body's response to immune challenges. Our current hypothesis is that TLT-1 mediates fibrinogen deposition and focuses neutrophil transmigration and protects against bleeding after various immune challenges. Using our null mouse model, we have demonstrated roles for TLT-1 in sepsis (Washington, 2009); cardiovascular disease (Esponda, 2011 and manuscript in preparation); acute lung injury (Morales, 2018); and diabetes/obesity (manuscripts in preparation). Our research is focused on the specific mechanisms that TLT-1 regulates in each of these aforementioned diseases and to develop TLT-1-based therapeutic interventions for any and all diseases where manipulation of TLT-1 will improve survival outcomes. TLT-1 is a type-1 receptor that binds fibrinogen. An estimated 50,000 copies of TLT-1 can be found on human platelets, and treatment of platelets with TLT-1 antibodies inhibits platelet aggregation. Antibodies to TLT-1 also rescue mice from mortality in pulmonary embolism models. Consistent with these findings, TLT-1 null mice (treml1−/−) have extended tail bleeding times and times to occlusion in the FeCl3 vascular injury model, signifying that TLT-1 has a role in hemostasis. However, TLT-1's main association is with inflammation-derived bleeding. The treml1−/− mice demonstrate hemorrhage after inflammatory treatments, such as lipopolysaccharide (LPS) and tumor necrosis factor alpha (TNF-α) treatment, or immune complexes. Although it is clear that TLT-1 regulates platelet function, its role in classic hemostasis remains somewhat obscure. Furthermore, details of TLT-1 signaling function remain elusive. The evidence supporting its role in affecting the innate immune functions of platelets seem more direct. Current evidence suggests that, in addition to TLT-1's role in hemostasis, TLT-1 supports fibrinogen deposition on tissues and subsequent neutrophil transmigration. Nevertheless, this relationship is not completely understood and represents a critical gap in the understanding of the molecular etiologies of inflammatory bleeding.

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Research Interests

My research interests involve examining measures of physical function and how they relate to health outcomes in kidney transplantation. Kidney transplantation is the preferred treatment for end-stage kidney disease. Ascertaining the kidney transplant candidacy of individual patients is a complex decision-making process requiring consideration of multiple factors beyond solely medical comorbidities. Functional status is one such factor, and we have strong evidence to suggest that poorer physical function is associated with increased risk for post-transplant hospitalization and death. However, it is much less clear what the optimal metrics are to evaluate physical function in patients awaiting kidney transplant. I am particularly interested in examining the 6-minute walk test as an objective and quantitative measure of physical function and how 6-minute walk test scores relate to peri-transplant outcomes. Such a metric could prove helpful to guide decision making in the selection of appropriate kidney transplant candidates. I also hold an interest in examining barriers to kidney transplantation, especially as they relate to those of more disadvantaged racial and socioeconomic groups. It is clear that certain groups, including African Americans and Hispanics, receive kidney transplants at a much lower rate than Caucasians, often leading to poorer health outcomes. I am interested in exploring the driving factors behind these disparities and the ways that we could potentially offset them.

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Research Interests

I trained family medicine/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 of family medicine residents in 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, my tests seek to implement interventions that improve health, specifically related to obesity and chronic disease outcomes. For example, the 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, rest adequately, and cope with stress effectively. Another developing area of research is community-engaged research (CEnR); through a Diversity Supplement provided by NIH's National Institute on Drug Abuse (PI: Linda Cottler, Transformative Approach to Reduce Research Disparities Towards Drug Users [2012–2014]), I am becoming increasingly proficient in the conduct of CEnR research and, in particular, engaging under-engaged populations in research involving topics and issues that concern them or of a particularly sensitive matter. This is becoming increasingly important as health professionals seek to engage out-of-treatment populations in efforts to reduce chronic diseases. I also lead and help to coordinate community research investigations to assist with increasing access to health/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 a co-investigator on three federally funded grants: the Centers for Disease Control and Prevention–funded Telemedicine project (R. Grewal, PI: 2017–2020); the NIH-funded JAX-ASCENT project (M. Pahor, PI: 2017–2020); and the Patient-Centered Outcomes Research Institute–funded Health-Smart project (C. Tucker, PI: 2017–2020). I also serve on civic boards, as well as scientific and national committees, aimed to improve population health.

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Research Interests
My primary research interests center around the impact of health literacy/health communication on the prevention and treatment of type 2 diabetes and obesity for Latino and African American adults and children. As a primary care physician board certified in Internal Medicine and Pediatrics, I have a special interest in family based behavioral approaches to reducing disparities experienced by communities of color and evaluating ways to improve patient-provider interactions and activating families to better engage in their health and health care. To date I have gained experience in developing a Spanish diabetes-related numeracy measure and conducting qualitative assessments of diabetes care among low-income Latino patients; I am currently a co-investigator in a trial evaluating low-literacy educational materials for patients with diabetes in a public health setting. My K23 award from NIDDK is facilitating the aforementioned investigations.

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Research Interests
My research focuses on the role of the fundamental causes of disease and how they contribute to health disparities within the context of gastroenterology, hepatology, and transplant hepatology. My specific areas of focus include contextualizing how socioeconomic and psychosocial factors mediate racial/ethnic disparities regarding outcomes in hepatitis C, colon cancer screening, and access to liver transplantation. I also serve as a primary investigator for multiple clinical trials assessing outcomes for hepatitis C, primary sclerosing cholangitis, and primary biliary cholangitis.

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Research Interests

My research interest focuses on the pathophysiology of kidney disease. I engage an interdisciplinary approach to explore the underlying mechanisms of kidney damage and how those mechanisms contribute to cardiovascular health. My long-term research goal is to develop novel therapeutics to improve the treatment of kidney and cardiovascular disease. Currently, my work is funded by the American Heart Association (National Scientist Development Grant) and an Industry Innovative Grant. I have been recognized as an outstanding early career scientist by the American Physiological Society, where I have been an active member of several committees. In addition, I was a founding member of the Minority Postdoctoral Council at Emory University and am a passionate mentor of undergraduate and graduate student scientists.

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Research Interests

My research interests are diabetes prevention, behavioral interventions, obesity management, and translation 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, into real-world settings. Over the last 5 years, I have worked with my mentor to culturally adapt the Diabetes Prevention Program and deliver it in African American churches. We conducted a pilot and later received funding to conduct a randomized control trial.

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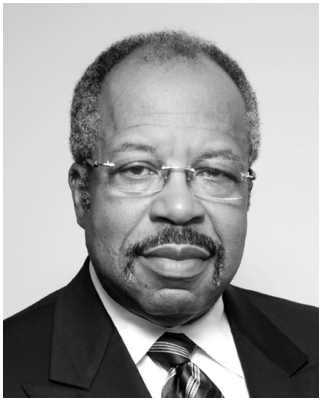
Research Interests

Behavioral health, health care services, and health care policy research on African Americans have been the focus of my research for the past 25 years. Personal care experiences through multiple health care systems fueled a strong commitment to eliminating health disparities among vulnerable and underserved African Americans through research, teaching, and community service. My current research program is the Health Empowerment Technology (HET) Project. The HET Project is a translational science research program purposed to eliminate health disparities among African Americans and other minority groups through the merger of evidence-based health disparity research and culturally centered health empowerment technology. Using web-based health empowerment technology, attention is given to reducing disparities in health literacy, health communication, and health outcomes among disparate groups. Another intent is to increase their inclusion in virtual health communities. Recent study populations consist of African American elderly and their doctors and African American women with disabilities.

The research on African American elderly is part of a Minority Eldercare Disparity Initiative at the University's Stokes Center on Aging. This initiative targeting minority elders, especially African Americans, in the areas of health and health service disparities represents an interdisciplinary effort at Central State University that includes gerontology academic programming, minority aging and health services research, and health outreach.



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Research Interests

I am Professor of Medicine and Program Director of the William T. Dahms, M.D., Clinical Research Unit at Case Western Reserve University (CWRU) and a member of the Executive Committee of CWRU's Clinical and Translational Science Award program. I am also Director of the Clinical Hypertension Program at University Hospitals Case Medical Center. My research experience includes having had a major or leadership role in nearly all of the major cardiovascular and renal clinical outcome trials conducted in black populations over the past two decades. I am currently co-principal investigator (PI) of one of seven clinical networks in the National Institute of Diabetes and Digestive and Kidney Diseases–sponsored Chronic Renal Insufficiency Cohort Study (40% black) and PI of one of the five clinical center networks in the National Heart, Lung, and Blood Institute-sponsored Systolic Blood Pressure Intervention Trial.

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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.

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Research Interests
My research examines sources of variability in neurocognitive functioning in older adults. I have focused primarily on older African Americans, with an emphasis on the role of cardiovascular risk factors—such as hypertension, impaired glucose tolerance, elevated lipids, and obesity—on such neurocognitive abilities as working memory, perceptual speed, verbal memory, visuospatial ability, executive function, and inductive reasoning. My interest in African American neurocognitive functioning developed from a variety of research experiences focused largely on issues surrounding racial/ethnic disparities in health.

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Research Interests
I am interested in discovering genetic variants and epigenetics regulation mechanism 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 -omics era. Methodologies involved in my research include, but are not limited to, genome-wide association study, gene expression profiling study using microarray or RNA-seq, genomic DNA methylation profiling, and bioinformatics pathway analysis.

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Research Interests

I am interested in the field of cancer stem cells and cancer disparities, with an emphasis in cancer comorbidities that affect African Americans. My latest research is focused on lung, prostate, and breast cancers that affect African Americans and their relationships with other comorbidities. In particular, I am testing the potential anticancer effects on cancer stem cells of clinically approved antidiabetic drugs (e.g., Biguanides). This research in lung cancer was published recently in *Stem Cell International* (https://www.hindawi.com/journals/sci/2019/6254269/). I am extending this research to include other types of antidiabetic drugs, such as GLP1 analogs and DPP4 inhibitors in prostate and breast cancers.

Bessie A. Young, M.D., M.P.H., FACP, FASN

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Research Interests

Chronic kidney disease (CKD) is widely prevalent and disproportionately affects minorities. Health disparities contribute to differences in CKD and end-stage renal disease (ESRD) outcomes. The overarching goal of my research program is to evaluate disparities in CKD/ESRD and to develop interventions aimed at decreasing kidney disease-associated health issues. My research program currently focuses on the development of a CKD working group for the NIH-funded Jackson Heart Study of 5,300 African Americans from Jackson, Mississippi. In addition, I have a project that is evaluating community, researcher, and clinician attitudes toward apolipoprotein L1 genetic polymorphism testing. My prior research projects included the NIH-funded Increasing Kidney Disease Awareness Network Transplant project, which involves the development and testing of new educational materials for patients with late-stage CKD. Clinically, within the U.S. Department of Veterans Affairs (VA), we have developed a kidney disease telemedicine intervention programs that focuses on increasing specialty-primary care interaction using the Extension for Community Health Outcomes (VA-ECHO) model to improve rural access to nephrology care. Finally, we are collaborating with the Caribbean Health and Education Foundation to develop a CKD registry to monitor the prevalence and incidence of CKD in Eastern Caribbean states. Currently, my research program receives NIH and VA funding, which supports several co-investigators and graduate students.

Anna Zamora-Kapoor, Ph.D.

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Research Interests

I am an Assistant Research Professor at Washington State University, committed to studying populations that are poor, discriminated against, and exhibit compromised health. I have expertise in the social determinants of health and health disparities and a special interest in identifying the most important strategies to prevent obesity, type 2 diabetes, and hypertension in American Indian and Alaska Native populations.

Eduardo Rodriguez Zarate, M.D.

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Research Interests

I am a current transplant hepatologist, taking care of patients with chronic liver disease in both the pre- and post-transplant settings. My research interests are in both settings. I would like to continue implementing quality improvement projects in my department to optimize the care we provide to our patients. I am interested in racial disparities and their impact in populations. A few of the liver diseases that I plan on studying include nonalcoholic fatty liver disease, alpha-1 antitrypsin, and hemochromatosis. I am also interested in the post-transplant setting, specifically clinical outcomes in the transplanted population. I plan on further studying variables that might affect outcomes in the patients who received living-donor organs. Finally, another big area that I plan on hopefully exploring is translational research. My plan is to collaborate with the genetics department to further study populations with end-stage liver disease.

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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 extinct 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.

National Institutes of Health
National Institute of Diabetes and Digestive and Kidney Diseases

Network of Minority Health Research Investigators
17th Annual Workshop

DoubleTree Hotel Bethesda
Bethesda, Maryland

April 25–26, 2019

Meeting Summary

Thursday, April 25, 2019

INTRODUCTIONS

Francesco Villarreal, M.D., Ph.D., Professor, University of California (UC), San Diego
Lawrence Agodoa, M.D., Director, Office of Minority Health Research Coordination (OMHRC), National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), National Institutes of Health (NIH)

Dr. Francesco Villarreal, chair of the Network of Minority Health Researchers (NMRI) Planning Committee, welcomed participants to the NMRI 17th Annual Workshop. Dr. Villarreal expressed appreciation to the NMRI leadership for their continuous support and invited participants to introduce themselves. Participants ranged from predoctoral and premedical students to tenured professors. Research areas of study included diabetes, epidemiology, endocrinology, health disparities, hematology, nephrology, nutrition, and obesity. Several participants were first-time attendees of a national NMRI workshop.

Dr. Lawrence Agodoa, Director, OMHRC, also welcomed participants and noted that the NMRI was established by the OMHRC in 2002 to encourage new minority investigators in pursuing their research and foster mentoring relationships. The OMHRC's current role in relation to the NMRI, a member-led network, is to provide the necessary resources for members to succeed.

KEYNOTE SPEAKER

Women in Academia: Becoming an Academic Nephrologist
Bessie Young, M.D., M.P.H., Professor, University of Washington

Dr. Bessie Young described her career path to become an academic nephrologist and noted the impact of the NMRI. Dr. Young remarked on being the only female in the 1983 entering class and one of two African American females in the 1987 graduating class of the University of Washington School of Medicine and, initially, the only African American during her internship and residency. Dr. Young focused her residency on general internal medicine and completed a rotation in nephrology, during which she found her passion in studying hypertension and kidney disease and specializing in the treatment of a disease that disproportionately affects minorities, especially African Americans. After completing a nephrology fellowship, she focused on basic research in diabetic nephropathy and acute kidney injury (AKI). Dr. Young then practiced clinical nephrology, but still desired to perform research, and she returned to academia through a U.S. Department of Veterans Affairs (VA) Health Services Research and Development Fellowship. She credits strong mentorship from Drs. Steve Fihn, Noel Weiss, and Ed Boyko at the University of Washington with encouraging her to pursue her dream of being an academician.

Dr. Young elaborated on the basis for her clinical research in chronic kidney disease (CKD), which is prevalent in the U.S. population. CKD can progress to end-stage renal disease (ESRD), and African Americans have a three- to four-fold higher incidence of ESRD compared with the white population; the incidences also are higher in other minority groups. Although comprising 12 percent of the U.S. population, African Americans make up 32 percent of dialysis patients. According to Centers for Disease Control and Prevention (CDC) reports, 15 percent of U.S. adults (37 million people) have CKD. Most adults with CKD are not aware that they have it, and

one in two persons with very low kidney function can progress to ESRD. In addition, the U.S. Renal Data System 2014 Annual Data Report (ADR) showed that the ESRD incidence rate by race steadily increased in minority populations from 1980 to 2012, especially in African Americans. The trends in ESRD incidence in the U.S. population, per the 2018 ADR, decreased in African American and Hispanic populations from 2000 to 2016 but remain higher than the white population.

As assistant professor, Dr. Young evaluated racial/ethnic differences in diabetic nephropathy with support from the American Diabetes Association and an award from the Harold Amos Medical Faculty Development Program (AMFDP) of the Robert Wood Johnson Foundation. Diabetes mellitus (DM) disproportionately affects minority populations and accounts for 50 percent of new ESRD cases annually, but little was known at the time about the risk factors of disease progression. To address this, Dr. Young investigated the racial and ethnic differences in microalbuminuria in the Pathways Study and found higher microalbuminuria levels in African Americans, regardless of their access to care. Evaluating these differences in the VA population produced similar results, and she concluded that African Americans have higher nephropathy, amputations, and lower risk of cardiovascular disease, and mortality in settings with equal access to care.

Dr. Young received an NIH R01 grant focused on increasing kidney transplant awareness in the African-American community. These efforts led to establishing the Increasing Kidney Disease Awareness Network (IKAN; www.ikankidney.org) and developing educational materials for African Americans approaching a transplant. Dr. Young and her team also developed a CKD education video and comic. As an associate professor, Dr. Young received a second NIH R01 grant to develop a national CKD working group within the Jackson Heart Study, an NIH-funded, large-scale, study that is evaluating cardiovascular disease in more than 5,000 African Americans in Jackson, Mississippi. In addition, she developed and implemented a tele- nephropathy program at the VA Puget Sound Health Care System, which leverages the VA Specialty Care Access Network-Extension for Community Healthcare Outcomes (commonly called VA SCAN-ECHO) program, and in collaboration with the VA Office of Rural Health, she is evaluating the racial/ethnic make-up of CKD/ESRD in rural compared to urban settings.

Dr. Young became the first African American female to be promoted to full professor in the Department of Medicine at the University of Washington School of Medicine in its 60-year history. She credits the NMRI with helping her attain this level of academic achievement. Dr. Young later became Section Chief of Nephrology at the VA Puget Sound Health Care System. Her research interests focus on health disparities and kidney disease, home dialysis, rural CKD in the VA system, and genetic testing for CKD. She provides mentorship to medical students, residents, fellows, and junior faculty. Regarding genetic testing, Dr. Young evaluated *APOL1* variants—which have been shown to be associated with CKD in African Americans—in the Jackson Heart Study cohort. The preliminary data showed increases in albuminuria, incident dialysis, and CKD and a decline in kidney function, which associated with the presence of *APOL1* alleles. Genetic testing is a sensitive topic in the African-American community that must be addressed. Dr. Young received a third NIH R01 grant to evaluate *APOL1* genetic testing in the African-American community. The outcomes were policies, guidelines, and educational material on genetic testing.

In 2018, Dr. Young was appointed Associate Chair of Diversity and Inclusion in the Department of Medicine at the University of Washington to increase diversity in trainees and faculty. In closing, Dr. Young shared that mentorship, teaching and clinical work, grants, manuscripts, national involvement, and volunteer work are important for success in academia. She encouraged participants, especially new investigators, to discover and pursue their passions, find several good mentors for all different aspects of life, find a good sponsor who would be a support locally and nationally, and develop guiding principles and remain true to them.

Discussion

Dr. Villarreal asked about the greatest challenge to career development. Dr. Young replied that relocating to medical school in Seattle, WA from her smaller town in Tacoma WA and not being well acquainted with anyone in the community, left her feeling isolated until she met new people

and began to build her network. Also, there were some challenges to acquire the necessary training and develop the skills needed for basic research.

Dr. Juan Sanabria commented that African Americans make up 58 percent of the population in many of the 48 states and suggested revisiting the term "minority" in that context. Dr. Sanabria added that in hiring professionals, talent is what is being sought and wondered about ways to educate, promote, and encourage excellence among people of diverse backgrounds. Dr. Young explained that the field of medicine has always been in the pursuit of excellence. She noted that the academic starting point for many URM students receiving their early education from low-resource schools tend to lag others and it may take them longer to begin performing at the desired level. Despite these odds, many underrepresented minority college students who have excelled in their studies are accepted into medical schools. Mentor and sponsors are needed to help guide medical students as they begin a career.

Dr. Mariya Sweetwyne asked about balancing faculty responsibilities and leadership roles external to the University of Washington School of Medicine. Dr. Young pointed out that as the only female African American professor in the Department of Medicine at the University of Washington she is called upon to do many tasks, but is selective in the requests she accepts. Saying no to being Associate Chair of Diversity and Inclusion was not an option she considered. Dr. Young also encouraged negotiating for the time needed for research, teaching, or clinical duties.

When asked about the appropriate time to transition from mentor support to a sponsor, Dr. Young noted that acquiring sponsorship can be challenging for a researcher to orchestrate alone and that engaging a person in the sponsor's network, preferably a trusted mentor, to make the introductions could be helpful. Dr. Deidra Crews added that it is important to have both mentor and sponsor and that to be effective, sponsors should hold influential positions at their respective companies or institutions.

STRATEGIES ON GRANT WRITING

Overview of the NIH Process

Frank Hamilton, M.D., Program Director, NIDDK, NIH

Dr. Frank Hamilton expressed appreciation to Dr. Agodoa for his vision, commitment, and continued support of the NMRI. He explained that grant writing should be approached carefully. Potential applicants must read specific grant instructions and perform self-reviews of their tools and backgrounds to determine whether they are a good fit for the particular funding opportunity announcement (FOA). Dr. Hamilton highlighted five key elements that grant reviewers consider in evaluation of research proposals:

- The clear and well-defined significance of the research.
- Adequate tools and expertise necessary to perform the study.
- The innovation in the methodology and/or strategies.
- The environment of the institution that is supporting the work.
- The outreach to enhance the proposal.

Dr. Hamilton recommended being conscientious of the FOA's requirements; presenting realistic, specific aims and goals; writing clearly and concisely; investigating the NIH grants' YouTube channel; and making good use of the NIH Office of Extramural Research tools (e.g., Research Portfolio Online Reporting Tools). Further details on NIH grants can be accessed at grants.nih.gov/grants/oer.htm. Dr. Hamilton remarked that receiving an NIH grant is one of the greatest opportunities afforded to a minority researcher and that now is the time to apply. The NMRI is the vehicle to prompt change and help to diversify the NIH research funding portfolio.

BASIC SCIENCE R01

Mark Lawson, Ph.D., Professor, UC San Diego

Dr. Mark Lawson elaborated on structuring a grant proposal, especially for Early Stage Investigators (ESIs). The NIH career development awards (K series) provide a resource for train-

ing on managing a team, developing effective research goals, and developing strategies for transitioning to an independent investigator. Dr. Lawson emphasized adopting the traits of professional writers and communicators and made several key points for writing an NIH grant:

- Have a vision and bring new ideas to the proposal.
- Understand your purpose for performing the research and the future direction.
- Know the target audience (e.g., reviewers).
- Know the purpose and scope of the grant (e.g., R01, R21).
- Become familiar with the history, funding decisions, and priorities of the applicable Center for Scientific Review (CSR) Study Section.
- Look up similar grant proposals already funded using the NIH Research Portfolio Online Reporting Tools database.
- Tell your story, include all the necessary evidence, and answer all questions.
- Be clear on who will be performing the research and assemble the necessary team and expertise for the conducting the research.

Dr. Lawson pointed out that the CSR and Institute-specific Study Section panels, on which he has served as a member to review proposals and that program staff across NIH Institutes and Centers (ICs) are allies to grant submitters/researchers. Reviewers must work with the information given in the proposal and cannot assume anything that is not provided. Proposals must provide language and justification that the reviewers can use to effectively advocate for each grant. First-time grant submitters who want to increase their funding chances should leverage the expertise of established investigators who have successfully been awarded NIH grants. Acknowledging weaknesses and areas to grow are important to address. When revising applications, it is important to clearly address the reviewers' criticisms and make a substantial effort to accommodate their concerns.

CLINICAL R01

Samuel Dagogo-Jack, M.D., D.M., Professor of Medicine, The University of Tennessee Health Science Center (UTHSC)

Dr. Samuel Dagogo-Jack reminded participants of the NIH definition of clinical research, which includes human physiology, epidemiology, and health services research studies, as well as therapeutic interventions (i.e., clinical trials). Translational research is an expansion of clinical research. Dr. Dagogo-Jack detailed the strategies for pre-application, application, after submission, and resubmission of the grant. The first step is to choose a research area of study, of which the FOA is the key driver. Consideration also should be given to common conditions, national and institutional priorities, and personal passion. Other options can include leveraging—but not duplicating—a mentor's field of study, addressing emerging areas, and considering the IC's topics of interest (e.g., diabetes, cancer, endocrine disorders. Preparation is key in the pre-application phase and should include the following:

- Allow sufficient time for background reading, brainstorming, and planning.
- Set a specific timeline and target dates for developing the research plan (e.g., specific aims).
- Strengthen the biosketch and add new publications.
- Acquire pilot funding and generate preliminary data.
- Survey the available institutional resources and support.
- Identify research collaborators and partners.

The NIH R01 grant, the benchmark of scientific achievement, consists of several parts (i.e., abstract/summary, research plan, and budget); however, the overall score by grant reviewers correlates highly with the study design or research approach. Dr. Dagogo-Jack emphasized that the distinction between a descriptive and intervention study design can be blurred in a clinical R01 grant application and strongly encouraged prospective applicants to carefully read the scope and specific language of the FOA and/or program announcement (PA). He emphasized this point by highlighting an NIH PA for proposals on racial and ethnic differences in the etiology

of type 2 DM in the United States. Each grant is a story, and each investigator must decide on his or her story based on the content of the FOA or PA. Dr. Dagogo-Jack detailed his steps in preparing a clinical research proposal in response to the PA-04-074 on ethnic disparities in NIDDK diseases—which included identifying the gap in research and formulating a research question to address that gap—and the resulting overall objective, specific aims, and hypothesis. He incorporated specific PA language and scope into the proposal, and his research approach focused on the study recruitment strategy, retention and assessment strategy, feedback of laboratory results, and nonmonetary incentives. The recruitment and retention strategy results can be published and disseminated to the public.

In the innovation component of the research plan, applicants need to explain how the project expands the existing knowledge and describe the unique aspects of the research. Innovation can take many forms and can be incorporated into the hypothesis, methods, and/or intervention. Dr. Dagogo-Jack advised providing preliminary data, although they may not be required. He suggested applying for other NIH grants, such as the small grant program (R03) or exploratory grants (R21), to generate preliminary data, if none exist. Leveraging intramural funds and/or networking and collaborating also are options to consider.

After submission, grants are categorized as follows: not discussed, not recommended for funding considerations, or scored. Those scoring in the fundable range are awarded, whereas grants scored in the non-fundable range can be addressed if additional resources are made available. Dr. Dagogo-Jack called attention to several serious flaws in a clinical R01 application that should be avoided at all costs, such as a poorly written/organized proposal, an unclear hypothesis, or a misaligned study approach and hypothesis. Grants not funded can be revised and resubmitted, or new proposals can be submitted. Investigators also can appeal the decision per the NIH Appeals Policy and Procedures for Applicants process. Dr. Dagogo-Jack encouraged participants to fortify their grant writing efforts by converting the proposal rationale and/or background components into a review article, formatting and submitting unfunded grant ideas to multiple sources, and preparing for a competitive renewal of funded grants.

WELCOME REMARKS

Griffin P. Rodgers, M.D., Director, NIDDK, NIH

NIDDK Director Griffin Rodgers, M.D., welcomed participants to the 17th workshop of the NMRI, a signature NIDDK program that has inspired other ICs to develop similar programs. Dr. Rodgers stated that the mission of the NIH is to seek fundamental knowledge about the nature and behavior of living systems and apply that knowledge to enhance health, lengthen life, and reduce illness and disability. The research mission of the NIDDK—one of 27 NIH ICs—supports research on diabetes and other endocrine disorders and metabolic disorders; digestive diseases, nutritional disorders and obesity; and kidney, urologic, and hematological diseases. These comprise the most common, costly, and consequential diseases affecting many people in the United States and abroad and disproportionately affect minority populations. The NIDDK biomedical research programs include basic and applied research for knowledge acquisition, clinical investigations and clinical trials for knowledge validation, and dissemination and education research for knowledge transfer.

Dr. Rodgers remarked that developing and maintaining the appropriate workforce and budget are essential to accomplishing the NIDDK mission. The NIH received a 5.4 percent increase in fiscal year (FY) 2019 budget appropriations compared to the FY 2018 enacted budget, and the NIDDK received a 3.4 percent increase. The NIDDK FY 2019 budget includes general increases for regular appropriations and targeted increases for special initiatives, such as the Cancer Moonshot℠ and Precision Medicine Initiative. This increase in FY 2019 funding allowed the NIDDK to maintain its R01 payline for established investigators and to increase its paylines for ESIs. The NIDDK works to preserve the investment in the next generation of researchers by supporting research training and career development programs to address critical moves between career levels. He highlighted the Loan Repayment Program, NIDDK K-Awardees Workshop, and NIDDK New Principal Investigator Workshop as three such programs.

Dr. Rodgers detailed the NIDDK programs for underrepresented minority (URM) groups, which are conduits for building the biomedical research workforce. The NMRI currently has approximately 200 members, of whom 20 percent are senior members. More than 700 members have attended the annual workshop in the past 10 years, and members have received a number of grants, had numerous publications, and have been well represented at national and international conferences. The Medical Student Research Program in Diabetes just completed its 10th summer session. More than 1,000 students from 120 medical schools have participated, and approximately one-third of participants are URMs. Aspirnaut™ (meaning one who aspires, seeks, and achieves) is a K–20 science, technology, engineering, and mathematics (STEM) pipeline organized by Vanderbilt University. From 2009 to 2018, 109 undergraduates from 25 universities participated in the NIDDK-supported Aspirnaut™ Summer Research Internship program; 79 have graduated from college, 29 are still attending college, and one left college. Of the 79 who graduated college, 83 percent obtained a STEM degree and/or are members of the STEM workforce. The NIDDK's Short-Term Research Experience for Underrepresented Persons (commonly called STEP-UP) has expanded to include three primary sites in Puerto Rico and six in the Pacific Islands. Participants were encouraged to visit the NIDDK website for additional information on NIDDK diversity and inclusion efforts and existing programs.

ROUNDTABLE DISCUSSIONS—SESSION I

Participants attended one of five roundtable discussions focused on various topics proving to be challenging to early career academics, including career planning and advancement, laboratory or research financial management, and personnel issues. Meeting participants attended the session of their choice. Moderators facilitated each roundtable discussion.

Table 1: Navigating Difficult Conversations
Leon McDougle, M.D., Chief Diversity Officer, The Ohio State University (OSU)
Mark Lawson, Ph.D., Professor, UC San Diego
Ricardo Azziz, M.D., M.P.H., M.B.A., Chief Officer, Academic Health and Hospital Affairs, State University of New York System Administration

Table 2: Other Federal Funding Opportunities
Francesco Villarreal, M.D., Ph.D., Professor, UC San Diego

Table 3: Funding on Women's Health
Victoria Cargill, Associate Director for Interdisciplinary Research, Office of Research on Women's Health, NIH

Table 4: NIH Funding Opportunities
Patricia Heyn, Ph.D., Associate Professor, University of Colorado Denver, Anschutz Medical Campus
Frank Hamilton, M.D., M.P.H., Program Director, NIDDK, NIH

Table 5: NIH Diversity Programs
Luis Cubano, Ph.D., Program Director, National Institute of General Medicine Sciences, NIH

ROUNDTABLE DISCUSSIONS—SESSION II

Session II provided participants the opportunity to switch discussion tables.

PARALLEL SESSION

This session provided the opportunity for participants to attend mock study sessions for different types of NIH awards—R01 Basic/Clinical, K01 Basic/Clinical, and R21 Basic/Clinical. During these sessions, session leaders were given sample grant applications to review and critique. Meeting participants attended the session of their choice.

Mock Study Section 1: R01
Francesco Villarreal, M.D., Ph.D., Professor, UC San Diego
Ann Jerkins, Ph.D., Scientific Review Officer, NIDDK, NIH

Mock Study Section 2: K01 Awards
Mark Lawson, Ph.D., Professor, UC San Diego
Michele Barnard, Ph.D., Deputy Branch Chief, Grants Review Branch, NIDDK, NIH

Mock Study Section 3: R21
Jose Romero, Ph.D., Associate Physiologist, Brigham and Women's Hospital, Harvard Medical School
Ryan Morris, Scientific Review Officer, NIDDK, NIH

CHALLENGES FOR WOMEN IN ACADEMIA

Panelists: Yvette Huet, Ph.D., Director, ADVANCE Faculty Affairs and Diversity Office, University of North Carolina at Charlotte (UNC Charlotte)
Leon McDougle, M.D., M.P.H., Chief Diversity Officer, OSU Wexner School of Medicine
Rocio Pereira, M.D., Chief of Endocrinology, Denver Health, Associate Professor, University of Colorado School of Medicine

Dr. Yvette Huet described her prior experiences as a female in academia and noted that she had encountered few women faculty members while in undergraduate school. During her doctoral studies, Dr. Huet observed that the only woman faculty member in the basic sciences did not receive tenure; in fact, having no women faculty seemed normal. In postdoctoral research, she found that more women were staff scientists and, like herself, married to another scientist. Faculty placement either meant separation by distance for some couples or dual positions at the same institution, which she was privileged to have received. Dr. Huet explained that without the Family and Medical Leave Act (FMLA) in place, she was challenged to balance her teaching duties during a 3-week leave from her role as assistant professor to start a family. Although some of the graduate students filled in during her absence, she emphasized the importance of knowing the institution's leave policies. The FMLA had been implemented by the time she was promoted to associate professor, and conditions significantly improved. Explaining a delay in pursuing tenure, which often accompanied time out for having children, was another challenge.

As Director of the ADVANCE Faculty Affairs and Diversity Office, one of Dr. Huet's first activities was to assess the polices across UNC Charlotte and change the guidelines regarding extension of time-to-tenure applicable to all faculty, regardless whether it is used or not used. Men tend to take the leave, but they appear not to use all of the time allotted for leave and often do not serve as primary caregivers. In addition, a lone female faculty member with children in a department is taxed to address all questions on life-work balance. One solution would be to incorporate changes in the academic institutional system so that women do not have to choose between a family and a promotion and tenure to be successful. Discussions on the expectations of what is acceptable in academia in terms of responsibilities for women faculty and their male counterparts are needed.

Dr. Leon McDougle presented on OSU's Allies & Advocates for Equity program, which aligns with the 2020 vision statement of the OSU president. Dr. McDougle first told the story of how his mentor and OSU professor, Dr. Margaret H. Hines, was denied tenure on three separate occasions, although she was clearly qualified. Dr. Hines finally was victorious after a legal decision led to her being granted promotion to Professor with tenure. The Office of Diversity and Inclusion and the Women's Place are partners in implementing the Allies & Advocates for Equity program. Advocates are senior faculty and administrative men who have a record of supporting women staff and faculty. Advocates are trained by the Women's Place staff to lead facilitated conversations with other men and expose them to methods of better identifying and behaving as allies in gender equity. The outcome of these groups is the sharing of evidence-based knowledge, skills, and strategies to effect positive personal, departmental, and institutional change.

Dr. McDougle described his personal experience and observations facilitating discussion among male faculty, staff, and leaders while serving as an advocate. The process involves sharing data on implicit bias and diversity and inclusion of the respective group or department performing the exercise. In addition, real-life experiences from OSU women faculty are distributed to the group, and real-life scenarios are presented. As facilitator, Dr. McDougle solicits responses from the group, which starts the discussion. He noted that an all-male group provides a safe environment for these types of discussions to garner sensitivity among male faculty and staff to the underlying issues. Dr. McDougle called attention to the OSU Kirwan Institute for the Study of Race and Ethnicity annual publication, *State of the Science: Implicit Bias Review*, which would be worthwhile reading.

Dr. Rocio Pereira shared advice that she had learned from her experiences as an academic faculty member. She encouraged current and aspiring academic women faculty to—

- Have a vision: Know the direction of their careers, and have a plan for reaching their goal. Although their vision may change over time, it should remain their own vision and not that of others.
- Focus: Refrain from being distracted by barriers or discouraged by failures.
- Ask for what they need: Communicate it clearly to others and do not assume they already know what those needs are.
- Learn to say, "No": Know what their job requires, and take careful thought to not accept work that either does not fit with their goals or cannot be successfully completed.
- Promote their successes: Be proud of their achievements, and tell others about them.

Discussion

In response to a question on work-life balance in a culture in which the expectations are to work 24/7 to be successful as an investigator, Dr. McDougle commented that work/life integration is valued in organizations and institutions. He suggested expressing concerns to the department chair about the work-life policy and how it impedes fulfilling the necessary roles of an upcoming junior faculty member and decreases quality time spent being a parent. Dr. McDougle also pointed out that the diversity and inclusion office is a place to have these types of discussions. Dr. Pereira suggested discussing the challenges in scheduling and assignments, first with the laboratory manager to make sure that points made and positions taken are clear. Proposing a potential solution that could be broadly implemented might be helpful.

STRATEGIES TO STRENGTHENING YOUR RESEARCH: BUILDING A TEAM

Ricardo Azziz, M.D., M.P.H., M.B.A., Chief Officer, Academic Health and Hospital Affairs, State University of New York System Administration

Dr. Ricardo Azziz presented on strategies for leading, managing, and building a team that strengthens the research. Leading a research team is about leading and managing people, building a team collectively, and developing a sustainable ecosystem. Effective leadership does not come naturally and involves preparation, time, self-development, and effort. Leading also is about relationships, networking, and understanding the need for emotional intelligence. A team consists of immediate staff, collaborators and co-investigators, and mentors and others in a network. Dr. Azziz emphasized the importance of choosing the right people and having strict rigor in making those decisions. Individuals must learn how to interview to ensure that the best candidate is hired. When it is necessary to make team personnel changes, act and be firm but compassionate. Research often fails when students, with many other obligations, are the only individuals engaged in the team.

Potential team members can be identified from referrals, job posting via the institution, advertising through human resources and professional journals, and visibility in lecturing and presenting research. A major component to recruiting and hiring a team is clearly defining the job description with the appropriate level of detail. Also, the ability to understand and describe the desired workplace culture, as well as the team leader's management style and personal limitations, allows leaders to successfully guide the hiring process. To hire the best candidate for the team, the interview process should be structured, use actionable behavioral-based questions for all candidates,

and avoid personal questions. The interview schedule should be a full day and consist of input from the current staff and associates. In addition, those hiring should determine the candidate's short- and long-term expectations; a demonstration or on-site observation of proposed duties might be helpful.

Dr. Azziz elaborated on retaining employees, because recruiting and retraining are costly and take time. Being flexible within established parameters of the ideal employee, being willing to invest in ongoing training and education, and creating a satisfying and inspiring job experience are key to employee retention. In the case of shared employees within a department or institution, set clear goals and separation of duties and keep accurate accounting of hours spent on specific tasks. Another aspect of retention is respecting and understanding employees' family, personal, and social needs while avoiding over-familiarity.

Successful team leaders provide regular feedback (positive feedback and fair criticism) verbally and in writing that aligns clearly with the job expectations, in addition to any periodic mandated performance evaluation. Always follow up meetings with a written record. Clear metrics are needed to determine the necessary improvements. Determine whether additional training and/or career development would be of value for underperforming employees. This would entail clearly defining the problem areas and developing a performance improvement plan. Conflicts in the laboratory often occur, and prompt actions (e.g., compromise or arbitration) for a resolution are necessary. Leaders should have a zero tolerance for unethical behavior or any form of harassment.

Dr. Azziz next detailed the steps for releasing (i.e., terminating) a member of the team. As a manager, know when to counsel or release an employee and always be fair, but firm. There must be written accounts of critiques and tasks given to the employee. Approximately 95 percent of underperforming employees are trying to do a good job and are not idle. Underperformance generally occurs for one of two reasons: (1) a management error because the right employee is the wrong match for the job, or (2) a hiring error because the wrong employee is in the right job. The solutions are to either change the job description and responsibilities or direct the employee to a job that better fits his or her skill set. Releasing an employee can be challenging, so be compassionate, convey the best interest of the team, and work with the human resources department as the official representative for the institution to finalize procedures.

Aside from building a strong team, establishing collaborations is an important strategy for strengthening the research team. Dr. Azziz remarked that collaborations are critical to broadening scientific and technical horizons, especially for grant applications. He highlighted the advantages and disadvantages of collaborations and noted methods to identify potential research collaborators, which could be based on the advice of a mentor, in-depth literature reviews, and/or presentations at research conferences and national meetings. Dr. Azziz emphasized that it is best to identify potential collaborators whose expertise and interests align closely with those of the team.

MARCO CABRERA POSTER AND NETWORKING SESSION

All meeting participants were invited to view the posters submitted to the NMRI 17th Annual Workshop and to converse with their presenters. Judges examined the posters and discussed the described research with each poster presenter. Winners were selected in three categories—Basic Science, Translational Science, and Clinical Science—and awards were presented to the winning recipients in the final session of the workshop.

DR. LAWRENCE Y. AGODOA HONORARY LECTURE OF THE NETWORK OF MINORITY HEALTH RESEARCH INVESTIGATORS

Dr. Villarreal welcome participants to the Dr. Lawrence Y. Agodoa Honorary Lecture and introduced the speaker.

The Physician-Scientist at the Confluence of the Art and Science of Medicine

Sam Dagogo-Jack, M.D., D.M., Professor of Medicine, UTHSC

Dr. Dagogo-Jack, professor of medicine and director of the division of endocrinology, diabetes and metabolism at UTHSC, presented on the physician-scientist at the convergence of the art

and science of medicine and described his experiences as a physician-scientist, training of new investigators, and his research. He expressed appreciation to Dr. Agodoa for his commitment and dedication to the NMRI, and to the NIDDK for its support. Born in West Africa, Dr. Dagogo-Jack graduated the University of Ibadan College of Medicine, Nigeria, completed his residency at the University of Newcastle, United Kingdom (UK), and became a Member of the Royal College of Physicians in 1982. His curiosity and inquisitive attitude during his clinical training caught the attention of one of his professors, Dr. Pat Kendall-Taylor, and he continued at the University of Newcastle, trained in research, and earned an M.S. and the Doctorate in Medicine (equivalent to the American Ph.D.). He also was prompted by Dr. Kendall-Taylor to continue research in the United States, and with her assistance on sponsorship, he did postdoctoral fellowship training studying endocrinology, DM, and metabolism at the Washington University School of Medicine in St. Louis. Dr. Dagogo-Jack then became Assistant Professor at UTHSC.

In the disparities triangle—consisting of the patient, system, and provider—the health care professional is integral to the initiation or disposition of disparities. A diversified workforce engages patients differently and in a culturally sensitive manner. An unstated hypothesis—"URM Replicon Hypothesis"—circulating the NIDDK is that attracting and mentoring a URM and supporting their early career, results in a URM faculty member and role model. The URM role model, in turn, attracts other URM proteges and builds a diverse team that advances the mission. Increased productivity and reputation leads to independent URM faculty, which is replicated. Dr. Dagogo-Jack emphasized that this model has been demonstrated and holds true, which he has witnessed in his diverse laboratory group. Several of his students and postdoctoral fellows have gone on to be educated at well-known universities and Ivy League schools, culminating in their becoming M.D.s, Ph.D.s, and Pharm.D.s. Another area that benefits from a diversified workforce is recruiting people to join and participate in research. In the Pathobiology of Prediabetes Biracial Cohort (POP-ABC) study, Dr. Dagogo-Jack and his group used such retention strategies as patient motivation and community-building activities to increase participation and diversity in the study. In fact, the POC-ABC consists of 217 African Americans and 159 European Americans.

Dr. Dagogo-Jack reviewed some foundational principles that still have an impact on science and medicine today. Maslow's hierarchy of needs, a theory proposed by American psychologist, Dr. Abraham Maslow in 1943 and expanded in 1971, concludes that transcendence from meeting one's own biological needs to helping others become self-actualized (i.e., full use of talents) is contingent upon being self-actualized. From his perspective, Dr. Dagogo-Jack articulated that physician-scientists, researchers, and investigators are at the apex of the hierarchy of needs. They are needed by society to conceptualize future directions, bring life to new ideas; and generate, discover, and disseminate new truths. The Flexner Report on American medicine, published in 1910 by Abraham Flexner, transformed medicine in the United States from its earliest identity of being the least esteemed of all the arts. The report recommended reducing the number of medical schools, increasing the prerequisites to enter medical training, training physicians to practice in a scientific manner, engaging medical faculty in biomedical research, facilitating medical schools' control of clinical instruction in hospitals, and strengthening state regulation of medical licensure.

Dr. Dagogo-Jack also called attention to the most widely used textbook of internal medicine—*Harrison's Principles of Internal Medicine*—which was created and first published in 1950 by American physician Dr. Tinsley Harrison. Dr. Harrison's quote in that first edition on the opportunity, responsibility, and obligation of a physician can be parlayed into the six tools of the profession: (1) scientific knowledge, (2) technical skill, (3) human understanding, (4) courage, (5) wisdom, and (6) humility. Advances in scientific knowledge and technical skills are ongoing. One example of a phenomenal explosion of knowledge impacting health is in the treatment of AIDS, a term the NIH coined in 1982. More than 40 years of research has provided an improved understanding of the biology and mechanism of the disease, which led to new diagnostic tests and therapies, resulting in a significant increase in the life expectancy of patients.

Although major scientific advancements have been significant, a scientific spirit of free inquiry is still needed to address some once-thought-unshakeable dogmas. The 10 leading causes of death in humans shift depending on the country or region, and the leading chronic diseases in high-

income countries are different from those in low- to middle-income countries. DM is one disease that cross-cuts the regions, and new approaches are needed, beyond prescription medications. Dr. Dagogo-Jack suggested that physician-scientists consider human understanding as an essential tool for treating patients. Recognizing that human understanding is about human beings, he has leveraged his resources, networks, and leadership in professional organizations to travel to other countries and interact with colleagues and patients. Those experiences revealed have two things that govern human interaction around the globe: reciprocity of norms (e.g., universal smile) and social desirability of bias (i.e., a person responds to a question with an acceptable answer). Two biases—egocentricity and sinister attribution—also were observed globally. In closing, Dr. Dagogo-Jack noted the needs and characteristics of the universal patient, including a need for empathy, pathophysiologic information, treatment possibilities, and preservation of hope and faith.

Friday, April 26, 2019

MENTOR/MENTEE SESSION

Junior investigators had the opportunity to meet with one of several senior NMRI investigators who had offered to serve as mentors. During the session, each mentor hosted a roundtable discussion with his or her mentees, answering questions and providing advice.

BUILDING THE NIDDK NMRI

Shirley Blanchard, Ph.D., Associate Professor, Creighton University

Dr. Shirley Blanchard reviewed an article that appeared in the February 2019 issue of *Ethnicity & Disease*, "Building the Network of Minority Health Research Investigators: A Novel Program to Enhance Leadership and Success of Underrepresented Minorities in Biomedical Research," which resulted from the collaborative efforts of the NIDDK's OMHRC, NMRI committees, and the Network. The NMRI Oversight and Planning Committees designed a survey to evaluate the NMRI and extrapolated four recurring themes from open-ended survey responses: (1) mentoring, (2) career development, (3) academic networking, and (4) social support.

Results revealed that the average number of members who attended meetings and workshops during the survey period (2008 to 2018) was 97, of whom, 34 percent were senior members and 66 percent were junior members. This 2:1 ratio of junior to senior researchers promotes mentoring and networking opportunities at the meetings. Career development, grant writing assistance, and time management strategies were perceived benefits of attending the NMRI annual meeting. Mentorship, mock study sections, and funding opportunity discussions were identified as essential to career development.

Dr. Blanchard highlighted the 2019 survey demographics, which included a mix of males and females, age groups, degrees and positions held, and tenure status. The NMRI works to provide the necessary resources for academic excellence for those members who responded that they had not received a promotion or tenure, including letters of support. Dr. Blanchard encouraged the Network members to continue to complete the annual survey, provide journal titles for manuscripts published, and report on promotions and tenure, all of which assists the OMHRC in meeting its funding commitments for the diversity programs.

ROLE OF SCIENTIFIC SOCIETIES AND PROFESSIONAL ORGANIZATIONS

Dr. Agodoa thanked the societies and organizations for their continued support and acknowledged the 17th Annual NMRI Workshop travel award winners. He noted that the American Association for the Study of Liver Disease had sponsored two 2019 NMRI Travel Awards, but representatives could not attend this year's workshop.

American Society of Nephrology (ASN)

Mark E. Rosenberg, M.D., FASN, President, ASN

Dr. Mark Rosenberg elaborated on his work with the ASN and how it affected his career and advancements as a nephrologist and clinical researcher. He noted the many opportunities that the ASN and professional societies, in general, offer to health researchers, including avenues for

funding, career development, and mentoring. Dr. Rosenberg conveyed that the ASN is proud to have sponsored 24 participants to travel to the 17th Annual NMRI Workshop and expressed appreciation to ASN/NMRI members for providing mentorship to junior researchers at today's meeting and beyond. Approximately 850 million people worldwide have kidney diseases, 40 million of whom live in the United States. Treating kidney diseases accounts for $114 billion in annual Medicare cost alone. The ASN—which has more than 20,000 members from 131 different countries—has a mission to prevent, treat, and cure kidney diseases throughout the world by educating health professionals and scientists, advancing innovation, communicating knowledge, and advocating for patients.

The reach of the ASN extends beyond the role of a professional society in that it uniquely endeavors to foster partnerships with Federal agencies. The ASN enterprise includes the Foundation for Kidney Research, which was established in 2012 to continuously fund kidney research. The Kidney Health Initiative (KHI), a collaboration between the U.S. Food and Drug Administration and the broader nephrology community, was started in 2012 to optimize kidney health and evaluate the safety of drugs, devices, biologics, and food products. More than 100 organizations from academia, private industry, and the pharmaceutical industry are members of the KHI, and patients are at the center as key stakeholders. In 2016, the ASN partnered with the CDC to form the Nephrologists Transforming Dialysis Safety (NTDS) project to actively pursue eliminating preventable infections in dialysis facilities. Infections are a leading cause of morbidity and mortality among patients on dialysis, and the NTDS is focused on educating and developing tools and strategies for the public. The ASN partnered with U.S. Department of Health and Human Services (HHS) in 2018 in a multidisciplinary approach to accelerate innovation in the prevention, diagnosis, and treatment of kidney diseases by forming the Kidney Innovation Accelerator (KidneyX). Other HHS agencies and offices (e.g., Centers for Medicare & Medicaid Services) are participating in KidneyX, and winners of the recent prize competition have recently been announced. The ASN anticipates that these partnerships will transform kidney care and catalyze kidney research.

Dr. Rosenberg explained that the ASN's values statement on diversity and inclusion—which embodies inclusiveness, mentorship, health equity, patient advocacy, and engagement—emphasizes the society's level of commitment. The Diversity and Inclusion Committee, chaired by NMRI member Dr. Deidra Crews, implements ASN plans, engages in a number of projects and activities, and has several notable accomplishments. The Committee has performed outreach to students through exhibits at meetings of professional graduate and medical student organizations, provided travel awards to 97 NMRI workshop participants from 2015 to 2019, and supported networking and social events in parallel to the ASN's Annual Meeting, titled Kidney Week. The Committee's 2019 priorities include implementing new ASN member demographic metric collection, funding the next ASN-AMFDP Award, developing recommendations on implicit/unconscious bias training for all ASN committees, and establishing benchmarks for evaluating diversity and inclusion initiatives across the society.

The ASN supports career development for kidney professionals at all levels of training. Dr. Rosenberg was happy to announce the 2019 launch of the ASN Midcareer Awards Program to support early-stage kidney professionals who have 10 to 20 years of experience after completing nephrology training. The program categories include distinguished clinical, educator, leader, mentor, and researcher awards. The Kidney Students and Residents at Kidney Week Travel Award and Kidney Tutored Research and Education for Kidney Scholars Award support medical students, residents, and doctoral candidates. Research fellowships for individuals holding M.D.s, D.O.s, and Ph.D.s include the Ben J. Lipps Research Fellowship Program Award and the William E. Mitch International Scholars Program Travel Award. The ASN also supports early career professionals through career development grants, the William and Sandra Bennett Clinical Scholars Program, and the AMFDP Award. In closing, Dr. Rosenberg noted the many benefits of becoming an ASN member and lauded the NMRI for its success.

Discussion

A participant observed that many ASN programs and awards are weighted heavily toward those with M.D. degrees who are performing clinical research and asked about programs for doctor-

al and basic science researchers. Acknowledging that many of the award programs emphasize clinical research, Dr. Rosenberg pointed out that opportunities also are available for doctoral and basic science researchers within the career development and research award programs. He introduced ASN Executive Vice President, Mr. Tod Ibrahim, to provide additional information. Although more medical doctors may seem to receive some of the awards, Mr. Ibrahim emphasized that no biases exist against Ph.D.s or basic scientists. Mr. Ibrahim further explained that those with M.D.s and Ph.D.s are treated equally in terms of eligibility for ASN lifetime achievement awards, career development awards, and the grants program. Both groups have the opportunity to serve on the ASN council and in other leadership roles. He noted the challenges to identify Ph.D. candidates who are interested in kidney research, as well as to identify the appropriate mechanism to communicate the opportunities that exist in the field. Participants are welcome to comment on the language the ASN uses to describe its awards and programs that might be misleading to those holding Ph.D.s who are applying for funding.

Dr. Silva Shah thanked the ASN for the travel award to attend the NMRI meeting and asked whether the eligibility criteria for the ASN career development award extend only to researchers transitioning from an NIH career development (K series) award to a research (R series) award. Mr. Ibrahim noted that the ASN is in the process of renaming the career development award to a "transition to independence" award, which should clarify the application criteria. He added that the ASN leadership also met with NIDDK program staff to discuss how best to align ASN awards and funding programs with NIDDK training and grant programs. Funding for transitioning to independence and international graduates, as well as sustainable funds for senior investigators, are key areas that need to be addressed. It would be beneficial to the ASN if the kidney research community identified additional funding needs.

American Society for Bone and Mineral Research (ASBMR)
Nicole Wright, Ph.D., Associate Professor, The University of Alabama at Birmingham

Dr. Nicole Wright, co-chair of the ASBMR Diversity in Bone and Mineral Research Committee, informed participants that the Society's mission is to advance excellence in bone, mineral, and musculoskeletal science worldwide and promote translation of basic and clinical research to improve human health. The ASBMR was established in 1977 and has served the bone, mineral, and musculoskeletal scientific community for more than 40 years. The diverse membership consists of approximately 4,000 members worldwide, 52 percent of whom are in the United States. Fifty-four percent hold Ph.D.s; 46 percent hold M.D.s; and 22 percent are ESIs.

Dr. Wright remarked that the ASBMR annual meeting is the world's largest and most diverse meeting in the bone, mineral, and musculoskeletal research field, attracting more than 3,000 attendees from more than 70 countries. In 2018, 1,100 posters and more than 100 educational sessions were presented. More than 150 travel grants and awards are available to U.S. and international members at every stage of their careers. Travel grants are available to young investigators, mid-career faculty, and research teams. In 2017, the ASBMR introduced the diversity travel grants, which support North American URM applicants, and emerging country travel grants. A new addition for 2019 is the Family Care Travel Grant, which provides support for the childcare expenses of applicants. The President's Award, Young Investigator Awards, Phoebe Leboy Professional Development Award, Felix Bronner Young Investigator Award, and Fund for Research and Education Young Investigator Awards are presented to winners at the annual meeting. The 2019 annual meeting will be held in Orlando, Florida, September 20–23, 2019. The submission period for late-breaking abstracts is open.

The ASBMR publications include the *Journal of Bone and Mineral Research (JBMR), JBMR Plus*, and the *Primer on the Metabolic Bone Diseases and Disorders of Mineral Metabolism.* Online access to these publications is available for all members of ASBMR as part of their membership package. Dr. Wright noted other benefits to an ASBMR membership, such as free access to the online education resource center, discount registration to the annual meeting, access to a global network of scientific researchers and clinician-scientists, and the opportunity to apply for research funding provided exclusively to ASBMR members.

The ASBMR sponsored one 2019 NMRI Workshop Travel Award and continues to increase its activities to promote the visibility of URM members throughout the society. The Diversity in Bone and Mineral Research Committee has advocated for increased funding for international young investigators, new diversity and emerging country travel grants, discounted member dues for certain emerging countries, and an NMRI Workshop travel grant. In 2019, the Committee will continue hosting networking activities in parallel to the ASBMR annual meeting, including the Diversity Networking Reception, Diversity Networking Lounge, and Diversity Poster Competition. Dr. Wright encouraged participants to visit the ASBMR website or contact ASBMR staff for more information.

Endocrine Society
Rocio Pereira, M.D., Associate Professor, University of Colorado School of Medicine

Dr. Pereira explained that the Endocrine Society has more than 18,000 members, 60 percent of whom are in the United States. As an international community, the membership consists of clinical practitioners and basic and clinical researchers representing 122 countries. The society's peer-reviewed publications include *Endocrine Reviews, Endocrinology*, the *Journal of the Endocrine Society*, and the *Journal of Clinical Endocrinology and Metabolism*. The society convenes an annual meeting (commonly called ENDO); ENDO 2020 will be held on March 28–31, 2020, in San Francisco, California.

The Endocrine Society features an online career center (Endocareers), which provides a mentor exchange program, in-training and early career resources, and board certification training for clinical endocrinologists. The Society's awards program spans all career levels and includes ENDO travel awards, the Harold Vigersky Practicing Physician Travel Award, scientific achievement awards, summer research fellowships, and student and early career awards. The society sponsored two 2019 NMRI Workshop Travel Awards. In addition, one of the society's diversity initiatives is the NIDDK-sponsored Future Leaders Advancing Research in Endocrinology (FLARE) program to support training in endocrine research for URMs. Components of the FLARE program include workshops, internship paths, mentorship paths, and ENDO travel awards. Aside from FLARE, the Endocrine Society's Committee on Diversity and Inclusion, formerly the Minority Affairs Committee (MAC), works to increase diversity within endocrine science and medicine.

Dr. Pereira noted her time spent serving on the MAC, as chair of the Committee on Diversity and Inclusion, and on other Endocrine Society committees. She remarked on how this representation benefited her career and provided access to endocrine research leaders, including current Endocrine Society president and senior NMRI member and mentor, Dr. E. Dale Abel. Participants were encouraged to seek out opportunities and resources available through professional societies and to consider memberships.

Discussion

Dr. Angelina Hernandez-Carretero thanked the Endocrine Society for the travel award and called attention to the Early Career Reviewer Program designed to train endocrinologists in the manuscript review process. Dr. Hernandez-Carretero also elaborated on the impact of the FLARE program on her career and expressed appreciation to the Society for the opportunities the program has provided.

EARLY RESEARCH OPPORTUNITIES LAY THE FOUNDATION FOR NETWORKING THROUGH A CAREER IN BIOMEDICAL RESEARCH

Rudy M. Ortiz, Ph.D., Professor, UC Merced

Dr. Rudy Ortiz, program director of the UC Merced Maximizing Access to Research Careers—Undergraduate Student Training in Academic Research (MARC U*STAR) NIH training grant (T34) pointed out the similarities between biochemical and professional and social networks relative to clusters in relationships and intermediates of interaction. He maintains that a major aspect of networking is more about "who" you know than "what" you know. Dr. Ortiz's journey and

career path to study metabolism began in his hometown of El Paso, Texas, which at the time, he thought, was one large city with its Mexican counterpart despite the presence of the U.S.–Mexico border. His academic alliance from his community experiences and doctoral and postdoctoral studies consisted of well-known professors and scientists, who also were family friends, including Dr. Renato Aguilera from the University of Texas at El Paso, Dr. Frank Talamantes at UC Santa Cruz, and Dr. L. Gabriel Navar at Tulane University.

Dr. Ortiz described his early research and the networking opportunities that he encountered as he progressed through his biomedical career. He began his education at Texas A&M University and participated in undergraduate research in marine animal biology. For his master's degree research at Texas A&M University, Dr. Ortiz performed hypothesis-generating studies in manatee biology in Florida and then Brazil with funding obtained via his network affiliations.

After graduation, Dr. Ortiz joined the National Aeronautics and Space Administration (NASA) Ames Research Center, studying marine animal biology and the effects of weightlessness. Subsequently, he worked for 2 years as a research investigator in the NASA Space Life Science and Gravitational Research Group, focusing on microgravitational effects on renal function. During his 2 years as NASA investigator, Dr. Ortiz also helped to train the Neurolab Shuttle Mission crew on experimental techniques for evaluating the effects of microgravity on neurological development and cognitive function in animals. Dr. Ortiz noted his long-lasting relationships and expanding network that developed out of his time spent at NASA. Dr. Ortiz participated in the National Institute on Minority Health and Health Disparities–sponsored Minority Health and Health Disparities International Research Training (MHIRT) program, conducting field research on seals in Mexico. Dr. Ortiz received a predoctoral fellowship to continue his education at UC Santa Cruz with Drs. Leo Ortiz and Talamantes, focusing on the northern elephant seal as a model for studying human diseases. During his postdoctoral fellowship in the Tulane Hypertension and Renal Center of Excellence at the Tulane University School of Medicine, Dr. Ortiz studied hypertension and kidney disease under the direction of Dr. Navar. He remarked on how networking at the undergraduate and graduate phases of his education and research training helped to provide opportunities to both advance his career and allow his family to explore different U.S. cities and other countries and cultures.

A new network of colleagues and collaborators emerged from Dr. Ortiz's years at Tulane University, including fellow postdoctoral researcher, Dr. Akira Nishiyama, with whom he, his laboratory, and mentees at UC Merced continue to work. Undergraduate and graduate students in the UC Santa Cruz–MHIRT program, which Dr. Ortiz organizes at UC Merced, are hosted by Dr. Nishiyama, Chair of the Department of Pharmacology, Kagawa University, Japan, to participate in a 10- to 12-week research-intensive summer program evaluating hypertension and cardiovascular disorders in a rat model of metabolic syndrome. Many of the MHIRT–Japan trainees have since graduated from UC Merced and are engaged successfully in clinical or basic science research in other academic institutions. Dr. Ortiz transitioned to clinical research with a focus on nutrition and disease prevention and received funding from the Almond Board of California to evaluate the effects of almond consumption on the glucoregulatory and cardiovascular profiles in young adults in a clinical trial. Additional networking and collaborations led to the incorporation of big data analytics (UC Davis), emerging treatments (UC San Diego), and new hypertension animal models (University of Kentucky) into his studies.

Dr. Ortiz pointed out that the three types of career-building networks—aspirational, professional, and social—are of equal value. Although women tend to be more effective at networking and have broader associations, any news of new job opportunities reaches men earlier through their predominately male networks. Several bodies of research on professional women and networks are available to review, but less on URMs. These sources recommend that women and underrepresented scientists should (1) include more men in their professional networks, (2) ensure that their competencies and interests are clear, and (3) develop a strategic plan to meet the leaders in their field of interest. In academia, networking is more about staying current on the literature, performing innovative work, publishing data, and presenting research at conferences to comple-

ment the social interactions with one's peers. Dr. Ortiz emphasized the importance of professional societies to develop a network and of building networks and professional connections with scholars worldwide. To build a network, participants must meet people, keep a record of contacts, be genuine about the relationships, and articulate aspirations to the people with whom they are connecting. Knowing one's expertise, making the most of feedback and criticism, and promoting oneself are key to career advancement, and networking is essential. In closing, Dr. Ortiz encouraged participants to spend time reflecting on their current networks.

Discussion

When asked about strategies for self-promoting in a networking environment, Dr. Ortiz cited affirmations as being effective and suggested practicing promotional techniques with trusted colleagues. There is no universal self-promotion strategy because each person is unique. The key is to find the right opportunity to promote yourself and engage mentors to help.

POSTER SESSION AWARDS

All the meeting participants who presented posters at this year's workshop were thanked for their time and willingness to share their research with the NMRI community. The four winners of the poster session awards were then announced and congratulated:

Basic Science Poster Award
Theodore Busby, Doctoral Candidate, The University of Alabama at Birmingham
"Molecular Role of the Mammalian SWI/SNF (BAF) Chromatin Remodeling Complex in Mineralized Tissue"

Ilse Daehn, Ph.D., Assistant Professor, Icahn School of Medicine at Mount Sinai
"Genetic Susceptibility of Diabetic Kidney Disease in Mice Is Linked to a Promoter Variant That Regulates XOR Activity in Mice"

Translational Science Poster Awards
Oluremi Ajala, M.D., M.P.H., Postdoctoral Fellow, Brigham and Women's Hospital
"Anti-Inflammatory HDL Function and Incident Cardiovascular/Death Events: A Secondary Analysis of the JUPITER Trial"

Clinical Science Poster Award
Jorge Gamboa, M.D., Assistant Professor, Vanderbilt University Medical Center
"Intermuscular Adipose Tissue Is Associated with Inflammation and Insulin Resistance in Patients with Chronic Kidney Disease"

BUSINESS MEETING AND COMMITTEE REPORTS

Oversight Committee Report
Juan Sanabria, M.D., Professor, Case Western Reserve University School of Medicine

Dr. Juan Sanabria provided an update on the Oversight Committee's new policies. The abstract submissions must follow specific, more restrictive guidelines. The time spent on developing specific aims for a review should be increased. The Oversight Committee advocates for funding, recruits new members, and coordinates with professional societies and organizations to facilitate informal gatherings at scientific conferences, such as the NMRI Annual Workshop. Dr. Sanabria remarked on the high number of junior members in attendance at today's workshop. He suggested that the Committee contact and encourage senior NMRI members to re-engage with the Network. The Oversight Committee helps to guide the NMRI and relies heavily on the feedback of its members. Dr. Sanabria reminded members to complete the evaluation survey, increase awareness of the Network among their peers and home institutions, and share news of accomplishments and personal anecdotes to be included in the 2019 NMRI Newsletter.

Planning Committee Report
Francesco Villarreal, M.D., Ph.D., Professor, UC San Diego

Dr. Villarreal encouraged members to send in contact information of potential speakers at their institutions who would be a good fit for the Network and forward comments and suggestions for future NMRI meetings to the Planning Committee. The Planning Committee convened by monthly teleconference in 2018 to share and discuss ideas and make decisions related to the broad mandate of the Committee. Members serve 2-year terms. The 2020 Annual Workshop is being planned and is scheduled to be held in Bethesda, Maryland; the dates are yet to be determined. Members are welcome to provide input on the theme and topical sessions.

NMRI Chapter Overview
Patricia Heyn, Ph.D., Associate Professor, University of Colorado Denver, Anschutz Medical Campus

Dr. Heyn provided an update on NMRI chapter development and pointed out that no active NMRI chapters currently exist. She encouraged Network members to consider establishing chapters at their respective institutions. NMRI chapters will adopt NMRI's four-fold mission. Individual chapters will provide an opportunity to engage students early in their studies, and Dr. Heyn and others in the Network will assist those who are interested.

SCIENTIFIC PRESENTATIONS

The workshop's three scientific poster presenters, who were selected from the pool of submitted abstracts, were announced and presented with plaques commemorating their achievements. These abstract winners were given the opportunity to present their research during the NMRI Annual Meeting.

Late-age Mitochondrial Intervention Alters the Organ-specific Landscape of Mitochondrial DNA Mutations in Aged Tissue as Revealed by Ultra-sensitive Duplex Sequencing
Mariya Sweetwyne, Ph.D., Acting Instructor, University of Washington

Cross-organelle Stress Response (CORE) Dysfunction Associated with Gentamicin-induced Proximal Tubule Injury
Chinamere Igwebuike, Ph.D., Graduate Student, Boston University School of Medicine

Neighborhood Socioeconomic Status and Risk of Hospitalization in Patients with Chronic Kidney Disease
Milda Saunders, M.D., Assistant Professor, The University of Chicago

NEXT STEPS AND ADJOURNMENT

Francesco Villarreal, M.D., Ph.D., Professor, UC San Diego
Winnie Martinez, Program Officer, NIDDK, NIH
Lawrence Agodoa, M.D., Director, OMHRC, NIDDK, NIH

Dr. Villarreal and Ms. Winnie Martinez thanked participants for attending the 17th Annual NMRI Workshop and Meeting, and Ms. Martinez added her thanks for the participants' support of the NMRI. She acknowledged the incoming NMRI Committee chairs—Oversight chair, Dr. Myra Kleinpeter, and Planning Committee chair, Dr. Heyn. Ms. Martinez announced that the NMRI Midwest Regional Meeting is scheduled for November 2019; members were encouraged to participate in the planning of this meeting, and a signup sheet was provided. Ms. Martinez reminded members to update their NMRI profiles to keep the Network current and accurate.

Dr. Agodoa remarked that the NMRI's success depends on the members' leadership and input. The NIDDK provides the necessary resources to support those endeavors. He also thanked participants and senior NMRI members for supporting the meeting and expressed appreciation to Ms. Martinez for her continued support. Members are welcome to send any comments or suggestions to the NIDDK.

Dr. Agodoa, accompanied by Ms. Martinez, presented the NMRI Committee chairs with certificates in appreciation of their service before the meeting was adjourned.

National Institute of
Diabetes and Digestive
and Kidney Diseases