



2015

# Network of Minority Health Research Investigators Directory



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Network of Minority Health Research  
Investigators Directory



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## **Mission Statement**

The Office of Minority Health Research Coordination of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) has 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, Alaska Native, Native Hawaiian, and other Pacific Islanders. The major objective of the network is to encourage and facilitate the participation of members of underrepresented population groups and others interested in minority health in the conduct of biomedical research in the fields of diabetes; endocrinology; metabolism; digestive diseases; nutrition; and kidney, urologic, and hematologic diseases. A second objective is to encourage and enhance the potential of the investigators in choosing a biomedical research career in these fields. An important component of this network is promotion of two-way communications between network members and the NIDDK.

Through the Network of Minority Health Research Investigators (NMRI), the NIDDK will elicit recommendations for strategies to enhance the opportunities and implement mechanisms for support of underrepresented population groups and others in biomedical research. The NMRI will advance scientific knowledge and contribute to the reduction and eventual elimination of racial and ethnic health disparities.

## NIDDK Executives



### **Griffin P. Rodgers, M.D., M.A.C.P.**

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Dr. Griffin P. Rodgers was named Director of the 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/oncology was in a joint program of the NIH with George Washington University and the Washington Veterans Administration Medical Center. In addition to his medical and research training, he earned a Master's degree in Business Administration, with a focus on the business of medicine/science, from the 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 (FDA)-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 was 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 in France, Italy, China, Japan, and Korea. He has been honored with many named lectureships at American medical centers; has published more than 200 original research articles, reviews, and book chapters; has edited four books and monographs; and holds four patents.

Dr. Rodgers served as Governor to the American College of Physicians for the U.S. Department of Health and Human Services from 1994 to 1997. He is a member of the American Society of Hematology, the American Society of Clinical Investigation of the National Academy of Sciences, the Association of American Physicians, and the Institute of Medicine, among others. He served as chair of the Hematology Subspecialty Board and is a member of the American Board of Internal Medicine Board of Directors.



**Lawrence Y.C. Agodoa, M.D., F.A.C.P.**

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Dr. Lawrence Y.C. Agodoa graduated from the 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-year training in clinical and basic research in Nephrology and Renal Pathology.

He served as Chief of the Nephrology Service at the Madigan Army Medical Center, Tacoma, Washington, in 1976 to 1981. He subsequently completed 2 years of clinical and research training in Rheumatology and Immunology, in 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 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, he was appointed Director of the Clinical Affairs Program in the Division of Kidney, Urologic, and Hematologic Diseases at the NIDDK of the NIH, Bethesda, Maryland. He also was an intramural research scientist in the Laboratory of Cell and Molecular Biology, NIDDK, from 1987 to 1992.

Presently, he is Professor of Medicine at the Uniformed Services University of the Health Sciences, F. Edward Hebert School of Medicine, and Program Director at the NIH. His current duties include the following:

- Director, Office of Minority Health Research Coordination, NIDDK, NIH.
- Director of the Minority Chronic Kidney Disease and End Stage Renal Disease Programs in the Division of Kidney, Urologic, and Hematologic Diseases of NIDDK.
- Co-project Officer of the end-stage renal disease (ESRD) renal database, the United States Renal Data System (USRDS).

## Program Planning Committee Members 2014–2015

### **Chair**

#### **Rhonda Bentley-Lewis, M.D., M.B.A., M.M.Sc. (2012–2015)**

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#### **Heather Tarleton, Ph.D., M.S., M.P.A.P. (2013–2016)**

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## Oversight Committee Members 2014–2015

### **Chair**

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### **Chair Elect**

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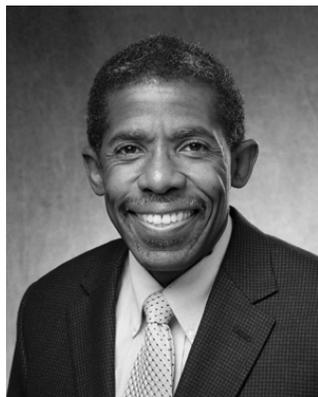
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## NMRI Attendees



### **E. Dale Abel, M.D., Ph.D.**

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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 and mitochondrial oxidative stress.



### **Adebowale "Ade" Adebisi, Ph.D.**

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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 GPCRs that regulate renal vascular and glomerular functions.



**Emilyn Alejandro, Ph.D.**

Assistant Professor, Visscher Biomedical Scholar  
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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.



**Larry D. Alexander, Ph.D.**

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***Research Interests***

My research has focused on identifying the intracellular signaling mechanisms underlying the renal tubular cell response to obstructive nephropathy. My ongoing research focuses on elucidating the roles of receptor- and nonreceptor tyrosine kinases, integrins, phospholipase A2 (PLA2), arachidonic acid, and heterotrimeric G proteins in mediating mechanical stretch-induced cytokine and chemokine gene and protein expression in renal proximal tubular cells, particularly relating to unraveling the linkage to these regulatory proteins and signal transduction pathways in mediating the effects of mechanical stretch on renal cell death, proliferation, and inflammation. Cyclic mechanical stretch represents a unique model to mimic transient increase in intrarenal pressure resulting in tubular mechanical stretch accompanying obstructive nephropathy and a mechanism to stimulate cytokine/chemokine gene and protein expression. This work may provide novel data in the pathophysiology of obstructive nephropathy.



**David B. Allison, Ph.D.**

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***Research Interests***

My research interests include obesity, energetics, and the effects of variations in energy metabolism, food intake, body composition, and energy expenditure on longevity. I also have an interest in research methods, research integrity, and research reproducibility, especially as applied to the fields of nutrition and obesity. My research ranges from basic science investigations with animal models through clinical trials, epidemiology, and public policy.



**Matthew Allison, M.D., M.P.H., F.A.H.A.**

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***Research Interests***

My research interests focus globally on the epidemiology and prevention of cardiovascular disease. Specific areas of ongoing projects include different measures of subclinical atherosclerosis, the associations of body composition and inflammation with cardiovascular disease, the relationships between calcified atherosclerosis and both hypertension and kidney function, and the potential effects between neighborhood characteristics and cardiometabolic health. I collaborate significantly with the Women's Health Initiative, Multi-Ethnic Study of Atherosclerosis, and the Hispanic Communities Health Study/Study of Latinos.

## **Ogechika Alozie, M.D., M.P.H., CPHIMS**

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### ***Research Interests***

My overall research interest is driven by infectious disease conditions that are overrepresented in minorities. Specifically, I am interested in HIV improved testing and using technology to improve care. I am building an HIV care cohort in a new HIV clinic in El Paso, Texas. I also am interested in HCV in minorities, including education, testing, and treatment that help to improve the differential outcomes for minorities with HCV. I hope to use my activity within the informatics space to tie my clinical research interests together.

## **Oluwatoyin Asojo, Ph.D.**

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### ***Research Interests***

I am a structural biologist with diverse interests. My current focus is structure-based drug design and the use of crystallography, biochemistry, and other methods to understand and develop new treatments in diverse systems, including hookworm infection, enteric parasites, cancer, and gut bacterial infections. I also am interested in diseases of poverty that affect predominantly minority populations.



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

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***Research Interests***

My research interests include the study of the polycystic ovary syndrome (PCOS); insulin action in adipocytes; the role of the adrenal in hyperandrogenic disorders; the nonclassic adrenal hyperplasias (NCAH); the genetics of hyperandrogenic disorders, including PCOS and NCAH; the treatment of hirsutism; and the regulation and physiology of adrenal androgens. Leadership development, academic administration, and organizational management are additional interests.



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***Research Interests***

In 2011, I became the Director of the Mayo Clinic Center for Translational Science Activities Office for Community Engaged Research and Assistant Professor of Epidemiology. My focus is community-engaged research in order to reduce health disparities and increase health equity in minority and disadvantaged populations. I am interested in studying the approaches that are used by researchers and communities to reduce disease burden. My research has focused on several areas, including but not limited to HIV/AIDS, breast cancer, tobacco cessation, and health services research. My research on perceptions and practices of primary care providers concerning tobacco cessation and minorities was published in the 2011 July issue of the *Journal of the National Medical Association*. I would like to continue in this manner by submitting and publishing work that will help to eliminate health disparities. My long-term career objective is to become a collaborative researcher who specializes in community-engaged research among diverse populations. It is also my desire to gain the necessary tools to expand on my knowledge and skills in developing, testing, and implementing health promotion interventions that are culturally sensitive and tailored for minorities and disadvantaged individuals. More importantly, I would like to work with mentors who will help me to (1) expand my knowledge in qualitative research design as it applies to using social marketing principles to tailor interventions for unique settings and population segments; (2) expand my ability to conduct data analysis using multilevel sampling; and (3) apply for future independent research funding for a multilevel, mixed method study of patients, health care providers, and built environments that influence culturally sensitive health care.



**Rasheed A. Balogun, M.D., F.A.C.P., F.A.S.N., H.P.  
(A.S.C.P.)**

Chair, Faculty Recruitment, Retention, Retirement, and Welfare  
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***Research Interests***

I am a nephrologist with advanced training and expertise in extracorporeal therapies, the use of highly specialized techniques for blood purification. My clinical responsibilities include providing care for patients focusing on prevention and treatment of chronic kidney disease and using specialized blood purification techniques like therapeutic apheresis to treat renal, neurological, and hematological disorders. My areas of interest in clinical research have included examination of outcomes (morbidity and mortality) in older dialysis patients (“geriatric nephrology”) with clinical depression, especially, and I am currently involved in trials looking at novel blood purification techniques that are promising for acutely ill patients who have kidney and liver failure.



**Detrice Green Barry, Ph.D., M.S.N., R.N.**

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***Research Interests***

My research interests include shared decision making in the bleeding disorder (hemophilia) community and virtual simulation and technology development.



**Mohamed A. Bayorh, Ph.D.**

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***Research Interests***

My major research interests are in elucidating the mechanism(s) involved in salt-induced hypertension and in the role of eicosanoids in health. I am particularly interested now in understanding the vasculopathic effects of one of the major culprits associated with the reninangiotensin-aldosterone system (RAAS), aldosterone, which is significantly elevated following high salt administration in Dahl rats. Other research interests of my laboratory pertain to better understanding the role of the glucocorticoids on vascular structure and function in the progression of metabolic syndrome in Zucker obese rats. Hypercholesterolemia and hypertension may precipitate one another, resulting in significant vascular remodeling and end-organ damage.



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

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***Research Interests***

My research interests and activities include (1) using brain functional magnetic resonance imaging (fMRI) to define the neural correlates of obesity in American Indians; (2) using a rodent model to study the neurobiology of reward-based appetitive behavior; (3) investigating satiety and changes in incretin hormones within the context of differing macronutrient paradigms in pre- and postgastric bypass surgery patients longitudinally; (4) using community-based participatory 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. My NMRI work is funded by the NIH/NIDDK K23.



**Shawn M. Bediako, Ph.D.**

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***Research Interests***

I am a community and social/health psychologist whose primary research focuses on the psychological, interpersonal, and behavioral experiences of adults living with sickle cell disease. My current program of research explores the clinical implications of sickle cell disease stigma, and I am initiating another line of inquiry that examines the relations among physical activity, eating behavior, and metabolic syndrome risk in sickle cell disease.

**Ruby Benjamin-Garner, Ph.D., M.P.H.**

Assistant Professor, Non-Tenure Research  
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***Research Interests***

In general, I am interested in determining factors associated with health disparities and development of interventions to reduce racial/ethnic and socioeconomic disparities in health and disease outcomes. I am interested in health care quality improvement (QI) as a means of improving health outcomes in minority and low-income populations and the impact of QI on health disparities. Primarily, I am interested in chronic diseases, such as cardiovascular diseases, diabetes, obesity, and chronic kidney disease, to name a few.



**Rhonda Bentley-Lewis, M.D., M.B.A., M.M.Sc.**

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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 NIH/NIDDK, 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.



**Shirley A. Blanchard, Ph.D.**

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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.

## **Maha Bektur, M.D., M.P.H.**

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### ***Research Interests***

In the United States, disparities in health care delivery and access are apparent between different racial and ethnic groups. Minorities, including African Americans, often suffer unreasonably from chronic diseases compared to Caucasians. The relative contributions of genetic and environmental factors to this susceptibility are not yet well understood. In the field of organ transplants such as kidney and liver, access to transplantation, both from deceased and living donors, also is restricted in many minority populations, and graft survival is often inferior. Disparities have been identified as a problem, and this could be due to barriers in early screening and treatment choices. Analysis of the explanations is complex because of the many confounding factors such as those that are cultural, social, and economic. I am very interested in addressing these barriers to increase cultural awareness by physicians; steps then can be made to reduce health care disparities.

## **Nawal Boukli, Ph.D.**

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### ***Research Interests***

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



**L. Ebony Boulware, M.D., M.P.H., F.A.C.P.**

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***Research Interests***

I am a general internist and clinical epidemiologist committed to improving quality and equity in the health and health care of patients affected by chronic illnesses such as chronic kidney disease, hypertension, and cardiovascular disease. I have studied the influence of medical, social, community, and health care system factors on these conditions. My research program seeks to improve health through practical strategies that are informed by patient and community needs. I also am dedicated to training the next generation of researchers who seek to improve quality and equity in health and health care.



**Lynda M. Brown, Ph.D.**

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***Research Interests***

My research focuses on sex differences in diet-induced obesity, especially the role of ovarian hormones and in central and peripheral inflammation through the life cycle. My long-term research goal is to understand the mechanisms involved in the anti-inflammatory effects of ovarian hormones and their neuroprotective actions. An emerging area of interest is to study multigenerational impacts of obesity, specifically, if maternal high-fat diet during development alters brain circuits in the pups to favor obesity.



**Natasha A. Brown, Ph.D., M.P.H.**

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***Research Interests***

My work utilizes health behavior and family science theories to investigate sociocultural and familial influences on obesity development and the risk of obesity-related chronic diseases, particularly among children of color. More specifically, my research aims to improve the understanding of the intersection of ethnic identity, culture, and extended family environments and how it influences children's development of dietary and physical activity behaviors, with the goal of developing family-based childhood obesity interventions.



**Susan D. Brown, Ph.D.**

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***Research Interests***

My research focuses on health behavior change for chronic disease prevention. Specifically, I examine the effectiveness, implementation, and reach of weight-management lifestyle interventions designed to reduce the incidence and burden of chronic diseases—such as type 2 diabetes—among adults at high risk. For example, I seek to develop and test theory-based patient engagement strategies for lifestyle programs in real-world health care settings, with a focus on serving women from racial and ethnic minority groups. I am a licensed clinical psychologist and completed my doctoral degree at Boston University, generalist clinical training at the San Francisco Veterans Affairs Medical Center, and postdoctoral research fellowship at the Stanford University School of Medicine. My experience includes conducting original quantitative and qualitative research, directing and providing consultation for behavior change interventions within large randomized clinical trials, evaluating patient-engagement strategies, collaborating with clinical leaders, systematically evaluating fidelity to intervention protocols, and recruiting and retaining diverse research samples. The objectives of this program of research are to apply the theory and practice of behavior change within health care delivery systems to promote chronic disease prevention at a population level.



**Gregory W. Buck, Ph.D.**

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***Research Interests***

My research interests include: (1) global gene regulation of *Vibrio vulnificus* pertaining to pathogenesis; (2) antibacterial properties of surfactants, nanoparticles, and Mexican herbal plants; (3) analysis of health disparities between diabetic Hispanics and Caucasians in effects of MRSA colonization on amputation rates; and (4) DNA repair in enteric bacteria and the evolution of general repair mechanisms throughout bacterial families. My laboratory trains graduate students, undergraduates, and a select few gifted high school students.



**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.



**Jarrett D. Cain, D.P.M., M.Sc., F.A.C.F.A.**

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***Research Interests***

I am an active basic science and clinical researcher. Along with publishing scientific papers and presenting at numerous academic meetings, I serve as a peer reviewer for various foot and ankle journals, review abstracts at scientific/research meetings, and served on various organization committees. My research focuses on foot and ankle disorders, diabetic bone healing/limb salvage, biomechanics, and clinical epidemiology.



**Kirk Campbell, M.D.**

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***Research Interests***

Kidney podocytes are the target cells for injury in human glomerular disease, a significant cause of end-stage kidney failure. Primary and secondary pathogenic processes affecting podocytes account for 90 percent of end-stage kidney disease at a cost of \$20 billion per year in the United States. A reduction in podocyte number (podocytopenia) directly correlates with the progression of several proteinuric kidney diseases, including focal segmental glomerulosclerosis (FSGS), IgA nephropathy, and diabetic nephropathy. Despite significant advances in the characterization of the molecular architecture of podocytes, the mechanisms underlying their survival, injury, and loss remain poorly understood. Validated therapeutic targets are scarce, and there currently are no podocyte-specific drugs commercially available. The overall goal of our research program is to enhance the pipeline of putative therapeutic targets available to tackle human glomerular disease by elucidating the details and functional significance of key signaling pathways that regulate podocyte injury and survival. We utilize cell-based assays and rodent models to identify and characterize key mediators of glomerular disease progression.



**Hector Carbajal, M.D.**

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***Research Interests***

My research interests include factors that relate to solid organ dysfunction and transplantation science. Most of my work has been centered at the clinical level. Replacing dysfunctional organs in people requires careful selection of candidates and careful application of multidisciplinary medical knowledge. This maximizes the function of the organ and the quality of life of the individual. Clinical trials and research are indispensable to consistently perfect what can be done for each individual patient and to do this in a safe and cost-effective way. Over the last decade, clinical transplant science has excelled at understanding how to achieve good short- and intermediate-term results. However, we now are trying to decipher what is necessary to attain better long-term outcomes.



**April P. Carson, Ph.D., M.S.P.H.**

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***Research Interests***

My research centers broadly on identifying and addressing factors associated with the development of diabetes and its vascular complications. I have a particular interest in understanding racial differences in glycemic markers and how these differences contribute to the development of cardiovascular and renal complications in minority populations. I have experience with several large observational cohort studies and have published on a range of social, clinical, and lifestyle factors related to the occurrence of diabetes and its vascular complications.



### **D. Roselyn Cerutis, Ph.D.**

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#### ***Research Interests***

The focus of my laboratory is lysophosphatidic acid (LPA) as a mediator in oral wound healing and inflammation. LPA is a potent, simple phospholipid mediator made by many cell types. LPA is a pleiotropic molecule with hormone- and growth factor-like properties. It binds to and activates its cognate G protein-coupled receptors (LPA1-6), each of which can signal through Gi, G12/13, and Gq and/or couple to the elevation of cAMP. Using an *in vitro* oral wound healing model, we have provided the first evidence that LPA controls the regenerative responses of human gingival and periodontal ligament fibroblasts. The present focus of our research is to understand the biochemical and molecular regulation of the LPA receptors on these cells, and to define the contribution played by each receptor subtype in controlling these “healing” responses, with emphasis on how these are altered under “diabetic” high-glucose conditions. We employ a combination of cellular, biochemical, and molecular approaches to investigate these changes. Other interests: adrenergic, purinergic, and serotonergic receptor pharmacology; adipokines.



### **Victor V. Chaban, Ph.D., M.S.C.R.**

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#### ***Research Interests***

I am Associate Professor of Medicine in the Department of Internal Medicine at Charles R. Drew University of Medicine and Science, Adjunct Associate Professor in the Department of Medicine at University of California, Los Angeles (UCLA) and Co-leader of the Education and Training Core at the UCLA Clinical and Translational Science Institute. My area of expertise is modulation of visceral pain. Currently, I serve as Executive Editor of *Journal of Autacoids and Hormones* and Editor-in-Chief of *International Journal of Research in Nursing*.

## **Healani K. Chang, Dr.P.H.**

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### ***Research Interests***

My research interests include the clinical and epidemiological study of insulin resistance and cardiovascular disease risk factors among adult Native Hawaiians and Hawaii's other multiethnic populations. Our current work involves a patient-centric, web-based diabetes program to improve glycemic control and reduce diabetes complications.



## **DeLawnia Comer-HaGans, Ph.D.**

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### ***Research Interests***

I am interested in health disparities research related to diabetes complications among adults and children, as well as among adults and children with disabilities, including intellectual and developmental disabilities. I also am interested in mental health disparities, obesity, and cardiovascular disease within this population.



**Leonor Corsino, M.D., M.H.S., F.A.C.E.**

Assistant Professor of Medicine  
Division of Endocrinology, Metabolism, and Nutrition  
Latino Medical Student Association, Faculty Advisor  
Duke School of Medicine  
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***Research Interests***

I am an Assistant Professor of Medicine in the Division of Endocrinology, Metabolism, and Nutrition at Duke University School of Medicine. My goal as a clinician scientist is to prevent and improve obesity, diabetes, and related conditions in minority populations. I have approached this interest through a diverse array of research studies: (1) community engagement projects in obesity; (2) implementation studies; (3) intervention studies; and most recently (4) studies to increase our understanding of biological factors contributing to these disparities in obese patients treated with bariatric surgery.



**Deidra C. Crews, M.D., Sc.M., F.A.S.N.**

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***Research Interests***

My core area of research addresses disparities in the care and outcomes of chronic kidney disease. I have examined the contribution of social determinants of health, including poverty and access to healthful foods, to disparities in kidney disease. My work in end-stage renal disease includes studies of the optimal timing and setting of dialysis initiation among vulnerable groups, and patient preparation for the start of renal replacement therapy.



**Luis Angel Cubano, Ph.D.**

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***Research Interests***

My research focuses on (1) development of natural compounds, and (2) training of under-represented populations in science, technology, engineering, and mathematics (STEM).



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

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***Research Interests***

Interaction of genetic and environmental factors in the prediction and prevention of prediabetes and diabetes; regulation of leptin in humans. Principal Investigator: Pathobiology and Reversibility of Prediabetes in a Biracial Cohort Study (PROP-ABC); Diabetes Control and Complications Trial/Epidemiology of Diabetes Interventions and Complications (DCCT/EDIC); and Diabetes Prevention Program (DPP)/DPP Outcomes Study (DPPOS).

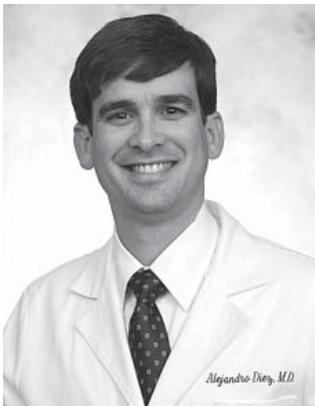


**Clarissa Jonas Diamantidis, M.D., M.H.S.**

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***Research Interests***

My research interests involve promoting engagement in kidney disease care by individuals at high risk for the incidence or progression of chronic kidney disease (CKD), with a focus on engagement by ethnic and racial minorities. Using relatively ubiquitous information technology tools such as websites and mobile health apps, my research goals include improvement of awareness of CKD by those at risk, reduction of adverse patient safety events in CKD such as medication errors, and facilitation of adherence to CKD care.



**Alejandro Diez, M.D., F.A.S.N.**

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***Research Interests***

My main area of interest is kidney transplantation. My current research focuses on recipient clinical outcomes following living kidney donation and transplantation of difficult-to-match recipients requiring kidney transplantation.



**Karen 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. 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.



**Aayoutunde Dokun, M.D., Ph.D.**

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***Research Interests***

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



## **Michael B. Duncan, Ph.D.**

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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 collagen, 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. In order 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.

## **O. Kenrik Duru, M.D.**

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### ***Research Interests***

I am a general internist and health services researcher interested in promoting physical activity and medication adherence among older minority adults, including those with diabetes. I hope to ultimately develop and implement interventions that improve outcomes among these patients. I have conducted and published several studies showing that clinical care strategies such as diabetes registries are not linked to reductions in black-white disparities in diabetes outcomes, while patient-level factors such as depression and medication adherence play a larger role. I also am interested in faith-based approaches to initiate and maintain physical activity among African-American women with diabetes and those at risk for developing the disease.

## **James Dzandu, Ph.D.**

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### ***Research Interests***

My research interests are in health disparities using the sickle cell disease model at several levels of analysis, including cells, proteomics, genomics, community, and individuals. I was one of the early graduate students at Wayne State University Comprehensive Sickle Cell Center in Detroit, Michigan. As part of my formal training in biochemistry, I spent several years studying the structure, functions, and interactions among molecules of life: proteins, nucleic acids, lipids, and carbohydrates. Part of my original research centered on a search for a unified theory of sickle cell disease, with membrane red cell abnormality as a central piece. Our work at Wayne State University School of Medicine benchmarked abnormal membrane protein phosphorylation in sickle cell disease. The test of time continues to highlight the importance of protein kinases as clever molecular control devices that drive many processes in health and disease states. Our earlier work focused on changes in red cell membrane structure (transmembrane signaling) in sickle cells as predictor variables for adhesion and/or red cell fragmentation. In 2009, we published studies on how fetal hemoglobin may be regulated through the effect of transcription factors, including Stat3 and GATA-1, with clues about the role of specific kinases. My current research interests are focused on hemoglobin A1C as a diagnostic marker for diabetes and prediabetes in emergency department patients. Beyond the diagnostic utility of A1C, I am interested in the identification of predictor variables of A1C. What factors determine A1C disparities among ethnic groups, gender, age, and so forth? Because there are hundreds of thousands of human proteins, what are the effects of glycation on these proteins? What will be the effect of glycation on kinases, receptors, antibodies, and structural proteins, and so forth? These ideas should drive basic research initiatives far into the future. Our current plan will establish the relationship between A1C and clinically meaningful patient outcome variables such as morbidity and mortality. As manager of clinical research at our level 1 trauma center and surgery residency program, I am actively involved in developing research agendas in areas of geriatric trauma, general surgery, robotic surgery, quality improvement efforts, and critical care issues. I continue to mentor medical students and surgery residents.



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

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***Research Interests***

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



## **Leonard E. Egede, M.D., M.S.**

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### ***Research Interests***

I am the Allen H. Johnson Endowed Chair and a tenured Professor of Medicine in the Division of General Internal Medicine and Geriatrics at the Medical University of South Carolina. I am the Director of the MUSC Center for Health Disparities Research and the Director of the Charleston VA HSR&D HEROIC, one of 19 nationally funded VA HSR&D Centers of Innovation (COIN). I am a general internist and health services researcher and have participated and led research projects designed to understand racial/ethnic variations in health care. My expertise is in the interplay among psychosocial factors, race/ethnicity, and health outcomes for chronic diseases, and development and testing of interventions to improve health behaviors in ethnic minorities with chronic medical and mental conditions. I am principal investigator (PI) of an NIH R01 (R01DK098529; 05/05/13-04/30/17) to evaluate the effectiveness of different technology-based diabetes education and skills training interventions in AAs with type 2 diabetes; PI on an NIH T35 grant (T35 DK007431-26) to train health professional students in research methods; and co-investigator on NIH R03 and VA HSR&D funded intervention studies. I also have an NIDDK K24 (K24DK093699), which provides protected time for mentoring. I also am conducting research on improving outcomes for noncommunicable disease (diabetes, hypertension and cardiovascular disease) in sub-Saharan African using innovative strategies. I have authored more than 180 original publications related to psychosocial influences and racial/ethnic differences in health outcomes in peer-reviewed journals. I was a standing member of the NIH scientific review study section, the Dissemination and Implementation Research in Health Study Section, and a member of the National Advisory Council of the Robert Wood Johnson Physician Faculty Scholars Program for several years. I am currently a Deputy Editor for the *Journal of General Internal Medicine* and on the editorial board of *Current Diabetes Reviews*. I also currently serve on the board of the Diabetes Initiative of South Carolina.



**Tolulope Falaiye, M.D., M.S.C.I.**

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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 inflammatory bowel disease, specifically, issues of transition of care to adult gastroenterology and outcomes research. Since arriving at Penn State, I established the pediatric IBD clinic and the pediatric IBD transition clinic at Penn State Hershey. Establishing the clinic included 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 (REACH-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 remains 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 impact the health of their families through lifestyle changes such as diet changes, increased exercise, and improved nutrition. Given that 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.



**Robert Ferry, Jr., M.D.**

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***Research Interests***

Our research is focused on diabetes mellitus and its complications, the endocrine sequelae of childhood cancer, and growth disorders in children.



**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.



**Michelle T. Foster, Ph.D.**

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***Research Interests***

The long-term goal is to identify and understand how adipose tissue contributes to the development, progression, and perhaps resistance to metabolic disease. Previous research focused on the role of visceral adipose tissue and its relation to insulin resistance. More specifically, we investigated the contribution of visceral-derived free fatty acid delivery in metabolic dysregulation via alterations in adipocyte expansion and fatty acid retention in the visceral bed. These studies focused on visceral fat-liver interactions and utilized surgical interventions (transplantation or removal of adipose tissue) and molecular techniques. The next step in the development of this research objective is to examine how extrinsic communication and concomitant adipocyte function of the visceral adipose depot are altered following energy storage perturbations. Extrinsic factors, such as neural regulation and the lymphatic system, can influence adipocytes and thus contribute to the behavior of adipose tissue depots. We postulate that these extrinsic factors not only play an important role in central/visceral obesity-mediated metabolic impairments but also in establishing the intrinsic characteristics of adipocytes in central adipose tissue depots. This research will provide new insight into how visceral adipose tissue contributes to obesity-mediated dysregulation.



**Martin Frank, Ph.D.**

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***Research Interests***

My research interests include excitation-contraction coupling in cardiac muscle and the effects of pharmacological interventions on the electrophysiology of isolated atrial muscle and the movement of calcium within the tissue. However, I have not been involved in research for many years, instead focusing my efforts toward association management and science policy.



**Brandi E. Franklin, Ph.D., M.B.A.**

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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 FDA-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 post-graduate 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. Over 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.



**Amanda Mae Fretts, Ph.D., M.P.H.**

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***Research Interests***

I am most interested in observational and interventional research aimed at improving the cardio-metabolic health of American Indians. I have been actively involved with the Strong Heart Study, a longitudinal study of cardiovascular disease and its risk factors in 13 American Indian communities, for the past 9 years. To date, my research efforts have primarily focused on the association of physical activity, diet, a healthy lifestyle, or gene-diet interactions with diabetes-related phenotypes. I am currently working on a project to better understand the social determinants of physical activity, diet, and cardio-metabolic health among American Indians, and to develop a culturally appropriate and targeted pilot intervention to improve the cardio-metabolic health of American Indians.

**Eduardo Fricovsky, Pharm.D.**

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***Research Interests***

My research interests include diabetic cardiomyopathy and the effects of enzymatic protein glycosylation (O-GlcNAc) in type 2 diabetic mouse hearts and their influence on cardiac function. Also, I conduct studies related to the expression of O-GlcNAcase (GCA), an enzyme that removes excessive O-GlcNAc modification and protection against cardiomyopathy. Furthermore, the abnormal calcium transients occurring in type 2 diabetic hearts are examined using transgenic animals.



**Crystal A. Gadegbeku, M.D., F.A.H.A., F.A.C.P., F.A.S.N.**

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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., R.N., C.D.E.**

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***Research Interests***

Over the past 15 years, 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 education programs. **Metabolic Research:** My studies have focused on differences in metabolic syndrome, insulin resistance, and its correlates in African Americans and white Americans. I am currently investigating the role of high density lipoprotein cholesterol (HDL-C) (quantity/function) and its associated proteins (Apo A1, ApoE and paraoxonase enzyme [PON1]) in the development of these diseases. In this context, HDL circulates in blood in different particle sizes (small, medium, and large) with varying metabolic and vascular properties that differ among ethnic/racial populations. I am interested in developing culturally specific lifestyle intervention studies that examine the role of HDL and other nontraditional risk factors in the prevention and management of prediabetes, type 2 diabetes, cardiovascular disease, and dementia. I believe understanding the role of HDL functionality and its subtypes on the vasculature (structure and function) could provide (1) new insights into the mechanisms of the atheroprotective effects of HDL; and (2) the potential to develop novel and therapeutic armamentarium to improve HDL as a nontraditional approach to preventing CVD, type 2 diabetes, and dementia in African Americans. **Community Diabetes Program:** I also am interested in community-based diabetes self-management and support for African Americans. I have demonstrated that patient-centered models are effective in lowering A1C in inner-city African Americans who have never attended a formal diabetes self-management and education program.



**Courtney E. Gamston, Pharm.D., Sc.M.**

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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 to 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 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.



**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 diabetic patients. I am specifically interested in how DNA methylation mediates tissue-specific gene expression patterns that define beta cell identity.



**Nasra Giama, D.N.P., R.N., P.H.N.**

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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 about hepatitis B and hepatitis C and liver disease among immigrant and refugee communities and identifying opportunities to intervene at the individual, community, and system level. 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***

I am a board-certified endocrinologist, cross-trained in diabetes and cardiovascular disease epidemiology. My research interests center around (1) identifying endocrine risk factors associated with the development of diabetes and cardiovascular disease; (2) examining mental health complications of diabetes and the biological, hormonal, and behavioral factors that explain these associations; (3) examining the association of endogenous sex hormones with atherosclerosis and insulin resistance in post-menopausal women; (4) understanding and eliminating diabetes health disparities; and (5) implementing and evaluating systems interventions to improve patient safety and quality of care in hospitalized patients with diabetes.



**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 clinical and translational research focuses on the effects of glucocorticoid hormones and PPAR-gamma agonists on the development of cardiac and hepatic steatosis. I am also very interested in the effects of antioxidants on the progression of atherosclerosis in type 2 diabetic patients.



## **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.



**Rasheeda Hall, M.D., M.B.A., M.H.S.**

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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 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 end-stage renal disease patients, and fracture prediction and management in older adults with kidney disease.



**B. Michelle Harris, Ph.D., M.P.H., R.D.**

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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 BMI. I also completed a study titled “The Relationship of Low Birth Weight and Current Obesity to Diabetes in African-American Women.”

## **Marquis Hawkins, Ph.D.**

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### ***Research Interests***

The title of my doctoral dissertation was “The Relationship Between Physical Activity and Chronic Kidney Disease/Kidney Function.” Using data from the National Health and Nutrition Examination Survey and the Strong Heart Study, I investigated whether physical activity can prevent the onset and/or slow the progression of chronic kidney disease (CKD). We showed that physical activity, specifically activities of light intensity, was independently associated with kidney function. We also showed that physical activity was associated with lower odds of rapid progression of kidney disease. Currently, I am part of a team that is conducting a pilot study investigating the impact of a lifestyle (diet, physical activity, and weight loss) intervention on cardiovascular risk factors in individuals with CKD. Given the complex dietary regimens of individuals with CKD, we hope to create an intervention that simplifies behavioral monitoring for this population. My future research goals are to investigate what factors mediate the relationship between physical activity and CKD progression.



## **Patricia Cristine Heyn, Ph.D.**

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### ***Research Interests***

My research interests encompass three investigational areas related to the effects of physical activity training on (1) metabolic syndrome (MetSyn) and insulin resistance, (2) cognitive function, and (3) cytokines and neurotrophic factors. I currently am evaluating the effects of exercise training with or without pharmacological treatment on selected metabolic markers (lipids, glucose, cytokines, and growth factors), obesity, lifestyle behavior, and cognitive function. I am constantly designing behavioral treatments for the prevention of cardiovascular diseases targeting adults with (1) mild cognitive impairments, (2) MetSyn, and (3) such disabilities as chronic tetraplegia. My research interests include establishing phenotypes for inherited forms of neurodevelopmental and neurodegenerative disorders and identifying preclinical stages of Alzheimer’s disease by biobehavioral, genetic, and neuroimaging markers. I have been involved in several international academic programs and scientific meetings. In December 2006, my research was featured in the most popular Argentinean newspaper, *La Nacion*, after I delivered a keynote lecture at the 6th Neuropsychological Argentinean Congress. My meta-analysis study is recognized as the Number #1 Top 25 SciVerse ScienceDirect: Archives of Physical Medicine and Rehabilitation Hottest Article.



**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., F.A.S.N.**

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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 have also been involved in creating statewide, community-based research into healthcare disparities related to chronic kidney disease and evaluating novel approaches to renal replacement therapies.



## **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 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.



## **Princess Imoukhuede, Ph.D.**

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### ***Research Interests***

I aim to advance our cellular and molecular understanding of receptor regulation through systems biology. I have extensive training in bioengineering and biophysics; as such, my laboratory leads efforts to sense, model, predict, and ultimately tune angiogenesis by both mapping cellular heterogeneity and integrating these parameters through computational modeling. I have recently pioneered a novel quantitative fluorescence approach for sensitive cell isolation and mapping of angiogenic receptor surface distributions. I have applied this technology to both animal models of breast cancer and ischemic disease. I incorporate these molecular and cellular data into multi-scale computational models. Such models have recently predicted the efficacy of anti-angiogenic therapeutics and identified novel drug targets and treatment schemes. My advancement of this bimodal, experimental, and computational paradigm accelerates discovery into the signaling cues mediating vascular growth and development.



**Carlos M. Isales, M.D.**

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***Research Interests***

Our laboratory is working to understand the impact of nutrients in stem cell division and regeneration and how this is impacted by the aging process. Our focus is translational for clinical applications for stem cell use.



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

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***Research Interests***

Focusing on the epidemiology, prevention, and control of obesity and type 2 diabetes, my past work highlighted the potential for health information technology to improve diabetes care, as well as racial/ethnic differences in (1) overweight/obesity trends within levels of educational attainment and (2) obesity-related mortality. As a postdoctoral research fellow at the Harvard School of Public Health, I am investigating the role of suboptimal diet and lifestyle as modifiable contributors to the disproportionate obesity and diabetes risk experienced by traditionally under-resourced populations. By centering my research objectives on modifiable, social determinants of obesity and diabetes, I plan to contribute to the translation of epidemiologic findings into interventions and policies that address structural macro-level, as well as individual-level, barriers to achieving and maintaining a healthy weight.

## **Cynthia Ann Jackson, Ph.D.**

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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 involved in water and electrolyte balances. Presently, I have two 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 and most recent project involves investigating signal transduction pathways and biomarkers involved in cell proliferation of renal carcinoma.



## **Cheedy Jaja, Ph.D., M.P.H., M.N., R.N.**

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### ***Research Interests***

My long-term career goal is to make substantial contributions to sickle cell disease analgesic pharmacogenetics by developing a robust pharmacogenetic research program centered on the clinical translation of inherited genetic variants that would foster the development of algorithms for appropriate selection of analgesics for pain management in sickle cell disease patients. My current NIH/National Institute of Nursing Research-funded study investigates incidence of suboptimal prescribing of analgesics and association between suboptimal prescribing, deficient cytochrome P450 (CYP2D6, CYP2C9, and CYP2C19) metabolic enzymes, frequent acute care visits, and quality of life in adult sickle cell disease patients.

## **Danese Joiner, Ph.D.**

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### ***Research Interests***

My current research focuses on the effect of interleukin-1 receptor-associated kinase 3 (IRAKM) genetic deletion on lung adenoma and adenocarcinoma. My research also is focused on single-immunoglobulin interleukin-1 receptor-related (SIGIRR) signaling during lung adenocarcinoma and the role of Transient receptor potential cation channel, subfamily V, member 4 (TRPV4) in lung adenocarcinoma EMT. I hope to utilize this research to protect and advance public health and to disseminate scientific knowledge to the public.



## **Stacy Jolly, M.D., M.A.S.**

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### ***Research Interests***

My research interests are in chronic kidney disease epidemiology and outcomes, with a particular focus on American Indians and Alaska Natives. I also am interested in chronic kidney disease knowledge and awareness, development of educational interventions, and use of technology or systems changes to improve the care of people with chronic disease. I have an NIH K23 Career Development Award.



**Arion Kennedy, Ph.D.**

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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.

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

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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 chronic kidney disease (CKD) patients, 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 be an integral part of these new health care models. I am interested in studying the impact of patient-centered medical homes on care delivery and reduction of health disparities in CKD patients.



### **Daniel T. Lackland, Dr.P.H.**

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#### ***Research Interests***

My research interests involve the population risk assessment of diabetes, cardiovascular disease, stroke, kidney disease, and hypertension. In particular, my work focuses on the biological and clinical factors, as well as the social determinants associated with disease. Our populations studies laboratory is also assessing the geographic patterns of disease through population-based cohort studies in the United States and around the world. We continue to include fetal and early-life factors in these population-based assessments. I also am involved in community- and population-based diabetes and high blood pressure control efforts. By working with international collaborators and the World Hypertension League, we are developing global health research projects focused on health disparities with a major component of training early-career clinical investigators in research methodology.



### **Joseph Larkin III, Ph.D.**

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#### ***Research Interests***

Our laboratory's primary focus is directed toward better understanding the balance between the immune system's ability to effectively eliminate pathogenic microorganisms and cancers, while remaining nonresponsive to self-tissues and commensal microorganisms. In general, the immune system is highly effective in limiting self-tissue damage; however, aberrant immune responses can result in the onset of the autoimmune diseases rheumatoid arthritis, type 1 diabetes, multiple sclerosis, and lupus. Recently, a subset of immune system cells, known as regulatory T cells, has been shown to be critical in moderating immune responses. We have recently shown that a cytokine inducible, intracellular protein, suppressor of cytokine signaling-1 (SOCS1), has a significant role in the regulation of Treg functions. As an extension of these findings, we are currently examining the role of SOCS1 in the regulation of immune cells, particularly Tregs, during lupus onset and progression (funded by the Lupus Research Institute). In separate research, partially supported by the Juvenile Diabetes Research Institute, we also are examining the capacity of gut bacteria composition to modulate immune system functions that promote type 1 diabetes onset.



### **Mark Andrew Lawson, Ph.D.**

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#### ***Research Interests***

We are investigating the molecular mechanisms of hormone action in the pituitary, with a special emphasis on factors controlling reproductive function. Current studies are focused on understanding the role of hormone action in regulating translation initiation and mRNA utilization. We also are interested in the mechanism of endocrine diseases affecting reproduction, such as polycystic ovary syndrome and type 2 diabetes. Our long-term interest is in understanding the integration of multiple hormone signaling pathways in the regulation of endocrine cell function.



### **Tennille S. Leak-Johnson, Ph.D., M.S.**

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#### ***Research Interests***

I aim to contribute to the understanding of the epigenetics and molecular epidemiology of diabetic nephropathy in high-risk populations. Previous research interrogated regions of the human genome for associations with type 2 diabetes and type 2 diabetes-associated end-stage renal disease in populations of African ancestry. My most notable findings published in, *Annals of Human Genetics*, include the identification of a novel locus, ELMO1 gene associated with type 2 diabetic nephropathy in two large African American case-control cohorts.

More recently, I embarked upon the next stage of my career by becoming the Associate Director of Systems Reforms at the Michigan Public Health Institute (MPHI). Here at MPHI, we house the Region 4 Midwest Genetics Collaborative funded by the Maternal and Child Health Bureau of the Health Resources and Services Administration, Genetic Services Branch, where we are tasked to strengthen and support the genetics and newborn screening capacity of the states, to improve the availability, accessibility, and quality of genetic services and resources for individuals having, or at risk for, genetic conditions and their families across the lifespan.

Additionally, I have a passion for improving human health, addressing health disparities in minority populations, and promoting outreach and education efforts to improve health.



## **Shirleatha T. Lee, Ph.D., R.N., C.N.E.**

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### ***Research Interests***

My research interests are focused on childhood obesity and the development of cardiovascular disease and diabetes in this population. I am very interested in pre-diabetes and cardiac autonomic dysfunction in obese youth. I would truly enjoy the opportunity to network with seasoned minority researchers. I would be interested in acquiring knowledge and expertise from mentors with similar research interests to help me become a successful biomedical researcher.

## **Shaye K. Lewis, Ph.D.**

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### ***Research Interests***

My research interests include the molecular characterization of normal and abnormal male genitourinary tract development, including the prostate, in order to define the etiology of congenital defects and prostate disease progression. Genetic, environmental, and hormonal insults sustained *in utero* are associated with congenital and adult onset diseases, even with apparently successful medical interventions. Genome-wide association studies can identify genetic variations to explain complex human diseases. I have identified chromosomal structural variations resulting in *de novo* copy number duplications and deletions in patients diagnosed with combined hypospadias and cryptorchidism. I hypothesize that these subtle chromosome aberrations affect dosage sensitive genes in these regions that are critical for genitourinary tract development. Subjects with combined hypospadias and cryptorchidism displayed distinct regions affected by submicroscopic chromosome duplications or deletions not detected in normal pregnancy-proven fertile controls or in the Database of Genomic Variants (<http://projects.tcag.ca/variation/>). Novel, candidate genes identified by aCGH may be required for normal genitourinary tract and male external genitalia development and function. Identification of such genes will improve patient diagnosis and perhaps treatment. Long term, I hope to develop more sensitive assays that, when utilized from a systems biology approach, result in a better understanding of the roles and interrelatedness that genomic, environmental, and hormonal insults have on genitourinary tract development. Ultimately, these will improve prevention, diagnosis, and treatment of diseases associated with genitourinary tract development and prostate disease progression in humans.



### **Zeenat Lila, Ph.D.**

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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, HPLC, and LC-MS/MS spectroscopy. 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.



### **Mary Frances Lopez, Ph.D.**

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#### ***Research Interests***

My research is focused on studying the role of insulin-like growth factor action-II (IGF2) in obesity and cancer. Obesity often is associated with substantial complications, including diabetes, cardiovascular disease, and death. I am currently performing gene expression studies to determine the mechanisms by which IGF2 regulates hepatic lipid metabolism. Since obesity is a significant risk factor for several types of cancers, I also am interested in determining the molecular basis of the connection between IGF2 and cancer.



## **Jesús M. López-Guisa, Ph.D.**

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### ***Research Interests***

Our laboratory's research focuses on the molecular mechanisms of renal interstitial fibrosis, particularly those changes occurring during the inflammatory and fibrotic stages. To study renal interstitial fibrosis, we use the unilateral ureter obstruction (UUO), Adriamycin<sup>®</sup>, puromycin, and protein overload models; for diabetic nephropathy, the streptozotocin (Stz) and db/db models are utilized. We have established that Timp1 deficiency does not alter the degree of interstitial fibrosis in either the murine protein overload or UUO models, possibly due to a genetic redundancy with genes such as *Timp2*. Additionally, we have demonstrated the fibrogenic role of PAI-1 (plasminogen activator inhibitor-1), proving its importance as a fibrosis promoting gene. Similar results were observed in two diabetic nephropathy models (Stz and db/db) using PAI-1 +/+ and PAI-1 deficient mice. Recent results using PAI-1 +/+ + mice have confirmed the importance of PAI-1 in renal fibrosis; mice overexpressing PAI-1 developed significantly more fibrosis than their wild-type counterparts. We also have shown that the uPAR gene attenuates renal fibrosis, possibly mediated by a urokinase-dependent—yet plasminogen independent—system. Our studies using uPA-null mice showed no difference in the fibrosis level between wild-type and null mice. This raises the question of the role of uPA in renal fibrosis, as well as its function in the absence of its receptor, uPAR, which may have antifibrotic properties. We have demonstrated the importance of the gp130 family of cytokines during the renal inflammatory process, prior to the chronic fibrotic stage. Preliminary results indicate that gp130 functions in a profibrotic capacity as an “alternative” receptor for uPA in the absence of uPAR. Studies have been initiated on the IL6 family of cytokines and the metabolic syndrome, focusing specifically on the role of macrophages during the inflammatory process.



**Ted Mala, M.D., M.P.H.**

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***Research Interests***

My interests are in the area of Native American Traditional Medicine. I strongly believe that culture must be integrated into Western medicine. To me, that means integrating cultural beliefs and practices into clinical medicine to form a more holistic approach to healing. I believe that clinical outcomes are strongly balanced with psychoneuroimmunology and that this can be demonstrated in all areas of clinical medicine. I am especially interested in the connection between Northern Circumpolar peoples and their relationship to Native Hawaiians and other Polynesian peoples.

**Alicia Mangram, M.D.**

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***Research Interests***

Many complications of diabetes, particularly those requiring surgical procedures, may be avoided or reduced in young individuals if effective early detection and management protocols are implemented. With regards to type 2 diabetes mellitus, initially my primary research focus was to identify undiagnosed type 2 diabetes among young individuals in order to reduce long-term, diabetes-related complications. Therefore, my research goals are to (1) develop a clinical paradigm/protocol specifically designed to identify diabetes and prediabetes, particularly in patients requiring surgical procedures; (2) develop a comprehensive multidisciplinary approach to diabetes care in order to address the plethora of medical and psychosocial needs of the young individual with diabetes and/or pre-diabetes; and (3) provide an opportunity for training minority physician residents with an interest in developing a clinical research career and to network with a critical mass of other minority research investigators. The research design and method is based on a current prospective observational cohort study of patients admitted to the Emergency Department with a general surgery or trauma admission. A1C is determined at the time of admission, and FPG measurements are done after patients are stable the following morning. Anthropomorphic data, prior medical and surgical histories, BMI, alcohol use, and smoking status are abstracted from medical records and then analyzed.



**Darius Mason, Pharm.D., BCPS**

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***Research Interests***

My research interests consist of describing and measuring the influence of chronic kidney disease management interventions on vitamin D and phosphorous metabolism. Specifically, my interest is focused on determining molecular mechanisms (i.e., cardiovascular and immunological) and pathways that are modified by these therapies.



**Marjorie K. Leimomi M. Mau, M.D., M.S.**

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***Research Interests***

My research interests are diabetes health disparities, especially among Native Hawaiians, Pacific Island peoples, and other Native populations of the United States; as well as community-engaged research as an effective approach to conduct translational research in metabolic syndrome, obesity, diabetes, and heart disease.



**Leon McDougle, M.D., M.P.H.**

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***Research Interests***

My research is focused on health empowerment technology for older African Americans and workforce diversity and inclusion.

**Eva M. McGhee, Ph.D., M.S.**

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***Research Interests***

I have two main research interests. The first is to study E6/E7 proteins of the high-risk human papillomaviruses that are associated with more than 95 percent of anogenital cancers. E6/E7 oncoproteins are consistently expressed in cervical cancer, and continued expression of E6/E7 is necessary for the induction as well as the maintenance of the transformed state. The main thrust of our studies is to determine chromosome instability and DNA repair mechanisms that are associated with E6/E7 protein's influence on cancer. A second interest of the laboratory is to delineate the function of genetic factors involved in diabetes, obesity, and kidney tumors.



### **Lancelot McLean, Ph.D.**

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#### ***Research Interests***

Our research interest involves investigating the mechanism of action of imidazoline compounds in the treatment of insulin resistance, hypertension, and metabolic syndrome X.

### **Tesfaye Mersha, Ph.D.**

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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 co-regulation of gene expression across the genome, data mining, and bioinformatics techniques for candidate gene prioritization procedures from linkage and expression studies. My long-term goals are to reduce childhood morbidity and mortality associated with metabolic and allergic disorders and to eliminate the significant racial disparities in asthma and asthma-related outcomes. To enhance my analytical skills for verifying statistical properties of biological problems as applied to admixed populations—such as ancestry inference, disease gene localization, evolutionary relationship, patterns of molecular diversities, and population structure in disease genetics—I will be actively involved in the NMRI program.



## **Nia S. Mitchell, M.D., M.P.H.**

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### ***Research Interests***

My career goal is to identify, evaluate, and facilitate the adoption of effective weight loss programs in underserved populations, specifically low-income and minority populations, who have been disproportionately affected by the obesity epidemic. Weight loss programs fail underserved populations for at least three reasons: (1) they are too expensive; (2) they are not geographically available; and (3) they do not help participants with long-term weight loss maintenance. My research is focused on addressing these issues.

My current research involves Take Off Pounds Sensibly (TOPS), a low-cost weight loss program with a national infrastructure. I am using the RE-AIM (Reach, Effectiveness, Adoption, Implementation, and Maintenance) framework to evaluate TOPS using its national database. I also have successfully piloted the program among older African American women in the Denver metropolitan area in the Senior Wellness Initiative and TOPS Collaboration for Health (SWITCH) project.

## **Jennifer Molokwu, M.D., M.P.H.**

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### ***Research Interests***

My overall research interest is in women's health and includes health education, health literacy, and chronic disease management. Currently, I am working on improving cervical cancer screening rates and HPV vaccination rates in Hispanic females. I also am working on a PCMH model for delivery of hepatitis C care, focusing on primary care physician education and community awareness of screening and treatment.



**Darren D. Moore, Ph.D., L.M.F.T.**

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***Research Interests***

My research, teaching, and clinical focus is the systemic examination and treatment of obesity, weight loss, eating disorders, and related addictions, with a special focus on men, African-American families, and other marginalized populations. My research interest includes examining barriers to treatment, psychological and psychosocial aspects, and couple and family relational dynamics regarding obesity, weight loss, eating disorders, and related addictions. My dissertation, "Life after Bariatric Surgery: Men's Perspectives on Self-concept, Intimate Relationships, and Social Support," explored the relational dynamics inherent when significant weight loss occurs in male-patient, female-spouse dyads. I am currently conducting a study titled "Health Disparities in Obesity and Bariatric Surgery Among African-American Men," which is focused on exploring the perceptions of weight loss surgery among an African-American male sample. My teaching includes training Master's level marriage and family therapy students and medical students in a family systems and collaborative approach to healthcare. Likewise, I focus on the history of obesity, the epistemology of obesity, obesity education, and intervention development. As a licensed Marriage and Family Therapist, my clinical work includes providing general mental health treatment to individuals, couples, and families, with a concentration in working with patients who are struggling with mental health, psychosocial, and relational aspects of obesity, weight loss, and eating disorders, including such topics as anorexia, bulimia, binge eating disorder, body dysmorphic disorder, negative body image, pre- and post-bariatric surgery, depression, and PTSD, among others.



**Stacey D. Moore-Olufemi, M.D.**

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***Research Interests***

My research focus is directed at pediatric intestinal failure, with a focus on gastroschisis-related intestinal dysfunction. I currently am using animal models to help elucidate the pathophysiology of intestinal dysmotility and shortened intestinal length seen clinically and in our model of gastroschisis. We also are interested in amino acid metabolism in intestinal failure and adaptation.



**Evangeline Motley, Ph.D.**

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***Research Interests***

The goal of my research is to delineate the signal transduction pathways that are involved in the development of such cardiovascular diseases as hypertension and atherosclerosis. I have studied various signaling pathways in my career, including alpha-1 receptor signaling in the vasculature and angiotensin II signaling. I currently am studying protease-activated receptor (PAR) signaling in endothelial cells and how it regulates endothelial nitric oxide synthase (eNOS) phosphorylation and nitric oxide production. In previous studies, my collaborators and I have shown that PAR-1 and PAR-2 differentially activate eNOS by different signaling pathways. We would like to further delineate the role of other PARs—such as PAR-3 and PAR-4—in the signaling pathways that lead to vascular inflammation, cell migration, and proliferation in cardiovascular diseases. Understanding the signaling pathways involved in these diseases will allow therapeutic agents to be developed at the molecular level.



**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.



**Keith C. Norris, M.D., Ph.D.**

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David Geffen School of Medicine  
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***Research Interests***

My research interests include the prevention and early intervention of chronic kidney disease (CKD) and CKD risk factors/complications in African-American and Latino populations. I also have interests in the role of vitamin D in CKD, hypertension and cardiovascular risk factors, and the interplay of social determinants of health and biologic mediators in health disparities, especially CKD and CKD risk factors.



**Benjamin Udoka Nwosu, M.D.**

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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 metformin therapy on glycemic control in children and adolescents with double diabetes. I am a Review Editor at *Frontiers in Endocrinology* and sit on the Editorial Board of *PREP Endocrinology*, as well as several other scientific journals.

## **Diana N. Obanda, Ph.D.**

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### ***Research Interests***

My research interests include the role of botanical compounds as complementary medicine for type 2 diabetes; specifically, the underlying cellular mechanisms by which natural compounds from botanical sources improve insulin sensitivity and reduce inflammation in type 2 diabetes and obesity. I am currently studying bioactives of *Artemisia* species and blueberries. I also study sphingolipid metabolism and its effect on insulin sensitivity in skeletal muscle and adipose tissue. I focus on how insulin resistance results from disruption of pathways of sphingolipid synthesis and metabolism.

## **Olorunseun O. Ogunwobi, M.D., Ph.D.**

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### ***Research Interests***

The overall goal of my laboratory is to elucidate the mechanisms of metastasis in solid organ cancers. Ongoing studies include examination of the role of circulating tumor cell biology and epigenetics in the metastasis of solid organ cancers. Also, my laboratory is investigating the biological mechanisms underlying the racial disparities in specific solid organ cancers. The cancer models we are currently using in our studies are hepatocellular carcinoma, pancreatic cancer, colon cancer, and prostate cancer.



**Tatiana Oliveira, M.D.**

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***Research Interests***

My line of work currently is a large study on adults with cerebral palsy who were evaluated as children, to study the epidemiology of epilepsy in these patients (especially after transition to adulthood, and the effects of aging in it). Furthermore, I also am studying the secondary health outcomes (cardiovascular, metabolic, and cognitive) of such a combination (cerebral palsy plus epilepsy) in this population.



**Kwame Osei, M.D., F.A.C.E., F.A.C.P.**

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***Research Interests***

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

## **Abdul Oseini, M.D.**

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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 (HBV) and hepatitis C virus (HCV) 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/NCI minority supplement at the Mayo Clinic in Rochester, MN. 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 lab is part of the NIH-sponsored Mayo Clinic–University of Minnesota Clinical Center Consortium of the Hepatitis B Research Network (HBRN).



## **Orhan K. Öz, M.D., Ph.D.**

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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.

## **Eric Patterson, Ph.D.**

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### ***Research Interests***

I am interested in vascular pathology associated with atherosclerosis and (re)stenosis of organs, such as the heart and the kidney. I would like to understand what role nutrition, specifically appropriate levels of vitamin D, plays in protecting major organs from the development of chronic diseases, such as atherosclerosis, and subsequent pathologies, such as restenosis. More specifically, I am interested in the effect of vitamin D on the immune cells, such as the monocyte/macrophage, and the role it plays in inflammation and resolution of injury in the vasculature. Long term, I am interested in the impact of poor diet and lack of physical activity in the development of such chronic disease as atherosclerosis, hypertension, and renal failure.



## **Yvette C. Paulino, Ph.D.**

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### ***Research Interests***

I am interested in helping communities achieve health equality. My research includes the epidemiology of areca (betel) nut chewing and poor health outcomes (including oral cancer, diabetes, cardiovascular disease, hypertension, and obesity) in Pacific populations. My most recent research is focused on preventing young childhood obesity by intervening at multiple levels of the socio-ecological model.



**Eribeth K. Penaranda, M.D.**

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***Research Interests***

I have a strong commitment to a cancer control career from the primary care standpoint. I am interested in investigating innovative strategies of cervical cancer screening, such as self-sampling for human papillomavirus (HPV), as well as strategies to increase HPV vaccination rates in the community. I also am interested in investigating strategies to treat and prevent obesity.



**Michelle Penn-Marshall, Ph.D.**

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***Research Interests***

I am an experienced academician with a strong background in teaching, research, and community outreach. Through my research in childhood obesity, diabetes, and health promotion, I have worked with undergraduate STEM students to develop strategies to increase the number of minorities participating in research from communities, public school systems, and faith-based organizations. My primary research interests include the prevention of chronic disease through the study of obesity, nutrition education and exercise; the study of epigenetics and obesity; and the retention of students. I currently serve as the Principal Investigator (PI) for the Washington Baltimore Hampton Roads Alliance-Louis Stokes Alliance for Minority Participation grant, to increase the number of underrepresented minorities who choose careers in STEM. In addition, I have served as the PI of pilot grants to study the effects of nutrition, exercise, and education with rural elementary school-age children and as the Co-PI of a National Library of Medicine Environmental Health Information Partnership Outreach Award. My students and I have disseminated health information to the lay community on health promotion and prevention programs regarding behavior and lifestyle changes affecting the school-age population who experience health disparities.



**Rocio I. Pereira, M.D.**

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***Research Interests***

My research focuses on the prevention of diabetes in Latinos. I conduct translational research exploring biological mechanisms for high insulin resistance among Mexican Americans. I have reported decreased circulating adiponectin in Mexican Americans after controlling for weight, BMI, and visceral adiposity. A current follow-up project is to identify nutritional factors associated with decreased circulating adiponectin and decreased insulin sensitivity in Mexican Americans. I am also the Program Director for a community translation project bringing the National Diabetes Prevention Program to Spanish-speaking Latinos in the Denver area and will be doing program implementation research related to this topic.



**Ariana Pichardo-Lowden, M.D.**

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***Research Interests***

My research focuses on the identification of gaps in care and the implementation of systems-based interventions to address barriers that prevent optimal delivery of care for patients with diabetes and hyperglycemia in the hospital setting. Dysglycemia is common among hospitalized patients and is associated with poor clinical and economic outcomes. Despite evidence of effective strategies for inpatient glycemic control and existence of clinical practice guidelines, inpatient glucose management remains suboptimal and patients at risk or with unrecognized diabetes are frequently overlooked.



### **Manu Platt, Ph.D.**

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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 Lab targets sickle cell disease and cancer metastasis. Mathematical models used by the Platt Lab add value to experimental systems by explaining phenomena difficult to test at the wet lab bench and to make sense of complex interactions among the proteases or the intracellular signaling changes leading to their expression.



### **Rosita Rodriguez Proteau, Ph.D., R.Ph.**

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#### ***Research Interests***

My research focuses on the development of various *in vitro* cellular models to explore and evaluate the mechanism by which xenobiotics damage or injure specific cell types of various organs or tissues. I mostly work with primary culture systems (liver, kidney, heart, and skin) and cell lines as experimental models to study the cellular and subcellular toxicity of selected xenobiotics using sensitive indices of cytotoxicity. I also perform drug transport and metabolism using a variety of intestinal models (*in vitro*, *in situ*, and *in vivo*) and perform pharmacokinetic studies. I am specifically interested in drug-dietary flavonoid interactions on drug transport, metabolism, excretion, and pharmacokinetic alterations resulting from these interactions. Using the intestinal drug transport model, Caco-2 cells, I am investigating the mechanism of cyclosporine A (CSA)-induced hyperlipidemia such that preventative measures can be taken to prevent the development of graft coronary vasculopathy. I also am investigating the effects of xanthohumol (XN) on cholesterol homeostasis. In this study, I am performing the pharmacokinetic studies of XN, as well as data analysis, and investigating the mechanism of cholesterol transport on the following transporters: ABCA1, ABCG5/G8, and NPIC1L1; I am using *in vitro* models and *in vivo* methods to evaluate cholesterol homeostasis.



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

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***Research Interests***

I am a health services researcher and social epidemiologist with primary interests related to promoting patient-centered care and addressing factors that contribute to race/ethnicity, gender, and socioeconomic disparities in healthcare quality and access to transplantation for patients with chronic kidney disease (CKD). My research encompasses a multidisciplinary, team-based approach to better incorporate patient preferences and enhance shared decision making about CKD treatments.



**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 also a DREAM Fellow with the NIMHD. The DREAM (Disparities Research and Education Advancing the Mission) is a (K22) Career Transition Award funded by the NIMHD. The award supports intramural and extramural career training and development in health disparities research.



**Marina Ramirez-Alvarado, Ph.D.**

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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 to design 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.



**Victor E. Reyes, Ph.D.**

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**Research Interests**

My research interests are in the area of gastrointestinal inflammation. Two major themes of my work are (1) understanding the pathogenesis and immune evasion mechanisms used by *Helicobacter pylori* and (2) characterizing the regulatory mechanisms of the intestinal lamina propria stroma in the immunopathogenesis of inflammatory bowel disease (IBD). For our efforts related to *H. pylori* we have used human *ex-vivo* systems and animal models to decipher mechanisms that are used by the bacterium to negatively affect protective T cell responses in order to establish chronic infection. For our work on IBD, we have used primary isolates of intestinal myofibroblasts, from individuals with IBD and controls, in coculture with naïve T cells to examine their influence on T cell phenotype and function as they correlate with the type of T cell responses in the IBD mucosa. To validate studies in the whole individual, we have used conditional mutant mice in which we can selectively ablate the expression of T cell co-stimulatory and co-inhibitory molecules on intestinal myofibroblasts.



**Fatima Rivas, Ph.D.**

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***Research Interests***

My research group discovers and uses natural products as chemical probes to identify, validate, and potentially treat biological targets in metabolic syndrome and chemo-resistant cancers. Our natural product screening campaigns generate lead matter and useful information against therapeutically relevant, yet challenging, biological targets. Our fundamental goals are the following: (1) identify unique natural products, (2) establish synthetic protocols for those molecules, (3) evaluate their structure activity relationship, and (4) identify their biological targets. Our natural and synthetic molecules are designed to provide basic mechanistic information regarding their mode of action and eventually progress from hit to lead. For the past 4 years, we have worked on developing modular synthesis to the acoranes, which target the enzyme 11 $\beta$  hydroxysteroid dehydrogenase type 1. We are using these compounds to better understand adipogenesis.



**Jesus Rivera-Nieves, M.D.**

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***Research Interests***

The inflammatory bowel diseases (IBD) affect over a million people in North America and their incidence is on the rise. These two chronic inflammatory conditions affect distinct intestinal segments and while ulcerative colitis involves strictly the large intestine, Crohn's disease may appear anywhere in the alimentary tract, from the mouth to the anus. Lymphocytes (T cells) are imprinted by dendritic cells with a cytokine (e.g., Th1, Th17) and homing program (e.g., CCR9,  $\alpha 4\beta 7$  integrin) and are in great part responsible for the perpetuation of IBD. The imprinting mechanisms that result in the expression of specific surface molecules required for the regional localization of IBD are only partially understood. The goal of our research is to further understand how T cells home specifically to distinct intestinal segments to explain the regional localization of the two main IBDs. We utilize a variety of mouse models of IBD, from simple chemically induced injury models (e.g., DSS) to immunologically manipulated models (i.e., CD45Rb<sup>high</sup> transfer) to spontaneous chronic models of colitis and Crohn's-like ileitis (i.e., TNF $\Delta$ ARE, SAMP1/Yit). Blocking traffic has been proven efficacious for the treatment of Crohn's disease, through the use of antibodies against integrins (i.e., natalizumab). However, in certain patients, serious complications from this therapy have occurred. Further understanding the mechanisms of traffic to the intestine will allow us to fine-tune this strategy for both efficacy and safety.



**Lewis R. Roberts, M.B., Ch.B., Ph.D**

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***Research Interests***

Research in my group includes (1) laboratory studies of the molecular mechanisms of liver carcinogenesis; (2) development and evaluation of biomarkers and clinical tests to improve the diagnosis and treatment of liver, bile duct, and pancreatic cancers; and (3) epidemiologic, clinical, and translational studies focused on improving the prevention, diagnosis, and treatment of hepatitis and liver cancer in sub-Saharan Africa and in minority and immigrant African and Asian communities in the United States.



**Beatriz Rodriguez, M.D., Ph.D., M.P.H.**

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***Research Interests***

I am a physician-epidemiologist who has devoted my career to diabetes and cardiovascular disease epidemiology. After completing my training in Public Health and Epidemiology at The University of Texas, I moved to Honolulu where I have served as Co-Principal Investigator of the Honolulu Heart Program since 1991. I was Principal Investigator of the Intermap Study Center, the SEARCH for Diabetes in Youth Hawaii Center, an Established Investigator Grant from the American Heart Association, and several other projects. I am Co-Director of the National Children's Study of the Hawaii Center and have served as Co-Investigator of the Women's Health Initiative. I was President of the American Heart Association (AHA) Hawaii Affiliate and served on the National Board of Directors of the AHA. I am currently on sabbatical working in Madrid, Spain.



**Mayra Rodriguez, M.D.**

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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 Masters 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 due 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 what is 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.



**Rudolph A. Rodriguez, M.D., F.A.C.P.**

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***Research Interests***

My research interests include (1) the interaction of HIV and kidney disease and (2) the interaction of race, kidney disease outcomes, and geography. I hope to better characterize the renal health services provided in racially segregated areas. Despite similar insurance coverage, dialysis patients living in racially segregated areas seem to have different rates of transplantation, and the health services provided seem to differ in comparison to nonracially segregated areas.



**José R. Romero, Ph.D.**

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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 mellitus: (1) the role of cellular magnesium in the pathophysiology of cardiovascular disease, and (2) the role of acute aldosterone responses in vascular inflammation. My group has led the discovery of a novel mechanism for the rapid/non-genomic 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 have formed the basis for our most recent NIH R01 grant award entitled, "Aldosterone, Intracellular Leukocyte Magnesium and Inflammation in Diabetes" from the National Heart, Lung, and Blood Institute, an ancillary clinical trial. A significant part of my professional activities is also devoted to mentoring junior faculty, fellows, and students at local, national, and international levels; I also am a consultant for medical research and training institutes in Puerto Rico, Portugal, and Mexico. For these contributions, I was honored to receive the A. Clifford Barger Excellence in Mentoring Award at Harvard Medical School. 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 Harvard Medical School.



**Sylvia E. Rosas, M.D., M.S.**

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***Research Interests***

My primary research focus is on cardiovascular disease in patients with chronic kidney disease (CKD), including dialysis and renal transplantation. I am an ancillary study investigator for the national Chronic Renal Insufficiency Cohort (CRIC) Study, evaluating the role of carotid intima media thickness to predict cardiovascular events in patients with CKD. Another area of research includes risk factors for progression of vascular calcification in CKD, including mineral metabolism disorders, inflammation, and oxidative stress. My research is funded by the NIH (National Heart, Lung, and Blood Institute and NIDDK) and the Veteran's Health Administration. I also am interested in health disparities research and in the professional development of minority faculty.



**Juan Sanabria, M.D., M.Sc., FRCS, FACS, FAASLD**

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Professor of Surgery  
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***Research Interests***

My research interest revolves at the level of basic, translational, and clinical research. We are exploring the chemical induced pathways of liver regeneration through the inhibition of the PG cascade and its effects in wound healing. Our more recent results were published this year in *Science*. The translational aspect involves the metabolomic prints (metabolomics) and the glutathione species behavior as biomarkers in patients with and without cirrhosis with tumors for the early detection of liver cancer. We have to open randomized trials for the evaluation of stereotactic body radio surgery (SBRT) in the treatment of advanced liver tumors. Lastly, we have been involved in the study of high-output outcomes at the global level in an attempt to explain the changes in health issues. Our group's work has been published this year in *The Lancet* and in *JAMA Oncology*.



**Virginia Sarapura, M.D.**

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***Research Interests***

My research has focused on several areas. As a trainee, I learned the basic tools of molecular biology research, and I investigated the mechanism of expression of the alpha-subunit of the pituitary glycoprotein hormones under the guidance of Dr. E. Chester Ridgway and his associates, Drs. William Wood and David Gordon. After that, I worked on the regulation of thyrotrope function by thyroid hormone, including the response of the different thyroid hormone receptor isoforms. I also explored other areas of investigation, including the expression of the glycoprotein hormone alpha-subunit gene in solid tumors, specifically lung cancer. Currently, I am interested in the genetic and epigenetic factors that predispose to the development of autoimmune thyroid disorders. My work primarily focuses on academic clinical practice and teaching.



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

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***Research Interests***

My research program addresses three main areas of aging and health promotion: (1) to assess the efficacy of nutrition and physical activity/exercise interventions on chronic disease risk factors and health outcomes; (2) to translate evidence-based lifestyle interventions into “real world” settings; and (3) to develop sustainable strategies to promote health and reduce the burden of chronic diseases. My translational research contributes to our understanding of the molecular and physiological declines that may increase vulnerability in older adults and the role of strength training and physical activity in disentangling components of the disablement process (from acquisition of risk factors and pathology, impairment and functional limitations, to disease, disability and poor quality of life). Additionally, my research findings provide examples of multidisciplinary approaches used to implement and disseminate effective exercise and physical activity promotion interventions to underserved communities and populations. I am an active member of the American Society for Nutrition, the Gerontological Society of America, the American Diabetes Association, and the American College of Sports Medicine.



**Isabel R. Schlaepfer, Ph.D.**

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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.



**Marion Sewer, Ph.D.**

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***Research Interests***

My research program has centered on investigating the mechanisms by which the steroid hormones are produced. Specifically, my laboratory is interested in how adrenocorticotropin (ACTH) controls steroid hormone biosynthesis in the human adrenal cortex. We have spent the past several years examining the mechanism by which ACTH signaling controls the transcription of cytochrome P450 enzymes (CYP) that metabolize cholesterol into steroid hormones (supported by NIH/National Institute of General Medical Sciences). Studies on the mechanism by which ACTH controls CYP17 transcription have resulted in several novel findings and have spawned new areas of investigation. In addition, we recently identified sphingosine as an antagonist and a short chain phosphatidic acid species as an agonist for the nuclear receptor steroidogenic factor-1 (SF-1). Since SF-1 is predominantly expressed in the nucleus, we have embarked on studies to characterize the nuclear lipid profile, to determine the mechanism by which these bioactive lipids are metabolized in nuclei, and to define how ACTH signaling regulates the activity and subcellular localization of enzymes that regulate sphingolipid and phospholipid biosynthesis (supported by NIH/NIDDK). Additionally, in work supported by NIDDK, we are investigating the mechanism by which ACTH signaling controls inter-organelle substrate trafficking and communication between the endoplasmic reticulum and mitochondria during cortisol production.



**Patricia Silveyra, Ph.D.**

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***Research Interests***

My research focuses on the molecular mechanisms involved in the development and resolution of pediatric and adult inflammatory lung disease. My laboratory uses a combination of molecular biology, immunology, and endocrinology approaches to study sex differences and hormonal regulation of miRNA and gene expression in lung cells in response to oxidative stress triggered by ozone and hyperoxia.

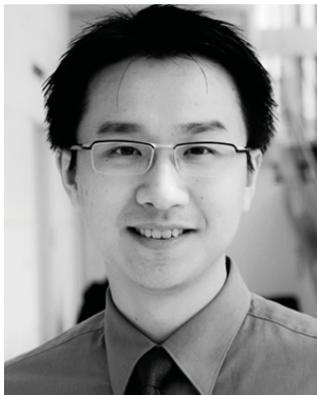
## **Omar Sims, Ph.D.**

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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 under-researched or under-represented in liver research: HCV-infected persons with co-existing alcohol, substance use, and psychiatric disorders, HCV/HIV co-infected persons, and African-Americans and other minorities living with HCV.



## **Ka-Chun (Joseph) Siu, Ph.D.**

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### ***Research Interests***

My primary research area is in both motor control and biomechanics, focusing on elderly populations and minorities. It includes fall prevention in aging, rehabilitation, and intervention. I am interested in studying the mechanism of human balance control and locomotion and have developed a training program for community-dwelling older adults; I am currently extending this research to minority populations. My second research area is focusing on motor learning in human performance. It includes skill acquisition, medical education, simulation technology, and telemedicine.



**Michael S. Spencer, Ph.D., M.S.S.W.**

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***Research Interests***

My research examines disparities in physical and mental health and service use among populations of color. I am the Principal Investigator of the REACH Detroit Family Intervention, an NIDDK funded, community-based, participatory research (CBPR) project which aims at reducing disparities in type 2 diabetes through the use of community health workers among African American and Latino residents in Detroit. Currently, I am developing new community-based, participatory research projects among Native Hawaiians and am particularly interested in the integration of community health workers into primary care settings among Native Hawaiian patients with type 2 diabetes.



**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.

## **Charmaine Stewart, M.D., F.A.C.P.**

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### ***Research Interests***

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



## **Alexis M. Stranahan, Ph.D.**

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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.



**April J. Stull, Ph.D., R.D.**

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***Research Interests***

My interests are in clinical and translational research. Most of my research has focused on botanicals and their impact on improving cardiometabolic risk factors. Specifically, we have found that consuming bioactives in blueberries for 6 weeks improved insulin sensitivity (*Journal of Nutrition*, 2010) and endothelial function (*Nutrients*, 2015) in an obese population with pre-diabetes and hypertension. We used the “gold standard” hyperinsulinemic euglycemic clamp to access insulin sensitivity and EndoPAT technology to access endothelial function. Besides my clinical research projects, I am also exploring the cellular mechanisms by which blueberries enhance insulin sensitivity.



**Jorge Suarez, M.D., Ph.D.**

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***Research Interests***

I am investigating novel approaches to treat and cure heart failure. Among those approaches is cutting-edge, vector-based gene therapy. I discovered that a new protein called Sorcin is able to alleviate cardiac failure of mice with diabetic cardiomyopathy. In addition, I was able to rescue cardiac failure by over-expressing SER-CA2a in an inducible way in the heart of pressure-overloaded and diabetic mice, using a novel line of transgenic animals that I designed and engineered. More recently, my focus of research is the study of excessive enzymatic glycosylation of proteins in the diabetic heart. My interest is concentrated in the mitochondria of cardiac myocytes and the effects of excessive glycosylation of mitochondrial proteins and the mechanisms that lead to energetic inefficiency in the diabetic heart.



## **Jacqueline C. Tanaka, Ph.D.**

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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 STEM education training, their faculty, and providing used laboratory equipment. In my role in the PSM 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.



**Heather Tarleton, Ph.D., M.S., M.P.A.P.**

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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, cardiorespiratory 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 STEM 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 (CUR).



### **Bolaji Thomas, Ph.D.**

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#### ***Research Interests***

Research in my laboratory is focused on three key areas: genetic deconvolution and population structure of sickle cell disease (including functionality of complement regulatory genes in sickle cell pathophysiology); metagenomics and expression profiling of *Leishmania mexicana* persistent parasitemia and chronic disease; and elucidation of the invasion mechanism driving *Plasmodium vivax* infection in Duffy-negative individuals. In addition, I am a faculty mentor for both the Federation of American Societies for Experimental Biology Maximizing Access to Research Careers (FASEB-MARC) Program and McNair Scholars Program at Rochester Institute of Technology. I also am a Board Member for the Louis Stokes Alliances for Minority Participation (LSAMP), leading the effort to recruit and train minority undergraduate students in biomedical sciences.



### **Claire K. M. Townsend, Dr.P.H.**

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#### ***Research Interests***

My research interests focus on addressing health disparities in Native Hawaiians and other Pacific Islanders using a social determinants of health framework. I am committed to working with communities to continue to develop CBPR partnerships, which will examine social determinants of health, enable communities, researchers, and policy makers to effectively address them, and result in improved health for all residents of Hawai'i. Currently, I am working with communities to disseminate and implement evidence-based, culturally relevant healthy lifestyle interventions. I also am interested in how racial microaggressions manifest for Native Hawaiians and the health and well-being impact of these experiences.



**Carolyn M. Tucker, Ph.D.**

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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 (a) culturally sensitive health promotion and health care to prevent and reduce obesity, hypertension, type 2 diabetes, and colorectal cancer, (b) the integration of health promotion into medicine, and (b) community health empowerment to reduce health disparities that affect racial/ethnic minority and economically disadvantaged communities. My current research studies involve (a) developing and testing interventions to prevent and reduce obesity in at-risk communities and (b) 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 95 published, refereed articles and have received more than \$11 million in research grants.

I am proudest of the fact that under my mentorship, 50 doctoral students (42% of whom are racial/ethnic minorities) have received their Ph.D. degrees, and 48 graduate students (49% of whom are racial/ethnic minorities) have received their Master's degrees.



**Crystal C. Tyson, M.D.**

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***Research Interests***

My research interests include non-pharmacologic 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.

## **Lisa VanHoose, Ph.D.**

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### ***Research Interests***

My research interest focuses on genetic and environmental factors causing lymphatic dysfunction that contributes to cardiovascular and lymphatic vascular diseases. I am particularly interested in structural and molecular changes in the cardiac lymphatic system related to diabetes. We have discovered interesting, novel findings regarding PROX-1, a lymphangiogenic transcription factor, under the backdrop of diabetes in Zucker diabetic fatty rats. I am preparing a grant application to continue exploring changes in lymphangiogenesis in another animal model of type 2 diabetes. I am currently investigating obesity-related secondary lymphedema in humans, and 100 percent of the subjects have a co-morbidity of type 2 diabetes. I have requested internal funds to evaluate gene expression in these subjects compared to age-matched healthy controls.

## **Roberto Vargas, M.D., M.P.H.**

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### ***Research Interests***

My research interests include the design and testing of interventions to improve quality of care and to reduce health disparities. This includes efforts to reduce disparities in cancer outcomes, improve detection and treatment of kidney disease, and improve management of chronic disease. In addition to conducting policy analyses and health services research, I am also engaged in community-partnered research projects to reduce disparities in cancer care and to address negative social determinants of health.



## **Janelle D. Vaughns, M.D.**

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### ***Research Interests***

I am interested in health disparities within the obese pediatric and adolescent surgical community. Specifically, as a pediatric anesthesiologist, I am studying the role of pharmacogenetics in fatty liver through Pk/Pd modeling. I want to explore the possible genetic variations in the cytochrome P450 systems and anesthetic drug metabolism within ethnic populations diagnosed with nonalcoholic steatohepatitis. Currently, I am funded through the Pediatric Trials Network/Duke University to undertake pharmacokinetic studies to support the relabeling of intravenous midazolam for use in obese children.

## **Francisco Villarreal, M.D., Ph.D.**

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### ***Research Interests***

Diabetes mellitus is the fastest growing pathology in the United States. In the last 2 years, 3 million more Americans have been diagnosed with the disease. Under the umbrella of an NIH-sponsored program project (National Center on Minority Health and Health Disparities-sponsored EXPORT grant, Dr. Sandra Daley, PI), we have undertaken a research effort jointly with Dr. Wolfgang Dillmann, Chief of Endocrinology at the University of California, San Diego, to examine the *in vitro* and *in vivo* effects that diabetes has on cardiac diastolic function. Efforts focus on alterations that arise in both cardiac myocytes and fibroblasts. Animal models of type 2 diabetes are used, including transgenic animal models. Our laboratory also has undertaken a project related to the characterization of the cardioprotective actions of cocoa flavanols on animal models of ischemia reperfusion injury, currently sponsored by a National Center for Complementary and Alternative Medicine R21. Cocoa flavanols are known to have beneficial effects in humans within a large dose range and with no toxic effects. Our intention is to demonstrate that the cocoa flavanol epicatechin can exert cardioprotective actions. For this purpose, we are currently pursuing studies *in vitro* and *in vivo*. Our expectation is to take our concept to initial clinical trials within a short time frame.

## **Phyllis Wallace, Dr.P.H.**

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### ***Research Interests***

My research interests include health disparities, cancer control and prevention, minority health, adolescent health, gender minority health, behavioral interventions, medical home, qualitative research, and mixed methods design. I also examine the benefits of fruit and vegetable consumption and physical activity as predictors and promoters of health and well-being.



## **Fern Jureidini Webb, Ph.D.**

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### ***Research Interests***

My research agenda focuses on health intervention models, using community-based asset models to improve health behaviors and decrease health disparities among African Americans. My research interests include (1) implementing evidenced-based health programs in community settings to improve health outcomes and decrease health disparities among African Americans, and (2) developing a community-based participatory research agenda where I collaborate with community organizations and community members to develop, implement, and evaluate programs designed specifically to meet the unique needs of African-Americans living with chronic diseases. For example, I served as the principal investigator on the Winning Over Weight Wellness program (WOW Wellness) in 2010 designed to assist African-American women and their families incorporate simple behavioral changes into their everyday lives in efforts to decrease weight. In addition, my research now focuses on community-engaged research; I received an NIH diversity supplement to work with Dr. Linda Cottler's (PI) NIH NIDA (R01) grant, "Transformative Approach to Reduce Research Disparities Toward Drug Users" (2012-2014). Through this opportunity, I am learning how to conduct community-engaged research as am exploring the willingness of community members in northeast and central Florida to engage in research studies to improve chronic diseases and health outcomes.



**Richard O. White III, M.D., M.Sc.**

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***Research Interests***

I was trained as an Internist and Pediatrician at Vanderbilt University and completed my Master's in Clinical Investigation at Meharry Medical College in 2010. My research focuses on the impact of health literacy and health communication on diabetes and obesity prevention/management for Latino and African American adults and children. I am currently involved in several community-engaged efforts to understand better the nature of the patient-provider interaction on diabetes care and the facilitators and barriers to healthy lifestyle among adults and youth in northeast Florida. I am currently beginning my fourth year of a K23 Career Development Award through NIDDK and hope to move toward research independence with a career that focuses on the development, cultural-tailoring, and implementation of family-based interventions to improve health outcomes for minority patients and address disparities of care.



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***Research Interests***

My research focus is health disparities. My interests are behavioral interventions developed through community-based participatory research (CBPR) interventions, obesity, physical activity, cardiovascular disease, and the development of sustainable translational interventions. Additional interests include stroke prevention and diabetes biomarkers predicting incident diabetes.



**Greta Berry Winbush, Ph.D.**

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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 over 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.

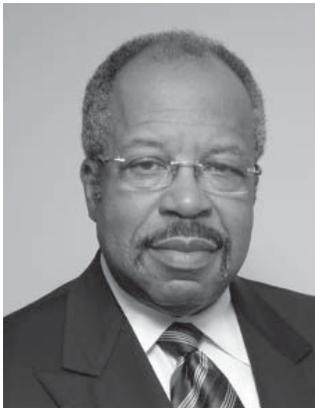


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***Research Interests***

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.



**Jackson T. Wright, Jr., M.D., Ph.D., F.A.C.P.**

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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 member of the Executive Committee of CWRU's CTSA. 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-PI of one of seven clinical networks in the NIDDK-sponsored Chronic Renal Insufficiency Cohort (CRIC) Study (40% black) and PI of one of the five clinical center networks in the NHLBI-sponsored Systolic Blood Pressure Intervention Trial (SPRINT).



**Bessie A. Young, M.D., M.P.H., F.A.C.P., F.A.S.N.**

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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 differences in kidney disease-related health disparities and to develop interventions aimed at decreasing health disparities in CKD and ESRD outcomes. My research program currently focuses on evaluating risk factors for cardiovascular outcomes, CKD and CKD progression, and mortality in the NIH NIDDK-funded Jackson Heart Study. My research projects include the NIH-funded Increasing Kidney Disease Awareness Network (IKAN) Transplant project, which involves the development and testing of new educational materials for patients with late-stage CKD. In addition, we are developing kidney disease telemedicine intervention programs within Veterans Affairs that focus on increasing specialty-primary care interaction using the Specialty Care Access Network Extension for Community Health Outcomes (SCAN-ECHO) model to improve rural access to nephrology care. We also are evaluating CKD-related outcomes in two large diabetes cohorts: the Pathways Study and the VA Pathways Study. 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 Nevis and St. Kitts. Currently, my research program receives NIH and VA funding, which supports several co-investigators and graduate students.



**Anna Zamora-Kapoor, PhD.**

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***Research Interests***

I am committed to study populations that are poor, discriminated against, and exhibit compromised health. As a Senior Fellow at the University of Washington, I have built research expertise in the social determinants of health and health disparities, with special interest in obesity and diabetes outcomes among American Indians and Alaska Natives (AI/ANs). Since I started my postdoctoral fellowship, I have received six awards: the 2014 Transnational Research Science Award from the Network of Minority Research Investigators at NIDDK for one of my papers, a cross-center trainee research award to collaborate with the UCLA School of Public Health, three travel awards, and one award for my PhD dissertation at Columbia. I have also received a pilot grant from the Center for Child and Family Well-being at the University of Washington, to study the role of infant-feeding practices in American Indian infants' gut microbiota and weight gain.

# **Network of Minority Health Research Investigators**

## **13th Annual Workshop**

### **National Institute of Diabetes and Digestive**

### **and Kidney Diseases**

### **National Institutes of Health**

#### **Bethesda Marriott**

#### **Bethesda, MD**

#### **April 16–17, 2015**

### **Final Summary Report**

**Thursday, April 16, 2015**

#### **Introductions**

***Rhonda Bentley-Lewis, M.D., M.B.A., M.M.Sc., Assistant Professor of Medicine, Harvard Medical School/Massachusetts General Hospital***

***Winnie Martinez, Program Officer, NMRI, NIDDK, NIH***

Dr. Rhonda Bentley-Lewis, chair of the NMRI Planning Committee, welcomed the participants to the 13th Annual Workshop of the NMRI. NMRI, established in 1999 by the Office of Minority Health Resource Center at the NIDDK, was designed to comprise biomedical research investigators and technical personnel interested in minority health research and to include individuals from populations traditionally underrepresented in biomedical research. The mission of NMRI is to: (1) encourage minority health investigators to be researchers in fields of interest to the NIDDK; (2) promote two-way communication between members of NMRI and the NIDDK; (3) gather recommendations for strategies to enhance opportunities that not only support but advance underrepresented individuals and others in biomedical research; and (4) advance scientific knowledge and contribute to the reduction and elimination of racial and ethnic health disparities.

Dr. Bentley-Lewis stated that NMRI falls under the leadership of Dr. Griffin P. Rodgers, Director of the NIDDK, and Dr. Lawrence Agodoa, Director of the NIDDK's Office of Minority Health Research Coordination (OMHRC), and is supported and guided by Ms. Winnie Martinez.

Dr. Bentley-Lewis expressed appreciation to the NMRI Planning Committee, the NMRI Oversight Committee, and the professional societies that helped support the meeting, including the previous evening's Reception/Networking Event sponsored by the American Gastroenterological Association.

Ms. Martinez thanked the attendees for their participation and attendance on behalf of Dr. Agodoa, who expressed pride regarding the group's accomplishments. Dr. Bentley-Lewis invited all of the meeting participants to introduce themselves to the group.

## **Welcoming Remarks**

### **Our Diverse Health Challenges Require a Diverse Workforce** ***Gregory Germino, M.D., Deputy Director, NIDDK, NIH***

Dr. Gregory Germino welcomed the meeting participants on behalf of Dr. Rodgers and the NIDDK. Dr. Germino stated that the research mission of the NIDDK, one of NIH's 27 Institutes and Centers, is to support and conduct research on common, costly, and consequential diseases that affect nearly all of the organs below the diaphragm as well as a few above, such as the esophagus. The NIDDK is divided into the Office of the Director, three extramural divisions (Division of Diabetes, Endocrinology, and Metabolic Diseases; Division of Digestive Diseases and Nutrition; Division of Kidney, Urologic, and Hematologic Diseases), the Division of Intramural Research, the Division of Extramural Activities, the Office of Obesity Research, OMHRC, and the Division of Nutrition Research Coordination.

NIDDK's funding portfolio includes both basic and clinical research. The NIDDK's budget for fiscal year 2014 was \$1.7 billion, with an additional \$150 million special appropriation for type 1 diabetes research that also includes funds to other Institutes and the Centers for Disease Control and Prevention (CDC). Extramural activities account for 80 to 85 percent of the budget, approximately 9 percent is dedicated to the intramural program, 4 percent is allotted to overhead, and some goes to contracts that support administrative and research activities. Dr. Germino stated that NIDDK aligns its budget with its core principles, which are to: (1) maintain a vigorous investigator-initiated research portfolio; (2) support pivotal clinical studies and trials; (3) preserve a stable pool of talented new investigators; (4) foster exceptional research training and mentoring opportunities; and (5) ensure knowledge dissemination about clinically impactful research. That is, approximately 60 percent of NIDDK's budget supports R01 awards; 15 to 20 percent supports other R award mechanisms; 15 to 20 percent supports clinical consortia, networks, and other initiatives; and the remaining funds support training and career development (e.g., K awards).

Dr. Germino remarked that many diseases that fall within NIDDK's primary mission disproportionately affect African Americans, Native Americans, Hispanic Americans, Pacific Islanders, and Asian Americans. He elaborated on the large ethnic and racial differences that exist in prevalence rates of obesity and diabetes. Obesity has become a critical national and global concern because it fuels multiple medical problems and its risks are significant for morbidity and premature death. Obesity is a major risk factor for type 2 diabetes, and the burden of diabetes is paralleling that of obesity both in the United States and globally. Dr. Germino stated that in the United States in 2012, 9.3 percent of the population (29.1 million people) were affected by diabetes, a number that could increase to 33 percent by 2050. Among Americans 20 years of age or older with diabetes, racial and ethnic age-adjusted percentages are 15.9 percent for Native Americans, 13.2 percent for non-Hispanic African Americans, 12.8 percent for Hispanics, 9 percent for Asian Americans, and 7.6 percent for

Non-Hispanic whites. Diabetes is the seventh leading cause of death, the leading cause of new blindness among adults ages 20 to 74, a major cause of lower limb amputations, and a cause of major birth defects. In addition, it increases the risk of heart disease two- to fourfold and is the leading cause of irreversible kidney failure. The annual financial cost of diabetes is \$245 billion.

Dr. Germino informed the audience about end-stage kidney disease (ESKD). He said that 115,000 Americans began ESKD therapy in 2011 and that patient care for ESKD cost approximately \$29 billion (2012 figure). The adjusted 5-year survival rate for individuals with ESKD, without a transplant, is worse than for many cancers. ESKD affects different groups at different prevalence rates, but Dr. Germino noted that research coupled with implementation of science has changed the curve for the Native American population, although rates are still high, particularly in the African American community. Genetic research has uncovered the Apolipoprotein L1 (*APOLI*) gene to be a factor that has causal variance associated with a highly increased risk of ESKD in African Americans. The *APOLI* variant not only is associated with hypertensive ESKD, but it is also the major reason that African Americans have a 60-fold increased risk of HIV nephropathy. Dr. Germino explained that this variant has become common because it is protective against trypanosomes (sleeping sickness infection); when the environmental factor is removed, however, the variant becomes a risk factor.

Dr. Germino presented several examples of the NIDDK's commitment to finding effective treatments for all individuals in the American population. The landmark Diabetes Prevention Program compared lifestyle modification, metformin, and conventional treatment across more than 3,000 Americans with pre-diabetes and demonstrated that lifestyle modifications made a dramatic improvement in delaying the transition from pre-diabetes to diabetes. The Look AHEAD trial showed that individuals with type 2 diabetes treated with intensive lifestyle intervention lost more weight; showed improved fitness, glucose control, blood pressure, and high-density lipoprotein levels; and required less medication. Cardiovascular risk, however, did not change. The African American Study of Kidney Disease and Hypertension revealed that most African Americans with hypertensive kidney disease had progressive chronic kidney disease (CKD) despite aggressive blood pressure control.

Dr. Germino emphasized the need to tap into the full expertise of all communities in the United States to inform research questions and find effective solutions. Currently, research award rates vary across populations, with African Americans having lower success rates in obtaining R01 grants. Dr. Germino stated that resources must be increased to help diversity the workforce and bring more people into the pipelines at an earlier stage. Examples of research and training opportunities include the Short-Term Research Experience for Underrepresented Persons (STEP-UP) program, R03s for clinical scientists, F31 predoctoral fellowships, research supplements to promote diversity in health-related research, and travel awards.

Dr. Germino acknowledged that the future of research funding is uncertain, especially with the ongoing dialogue in the United States about the role of government. He stated that passion and outcomes will drive the community forward. Dr. Germino celebrated the successes of the researchers at the meeting and noted the celebration of National Minority Health Month with Department of Health and Human Services Secretary Sylvia Mathews Burwell. Dr. Germino wished a great meeting and thanked the audience for its support of NMRI.

## **Discussion**

In response to a question about the relationship between low minority participation rates and the review process, Dr. Germino confirmed that the NIH Center for Scientific Review (CSR)

is attempting to broaden recruitment strategies. CSR is in the process of conducting pilot studies that test unconscious bias by stripping away information that might reveal investigator identities.

A participant asked about the success rate of students from the STEP-UP program entering science or research programs. Dr. Germino replied that tracking individuals post training is difficult, particularly those earlier in the pipeline who may not end up pursuing an academic career. To help resolve this issue, the NIH is considering using universal identifiers.

Dr. Germino expressed enthusiasm for the addition of Dr. Hannah Valentine to the NIH as its first Chief Officer for Scientific Workforce Diversity. NIH intramural programs are attempting to broaden recruitment strategies with her assistance.

A meeting participant asked how best to communicate to Congress the importance of government funding of scientific research. Dr. Germino responded that the challenge lies in the “disconnect” between dialogue and facts and noted that evidence and education alone cannot change the funding landscape. The NIH strives to ensure that its funds are kept robust and can be utilized as the NIH, with input from its scientific and workforce communities, sees fit.

An audience member asked whether genotyping of African Americans has become routine. Dr. Germino responded that he is certain that the *APOLI* discovery, made only a few years ago, will have an impact on clinical practice. For example, because kidneys with the *APOLI* variant perform less well in transplants, a relevant question is whether such a kidney should serve as a donor. Dr. Germino added that an upcoming *APOLI* conference will be taking place at the NIH.

The audience member also asked whether the NIH contextualizes change in the availability of NIH funds in the funding environment. Dr. Germino remarked that administrative issues are difficult and are being discussed internally with division directors. He noted that young investigators who have received a K award have a favorable success rate of obtaining an R01 award. He recognized the uncertainty in the budget but was optimistic about its stability.

## **Keynote Speaker**

### **Leveraging Failure and the Unexpected for Success: Instructive Anecdotes in a Quest to Understand Myocardial Autophagy**

***Dale Abel, M.D., Ph.D., Professor of Medicine and Biochemistry, Roy J. and Lucille A. Carver College of Medicine, University of Iowa***

Dr. Dale Abel thanked Dr. Bentley-Lewis for extending an invitation to him to present as NMRI's Keynote Speaker. He said that he attended the inaugural NMRI meeting over 13 years ago and has benefitted from NMRI's emphasis on mentorship, networking, and other principles. Dr. Abel outlined his presentation as consisting of two parts: an overview of a project arising from his scientific research program and some reflections on areas that have impacted him and his career. He acknowledged the contributions of the members of his laboratory as well as his funding sources, including the NIH, Juvenile Diabetes Research Foundation, American Diabetes Association, and American Heart Association.

Dr. Abel's laboratory focuses on cardiovascular complications of diabetes, specifically the role of aberrations in insulin signal transduction within the cardiomyocyte. Dr. Abel explained that when insulin binds to tyrosine kinase receptors, these receptors interact with intracellular

molecules that include insulin substrate receptor (IRS) proteins. IRS proteins activate a variety of intercellular signaling pathways that lead to increased metabolism, protein synthesis, and inhibition of cell death. Dr. Abel said that his laboratory stumbled into work on the process of autophagy, the intracellular degradation system induced during starvation in which autophagosomes engulf organelles and then fuse them with lysosomes to degrade their content. Autophagy is a highly regulated process because it must balance the accumulation of organelles with the degradation of cells. A number of autophagy-related (Atg) proteins were identified in yeast and shown to be conserved through mammalian systems. One such Atg protein, LC32, is a marker of autophagosomes and can be used to track the autophagy process. Dr. Abel described how a temporary fasting situation, as occurs overnight during sleep, induces cardiac autophagy *in vivo*. The parallel increase in insulin signaling provides evidence that autophagy might be regulated by insulin signaling. Dr. Abel added that the very dynamic process of fasting-induced autophagy is reversed within an hour of refeeding.

Dr. Abel stated that his laboratory has used a variety of genetic strategies to perturb various aspects of the insulin signaling pathway in the heart. He explained that the insulin receptor and the insulin-like growth factor 1 (IGF-1) receptor cross-talk with each other in cardiac muscle and that the laboratory spent many years attempting to determine the extent of each one's effect on heart size. The laboratory learned that insulin signaling plays a crucial role in multiple facets of mitochondrial function and in how the heart responds to stress.

Dr. Abel shifted to a story about a bright former student named Christian whose goal was to perform his research, publish journal articles, and return to Germany within 18 months. Dr. Abel convinced Christian to pursue a project that would knock out the IRS signaling complex in mice. When it was clear that the mice were all dying at 4 weeks, however, Christian requested a new project. Dr. Abel encouraged Christian to determine what was leading to the premature mortality. At that point the researchers heard a presentation about autophagy, which led them to investigate the potential role of autophagy. Their experimental results revealed a dramatic increase in myocardial autophagy 24 hours after birth, supporting earlier observations that autophagy is an important survival mechanism that maintains the energy status of critical organs (e.g., heart, liver, diaphragm) in the perinatal window. Autophagy represents a critical survival mechanism in the face of short-term caloric restriction. Dr. Abel then convinced Christian to determine how an animal knows to turn off autophagy once it starts feeding. Christian performed experiments to examine the potential mechanisms by which autophagy could be suppressed. Christian determined that the animals could not sense an increase in insulin.

Dr. Abel stated that although autophagy in the model might have been due to insulin signaling, it was still unclear why the animals were dying. Experiments so far had consisted of a series of observations, but a mechanistic experiment was needed to test whether animals with inhibited autophagy lived longer. Therefore, Christian injected mice with amino acids or saline every day for 1 month. The animals that received saline had thin, fibrotic hearts and were dying of heart failure, whereas the animals that received amino acids had histologically healthy hearts and lived longer. To prove their hypothesis and complement the experiments that showed success using a pharmacologic approach, Dr. Abel and Christian performed an expensive experiment that would delete a gene, Beclin 1, from the mutant mice (which already had two deleted genes) to prohibit autophagy genetically. Beclin 1 haploinsufficiency prevented suppressed autophagy and fixed the heart. Dr. Abel stated that the data supported the hypothesis that insulin signal transduction is a physiological regulator of autophagy during the fasting-to-feeding transition as well as upon refeeding. The paper was finally submitted and published, and Christian was ready to return to Germany after spending more than the originally planned 18 months.

Dr. Abel urged Christian to try to determine whether the paradigm they described is true also in the adult heart. Using genetic engineering, they generated a variety of mutant animals in which they could delete genes in the adult heart. When the researchers acutely removed insulin receptor and IGF-1 signaling, the hearts failed within 1 week, which was very acute and dramatic heart failure. Suppression of autophagy did not reverse heart failure. In a final experiment, the researchers performed a genomics screen that revealed that nearly the entire genetic program that regulated sarcomeres, the muscle structures within the heart, and gap junctions, which are located between cardiac muscle cells, were unexpectedly repressed. Overall, Dr. Abel and Christian showed through this series of studies that insulin and IGF-1 signaling serves as a “glue” that keeps the heart together. Dr. Abel emphasized Christian’s role in the aforementioned story to demonstrate how a project could be used to stretch a young researcher scientifically. Christian, who is now building his own independent research program, has acknowledged to Dr. Abel his appreciation of having been stretched.

Dr. Abel transitioned to reflecting on his personal career. He described the path up the academic ladder over the arc of one’s career as “navigating a very challenging environment.” Dr. Abel underscored the importance of consulting with senior members who have been through the process and can begin to demystify the academic process. Dr. Abel advised young faculty to focus on sustainability when evaluating offers, not only on the startup package. Citing his experience relocating from the University of Utah to the University of Iowa, he encouraged negotiating not only for what one’s laboratory needs but also what the program needs to sustain its success. Dr. Abel also described instituting an informal monthly “chalk talk” during which investigators can present their grants to their peers to be vetted and refine their thoughts and concepts before forming specific aims. This approach has proven to be vital in increasing the competitiveness of grant applications particularly by early-stage investigators. He emphasized the need to adapt to changing funding climates.

**Research Supplements to Promote Diversity in Health-Related Research (PA-12-149)**  
**Kevin McBryde, M.D., Program Director, OMHRC, NIDDK, NIH**

Dr. Kevin McBryde presented both general and NIDDK-specific instructions regarding Research Supplements to Promote Diversity in Health-Related Research (funding opportunity PA-12-149), which he said is expiring in 2015 but will be renewed. He urged the participants to bookmark the website [www.grants.nih.gov](http://www.grants.nih.gov) to find any information regarding funding opportunity announcements and application forms, dates, and types. Dr. McBryde guided the audience through a sample search on the website and noted that original funding opportunities are located at the bottom of results pages because subsequent Institute-specific notices and updates are added to the top.

Dr. McBryde stated that research supplements, which must be associated with an existing peer-reviewed parent award, are available through 24 NIH Institutes, each of which has a separate contact person and protocol for handling applications. Eligible parent awards include R, P, and U awards, and if a specific award type is not listed in the announcement, Dr. McBryde encouraged researchers to inquire with the relevant Institute’s contact person. The NIH seeks to reach a broad and diverse audience with this funding opportunity announcement, and candidates for support can range from a high school student up to a faculty member. He reminded the participants that new independent research projects cannot be introduced in a research supplement application.

Dr. McBryde also remarked on NIDDK-specific guidelines. He stated that the NIDDK's review committee seeks candidates who have not yet received independent funding from the NIH. The NIDDK's receipt dates are rolling, and reviews occur every month except in December, August, and September. The deadline for application submission is the first of each month at 5:00 p.m. local time, and the review takes place on the fourth Wednesday of the month. Applications can be submitted on paper, electronically via PDF, or through the older PHS 398 forms. The NIH encourages electronic submission for tracking purposes, but Dr. McBryde urged participants to submit in the format required by their institution's grants office. He stated that the eRA Commons system does not allow the NIH to upload documents, so any administrative notes or notification letters are emailed to applicants manually.

Dr. McBryde offered advice to participants regarding the 6-page research strategy portion of the application. Dr. McBryde emphasized that applicants should *not* focus on the science (e.g., research, statistical analysis plans, innovation, pitfalls, alternative approaches) because the science has already been peer-reviewed through the supplement's parent grant. Instead, the research strategy should focus on the candidate's role in the project and the mentorship plan for the candidate, the application's most important component. Supplements offer support for 1 to 5 years depending on the Institute; the NIDDK offers support for 2 years, with an option for a third year on a competitive basis.

A common question that Dr. McBryde receives is in regard to salaries. He stated that high school and undergraduates receive minimum wage but can be paid more if adequate institutional justification is provided. Post baccalaureates and Master's degree candidates can receive a maximum of \$42,840 (salary plus fringe benefits). Graduate students receive a salary of \$42,840, but this includes stipend, tuition, and fringe benefits (exact amounts are decided by individual institutions). Postdoctoral scholars can receive a maximum of \$50,000 (salary plus fringe benefits), and investigators can receive a maximum of \$70,000 (salary) or \$80,000 (with fringe benefits). Both postdoctoral scholars and investigators require a minimum commitment of 9 calendar months (0.75 effort).

## **Discussion**

A participant asked how the term of one's R grant affects the ability to apply for a supplement. Dr. McBryde responded that applicants should have minimum of 2 years remaining on the parent award when applying for a supplement; however, the NIH will accept applications that have 1 year remaining on the parent award. In all cases, the supplement will end when the parent R01 ends. If the R01 is renewed, applicants can reapply for a continuation request for up to 2 years.

A meeting participant asked why candidates for supplements cannot be placed directly on the R01 parent grant. Dr. McBryde stated that the supplement program exists for those investigators whose R01s are unable to include the qualified candidate.

An audience member asked about the recommended time frame for submitting a supplement application. Dr. McBryde replied that applications are accepted at any time within the same fiscal year as the supplement's intended start date. Dr. McBryde reminded the audience that the NIH fiscal year is October 1 through September 30 and recommended submitting early in the fiscal year due to decreased funds later in the year. Dr. McBryde said that the NIDDK budget for supplements has dropped from \$12.5 million in the mid-2000s to \$6 million in 2014. The majority of the funds for the supplement program currently comes from the NIDDK Director's budget.

## **National Institute on Minority Health and Health Disparities (NIMHD)**

***Joyce Hunter, Ph.D., Deputy Director, Extramural Research Activities, NIMHD, NIH***

Dr. Joyce Hunter presented on the NIMHD and its loan repayment program. She said that the NIMHD began as an office within the Office of the Director and was a direct response to a report published 30 years ago about the disparities that existed in the health of African American populations. With the passage of the Minority Health and Health Disparities and Education Act in 2000, the office became a Center and was given funding authority. With the passage of the Patient Protection and Affordable Care Act in 2010, the Center was elevated to an Institute.

Dr. Hunter said that the NIMHD's mission is to lead scientific research that will improve minority health and eliminate health disparities. The NIMHD accomplishes this by (1) planning, reviewing, coordinating, and evaluating all minority health and health disparities research activities across the NIH; (2) conducting and supporting research on health disparities; (3) promoting and supporting the training of a diverse research workforce; (4) translating and disseminating research information; and (5) fostering innovative collaborations and partnerships. When the office became a Center, Congress mandated that certain programs be put into place, including Centers of Excellence, an endowment program, and a loan repayment program. Dr. Hunter added that the NIMHD works very hard to foster collaborations with other Institutes and Centers, communities, local and state governments, and Federal partners.

The minority groups encompassed by the NIMHD are Hispanics, Asian Americans and Pacific Islanders, African Americans, Native Americans, and rural communities. A population is considered a health disparity population if there is a significant disparity in the overall rate of disease incidence, prevalence, morbidity, mortality, or survival rates in the population as compared to the health status of the general population. Dr. Hunter stated that there is a need to develop standard analytical approaches to how health disparities are measured; identify appropriate interventions and determine the right time over the life course that an intervention can have the greatest health impact; measure the success of an intervention; and together with policymakers and stakeholders, determine how best to disseminate information in a community. She emphasized that health disparities research needs to be multidisciplinary, and toward this end, two summits held in 2004 and 2008 focused on the intersection of science, policy, and practice. In addition, diversity among researchers is needed to encourage participation in community-based research.

Dr. Hunter remarked that the NIMHD has begun a scientific visioning process to better define and identify health disparities and to create a robust, active research agenda for eliminating these disparities. Additional goals are to identify the most promising scientific opportunities of the next 10 years across the NIMHD's broad mission, to encourage and stimulate collaborative research across the spectrum of opportunities, and to set an ambitious agenda that inspires the research community to achieve critical scientific goals and meet pressing public health needs. The visioning process focuses on the future, not on the past; on the science, not on strategic planning; and on what the entire research community can accomplish together, not on what NIMHD can achieve alone. Dr. Hunter said that the NIH spends over \$2 million on health disparities research, but the definitions of minority health disparities research are inconsistent and must be reconciled. She added that a request for information to be released soon will target scientists, physicians, and policymakers.

The NIMHD supports four main types of extramural programs: Transdisciplinary and Translational Research (e.g., P20, P60, U54); Basic, Social, and Behavioral Research (e.g., R01, R24); Science Education and Research Training (e.g., LRP, T37, R25); and Research Capacity Building and Infrastructure (e.g., BRIC, U24). Dr. Hunter expressed particular enthusiasm for

the NIMHD's Community-Based Participatory Research Program in which individual projects can last up to 11 years. Other programs include the T37 award, which is an international minority training program, and the R25 award, which has three tracks (i.e., a summer program for undergraduates and graduate students, a mentoring career development program for postdoctoral scholars, and a career development track for young investigators). In addition, the NIMHD has an endowment program, the Research Centers in Minority Institution Program, the Building Research and Infrastructure and Capacity program, and U24 awards. In addition, this year the NIMHD joined the R01 and K99/R00 parent grants.

Dr. Hunter discussed the NIMHD's two congressionally mandated loan repayment programs: the Loan Repayment Program for Health Disparities Research and the Extramural Clinical Research Loan Repayment Program for Individuals from Disadvantaged Backgrounds. These programs seek to recruit and retain qualified health professionals to research careers that focus on minority health disparities or other health disparities. Eligibility requirements include a doctorate-level degree, student loan debt greater than or equal to 20 percent of one's annual salary, U.S. citizenship or permanent residency, and a job not in the Federal government. Most loans are eligible, payments are made directly to the lender, and all of one's student loans can be consolidated. Dr. Hunter added that NIMHD's loan repayment program has supported over 2,000 recipients to date, the largest such program at the NIH. Dr. Hunter invited participants to visit [www.lrp.nih.gov](http://www.lrp.nih.gov) for additional information.

## **Discussion**

In response to an audience question, Dr. Hunter stated that the NIMHD, unlike other Institutes and Centers, can support studies that are focused entirely on minority populations.

A question was asked about how to direct an application to the NIMHD. Dr. Hunter explained that all public health service applications are routed to the Center for Scientific Review, where they are read and referred to the appropriate Institute based on specific referral guidelines. An applicant also can request in a cover letter that his or her application be directed to a specific Institute.

## **Session I: Round Table Discussions**

Participants attended one of seven round table discussions focused on various career-oriented topics. Participants self-selected which discussion to attend.

### **Table 1: Health Disparity Research**

*Carolyn Tucker, Ph.D., Professor, University of Florida*

### **Table 2: Research Supplement**

*Kevin McBryde, M.D., Program Director, OMHRC, NIDDK, NIH*

### **Table 3: Setting Priorities for Success**

*Marion Sewer, Ph.D., Associate Professor, University of California, San Diego*

### **Table 4: Community-Based Participatory Research**

*Cherise Harrington, Ph.D., M.P.H., Assistant Professor, George Washington University*

**Table 5: How to Budget and Manage Your Funds (Basic and Clinical)**

*Sylvia Rosas, M.D., M.S., Assistant Professor of Medicine, Joslin Diabetes Center/Beth Israel Deaconess Medical Center*

*Mark Lawson, Ph.D., Professor, University of California, San Diego*

**Table 6: Strategies for Successful Recruitment (From the Perspective of a Candidate or a Chair)**

*Dale Abel, M.D., Ph.D., Professor of Medicine and Biochemistry, Roy J. and Lucille A. Carver College of Medicine, University of Iowa*

**Table 7: Patient-centered Outcomes Research Institute (PCORI)**

*Michael Flessner, M.D., Ph.D., Director, Inflammatory Renal Diseases, Division of Kidney, Urologic, and Hematologic Diseases, NIDDK, NIH*

**Table 8: Grant Writing Tips**

*Bessie Young, M.D., M.P.H., Associate Professor, University of Washington*

*Patricia Heyn, Ph.D., Assistant Professor, University of Colorado Denver, Anschutz Medical Campus*

**Table 9: How to Give Effective Presentations**

*Senta Georgia, Ph.D., Assistant Professor, Children's Hospital Los Angeles*

**Session II: Mock Study Sections**

Participants attended one of four Mock Study Sections. Each session covered different types of NIH awards: R01/Basic, R01/Clinical, K01/Clinical and Basic, and R03. The four study sections were comprised of a Scientific Review Officer (SRO) and a Chair, as noted below. Session leaders were given sample grant applications to review and critique, and the SRO led a discussion of the feedback sessions.

**Study Section 1: R01/Basic Grant**

**SRO:** *Ann Jerkins, Ph.D., SRO, NIDDK, NIH*

**Chair:** *Jose Romero, Ph.D., Associate Physiologist, Harvard Medical School*

**Study Section 2: R01/Clinical**

**SRO:** *Maria Davila-Bloom, Ph.D., SRO, NIDDK, NIH*

**Chair:** *Susanne Nicholas, M.D., Ph.D., M.P.H., Associate Professor of Medicine, University of California, Los Angeles*

**Study Section 3: K01/Clinical and Basic**

**SRO:** *Robert Wellner, Ph.D., SRO, NIDDK, NIH*

**Chair:** *Senta Georgia, Ph.D., Assistant Professor, Children's Hospital Los Angeles*

**Study Section 4: R03**

**SRO:** *Michelle Barnard, Ph.D., SRO, NIDDK, NIH*

**Chair:** *Rhonda Bentley-Lewis, M.D., M.B.A., M.M.Sc., Assistant Professor of Medicine, Harvard Medical School/Massachusetts General Hospital*

## **Specific Aim Review with Senior NMRI Members**

Participants who signed up to meet with a senior NMRI member had the opportunity to discuss and receive feedback on the specific aims of an upcoming grant proposal. During the session, senior members reviewed the specific aims and advised on areas of improvement.

### **Negotiation: Managing Your Academic Career**

***Ricardo Azziz, M.D., M.P.H., M.B.A., President, Georgia Regents University***

Dr. Ricardo Azziz presented on managing and negotiating one's academic career and offered several pointers and primers for the audience to consider. Dr. Azziz explained that negotiation is a formal discussion between people who are trying to reach an agreement and that successful negotiation begins with an understanding of the other person's position, needs, advantages, and disadvantages. Dr. Azziz urged the participants to understand the roles and responsibilities of their director, chair, or dean, who have many responsibilities: to assure fiscal integrity, establish or enforce the institutional mission and vision, establish priorities, balance institutional versus local priorities, assure internal fairness and balance, assure regulatory compliance, maintain faculty morale, reduce turnover, and help faculty achieve their potential.

To help the audience begin to understand academic politics in the context of negotiation, Dr. Azziz discussed the value of three elements: experience, relationships, and a clear professional vision. Experience reflects not titles but goals accomplished, tasks completed, and projects managed. Dr. Azziz advised the participants to pursue, measure, and document their experience and emphasized that leadership is a learned skill set and a continually developing process. He recommended that participants seek role models, which he contrasted from mentors as being individuals with a desired ability (e.g., to be creative, to balance work and family life). Dr. Azziz described academia as a matrix framework of relationships with no clear objective. He encouraged participants to develop a network both across their organization and beyond and, when requesting advice, to do so in a more formal way (i.e., not to ask directly for mentoring). He also reminded the audience not to confuse a supervisor with a mentor. Dr. Azziz stated that having a clear professional vision is important when negotiating. He advised the participants to establish short- and long-term goals and to prioritize them, adding the caveats that no two priorities are the same and that a list with more than three priorities becomes a to-do list.

Dr. Azziz shared three questions that he commonly is asked. First, many people wonder why they do not receive more recognition and positive reinforcement. He offered three possible reasons—one's superiors are lacking, one's extraordinary talent is hidden, or one is merely meeting expectations—and said the true reason is typically a combination of these factors. Second, faculty often ask why they were not named to a given position. Dr. Azziz said that the most likely reason is a lack of experience to perform the job. He urged the participants to gain any needed experience above and beyond what their current job requires. Third, many people ask why they are not given something that they requested (e.g., funds, laboratory support). Dr. Azziz said that most likely this is because the chair or dean must prioritize requests with a limited budget and other restrictions. Dr. Azziz described understanding the perspective of one's managers as the art of "managing up" and stressed the need to develop this skill set.

Dr. Azziz advised young researchers to understand the faculty promotion process; the specific protocol and regulations governing promotion and tenure; the requirements of different academic tracks; and the expectations of the chair, promotions committee, dean, and

institution. He recommended planning in advance, establishing milestones in one's career, and being willing to be very rigorous with oneself. Common mistakes include seeking promotion prematurely, not discussing promotion with one's director or chair in advance, and not managing and formatting one's curriculum vitae (CV) with care.

Dr. Azziz shared the quote, "The one quality that can develop by studious reflection and practice is the leadership of men." He encouraged the participants to understand their leadership competencies, leverage their strengths, and work to compensate for their weaknesses.

Dr. Azziz asserted that an effective leader is compassionate but firm and should act fast if needing to dismiss an employee. Other critical leadership skills include "reading the tea leaves and watching the smoke signals"; managing transformation and change; and communicating in a complex, heterogeneous environment. He added that many people incorrectly believe that they have communicated simply because they said something or sent an email. Regarding career transitions, Dr. Azziz suggested minimizing change if possible, or at least establishing oneself thematically around a research area before moving to another institution.

Regarding the deficit in faculty diversity at universities, Dr. Azziz said that there are multiple causes, including a narrow pipeline. Dr. Azziz noted that recent research suggested that interest in pursuing a subsequent faculty position drops with training and that interest among minority men and women drops more significantly than among majority men, at least for faculty positions at research-intensive universities. Furthermore, a paucity of minority leadership in academia who can serve as role models also is an issue in enhancing the diversity of the faculty body. Dr. Azziz added that the value of diversity is under-recognized in general and should be presented as the "right" business decision. Finally, he acknowledged the need to maximize "fit" in academics and leadership.

## **Discussion**

A meeting participant asked how to decipher what one's chair was hired to accomplish, particularly if the chair is new. Dr. Azziz recommended a number of approaches, including listening closely at department meetings, speaking with senior faculty, and meeting with the chair.

In response to a question about CVs, Dr. Azziz recommended that the ratio of original publications to chapters and reviews be no more than 2–3 to 1. In addition, a CV with many outside or invited presentations tells the reader that the person is spending a significant amount of time (likely too much) away from his or her institution.

Another participant asked about the need to hire a lawyer to review one's negotiation contract. Dr. Azziz recommended that young faculty consult a knowledgeable lawyer in contract negotiations, but he added that he advises the young faculty that it is better if they are the ones executing the negotiation. At the end of the day, Dr. Azziz said, being hired is an act of mutual trust.

An audience member commented that Dr. Azziz seemed to be advocating compliance and wondered about dependency on the negotiation process, especially given that conflict drives change. Dr. Azziz clarified that his mention of compliance was in reference to regulatory compliance (e.g., Institutional Review Boards, human subjects), not to being "compliant" with everything that is said or decided upon. He asserted the importance of vocalizing one's ideas in a positive way.

A meeting participant inquired about how to gain leadership experience if one is not getting promoted to leadership positions. Dr. Azziz suggested volunteering to be part of different tasks, duties, and services at one's institution.

In response to a question about creating a new title for oneself, Dr. Azziz said that a new title can be a good tool in negotiation, but that the new title proposed should be nonthreatening to others, occur at no cost to others, and be genuinely meritorious. In addition, its receipt should not detract very much from the possibility of other tangible gains (i.e., real monetary resources).

### **Marco Cabrera Poster and Networking Session**

Meeting participants were invited to view the posters submitted to the NMRI Annual Workshop. During the poster review, judges observed the posters and spoke with presenters. Winners were chosen for each of three categories: Basic Science, Translational Science, and Clinical Science. Awards were presented to the winning recipients on the second day of the workshop.

### **Dinner Speaker**

#### **Mapping a Path toward Career Success**

***Joan Reede, M.D., M.S., M.P.H., M.B.A., Dean for Diversity and Community Partnership, Harvard Medical School***

Dr. Joan Reede presented on the elements valuable to career development and reviewed the critical questions of what, when, where, who, and why.

Dr. Reede explained that "what" begins with a self-assessment of one's gifts, talents, knowledge, skills, interests, passions, and strengths through one's own lens, not through the lens of others. Strengths can be identified through a modified 360-degree assessment or by asking one's supervisors and colleagues. Dr. Reede suggested developing a single outstanding strength by selecting one strength on which to focus, thinking about skill development in an asset way, and framing the skill in a way that is valuable to one's organization. Another "what" component is one's personal definition of success. For some, success means promotion; for others, it means autonomy or the responsibility of solving large problems. Dr. Reede cautioned against allowing others to define success and advised the participants to be willing to take risks such as moving laterally within an organization, realigning as interests change, moving out of an organization.

Dr. Reede shifted to a discussion of "when," highlighting that career paths are dynamic and that priorities, interests, and funding environments shift throughout one's career. Through changes in funding climate, she encouraged staying aligned with one's interests but reframing them in such a way that allows funding to be sustained and forward career progress to be made.

In her discussion of "where," Dr. Reede used the analogy of an iceberg that is 10 percent above water and 90 percent below to represent the operation of an organization. She shared a quote: "A strength you feel passionate about that is not important to an organization is essentially a hobby, and a strength an organization needs that you do not feel passionate about is just a chore." In the academic world, she advised the participants to ensure that they are given the resources they need to succeed, such as autonomy, opportunities for promotion or advancement, and strategic committee assignments. Because people of color are often requested to join committees, she advised the participants to find a balance regarding committee membership and to be strategic about knowing how to say "no." Dr. Reede prefers to be on committees

that either will help her understand the organization or that distribute funds and resources and set the policy within the organization. She suggested asking why one is being considered for this committee and also reminded the participants that the duration of a commitment to a committee can be as little as 1 or 2 years. Volunteering for committees and assuming stretch assignments is another way to gain experience.

Dr. Reede said that the “who” is about the supports, networks, role models, advisors, mentors, and other people inside and outside the organization who can help with career progress. She recommended considering the purpose of each relationship (e.g., career development, knowledge and skills, understanding of the professional landscape, access to resources, emotional support, career outcomes) and setting reasonable expectations about mentoring and networking outcomes. Mentoring should allow both individuals to gain in the relationship. Dr. Reede noted that high performers have ties to a broad network, including those who provide personal support and promote a sense of purpose and work/life balance.

Briefly commenting on the “why” in regards to career development and purpose, Dr. Reede emphasized the need to make choices and decisions that are in line with one’s values and desired contributions to the world. She offered the quote, “Chance favors the prepared mind.”

Dr. Reede shifted to a discussion of the work of the Office for Diversity Inclusion and Community Partnerships at Harvard Medical School. One of its projects was awarded a NIH Pathfinder Award for Diversity, which is granted to projects that tackle issues of diversity in the United States and consider new ways to conduct research to change the dialogue and bring new understanding. The project focused on diversity inclusion, which is the way in which diversity is embedded within an organization’s policies, practices, and programs, and how people are connected within that organization. Early findings have shown that across all age groups, coauthorship reach and connections are lower for women than for men and for underrepresented minorities than for others. When controlling for factors such as institution, number of years at institution, number of publications, race and ethnicity, and discipline, one’s network of connections within an organization shows a relationship with one’s success in advancing within the institution. Dr. Reede advised the participants to expand the range of their network outside of their discipline and to consider each potential mentor’s reputation, experience, expertise, organizational position, accessibility, prior mentee references, and personal qualities. Dr. Reede cautioned about the existence of “de-mentors” and “tor-mentors.”

## **Discussion**

A meeting participant asked how she should respond when a person she met yesterday does not remember her. Dr. Reede replied that the person simply might be thinking about something else or might behave this way toward everybody. If handing out a business card, Dr. Reede advised the participant to note on its back the meeting location or common interest to trigger the person’s memory in the future. She also recommended a follow-up phone call or note and, when reaching out regarding career advice, including specific questions and attaching a CV.

A meeting participant asked Dr. Reede to speak to the costs of success in academia, noting that some students pursue nursing after completing their Ph.D. because of the effort and time to achieve success in the academic realm. Dr. Reede reminded the participant that nurses can conduct research through the NIH Institute of Nursing. She advised not judging students on the path they take, recognizing that Ph.D. training is a funnel through which not all can pass. She emphasized the need to push the dialogue further because young students have a limited understanding of career paths and the options available to them.

In response to a question about how to identify significant committees and unwritten rules, Dr. Reede suggested inquiring about the work that the committee does, its membership, to whom the committee reports, and when and how often the committee meets.

A meeting participant asked about the biggest challenge Dr. Reede has faced. Dr. Reede responded that, as a single mother, supporting her daughter as Dr. Reede suffered from cancer was a major challenge. She did not fully realize the severity of the impact on her daughter until reading her daughter's college essays years later.

## **Friday, April 17, 2015**

### **Mentor/Mentee Session**

On the first day of the meeting, junior investigators were given the opportunity to sign up to meet with one of several senior investigators who were willing to serve as mentors. During the session, each mentor hosted a roundtable discussion with his or her mentees, answering questions and offering advice.

### **Business Meeting and Committee Reports**

#### **Planning Committee Report**

***Rhonda Bentley-Lewis, M.D., M.B.A., M.M.Sc., Assistant Professor of Medicine, Harvard Medical School/Massachusetts General Hospital***

Dr. Bentley-Lewis reported on the activities of the NMRI Planning Committee, which met monthly via conference call to plan the agenda for the Annual Workshop, review abstracts, select oral presenters, and establish the travel budget. She invited all meeting attendees to become members of the Planning Committee and thanked Ms. Martinez for her hard work.

Dr. Bentley-Lewis requested that all attendees complete an evaluation form for the meeting. These forms are used collectively to plan the next NMRI workshop. For example, the Planning Committee added the Networking Reception, Mock Study Section for R03, and the Specific Aim Review with Senior NMRI Members to this year's meeting agenda based on feedback from last year's evaluations.

Dr. Bentley-Lewis acknowledged Dr. Agodoa, Ms. Martinez, the NMRI Oversight Committee, and the meeting's sponsors for their support. Dr. Bentley-Lewis welcomed Dr. Heather Tarleton as the upcoming chair of the Planning Committee.

#### **Oversight Committee Report**

***Leonor Corsino, M.D., M.H.S., Assistant Professor, Duke University School of Medicine***  
***Shirley Blanchard, Ph.D., Associate Professor, Creighton University***

Dr. Leonor Corsino reported on recent accomplishments of the NMRI Oversight Committee. The Committee's major responsibility is the successful maintenance of NMRI through activities such as facilitating the development of active mentoring relationships between senior and junior members, identifying new members and planning outreach activities, establishing specific groups of NMRI members, coordinating with professional societies that host annual meetings

attended by NMRI members, exploring mechanisms to evaluate NMRI effectiveness in terms of outcomes, and ensuring that NMRI members and activities fall within the specific programmatic areas of the NIDDK.

The Oversight Committee began several initiatives in 2014 to 2015: (1) increasing visibility with partner associations; (2) gaining foundation funding to supplement NIDDK support for the 2015 Annual Workshop; (3) establishing a long-term collaboration with the American Society of Nephrology (ASN), which sponsored 15 fellows to attend the NMRI Annual Workshop; and (4) forming partnerships with foundations to disseminate information about NMRI. Dr. Corsino stated that ongoing challenges and opportunities for NMRI include recruitment, retention for senior members, mentoring, additional partnerships with societies and foundations, and ensuring a sustainable budget and support. The Oversight Committee seeks to (1) expand opportunities for NMRI members to contribute meaningfully to reducing health disparities, (2) foster collaborations and have multiple principal investigators on grant applications, (3) increase regional participation, (4) train members to diversify their funding streams due to the difficult funding environment, and (5) impact health policy.

Dr. Corsino reviewed the many opportunities that exist to become involved in NMRI's activities and mission. She invited participants to recruit others to join NMRI, sign up for the mentor-mentee program, volunteer to coordinate an interest group, serve as a NMRI representative/liaison with societies or foundations in areas of interest, serve on the Planning or Oversight Committees, help raise funding to increase support for NMRI meetings, and inform NMRI of what it could do to help foster success.

Dr. Corsino expressed special thanks to Dr. Agodoa, Ms. Martinez, the Planning and Oversight Committees, and the NIDDK. She introduced Dr. Luis Cubano as next year's Chair of the Oversight Committee.

Dr. Shirley Blanchard, a member of the Oversight Committee, presented information from the results of the 2014 NMRI evaluation forms in comparison with those of the 2013 evaluation forms.

In 2013, 34 NMRI members responded to the questionnaire. Twenty-two (65%) held the rank of Assistant Professor, and 8 (24%) held the rank of Associate Professor. Eleven (31%) were tenured, 8 (23%) were tenure-track, 16 (46%) were nontenured. The average income was \$115,000. Respondents indicated that being a member of NMRI supports the tenure process primarily through networking, mentor advice, grant application success, and promotion and tenure advice.

In 2014, 60 NMRI members completed the questionnaire. Twenty-four (40%) held the rank of Assistant Professor and 12 (20%) of Associate Professor. A marked increase was seen in the number (8) of "other" ranks (e.g., clinical scholar, research scientist, staff scientist). Thirty-one (57%) were tenure-track and 23 (43%) were nontenured. The average income was \$106,000. Respondents indicated that being a member of NMRI supports the tenure process primarily through networking, grantsmanship, building confidence, and being a source of inspiration. New responses included receiving a promotion letter, reducing feelings of isolation, serving as a welcoming forum at which to present research, and serving as a place of professional identity. In response to a question about how NMRI has helped their career, respondents indicated through networking, the grant process, mentorship, support of promotion, opportunities to contribute, and the potential for collaboration. New themes were the development of academic coping skills, increased skill in data presentation, and rekindled motivation.

Dr. Blanchard explained that the expectations that NMRI has of its members are: (1) consistent reporting of publications, presentations, grants, and promotions online; (2) completing post-program evaluations; (3) recruiting one or more members per year; and (4) contacting at least one organization or society to support NMRI.

Dr. Blanchard invited the participants to complete a questionnaire on the paper provided at each table. The seven questions asked were: (1) What is your rank? (2) Are you on a tenure or nontenure track? (3) How many grants did you have funded in the last year? (4) How has NMRI helped your career? (5) What is your salary? (6) Why did you attend this meeting? and (7) What are the pros and cons of a NMRI Fellowship? Dr. Blanchard elaborated on the proposed NMRI Fellowship and presented a list of possible requirements to achieve the title of NMRI Fellow, three of which would need to be met.

## **Discussion**

In response to a question about the purpose of the proposed NMRI Fellowship, Dr. Blanchard stated that the goals of the Fellowship are increased participation and sustainability of NMRI, ensured documentation of mentorship outcomes, and help in verifying through outcomes that NMRI's mentorship program is successful.

A meeting attendee inquired about the availability of a set of materials about NMRI to bring to society meetings. Dr. Blanchard responded affirmatively and invited participants to contact Ms. Martinez.

Dr. Keith Norris emphasized the value of participation on NMRI committees and encouraged assistant professors to join. Serving as a committee member or chair on a national program through the NIH is an honor that can and should be highlighted on a CV as service to the academic community.

## **Poster Session Awards**

The three poster award winners were announced and congratulated, and all poster presenters were thanked for taking the time to explain their research to the NMRI community. The following were the winners in the categories of Basic, Translational, and Clinical Science:

### **Basic Science Poster Award**

*Diana N. Obanda, Ph.D., Instructor, Pennington Biomedical Research Center*

*"Insulin Sensitizing Effects of Urtica dioica L. Extract are Partly Mediated through Adiponectin Effects on Ceramide Catabolism"*

### **Translational Science Poster Award**

*Chandra L. Jackson, Ph.D., M.S., Epidemiologist, Harvard Medical School Clinical and Translational Science Center*

*"Racial Disparities in Short Sleep Duration by Occupation and Industry: John Henryism in Black Professionals"*

### **Clinical Science Poster Award**

*Amanda M. Fretts, Ph.D., M.P.H., Assistant Professor, University of Washington*

*"Associations of Processed Meat and Unprocessed Red Meat Intake with Short Leukocyte Telomere Length: The Strong Heart Family Study"*

## Scientific Presentations

### **Systems Biology and Angiogenesis: Developing Integrative Models of VEGFR1 Activation in Hypoxic Environments**

**Princess Imoukhuede, Ph.D., Assistant Professor, University of Illinois at Urbana-Champaign**

Dr. Princess Imoukhuede introduced her laboratory as a systems biology research group that uses computational modeling and experimental profiling to better understand the vascular microenvironment, specifically the progression of angiogenesis and disease. Dr. Imoukhuede explained that angiogenesis, the growth of new blood vessels from pre-existing microvasculature, is critical in wound healing. Pathologies of the 70 angiogenesis dependent diseases can be associated either with excessive angiogenesis (e.g., tumor growth, rheumatoid arthritis, cirrhosis) or with deficient angiogenesis (e.g., myocardial ischemia, preeclampsia, neurodegenerative diseases). Dr. Imoukhuede focused her presentation on tumor growth and, specifically, the vascular endothelial growth factor (VEGF) family, members of which are among the primary signaling molecules promoting both angiogenesis and arteriogenesis, and their receptors. The tumor microenvironment is highly heterogeneous, and several cell types have differential responsiveness to therapeutics. The most well-known of four anti-angiogenic drugs for the treatment of tumors is Avastin® (bevacizumab). Controversy has surrounded anti-angiogenic drugs because some patients are intrinsically resistant to anti-angiogenesis and others acquire resistance over time.

Although much experimental work has been conducted on VEGF, no theoretical work has been performed. Dr. Imoukhuede explained that her laboratory has optimized methods for quantitatively profiling the abundance of VEGF receptors (VEGFRs) on the cell's surface. In addition, a quantitative flow cytometry (qFlow) approach provides insight into VEGFR surface expression levels on tumor cells and tumor endothelial cells both *in vitro* and *ex vivo*. Results using the qFlow approach have shown that VEGFR levels vary as tumors develop, and VEGFR1 in particular displays significant heterogeneity on tumor endothelial cells. Subpopulations of cells expressing VEGFR1 can be identified using multicomponent mixture modeling, leading to a quantitative method for understanding heterogeneity.

Quantitative profiling of VEGFR subpopulations in combination with computational modeling can help researchers understand disease through predictions of the effect on disease and the effectiveness of therapeutics on disease. Such models have been used to study the pharmacokinetics and pharmacodynamics of VEGF binding to its receptors and Avastin®. Dr. Imoukhuede explained that her laboratory's models suggest that VEGFR1 could serve as a predictor of Avastin® efficacy. She stated that it would be very significant if such models could be used to profile individual patients. Currently, she is working with a local hospital to start to use this approach to profile patient samples and attempt to predict which patients might respond well to treatment with Avastin®.

Dr. Imoukhuede learned several rules from this approach in addition to moving toward clinical profiling. Isolating the cells within an environment (e.g., tumor microenvironment, tissue microenvironment) yields greater insight into systemic effects, and profiling with quantitative methods yields insights into tissue heterogeneity. Incorporating these data into computation modeling hopefully can predict new therapeutic approaches. Dr. Imoukhuede said that her laboratory is now moving toward this approach: isolating, profiling, modeling, and predicting.

Because isolating endothelial cells is very time-consuming, Dr. Imoukhuede's goal is to develop a microfluidic approach on a chip that will allow for high-throughput methods of personalizing medicine. The laboratory hopes to translate their recent success in this area to profiling samples from blood and isolating circulating endothelial cells. Dr. Imoukhuede's laboratory also is

focused on developing a quantum dot (Qdot) approach that allows for profiling all VEGFRs at once. Because Qdots are known for their cytotoxicity, the laboratory now is working to optimize the conditions in which Qdots can be used to allow for viability of cells.

In addition, the laboratory is starting to investigate signaling that occurs through platelet-derived growth factor (PDGF) receptors. Surface plasma resonance research is ongoing to begin to establish the binding kinetics between VEGF and its receptors and PDGF and its receptors, which will enable construction of computational models that comprehensively incorporate signaling dynamics. Dr. Imoukhuede stated that the group has a publication in press that strives to combine all of the signaling dynamics into a model that incorporates hemodynamics to optimize drug delivery. The work was performed in collaboration with a civil engineer who has developed models of blood flow through arteries. Combining these types of models allows for the development of multiscale models that hopefully will allow for translation to the clinic in the future.

## **Discussion**

A meeting participant asked about whether removing cells from their microenvironment is representative of the natural environment. Dr. Imoukhuede replied that the laboratory has performed optimization to ensure that profiling maintains receptors at the same level.

The same participant asked about how VEGF levels might correlate to a physiological response. Dr. Imoukhuede replied that Delta-Notch signaling determines the selection of tip cells versus stalk cells in the vascular microenvironment. Tip cells are those that protrude and move toward the hypoxic region, and stalk cells trail and form a vascular sprout. Notch signaling and down-regulation of VEGFR2 on the cell surface is the profile of a stalk cell, whereas high VEGFR2 is the profile of a tip cell. The work that Dr. Imoukhuede's laboratory is conducting can be very useful to researchers interested in molecular biophysics and the progression of competition between tip and stalk cells. This type of profiling will help validate work that other laboratories are conducting and also can give insight into the potential of the angiogenic microenvironment.

## **Racial Differences in the Impact of Anemia on Clinical Outcomes in Kidney Transplant Recipients**

***Mukoso Ozieh, M.D., Fellow, Medical University of South Carolina***

Dr. Mukoso Ozieh presented on the racial differences in the impact of anemia on clinical outcomes in kidney transplant recipients. In patients with CKD, anemia is a complication typically seen both during and after renal transplantation due to blood loss during the transplantation, iron deficiency, or other reasons. Factors that have been implicated in the etiology of post-transplant anemia include graft function in renal transplant recipients, medications, donor and recipient factors, and acid-base status. Studies show that anemia is a strong determinant of outcomes in renal transplant recipients (RTRs), but little is known about the impact of anemia on outcomes across race.

Dr. Ozieh said that she aimed to quantify the impact of anemia on graft outcomes in RTRs among veterans and to determine the impact of race on this association. She conducted a national longitudinal cohort study with a data set of veterans created by linking the Veterans Affairs (VA) Informatics and Computing Infrastructure, the United States Renal Data System, and Medicare data. This unique database contained detailed information on baseline donor and recipient characteristics, follow-up care, laboratory values, and outcomes. Included in the study were adult solitary RTRs transplanted between 2001 and 2007, with follow-up through 2010 (10-year cohort). A generalized linear mixed model was used for analysis. Hypertension and

diabetes were the leading comorbidities in these patients. Of the over 5,000 patients that were studied, approximately 3,300 were non-Hispanic whites and 1,600 were non-Hispanic blacks.

Results revealed that the prevalence of graft failure was 28 percent, the prevalence of death was 18 percent, and the prevalence of death-censored graft loss was 16 percent. The mean hemoglobin was about 13 g/dL and was higher in non-Hispanic whites compared to non-Hispanic blacks. Dr. Ozieh and her team concluded from the study that non-Hispanic blacks have a higher prevalence of anemia following renal transplant than non-Hispanic white RTRs. Anemia appears to have a detrimental effect in both groups, but it is more pronounced in non-Hispanic blacks. Every follow-up visit was associated with an increased risk of graft failure, death, or death-censored graft loss. In addition, increases in hemoglobin were associated with a lower risk of these three outcomes, and the interaction between hemoglobin and race was statistically significant. Strategies to address anemia in veterans who are RTRs are needed.

Limitations of the study were the low numbers of female patients (less than 3%) and Hispanics, the retrospective study approach that is prone to some bias, and access to VA laboratory data only. A clinical implication of this work is that non-Hispanic blacks are at three times the risk of experiencing adverse outcomes. Anemia and the need for early identification and treatment is critical. Research implications include the need to replicate the study among civilian population. Policy implications include needing specific guidelines to identify and treat anemia in RTRs.

### **Empowering Patient-Doctor Relationships among Older African American Patients with Diabetes and Hypertension Using Health Empowerment Technology (HET)**

***Greta Winbush, Ph.D., Associate Professor, Central State University***

Dr. Greta Winbush presented on the HET project, a translational science research program purposed to eliminate health disparities among African Americans and other minority groups through the merger of evidence-based health disparities research and culturally centered health empowerment technology. The HET project, originally funded by the NIMHD, is aligned with the Healthy People 2020 goal of empowering individuals towards making informed health decisions. HET project hallmarks are its trademark research approach and its emphasis on relationship empowerment (of the patient-doctor relationship, not of the patient). Its innovative features include its customization to older African Americans and its mobile web-based health technology interventions. Mobile web-based health technology is perceived to strengthen the patient-doctor relationship by enabling patients to view medical records, request medication refills, research vetted health information, and communicate with their healthcare providers. HET's concept of mutuality promotes knowledge, power, influence, training, and actions among both individuals in the patient-doctor relationship for better disease treatment and management.

The first HET study involved the development and piloting of a mobile web-based health intervention on diabetes and hypertension aimed at improving health outcomes, health communication, and health technology integration among older African Americans and their healthcare providers. During a 4-week period, 12 patient-doctor dyads of older African Americans and their doctors engaged in the web-based health intervention. The patients engaged with the online health channel on tablet computers and were offered computer and HET training. Pre- and post-testing focus groups yielded measures on diabetes and hypertension health literacy, cultural and aging sensitivity, health outcomes, technology skill use and capacities, and health technology integration in the clinical encounter. Data from the 12 patients revealed increases in patients' (1) email communication with their doctor; (2) use of the electronic health record system to schedule appointments and refill medications; (3) trust

of their doctor's medical decisions and explanations; (4) obeying of their doctor's instructions, (5) health literacy; and (6) confidence in their Internet skills. Patients perceived a decrease in their doctor's discussion of the advantages and disadvantages of treatment options and in the number of options offered. HET was educative for both the patients and their doctors. The patients widened their knowledge of health behaviors and their effects relative to diabetes and hypertension disease management, and the doctors widened their cultural knowledge of African American patient health behaviors. Both predicted and unpredicted results were found that offered favorable outcomes for the study participants and their healthcare providers.

Recommendations were to improve the web-based health empowerment platform technologically, increase health outreach, increase family engagement, and expand future health disparity research. Findings of this study substantiated HET's unique research approach and conceptual framework. They also shed some light on the viability of using HET to improve health outcomes of older African Americans with diabetes and hypertension. Next steps include manuscript submission, a potential project engaging African American women with disabilities with the site, and an upcoming R15 grant submission.

Dr. Winbush acknowledged and thanked Dr. Leon McDougle for his collaboration, guidance, and support. She stressed that behind the success of the HET research project are several institutional collaborations and a great team of faculty and student researchers, both graduate and undergraduate.

### **Peer Mentoring**

***Arthur Gutierrez-Hartmann, M.D., Professor and Director, University of Colorado Denver, Anschutz Medical Campus***

Dr. Arthur Gutierrez-Hartmann moderated a discussion about peer mentoring with three panelists and the meeting participants. Dr. Gutierrez-Hartmann reflected on the value of individuals conversing with one another over lunch or coffee, for example, about issues such as hiring, firing, promotions, and salary concerns. He believed that such issues are particularly important for minorities and women, citing the public outcry that occurred when Dr. Lawrence Summers, then President of Harvard University, stated that differences in intrinsic aptitude might explain why fewer women pursue careers in science, technology, engineering, and mathematics. Dr. Gutierrez-Hartmann shared two examples he has observed of physical spaces that bring together individuals of all professional levels: the lactation room and the gym. Informal discussions are invaluable for helping manage a laboratory, one's career, and one's goals.

Gabriel Gonzalez, Ph.D., Research Biologist and Postdoctoral Fellow, VA Boston Healthcare System, recounted his experience switching study organs when he began his postdoctoral position. Because postdoctoral scholars spent most of their time at the bench, Dr. Gonzalez decided to purchase pizzas and invite postdoctoral researchers to speak about their work on a monthly basis. This way he could learn about the areas of expertise and techniques being used by fellow researchers. Dr. Gutierrez-Hartmann reiterated that peer discussions at the postdoctoral level often are very practical—about publishing papers, learning a technique, and engaging in a job search.

Gentzon Hall, M.D., Ph.D., Fellow, Duke University Medical Center, recalled the existence of a corkboard during graduate school to which people posted interesting academic talks, industry presentations, and similar events. Dr. Hall valued the corkboard's postings because they spanned a range of disciplines and provided opportunities to meet researchers in other

fields. Dr. Hall has continued this tradition in his new position at Duke. With regard to peer mentoring, Dr. Hall said that junior faculty have been holding meetings to share their concerns and give themselves a voice. He also shared his tactic of inserting himself into places where the emerging thought leaders are present. Dr. Gutierrez-Hartmann reflected on the value of integrating and building bridges with other researchers, which also helps ensure one is not overlooked for promotions.

Patricia Silveyra, Ph.D., M.S., Assistant Professor, The Pennsylvania State University College of Medicine, explained that because she is from Argentina she experienced a strong language barrier when she arrived to the United States. Joining the Graduate Women in Science organization helped her overcome her initial timidity. There she met peers with whom she connected and who introduced her to their mentors, and eventually these interactions led to introductions to international researchers. Dr. Silveyra noted that she received her first grant through Graduate Women in Science. Dr. Gutierrez-Hartmann added that holding regular meetings with peers to receive critical feedback is invaluable.

## **Discussion**

Dr. Manu Platt suggested to young investigators that they seek out a peer who is 2 years ahead of them in the academic timeline. Dr. Platt stated that such a person was the most important mentor he had at that time because he learned from the issues she experienced and had a 2-year lag time to prepare. Because rules about promotions and tenure vary among institutions, Dr. Gutierrez-Hartmann urged participants to read their institution's rules very carefully in advance of the process.

Dr. Tolulope Falaiye asked about how to suggest ideas and be a team player without losing ownership of the ideas and therefore being overlooked. Dr. Gutierrez-Hartmann remarked that this issue is more important during the early investigator years. He emphasized the importance of "doing the work," recalling his admiration of a poster that read, "Ideas are cheap. It's work that counts." He added that women at the University of Colorado joined together and talked to their chairs to make sure that they were not being overlooked for certain awards (e.g., Howard Hughes, Basil O'Connor). He urged participants to be active. Dr. Silveyra added that ensuring a safe environment is critical prior to sharing one's ideas. A meeting participant noted the value in setting up meetings with the division chief.

Dr. Corsino commented that peers are highly useful for motivation and for asking questions that can be difficult to broach with a mentor or chief. Dr. Gutierrez-Hartmann suggested meeting at a coffee shop once per week to discuss issues of, for example, childcare, work-life balance, and promotions, as some colleagues of his do.

Dr. Deidra Cruz shared her experience as a member of peer-to-peer mentoring groups such as a "K club" of K awardees and a writing accountability group. These groups meet for 1 hour once per week to engage in process mentoring and writing.

A meeting participant shared the value of the National Institute of General Medical Sciences (NIGMS)-sponsored Institutional Research and Academic Career Development Awards (IRACDA) T32 postdoctoral program for students from groups underrepresented in biomedical research. At the University of California, San Diego, the IRACDA program funds 15 post-doctoral fellows for 3 years and provides significant opportunities for teaching activities in a structured format. Additional emphasis is placed on grant writing, publication writing, and ethical issues, among others. IRACDA fellows have seen a very high success rate in hiring.

## **Parallel Sessions**

*Two parallel sessions were designed as informal, interactive discussions led by a panel of experts addressing important career development topics for investigators. Meeting participants attended the session of their choice.*

### **Session I: Becoming a Successful Clinical/Translational Researcher: What “Progress” Looks Like at Each Stage**

***Matthew Allison, M.D., M.P.H., Professor, University of California, San Diego***

***Glenn Chertow, M.D., Professor of Medicine, Stanford University School of Medicine***

***Daisy De Leon, Ph.D., M.S., Professor, Loma Linda University***

***Kwami Osei, M.D., Director, Diabetes Research Center, The Ohio State University College of Medicine***

Dr. Matthew Allison described his medical career path beginning at the Uniformed Services University of the Health Sciences in Bethesda, MD. An internship at the Naval Medical Center San Diego followed and led to work in diving and undersea medicine for the U.S. Navy for nearly 8 years. Dr. Allison’s last tour of duty was in San Diego, and while there he earned a M.P.H. degree and subsequently transitioned to a preventive medicine residency focused on preventative cardiology at the University of California, San Diego, and San Diego State University. Dr. Allison’s sources of funding have included the American Heart Association and two R01 and one R21 grants from the NIH. Dr. Allison stated that skills he developed along the way included epidemiology and biostatistics skills acquired while earning his M.P.H. and training on how to perform and read ultrasounds on carotid intima-media thickness. He encouraged others to take advantage of training opportunities that at first may seem tangential to their research. The top team members he has relied on over the years include his mentor, his study coordinator and administrative assistant, and T32 mentees who have, as a group, broadened the research agendas of principal investigators.

Dr. Glenn Chertow shared his path from childhood in Brooklyn to attending the University of Pennsylvania and Harvard Medical School. Dr. Chertow explained that when he decided to accept a residency at Brigham and Women’s Hospital, he was told he would not succeed there because he was clinically oriented, not research oriented. He dismissed the naysayers and remained there as a fellow and a faculty member. During his fellowship, Dr. Chertow was awarded a grant from the American Kidney Fund and also earned an M.P.H. Dr. Chertow remarked that the valuable skills he developed along the way included those learned during his M.P.H. as well as writing and editing skills, with which his wife helped tremendously. He cautioned that academia is difficult to survive without enjoying and being skilled at writing. Dr. Chertow recognized that unpredictability in life can make navigating career changes challenging. He said that valuable to his career have been his mentors, colleagues, and mentees; his wife; and the barista. Dr. Chertow’s advice to younger researchers is to not rush decisions and to take an extra year or two to engage in additional training or accomplish a goal, if financially feasible. Reflecting on his own experience, Dr. Chertow said that he might have very much enjoyed completing a Ph.D. in epidemiology or a fellowship in critical care, but was in a rush to finish.

Dr. Daisy De Leon attributed her career interest in endocrinology to a phenomenal professor. Dr. De Leon was married with a 2-year-old daughter when applying from Puerto Rico to the only three Ph.D. programs in endocrinology in the United States at the time. She arrived at the University of California, Davis, and although English was her scientific language, Dr. De Leon felt a strong language barrier. Because she and her husband were the first husband-wife team graduating together in the sciences, they made the front page of the local newspaper. Dr. De Leon moved to Stanford for a postdoctoral position and was recommended

to a T32 NCI training grant program. The T32 program allowed Dr. De Leon to understand the value of research as being about the science rather than being concerned about obtaining funding. A skill she learned along the way was knowing when to say “yes” because she was accustomed to saying “no” with her children. Dr. De Leon’s most valuable team members were her husband, who was excellent in negotiating; her mentor, who was extremely understanding when Dr. De Leon’s pregnancy complications required her to be bedridden for 7 months; and her postdoctoral mentor at Stanford. Dr. De Leon added that because of her three children, she could only work regular working hours and therefore spent little time chit-chatting with colleagues in the coffee room. Dr. De Leon said that at Loma Linda University, tenure was not common; however, she made her case, fought for it, and was eventually granted tenure.

Dr. Kwame Osei came to the United States from Ghana in 1978 after completing medical school. He attended a Philadelphia anatomical pathology clinical program for 1 year and an internal medicine program for 3 years and then moved to The Ohio State University College of Medicine, where he has been for 32 years. Dr. Osei received funding from his division, a clinical grant from the American Diabetes Association, a cardiovascular grant from the American Heart Association, and eventually a R01 award from the NIDDK on treatment for diabetes. He recommended pursuing small-value grants whenever possible. Dr. Osei began to wonder whether a biological or genetic basis might explain why African Americans suffer more from diabetes and complications of the disease than other populations. Eventually Dr. Osei felt that he needed to expand his research, so he traveled to Ghana to compare Ghanaians living in Ghana with Ghanaians who have migrated to the United States, as well as Caucasians and African Americans, to more fully understand the pathophysiology of diabetes in the African diaspora. Dr. Osei also remarked about the value of students and recommended that faculty guide them, protect them, bring them to meetings, and introduce them to others in the field. He advised the meeting participants to listen to and respect others and to be willing to seek collaborations.

## **Discussion**

A meeting participant asked how to evaluate progress and success. Dr. De Leon responded that this is a personal feeling and recommended not comparing oneself with senior colleagues.

### **Session II: How to Thrive as a Basic/Translational Science Researcher: From Postdoc to Principal Investigator**

***Lynda Brown, Ph.D., Associate Professor, North Carolina Agricultural and Technical State University***  
***Courtney Houchen, M.D., Professor of Medicine, University of Oklahoma Health Science Center***

***Manuel Miranda-Arango, Ph.D., Associate Professor, University of Texas***

***Marion Sewer, Ph.D., Associate Professor, University of California, San Diego (UCSD)***

Dr. Courtney Houchen remarked that he conducts basic and translational research on the role of gastrointestinal stem cells in repair and regeneration as well as in cancer despite not having a Ph.D. Dr. Houchen trained as a gastrointestinal fellow at Washington University in St. Louis and was funded initially through a NIH training grant and during his second year through a NIH supplement to his mentor’s R01 award. Dr. Houchen then received a Robert Wood Johnson Minority Faculty Development award (renamed the Harold Amos Medical Faculty Development Program), which he declared was the most significant influence in the development of his career. Dr. Houchen received K08 and R03 awards prior to being named to his current position as Chief of Gastroenterology at the University of Oklahoma Health Science Center.

Dr. Manuel Miranda-Arango stated that his research focuses on ion transporters, mainly neurotransmitters such as glycine and dopamine. Dr. Miranda-Arango arrived at Yale University from Mexico City in 1996 with a 2-year fellowship from the NIH offered to two students from Central and South America. He stayed a total of 7 years, moved to the University of Colorado for 4 years, and then was appointed Assistant Professor at the University of Texas at El Paso. Dr. Miranda-Arango pointed out that he met much success in establishing an independent career through networking. Dr. Miranda-Arango reflected that fundamental to his career has been his training at two laboratories that work in very different research areas. He added that chairing his institution's Institutional Animal Care and Use Committee for 3 years gave him much insight into how institutions operate and the resources necessary to support an animal program. Dr. Miranda-Arango reminded the audience to connect with investigators from different institutions at meetings, especially in the last couple of years before reaching tenure, to aid in the transition.

Dr. Marion Sewer shared that her research focuses on the molecular mechanisms that regulate the transcription of enzymes that metabolize cholesterol into steroid hormones. Dr. Sewer received her Ph.D. from Emory University and engaged in postdoctoral research at Vanderbilt University. She decided that she wanted to teach in addition to having a research lab, so she joined the faculty at the Georgia Institute of Technology. While there, Dr. Sewer obtained a National Science Foundation Career Development Award and her first R01. She later realized that she wanted to devote more time to research, so after receiving tenure she moved to UCSD, where she has been for nearly 6 years and was promoted to full Professor.

Dr. Lynda Brown, who studies the neuroendocrinology of obesity, performed her Ph.D. research at the University of Maryland in College Park. She remarked that two important parts of her experience as a graduate student were the mentoring group that she and two other students formed and that her advisor required that she present outside the university at least once per year. The person most disappointed with her presentations was her faculty chair. Dr. Brown accepted her criticism and strived to improve, which thoroughly impressed the chair, who is now one of her greatest mentors. Dr. Brown completed a postdoctoral fellowship at the University of Cincinnati's Obesity Research Center with funding from a minority supplement through her mentor's R01. She said that she was encouraged by her postdoctoral mentor to apply to an Assistant Professor position at the University of North Carolina at Greensboro after only 2 years as a postdoctoral fellow and succeeded. Dr. Brown is currently at the North Carolina Agricultural and Technical State University.

## **Discussion**

The panelists were asked to elaborate on any non-obvious skills that are equally if not more important than obvious skills (e.g., networking, grant writing). Dr. Brown suggested the ability to recover after faltering and the discipline to work for and achieve more than is expected. Dr. Sewer added the abilities to extract the value from others' opinions, empower others to perform, and understand one's personality type and work on areas that need improvement. Dr. Miranda-Arango noted overcoming shyness and having the confidence to introduce oneself to others as valuable skills. Dr. Houchen urged the audience not to lock themselves into a hypothesis scientifically but to develop questions that will generate valuable findings whatever the results.

Dr. Rotonya Carr asked the panelists to name the best business tool that has fostered success in the laboratory. Dr. Houchen stated that hiring a great technician who can run the laboratory is key to establishing one's own research program. Dr. Miranda-Arango echoed Dr. Houchen's remark. Dr. Sewer suggested tapping into available institutional resources (e.g., training grants, core facilities) to minimize costs.

A meeting participant asked for recommendations for building resilience. Dr. Brown suggested having a close, small group of friends and mentors that will talk through issues, and Dr. Sewer recommended finding mentors who are simultaneously supportive and critical. Dr. Brown also noted the importance of fostering self-awareness regarding “imposter syndrome.”

An audience member asked about the panelists’ biggest mistake. Drs. Sewer and Brown advised the audience member to be cautious during hiring.

### **Biostatistics: All About the Basics**

***Fern Webb, Ph.D., Assistant Professor, University of Florida***

Dr. Fern Webb presented practical knowledge about biostatistics with the genuine intent to increase knowledge about and understanding of basic statistical concepts and applications. She offered two definitions of epidemiology: (1) a branch of medical sciences involving the analysis of the incidence, distribution, and control of disease and/or health in a population; and (2) the study of the distribution and determinants of disease frequency and health in the population. The underlying assumption of both definitions is that disease or health distributions are not random events.

Dr. Webb stated that epidemiologists have a toolkit for designing studies. Common misconceptions are that a single best design exists to answer each research question, descriptive or retrospective studies are scientifically useless, and a randomized controlled trial is always the best option. Questions can, in fact, be approached using various methods, each with its own strengths and limitations. Study design decisions typically are a compromise between the scientific question, available resources, and reality.

To determine study factors or variables, investigators should consider how the exposures are defined and measured. Dr. Webb informed attendees that there are multiple names for the same idea or thing. For example, exposure, treatment, independent variable, antecedent, and predictor are all synonyms. Outcome, condition, dependent variable, consequent and criterion also have the same meaning. Dr. Webb advised participants to be consistent in the terms they choose to use for each study.

Sampling design, procedures, and instruments must all be considered when collecting data. Dr. Webb recommended keeping surveys simple, short, and focused; using objective scales when possible; and using validated instruments. Examples of secondary data include patient registries, electronic medical records, observational or cohort databases, and longitudinal studies. Information needed to appropriately analyze secondary data includes access and permission, knowledge of the data collected, and the sampling frame and structure.

Data variables can be categorized into four types. Nominal data are those that can be grouped into categories that have no specific order (e.g., ethnicity, blood type). Ordinal data can be grouped into ordered categories, but the difference between levels is imprecisely defined (e.g., excellent, very good, good, fair, poor). Interval data can also be ordered into categories, the difference between levels can be defined and there is no “true” zero point (e.g., temperature). Ratio or continuous data are similar to interval data with a “true” zero point (e.g., blood pressure, weight).

Dr. Webb elaborated on methods of analysis and evaluation once variable types are defined. Measures of frequency are used in descriptive analyses to describe information (measured by variables) or characteristics of those participating in the study. Basic measures of frequency

are counts (n), proportions (e.g.,  $a/[a+b]$ ), rates (e.g.,  $a/[a+b]$  over a period of time), and ratios (e.g.,  $a/b$  with the numerator and denominator being mutually exclusive). A hallmark of epidemiology is the “2 × 2” table, in which the independent variable is aligned along the vertical axis and the dependent variable is placed along the horizontal axis.

Measures of association are used in statistical and inferential analyses to describe how information (usually measured by variables) is associated or related to one another (measured by variables). An association can be understood as the extent to which variables occur together (nondirectional) or as the statistical dependence between two variables. Researchers must choose the appropriate statistic to measure the association, which is based solely on the variable type for the independent and dependent variables. Researchers also should consult with a biostatistician in the study planning phase prior to beginning data collection.

## **Role of Scientific Societies and Professional Organizations**

### **American Association for the Study of Liver Disease (AASLD)**

***Gyongyi Szabo, M.D., Ph.D., President, AASLD***

Dr. Gyongyi Szabo presented on the activities of the AASLD, first acknowledging and congratulating the recipients of the AASLD Travel Award. Dr. Szabo stated that the vision of the AASLD is to prevent and cure liver disease, and its mission is to advance and disseminate the science and practice of hepatology and to promote liver health and quality patient care. The AASLD is the leading and largest organization around the world for healthcare professionals committed to preventing and curing liver disease. AASLD provides leadership through its publications, *HEPATOLOGY*, *Liver Transplantation*, and the online journal *Clinical Liver Disease*, as well as through available practice guidelines. Dr. Szabo shared that 3 years ago the AASLD embarked on a strategic planning meeting to reassess the goals of the AASLD. The strategic plan is in its second year of implementation, and its major activities include professional development, research innovation and support, treatment advances, and organizational health.

Dr. Szabo stated that the AASLD was founded about 50 years ago as a very research-oriented organization and grew over time to include healthcare providers. The AASLD currently comprises 4,700 members (33% female and 25% international) and holds an annual meeting that brings together 10,000 individuals. It is currently working on increasing its knowledge of the demographics of its members and is incorporating its membership diversity statement into official documents. Dr. Szabo noted that many leadership opportunities exist within the AASLD, which has 19 standing committees. Forty-two percent of committee chairmanships and 41 percent of committee members are women. The AASLD Liver Research Fund is committed to encouraging members to become independent researchers in basic, translational, and clinical science arenas, and since 2008 it has provided more than \$12.5 million in support of liver research and advanced hepatology training. The AASLD Foundation, established in 2014, is focused on growing the Liver Research Fund.

Educational activities available online include the AASLD Curriculum and Training (ACT-First), which is a free, online continuing medical education course, and comprehensive hepatitis B and hepatitis C modules. Forthcoming modules will cover cirrhosis and interpretation of abnormal liver function tests (intended for nonhepatologists). Other current initiatives and resources include 16 special interest groups, the newest of which focuses on public health and healthcare delivery. This group will concentrate on disease prevention, access to care, population-based

disease management, improving the quality of healthcare delivery, and economics. Dr. Szabo envisioned that diversity issues in liver diseases, gender differences in liver diseases, and increased understanding of underrepresented populations and healthcare disparities will be emphasized in future AASLD platforms.

Dr. Szabo advertised that Digestive Disease Week will be held on May 16–19, 2015, in Washington, DC; Clinical Hepatology: State of the Art Management, a mid-year course, will be held on June 27–28, 2015, in Chicago, IL; and the annual Liver Meeting will be held on November 13–17, 2015, in San Francisco, California. Dr. Szabo invited participants to visit [www.aasld.org](http://www.aasld.org) for addition information.

### **American Diabetes Association (ADA)**

#### ***Tamara Darsow, Ph.D., Vice President of Research Programs, ADA***

Dr. Tamara Darsow informed the meeting participants about the ADA's research programs and goals. Dr. Darsow explained that the vision of the ADA is a life free of diabetes and all its burdens. Its mission is to prevent and cure diabetes and to improve the lives of all people affected by diabetes. She stated that 29 million individuals in the United States are affected by diabetes (9.3% of the population), and 86 million with pre-diabetes are at risk for the disease. The prevalence of diabetes, which has a disparate impact on demographic subpopulations, has been increasing over time. If trends continue, one in three adults and one in two high-risk minority populations in the United States will have diabetes by the year 2050. Consequences of diabetes include long-term chronic disease management, acute and chronic complications, and \$245 billion per year in patient care costs.

The ADA to achieve its mission provides (1) professional resources through scientific meetings, professional education, and peer-reviewed scientific and clinical publications; (2) medical information through clinical practice recommendations and medical publications; (3) advocacy through research support, diabetes prevention and care, legal advocacy and support, and legislative action; and (4) community support through community health education programs, a call center for information and support, and resources for those affected by the disease. The ADA recognizes that the only way to achieve the vision of a life free of diabetes is through research, which is why research has been at the center of the ADA's mission activities since its founding in 1940. The ADA has supported nearly 4,500 independent research projects and invested more than \$700 million in diabetes research. In 2014, the ADA supported 375 active grants through a \$30 million research budget.

Dr. Darsow stated that the ADA's research portfolio is broad and supports all types of diabetes research. Sixty percent of research funds support basic science and 40 percent support clinical and translational research. Researchers investigate type 1 and type 2 diabetes, gestational diabetes, obesity, as well as pre-diabetes/insulin resistance, and funds are distributed across a range of research foci: clinical, behavior, and epidemiology (18%); complications (16%); integrated physiology (16%); and signal transduction (16%), among others.

ADA support for research is offered through three distinct programs: the Core Research Program (approximately 88% of the research budget), Pathway to Stop Diabetes (5%), and the Targeted Research Program (7%). Objectives of the Core Research Program are to support innovative research with a high potential to have a significant impact for people with diabetes, encourage new investigators to dedicate their careers to diabetes research, and support

high-quality science across the spectrum of diabetes. Dr. Darsow mentioned that grant opportunities span all career stages and brought particular attention to the ADA's Minority Postdoctoral Fellowship Awards, which are 3-year, direct-to-fellow grants, and its Minority Undergraduate Internship Awards, which are awarded to current ADA-funded investigators and require only a 1-page, noncompetitive form. The Pathway to Stop Diabetes program, launched in 2013, is meant to attract brilliant minds at the peak of their creativity; invest in people rather than projects; and provides researchers with freedom, autonomy, and resources. The program provides researchers with long-term, high-dollar awards to conduct transformative science and offers them access to extremely distinguished mentors. The Targeted Research Program supports periodic requests for applications for a narrow scope of projects that address emerging areas with high potential for significant progress.

Dr. Darsow urged the audience to become involved with professional organizations. The ADA provides opportunities to share and publish data, become involved at the local level, serve on committees and as grant reviewers, and participate in special events. Dr. Darsow invited participants to visit [www.diabetes.org](http://www.diabetes.org).

### **American Society of Nephrology (ASN)**

**Jonathan Himmelfarb, M.D., FASN, President, Co-Chair, Diversity and Inclusion Work Group, ASN**

Dr. Jonathan Himmelfarb presented on the activities of the ASN. Dr. Himmelfarb reported that CKD affects more than 20 million people in the United States, and its prevalence around the world is estimated at 10 to 14 percent. CKD is a major risk amplifier for cardiovascular complications and premature mortality, and it puts individuals at risk for progression to ESKD. Tremendous racial and ethnic disparities exist in kidney disease and particularly related to ESKD requiring dialysis. Although ESKD incidence rates are beginning to plateau among Native Americans and African Americans, they continue to be very high. For example, African Americans represent approximately 13 percent of the U.S. population, yet they are 37 percent of the dialysis population.

The primary approach to attacking the issue of kidney disease is through research that informs public policy, investigates social factors, or explores health services and healthcare delivery. An exciting area of research is the cellular and molecular biology of kidney disease, which has made new findings in recent years with regard to genetic predisposition to ESKD in African Americans (e.g., *APOL1* gene). The ASN feels a responsibility to catalyze work on changing the racial and ethnic disparities in kidney disease and developing improved treatments.

Dr. Himmelfarb pointed out that the ASN has become a very dynamic organization over the last 5 to 10 years. With 15,500 members, the ASN is the largest professional society related to kidney disease, and its annual meeting is attended by 13,000 people from 100 countries. Dr. Himmelfarb noted that the ASN publishes the *Journal of the ASN*, which is the highest impact factor kidney journal; the *Clinical Journal of the ASN*, the most highly read kidney journal; and *Kidney News*, the most widely distributed publication in the kidney community. The ASN is committed to communicating new knowledge about kidney disease and is the largest supporter outside of Federal government of kidney disease research in the United States. The ASN Foundation for Kidney Research was established in the last 5 years to ensure that research mission is sustainable. In addition, the Kidney Health Initiative is a partnership with the U.S. Food and Drug Administration to create an umbrella organization to remove barriers to the development of safe and effective treatments to kidney disease, covering food products, biologics, drugs, and devices.

The ASN has put forth efforts to increase diversity to meet its mission more effectively. A Diversity Summit held in June 2013 made recommendations to the ASN leadership and formed a Diversity and Inclusion Work Group. These efforts have resulted in an ASN mission, vision, and values statement on diversity:

- Mission: to promote diversity and inclusiveness to enhance the nephrology profession and the lives of people with kidney disease through improved healthcare, research, and education.
- Vision: a diverse and inclusive ASN will foster innovation, creativity, and sensitivity to advance health for all people living with kidney disease and serve as a model for organizations dedicated to health equity.
- Values: inclusiveness, mentorship, health equity, patient advocacy, and engagement.

Other accomplishments of the Work Group in its first 15 months include increased collection of ASN member demographics; establishment of the ASN-Harold Amos Medical Faculty Development Program Award; and recruitment of a volunteer to the Work Group to represent lesbian, gay, bisexual, and transgender (LGBT) community interests. In addition, the ASN for the first time funded participation in the NMRI Annual Workshop.

Dr. Himmelfarb shared that upcoming initiatives include a pilot project that involves matching underrepresented early career nephrologists with influential mentors, building of sponsorship opportunities, developing a mentorship curriculum built on an existing CTSA curriculum, and tracking and evaluating demographics with an emphasis on gauging the success of the ASN's diversity inclusion efforts. Two grant mechanisms highlighted by Dr. Himmelfarb are Career Development Grants, supporting early career professionals around the K-to-R transition, and the William and Sandra Bennett Clinical Scholars Program, supporting young faculty clinician educators who seek to enhance education along the research/education line. The ASN also supports students and trainees and is committed to career development for kidney professionals. More information can be found at [www.asn-online.org](http://www.asn-online.org).

### **American Society for Bone and Mineral Research (ASBMR)**

**Roberto Fajardo, Ph.D., Assistant Professor, University of Texas Health Science Center, San Antonio**

Dr. Roberto Fajardo presented on the mission and activities of the ASBMR, whose motto is to make discoveries that keep bones healthy for a lifetime, and on the interaction of diabetes and bone. The ASBMR membership includes approximately 3,800 members, 46 percent of whom are from outside the United States, and its annual meeting convenes about 4,000 attendees. The ASBMR publishes the *Journal of Bone and Mineral Research*, the highest impact factor bone journal.

Dr. Fajardo asserted that bone can be considered an endocrine organ. He explained a series of experiments that revealed a dependency between bone and glucose regulation, suggesting a potential clinical impact of diabetes on the skeleton. He noted that low-energy fragility fractures related to type 2 diabetes are proving to be a major problem in the United States and around the world, with the risks of fracture significantly higher in minority populations.

Dr. Fajardo described his work on a 17-year prospective study of aging and disease in the Mexican American population. Data have shown that hip fractures correlate with age and insulin use. Strong trends also are seen between hip fracture and type 2 diabetes, as well as body mass index. Diabetic fractures are particularly difficult to understand because they are not

necessarily related to bone mass loss. A change in the material properties (e.g., due to glycation of collagen), morphology, and other contributions add to the fracture risk. Researchers are also trying to determine how microvascular changes might contribute to bone and its fragility in the case of diabetes. Preliminary data have shown that the expression of VEGF, which is important for bone formation, bone remodeling, and maintenance of vascular tissues, appears to be down-regulated in diabetic and bone tissue. The mechanisms are not yet understood and warrant further research.

Dr. Fajardo highlighted that the first symposium on the relationship between diabetes and skeletal health, a very new area of interest for the ASBMR, was held in September 2014 at the ASBMR Annual Meeting. At the 2015 Annual Meeting in Seattle, WA, an increasing number of posters and presentations will focus on diabetes and bone and skeletal health, and a new symposium titled “Crosstalk Between Kidney and Bone: Bench to Bedside” will take place. Dr. Fajardo encouraged interested participants to attend the meeting. In addition, Dr. Bruce Spiegelman from the Dana-Farber Cancer Institute and Harvard Medical School will present a special lecture titled “Bone, Fat, and Energy Metabolism.” Dr. Fajardo added that \$500 travel awards are available to presenters. In addition, the Diversity Planning Committee schedules morning and evening events as well as other ways to socialize and meet others. Dr. Fajardo encouraged the meeting participants to visit [www.asbmr.org](http://www.asbmr.org).

### **American Gastroenterological Association (AGA)**

**Lewis Roberts, M.D., Ph.D., Professor of Medicine, Mayo Clinic College of Medicine**

Dr. Lewis Roberts reported on the activities of the AGA and thanked the other associations for supporting NMRI. Dr. Roberts took a moment to acknowledge the late Dr. Levi Watkins, Jr., who made great efforts to seek racial equality and justice in the United States, particularly in the area of healthcare. Dr. Watkins was the first African American to graduate from Vanderbilt University School of Medicine, the first Chief Resident in Surgery at The Johns Hopkins Hospital, and the first person to insert an implantable cardioverter defibrillator. He was an outstanding role model and left a strong legacy.

Dr. Roberts began by explaining that the projected shortfall of physicians by 2025 is estimated at between 45,000 and 90,000 physicians. Currently, little change is seen in underrepresented minority representation in medical and graduate schools, yet minority physicians and scientists are critical to the health workforce in part because they are more likely to serve the minority community and can help develop more culturally sensitive programs. Dr. Roberts highlighted some of the diseases for which there are disparities. Gastric cancer affects Latinos and African Americans at substantially higher rates; colorectal cancer affects African Americans at higher rates and earlier in age; hepatitis C, cirrhosis, and liver cancer all are more frequent in Latinos and African Americans; and hepatitis B and hepatitis B-induced cirrhosis and liver cancer are particularly important in immigrant Asian and African communities. Gallstone disease, *Helicobacter pylori*, and gall bladder cancer also are important in Native American and Hispanic communities.

Dr. Roberts stated that the AGA was founded in 1897 and is dedicated to the mission of advancing the science and practice of gastroenterology. With more than 17,000 members, the AGA is a trusted voice of the gastrointestinal community. The AGA has an annual meeting, peer-reviewed journals in the field (*Gastroenterology* is the leading gastroenterological journal, and *Clinical Gastroenterology and Hepatology* and *Cellular and Molecular Gastroenterology and Hepatology* respectively supplement the clinical and basic science scope of *Gastroenterology*), and a newsletter

for members called *AGA Perspectives*. The AGA has efforts underway to better understand the demographic information of its membership and to promote diversity and gastroenterological training. Initial statistics reveal that that 1 in 6 applicants for gastroenterological fellowships yearly are accepted to a first-year accredited position. Nationally there are more than 14,000 practicing gastroenterologists.

A key element of AGA's work is providing educational and networking opportunities. The AGA competed for a NIDDK Education Program Grant (R25) that supports summer research fellowships that focus on underrepresented minorities. At the annual Digestive Disease Week meeting, the AGA will sponsor a joint diversity reception with AASLD, the American Society for Gastrointestinal Endoscopy (ASGE), and the Society for Surgery of the Alimentary Tract (SSAT). In addition, student memberships encourage high school, college, and medical students to consider gastroenterology as a career. Dr. Roberts highlighted the opportunities provided by the AGA that impacted his career personally. He added that the AGA emphasizes team science and collaborations, networking with colleagues at meetings, mentoring, and service opportunities.

Dr. Roberts ended by encouraging participants to attend the upcoming Digestive Disease Week on May 16–19, 2015, in Washington, DC, to visit its website at [www.ddw.org](http://www.ddw.org), and to visit the AGA's website at [www.gastro.org](http://www.gastro.org). Dr. Bentley-Lewis acknowledged and thanked the AGA for supporting the first-ever Networking Reception at this year's NMRI Annual Workshop.

## **Endocrine Society**

**Mark Lawson, Ph.D., Professor, University of California, San Diego**

Dr. Mark Lawson remarked that the Endocrine Society has a history of being engaged in training and career support. The Endocrine Society over the last few years has undertaken a strategic reassessment of its activities and purpose in part to increase its efforts to support investigators, especially younger investigators and trainees. Like many societies, the Endocrine Society is currently improving its assessment of membership demographics to address position services and researcher shortages and to ensure that the field remains vibrant. This effort has been undertaken by the Endocrine Society's Minority Affairs Committee Service as well as the Trainee and Career Development Core Committee. He invited the meeting participants to join the committees.

Dr. Lawson outlined resources available through the Endocrine Society. The summer research fellowship program invites individuals at the undergraduate, graduate, and medical training levels to spend a summer in the laboratory with a mentor. This idea expanded into the NIGMS-funded Minority Access Program, a 2-year commitment to the Endocrine Society during which an individual gains summer research experience, attends the Endocrine Society conference, and is given career development training and mentorship resources that help solidify and preserve his or her interest in biomedical sciences as a research career. The NIDDK-funded Future Leaders Advancing Research in Endocrinology (FLARE) program (R25) provides career development appropriate for late graduate/early postdoctoral levels. The Endocrine Society annual meetings offer career development events, such as a promotion and tenure workshop, and also host a Minority Student Luncheon and Minority Mentoring and Poster Reception.

Dr. Lawson encouraged participants to visit [www.endocrine.org](http://www.endocrine.org), which has additional information about the annual meeting program and special workshops, as well as information about job interviews, a grant clearinghouse, clinical practice guidelines, and more.

## **Next Steps and Adjournment**

***Rhonda Bentley-Lewis, M.D., M.B.A., M.M.Sc., Assistant Professor of Medicine, Harvard Medical School/Massachusetts General Hospital***

***Gregory Germino, M.D., Deputy Director, NIDDK, NIH***

Dr. Bentley-Lewis thanked the professional society representatives not only for the travel awards provided to support NMRI membership to attend the Annual Meeting, but also for providing encouraging information that demonstrates their efforts to foster the career development of NMRI members. She thanked the participants for attending the meeting and looks forward to reconnecting again next year.

Dr. Germino thanked the society representatives for their commitment to the principles that NMRI and its community represent. He expressed appreciation to NMRI mentors and senior members for their continued participation and also extended a warm welcome to new investigators who have only recently joined the community. Dr. Germino closed with a presentation of awards acknowledging the efforts and leadership of Dr. Corsino, Chair of the Oversight Committee, and Dr. Bentley-Lewis, Chair of the Planning Committee. Dr. Germino again thanked the participants and wished safe travels home.



National Institute of  
Diabetes and Digestive  
and Kidney Diseases