2011
Network of Minority Research Investigators Membership Directory

National Institute of Diabetes and Digestive and Kidney Diseases

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Contents

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 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 participation of the members of underrepresented racial and ethnic minority groups 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 underrepresented minority investigators in choosing a biomedical research career in these fields. An important component of this network is the promotion of two-way communications between Network members and NIDDK.

Through the Network of Minority Research Investigators (NMRI), NIDDK will elicit recommendations for strategies to enhance the opportunities of and to implement mechanisms for supporting minority investigators in biomedical research.

NIDDK Executives

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

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Dr. Griffin P. Rodgers was named Director of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)—one of the National Institutes of Health (NIH)—on April 1, 2007. He had served as NIDDK's Acting Director since March 2006 and had been the Institute's Deputy Director since January 2001. As the Director of NIDDK, Dr. Rodgers provides scientific leadership and manages a staff of more than 600 employees and a budget of $2.0 billion.

Dr. Rodgers received his undergraduate, graduate, and medical degrees from Brown University in Providence, Rhode Island. He performed his residency and chief residency in internal medicine at Barnes Hospital and the Washington University School of Medicine in St. Louis. His fellowship training in hematology/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 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 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 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. Agodoa, M.D.

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Dr. Agodoa is a Program Director at the National Institutes of Health (NIH) and a Professor of Medicine in the F. Edward Herbert School of Medicine, Uniformed Services University of the Health Sciences (USUHS). His current duties include the following:

- Director, Office of Minority Health Research Coordination at the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), NIH
- Director of the End-Stage Renal Disease Program in the Division of Kidney, Urologic, and Hematologic Diseases
- Program Scientist and Coordinator of the Multicenter Clinical Study, The African-American Study of Kidney Disease, and the Hypertension Cohort Study
- Co-Project Officer of the End-Stage Renal Disease Database, the United States Renal Data System.

Dr. Agodoa graduated from Cornell University College of Medicine in 1971. He completed his internship and residency training in internal medicine at the University of Washington Hospital in Seattle, Washington, and a 3-year training program in clinical and biomedical research in nephrology and renal pathology. Dr. Agodoa was Chief of the Nephrology Service at the Madigan Army Medical Center in Tacoma, Washington, from 1976 to 1981. In 1981, he returned to the University of Washington and completed 2 years of clinical and research training in rheumatology and immunology. In 1983, Dr. Agodoa was assigned to the Walter Reed Army Medical Center as Assistant Chief of the Nephrology Service and the Nephrology Training Program and also was appointed to the Faculty of Medicine at USUHS. In 1985, he was appointed Director of the Military Medical Research Fellowship at the Walter Reed Army Institute of Research.

In 1987, Dr. Agodoa was appointed Director of the Clinical Affairs Program in the Division of Kidney, Urologic, and Hematologic Diseases, NIDDK. He also was a research scientist in the Laboratory of Cell and Molecular Biology, NIDDK, from 1987 to 1992.

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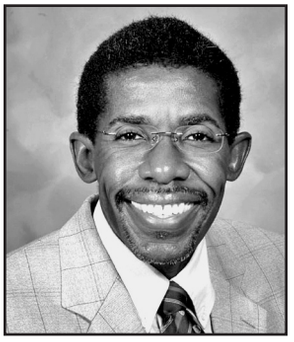

E. Dale Abel, M.D., Ph.D.

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Research Interests

My research is focused on elucidating the molecular mechanisms that are responsible for cardiac muscle injury in diabetes. The laboratory is examining the role of altered insulin signaling and altered fatty acid and glucose utilization and the role of mitochondrial dysfunction. My research is supported by grants from the National Institutes of Health, American Diabetes Association, American Heart Association, and Juvenile Diabetes Research Foundation.

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Research Interests

My laboratory employs an integrative approach to studying signaling complexes that regulate vascular contractility. We utilize a combination of molecular, physiological, and pharmacological tools to investigate macromolecular complexes formed by ion channels and scaffolding proteins and their roles in the physiology and pathophysiology of microcirculation.

Gbemisola Adeseun, M.D., M.P.H.

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Research Interests

I am interested in exploring the impact of health literacy on clinical outcomes in chronic kidney disease. My future research will seek to better understand the influence of health literacy on health behavior and decision-making in the context of a complicated health care system. I also am interested in elucidating the interplay between health literacy, health care utilization, and health care quality in chronic kidney disease.

Roberto Aguilar, Ph.D.

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Research Interests

I have been studying the effects of increased cAMP and/or cGMP on the ability to regenerate axons after an injury using genetically engineered mice that lack cyclic nucleotide phosphodiesterases. Additionally, I have designed, generated, and characterized a novel model of cervical bilateral contusion in mice. This model is important because more than 50 percent of spinal cord injuries (SCI) in humans are at the cervical vertebral level. Thus, generating a clinically relevant model of SCI in mice would allow us to utilize genetically modified mice to design proof-of-principle experiments.

My future research interests include the use of my training in endocrinology, SCI, genetics, molecular biology, and neuroscience to explore new therapeutic avenues that would allow for neural regeneration to occur after an injury. I would like to identify what endocrine hormone(s) can be utilized, either on their own or in combination, to regenerate neurons/axons after injury.

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Research Interests

Overall, my past and present research interests have been in the area of diabetes, metabolism, and basic sciences. I currently am studying intermittent hypoxia and its effects on blood pressure, endothelial function, and markers of thrombosis and inflammation in male Sprague-Dawley rats. The main goal is to better understand how intermittent hypoxia may alter thrombosis and blood pressure in an animal model to gain a better understanding of the human condition seen in obstructive sleep apnea. This work may provide novel data with important implications for obstructive sleep apnea-related cardiovascular and metabolic disease (diabetes and insulin resistance) and thus represents clinical translation research.

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Research Interests

My research interest is in physical activity in the prevention of pediatric obesity. In particular, my interest is in the utilization of community family-based physical activity interventions to reduce early onset cardiovascular disease risk factors in ethnic-minority children. My research agenda also includes examining: (1) the interrelationship between physical activity and nutrition in preschool-age children; and (2) environmental and media influence on various health behaviors in ethnic-minority populations.

Erica Renee Alvarez, M.D. candidate

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Research Interests

I am interested in studying the metabolic syndrome as a risk factor for the development and the progression of chronic kidney disease in Hispanics.

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Research Interests

My research focuses on the cell biology of diarrheal disease. Specifically, our laboratory has focused on studies that investigate mechanisms that regulate apical endocytosis and exocytosis of the Cystic Fibrosis Transmembrane Conductance Regulator (CFTR) chloride channel in the intestine. CFTR is the major exit pathway for chloride and bicarbonate (anions) secretion in epithelial cells of the intestine and therefore is critical for intestinal fluid secretion. In the genetic disease Cystic Fibrosis, mutations lead to defective intracellular traffic of CFTR to the plasma membrane of intestinal cells, resulting in lack of fluid secretion in the intestinal lumen. On the other hand, diarrhea results when the number of CFTR channels on the apical surface of intestinal cells is increased by exocytosis or defective endocytosis. Our group was the first to demonstrate that intestinal fluid secretion is regulated by agonist (cAMP/PKA and cGMP/PKG)-stimulated traffic and insertion of CFTR channels from subapical endosomes to the plasma membrane and by defects in apical clathrin mediated endocytosis. Since then, we have worked to characterize the physiologic regulators of apical endocytosis, recycling, and exocytosis of CFTR in the intestine, with the goal of identifying targets for the pathogenesis and treatment of diarrheal diseases. Most recently, we have been examining the role of myosin motors and adaptor proteins in CFTR endocytosis.

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Research Interests

My research interests include skeletal muscle function and metabolism, integrated biochemical and physiological approaches to the study of prototypical and atypical skeletal muscles and the process of how they are altered by age, neuromuscular disorders, and the study of preferentially targeted or spared motor groups to determine protective strategies.

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Research Interests

My research interests include ethnic differences in Type 2 diabetes and its complications, cardiovascular disease, visceral fat accumulation, adipocytokines, osteoporosis, and nonalcoholic fatty liver disease among postmenopausal Filipino, African-American, and Caucasian women. Other interests include metabolic abnormalities among HIV-infected children.

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Research Interests

I am interested in the role of microRNAs in diabetic nephropathy. Specifically, my interests are in the differential expression of microRNAs in response to high glucose, Angiotensin II, and TGF-beta in the diabetic kidney. MicroRNAs are short RNA molecules that bind and either block or degrade mRNA gene targets to mediate gene expression. As negative regulators of gene expression, microRNAs have been demonstrated to downregulate repressors of fibrotic genes in the diabetic kidney, therefore promoting renal fibrosis. My goal is to identify microRNAs induced in the diabetic kidney as well as their respective target mRNAs. This will elucidate the molecular mechanisms involved in diabetic nephropathy and potentially yield new therapeutics.

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Research Interests

I have two general areas of research. First, I oversee the development and evaluation of a culturally sensitive, family-focused intervention for African-American parishioners to increase intentions to serve as organ donors. This line of research entailed conducting qualitative formative research to understand barriers and facilitators of donation among both clergy and parishioners, developing an intervention package that would address these issues, testing the effectiveness of the intervention using a randomized controlled design, and enhancing the effectiveness of the intervention. Second, I conduct research related to HIV/AIDS in correctional settings. I have helped develop and implement two multisite national evaluations of demonstration projects that seek to link HIV-infected inmates to care while incarcerated and maintain that care once the inmate is released into the community.

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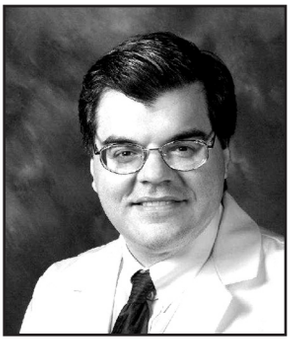
Research Interests

Fibrosis is a leading cause of organ failure and inflammation worldwide. Understanding the mechanisms that lead to or prevent fibrosis will allow easier and more practical therapies to ameliorate this Multi-System Pathology (MSP). Our results indicate that 1,25D, the biologically active form of vitamin D, also known as calcitriol, induces the promotion of an anti-inflammatory/anti-fibrotic phenotype in mesenchymal multipotent cells, suggesting that supplementation with vitamin D could be a valid anti-inflammatory/fibrosis strategy in therapeutic treatment of chronic diseases such as renal or cardiac fibrosis. Our goal is to develop a therapeutic approach more easily translatable to the clinic, identifying factors or genes such as myostatin and vitamin D that can be responsible for promoting or inhibiting fibrosis. I am also interested in the process of cell differentiation mediated by vitamin D.



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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.

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Research Interests

It is my plan that my fellowship training will prepare me to become established as an independent and collaborative researcher at Mayo Clinic. 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 JNMA. 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 an independent 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, (3) apply for a new career development grant so that I can explore research methods related to developing a culturally sensitive community-engagement research model to reduce premature morbidity and mortality in an underserved community, and (4) 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.

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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.

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Research Interests

In concert with my clinical interest in gastroenterology, I am currently involved in three research projects through both my home institution, Columbia University Medical Center, and our sister institution, Weill Cornell Medical College. First, I am constructing a case-writeup for submission on the use of cyclosporine during first-trimester pregnancy for an acute steroid-refractory ulcerative colitis flare. This stems from a recent poster presentation I had done at the American College of Gastroenterology National Scientific Conference in early October 2008. Next, I am awaiting approval on an Institutional Review Board (IRB) proposal I designed, which is a retrospective study comparing pregnancy outcomes of celiac disease patients with inflammatory bowel disease (IBD) controls and normal controls. The hypothesis under investigation is that adverse pregnancy outcomes occur in similar increased frequencies in IBD patients as compared to non-IBD patients. The final research project I am currently working on is a retrospective study looking at the relationship between inflammatory markers and celiac disease. Specifically, I am conducting a chart review on celiac patients and trending their erythrocyte sedimentation rates (ESRs) and C-reactive protein (CRP) levels both prior to and following the initiation of a gluten-free diet (GFD). This clinical research hopes to support the idea that celiac disease represents an inflammatory bowel disease, as evidenced by exceedingly high ESR and CRP in these celiac disease patients.

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Research Interests

My research interests include the effects of fluid mechanical forces on cell adhesion and tissue growth and development, cellular and tissue engineering, and bioengineering aspects of the vasculature. *In vitro* flow systems and models have been developed and employed to better understand the pathophysiology of disease states such as sickle cell disease with an eye towards novel therapeutic approaches.

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Research Interests

My main area of research interest is in the field of Hepatology. I am currently working on two projects, one retrospective and one prospective; dealing with Non-Alcoholic Fatty Liver Disease (NAFLD) and its relation to Obstructive Sleep Apnea. I plan to continue to focus on NAFLD and will be going on to a Liver Transplant Fellowship after my current fellowship is done. In the past, I have also done research in the treatment of Hepatitis C in previous non-responders.

I also have a strong interest in academics and education. My current quality improvement research project involves developing techniques to educate gastroenterologists on how to appropriately estimate polyp size during endoscopic procedures.

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; (5) using holistic methods such as traditional Indian medicine, cross-cultural healing methods, and storytelling to improve health disparities in American Indians.

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Research Interests

My research involves patient-oriented investigations of hormonal mechanisms underlying cardiovascular disease risk; specifically, the roles of the renin-angiotensin-aldosterone system (RAAS) and insulin resistance in mediating vascular dysfunction. My work on the RAAS is funded by the NIH/NCRR K23, and I have recently received a Robert Wood Johnson Foundation Harold Amos Medical Faculty Development Program Award to investigate the role of gestational diabetes mellitus in mediating cardiovascular disease risk.

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Research Interests

My specific research interests are in the field of molecular aspects of signal recognition particle (SRP), an important cytosolic ribonucleoprotein complex that directs secretory proteins to and across biological membranes in all organisms. My research has the goal of identifying the signal peptide interactions that involve the signal peptide in interactions with SRP54 and SRP RNA, using Archaeoglobus fulgidus as a model system. As the Principal Investigator (PI) of the NSF-funded project entitled "Cytosolic SULTs and Environmental Xenoestrogen Metabolism: A Zebrafish Model," I have been involved in the cloning of new zebrafish cytosolic sulfotransferases (SULTs), and carry out experiments related to the characterization of the activities of the purified enzymes toward environmental xenoestrogens.

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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 Boktour, 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 transplant such as kidney and liver, access to transplantation, both from deceased and living donors, is also 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 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.

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Research Interests

My goal is to study the potential molecular mechanisms underlying the effects of TGF-beta family proteins in adipogenesis using adipocyte cell lines and transgenic mouse models. Ultimately, these models will help us to better understand the role of these proteins in energy expenditure and metabolic diseases, including obesity.

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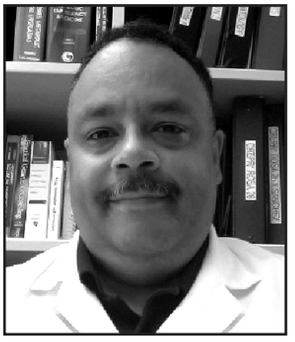
Research Interests

My research interests include chronic illness management and type 2 diabetes. The long-term research goal would be to follow the ancestry of the participants in the parent grant in identifying specific genetic variants and cultural influences that may be predictive in acquiring diabetes and improving quality of life, depression, and adherence to self-management strategies in Asian and Pacific Islanders with type 2 diabetes.



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Research Interests

Our laboratory is working to understand the mechanisms by which genes regulate body composition, using cell-based approaches, genetically engineered mouse models, and microarray technologies to dissect the complex interrelationships among gene products and their effects on adiposity and metabolism. Several of these gene products are members of the TGF-beta superfamily, which has been our main focus. Our team's ultimate goal is to understand the variety of mechanisms by which genes affect adiposity in humans, thereby providing the basis for the rational design of drugs for the medical treatment of obesity and its co-morbidities. Accordingly, my clinical interests include genetic syndromes with obesity as a feature, and the contributions of genomic copy number variation and monogenic variants to non-syndromic obesity.

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Research Interests

As a postdoctoral fellow at the Obesity Research Center at the University of Cincinnati, I investigated the interactions among several key factors that determine whether or not animals become obese. These included gender (e.g., we have found that males and females respond differently to adiposity signals); dietary fat (e.g., we have found that rats maintained on a high-fat diet are resistant to the catabolic actions of insulin and leptin in the brain); and the presence or absence of specific genes important in the regulation of energy homeostasis. One of my major areas of investigation was central insulin resistance caused by high-fat diets. I wrote a research proposal and subsequently received an award from the NIH to conduct these experiments. The objective of the research I have initiated at the University of North Carolina at Greensboro is to develop an animal model of middle-aged humans, a time when estrogen levels decline in women and the incidence of obesity and its complications increases, and to evaluate fundamental questions related to body fat and sex differences. I will compare central leptin sensitivity in male and female rats that are middle-aged to determine the role of estrogen in determining visceral fat as well as the brain's sensitivity to leptin. These objectives will allow me to establish novel techniques to ask important questions of the association between aging, estrogen levels, and body fat as individuals end their reproductive capacity (mimicking menopause in women).

Terry A. Brown-Bryan, Ph.D.

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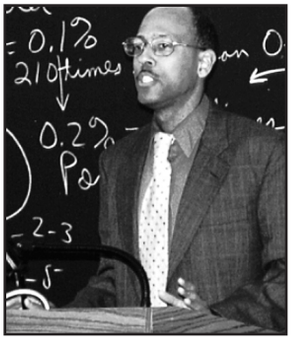
Research Interests

The prevalence of diabetic nephropathy (DN) is of much concern to health care systems worldwide. Extensive research has been done to understand the pathogenesis of this disease. Studies have characterized several factors that may mediate structural alterations during the progression of DN, such as renal tubular hypertrophy and subsequent tubulointerstitial fibrosis (TIF). However, ongoing research is necessary to identify novel genes that may be critical modulators of tubular hypertrophy, TIF, and progressive DN. My long-term research interest is to establish the regulatory mechanisms of tubular hypertrophy and TIF in the progression of DN and to develop innovative therapies and effective interventions for reversing and preventing the progression to DN.



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Research Interests

My research interests include: (1) global regulation of *Vibrio vulnificus* pertaining to pathogenesis; (2) analysis of health disparities between diabetic Hispanics and Caucasians in effects of MRSA colonization on amputation rates; (3) efficiency of Mexican herbal remedies on treatment of antibacterial infections; and (4) DNA repair in enteric bacteria and the evolution of general repair mechanisms throughout bacterial families.

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Research Interests

Although short-term graft and patient survival after liver transplantation have markedly improved over the last 2 decades, an unacceptable rate of graft loss due to uncharacterized immune-mediated complications persists. Durable graft survival remains an elusive goal for many patients, particularly patients of African and Latino descent. A review of the United Network for Organ Sharing statistics demonstrates that African American and Latino recipients fare 5-10 percent worse in 1- and 3-year graft and patient survival after liver transplantation than their Caucasian and Asian counterparts. The negative impact of this problem has eroded the recent overall short-term gains and contributes to the persistent problem of relisted candidates and failed retransplants. Unfortunately, these recipients are generally only identified after failing standard immunosuppressive therapy; their course is often that of unanticipated and/or difficult-to-treat rejection with histologic changes on biopsy suggestive of immune-based injury, often classified using the waste-basket term "chronic rejection." The immunobiology of chronic rejection is poorly understood but likely related to suboptimal response to standard immunoprophylaxis and/or immune hyperreactivity. Population-based pharmacogenomic analyses described in genetic studies of other disease processes, coupled with relevant immunogenetic findings in high-risk recipients of other organs such as kidney transplants, suggest that immunogenetic and pharmacogenomic analyses of liver transplant recipients may assist in stratifying patients' risk of graft loss. Polymorphisms of genes encoding drug metabolizing enzymes such as cytochrome p450 as well as those encoding critical downstream mediators of the alloimmune response, including lymphocyte calcineurin, IL-2 receptor and cytotoxic T lymphocyte antigen-4 expression, may impact patient response to conventional immunosuppressant therapy and therefore immunosuppressant efficacy. This line of investigation has not been extensively pursued in the liver transplant population and may reveal a scientific basis for differential outcomes in survival after liver transplantation.

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Research Interests

My current research investigates the influence of pregnancy and lactation on growth and gene expression patterns of the maternal liver. I am interested in examining the molecular mechanism(s) by which maternal liver size is regulated during pregnancy. These studies are very interesting because an increase in the size of the maternal liver may be very important for fetal development and/or maternal health and, therefore, it is possible that conditions that impede liver growth, such as alcohol consumption or steatosis, could indirectly affect development of the fetus and or the health of the mother.

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Research Interests

My research expertise is grounded in health services research that addresses how best to enhance health literacy to improve access to and utilization of health care, and self-efficacy to improve outcomes from secondary and tertiary disease prevention, with a focus on breast cancer prevention and diabetes management among vulnerable populations, including the elderly. Using an ethnomedical science framework (cross-cultural research) and mixed methods (survey and qualitative), I have pioneered and published two methods that may enhance health communication among vulnerable populations with limited literacy skills, and a new qualitative method, Focused Discussion Groups, that has been shown to be effective as an educational intervention.

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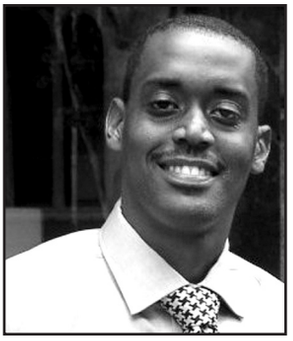
Research Interests

My laboratory studies the mechanisms of disease in the Hyperornithinemia-Hyperammonemia-Homocitrullinuria (HHH) syndrome, a disorder of the urea cycle (UC) and ornithine degradation pathway, caused by mutations in the mitochondrial ornithine transporter, ORNT1, which also serves to transport lysine and arginine across the inner mitochondrial membrane. The clinical presentation of HHH syndrome is generally milder, later-onset, and more variable when compared to other UC disorders such as ornithine transcarbamylase deficiency, which presents as neonatal hyperammonemia. We believe this clinical presentation may, in part, be related to the existence of gene redundancy at the level of the mitochondrial carrier proteins (ORNT2 and ORNT3). Symptoms are associated with CNS (i.e., spastic ataxia, stroke-like episodes, developmental delay) and hepatic dysfunction. Despite early detection and adequate metabolic control, patients with HHH syndrome may continue to worsen neurologically. Given ORNT1's crucial role in the UC, ornithine degradation pathway, and the metabolism of lysine and arginine, our overall hypothesis is that tissue-specific abnormalities due to ORNT1 ablation contribute to the mechanism of disease in this metabolic disorder independent of hyperammonemia and that redundant transporters may serve to modify the HHH phenotype. To study the mechanisms of disease in HHH syndrome, we utilize a combined experimental approach that includes the use of fibroblasts and lymphoblastoid cells from HHH patients and a transgenic mouse model. Because current treatment focuses solely on the prevention of hyperammonemia, one of our long-term objectives is to design more effective nutritional and pharmacological therapies to treat HHH patients. To achieve this goal, we are currently investigating mitochondrial dysfunction as a putative disease mechanism in patients with HHH syndrome using an *Ornt1* KO mouse model. Surprisingly, the *Ornt1* KO mouse shares many of the clinical findings of HHH patients such as variable and late onset presentation, progressive neurological deterioration, residual ornithine transport, mild hyperammonemia, fatty liver, and a clinical biochemical profile suggestive of mitochondrial disease. Overall, preliminary studies suggest that the *Ornt1* KO mouse is a useful model to study the fundamental role that ORNT1 and other mitochondrial amino acid carrier proteins play in mitochondrial physiology and mitochondrial protein synthesis. Moreover, the content or activity of these redundant mitochondrial amino acid carrier proteins could be manipulated to the physiological advantage of patients with HHH syndrome or other forms of mitochondrial disease.



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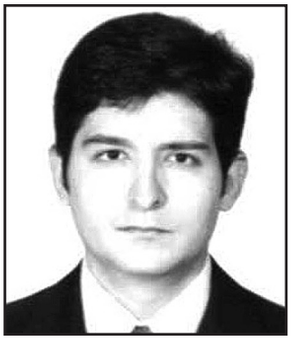
Research Interests

My current area of focus centers on the functional characterization of the glomerular slit diaphragm protein dendrin. We have demonstrated that dendrin relocates from the slit diaphragm to the podocyte nucleus in response to pro-apoptotic TGF-β as well as in a mouse model of anti-glomerular basement membrane glomerulonephritis. Our current work seeks to elucidate the mechanism of the nuclear import of dendrin as well as identify the nuclear targets that enhance the pro-apoptotic response. Given the correlation between a reduction in podocyte number (podocytopenia) and the progression of chronic kidney disease, we hope to identify specific molecular targets to tackle disorders that result in a compromise of slit diaphragm integrity and proteinuria.



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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.

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Research Interests

My research goal is to develop gene therapy strategies for the treatment of neuroendocrine disorders, such as pituitary disease, brain tumors, and chronic neurodegenerative disorders. My research group has developed novel gutless adenovirus vectors and has pioneered *in vivo* gene transfer into the pituitary gland and the central nervous system. I am particularly interested in understanding the cellular and molecular mechanisms that mediate long-term transgene expression and the immunological basis, which determines the interactions between viral vectors and their target tissues. I am also pursuing preclinical testing of these novel gene therapies as a prelude to clinical trials in humans. I serve on the editorial boards of *Gene Therapy, Current Gene Therapy, Journal of Endocrinology, Journal of Molecular Endocrinology, Pituitary,* and *Journal of Neuromolecular Medicine*. I am a recipient of National Institutes of Health grants to develop novel gene therapy approaches to treat brain diseases such as Parkinson's disease and brain cancer. I have published more than 125 original research articles and have published in high-impact journals such as *Nature Medicine, Proceedings of the National Academy of Sciences of the USA, Nature Biotechnology, Endocrinology,* and *Journal of Clinical Endocrinology and Metabolism*.

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Research Interests

My area of expertise includes hormonal modulation of pain transmission and non-genomic effects of sex steroids. The aim of my research program is to elucidate the nociceptive pathways modulated by steroid hormones in nervous tissue. Although a central site of this modulation is widely accepted, we study how sex steroids act on primary nociceptors and modulate the response to pro- and anti-nociceptive signals, depending upon the nature of the signals interacting at the level of sensory neurons. Nociceptive systems are implicated in the etiology of functional disorders such as non-cardiac chest pain, interstitial cystitis, fibromyalgia, acute or chronic abdominal pain associated with functional bowel disorders, and chronic pelvic pain. The incidence of episodic or persistent visceral pain associated with functional disorders is much higher in women than men; therefore, it is a novel concept to suggest that sex steroids may play a role in modulating peripheral cross-sensitization between different visceral organs. My studies may provide important information about the actions of sex steroids on primary sensory neurons or a better understanding of gender differences observed in the clinical presentation of functional pain-associated disorders. Designing new gender-specific therapies will have a major impact on health-related quality of life, significantly reducing therapeutic interventions. For my work, I received a Wood-Whellan Award from the International Union of Biochemistry and Molecular Biology and Fellowships from the International Science Foundation, European Science Foundation, and UNESCO. I also received a President's Award for Excellence in Service to Charles Drew University and a Life Sciences Institute Emerging Scientist Award.

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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.

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Research Interests

The research that I am currently working on is based on the Barker hypothesis. The Barker hypothesis postulates that fetal stress *in utero* can lead to the development of diseases in adult life. The project that I am currently working on restricts the feed or food intake of pregnant rats. Our goal is to test the hypothesis that maternal food restriction (MFR) causes changes in the vascular system, hence making the offspring more vulnerable to diseases such as stroke, hypertension, and coronary heart disease when they become adults. This study is relevant because, in low socioeconomic communities, pregnant mothers may not have access to the proper nutrition during pregnancy, which can lead to their offspring developing diseases such as stroke, hypertension, coronary heart disease, and the like.

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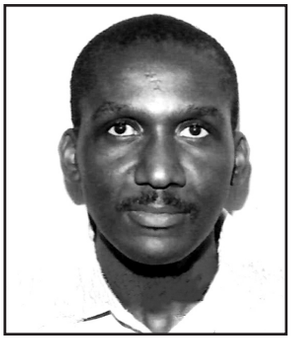
Research Interests

My research interests broadly address fundamental issues in acute and chronic kidney disease, using techniques of clinical epidemiology, health services research, decision sciences, and clinical trials. Active NIH-sponsored research projects on which I serve either as Principal Investigator or a member of the Executive or Steering Committee include the Frequent Hemodialysis Network (FHN) study, the United States Renal Data System (USRDS) Special Studies Center in Nutrition, the Chronic Renal Insufficiency Cohort (CRIC) study, and the Systolic Pressure Intervention Trial (SPRINT) and SPRINT MIND.



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Research Interests

My interest is in clinical nutrition and nutritional epidemiology research. I am specifically interested in the micronutrient status of preschool children, especially zinc and iron, because of the long-term effect of deficiencies that occur during this crucial period. I also am interested in understanding the clinical, metabolic, and molecular effects of bacterial overgrowth in children with a history of surgical short bowel syndrome to improve their nutritional status and overall outcome.

Elizabeth Coss, M.D.

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Research Interests

During my residency, I had the opportunity to explore clinical research in liver transplantation. Specifically, I participated in a prospective cohort study where we conducted a chart review looking for the association of troponin and cardiovascular and mortality outcomes in liver transplant recipients. Over the last year, my research interests have changed. As a minority, I have developed an interest in how certain gastroenterologic diseases are manifested in our patient population. I hope to explore this further once I begin my fellowship.

Vanessa Costilla, M.D.

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Research Interests

In 2005, as a research intern at Johns Hopkins School of Public Health, I performed a study on the epidemiology of lawn mower injuries in the United States that was published in the *Annals of Emergency Medicine* in 2006. My latest project involves finding the prevalence of depression among Hispanics with non-end stage chronic kidney disease. I also have a significant interest in gastroenterology, though I have not had the opportunity to engage in a major GI research project. As a fourth-year medical student, I find myself more stimulated by the fields of gastroenterology and oncology. My hope is that after a year of exploring the various subspecialties of Internal Medicine, I will be better equipped to define my primary interests and find mentors to help turn my research ideas into publishable projects.

Deidra C. Crews, M.D., Sc.M., FASN

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Research Interests

My research interests include chronic kidney disease epidemiology, patient and provider education, and racial disparities in chronic kidney disease. I am particularly interested in the mechanisms through which socioeconomic, lifestyle, and behavioral factors might contribute to racial disparities in chronic kidney disease.

Luis Angel Cubano, Ph.D.

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Associate Professor of Cell Biology
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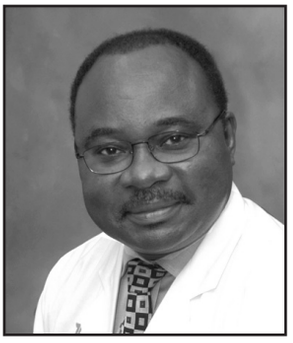
Research Interests

My research focuses on how mechanical culture conditions affect renal cell gene expression, NF-κB and vitamin D receptor expression, and the production of vitamin D and urokinase.



Samuel Dagogo-Jack, M.D.

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Research Interests

My laboratory has ongoing studies and collaborations in such areas as the pathobiology of early glucose abnormalities leading to prediabetes, the prevention of Type 2 diabetes and the epidemiology of diabetes complications, and leptin regulation and its role in human metabolic pathophysiology.

Carla Davis, M.D.

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Research Interests

My research interest is in the area of immune responses to foods. My interest is in the cellular mechanisms, which are involved in clinical conditions typically described as non-IgE mediated food hypersensitivities. These include eosinophilic esophagitis and food protein-induced enteropathies. Because I have an interest in discovering the cellular and biochemical mechanisms of eosinophilic inflammation in the gut mucosa, the specific role of food allergens as a trigger for this inflammation is a specific interest of mine. I have a clinic in which I see patients for the determination of the role of food allergies in eosinophilic esophagitis where allergy testing is performed routinely in collaboration with Dr. Anthony Olive, a gastroenterologist at Texas Children's Hospital. I am exploring the role of testing for delayed-type hypersensitivity by patch testing to allergenic foods with the purpose of improving the clinical management of non-IgE mediated disorders. I have been exploring T regulatory involvement in the pathogenesis of eosinophilic esophagitis as well. I also am involved in a project entitled, "Eosinophilic Proteome Analysis in Eosinophilic Esophagitis." This study will help elucidate the effect of the peripheral blood eosinophil protein expression on mucosal inflammation in children and adolescents with eosinophilic esophagitis (EE). The current objective of this study is to determine the relationship between the eosinophil proteome and markers of mucosal eosinophilic inflammation in eosinophilic gastrointestinal (GI) disease. This project will focus on identification of peripheral blood eosinophil biomarkers, which could lead to the development of a non-invasive method of assessing disease progression or remission, and the effectiveness of treatment modalities in EE.

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Research Interests

My research focuses on the development, implementation, and evaluation of community-based childhood obesity and diabetes prevention behavioral interventions and the employment of a community-based participatory research (CBPR) approach. I have three primary research interest areas. The first involves the examination of the organizational and individual-level factors influencing academic-community research partnership development, specifically with faith-based organizations. The second explores the intersection of faith and health among African Americans, and how obesity and diabetes interventions can be integrated into the faith organizational educational structure. The third entails the development and evaluation of community-based obesity and diabetes behavioral interventions for African-American children and families using a CBPR process. Specifically, my work entails working with faith organizations and YMCAs to promote healthy eating and physical activity to prevent childhood obesity among African-American youth and families.

Daisy Delgado DeLeon, Ph.D.

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Research Interests

My research interests include the role of insulin-like growth factors in breast cancer. The main interest of our laboratory is to evaluate the role of IGF-II in breast cancer development and the progression of metastasis. We have demonstrated that expression of IGF-II stimulates cancer growth and enhances the secretion of cathepsin D, an enzyme associated with poor prognosis in breast cancer patients. Of great interest is our recent observation that IGF-II is also important in the establishment of breast tumors. Breast cancer tumors can be developed in SCID and NUDE mice without the requirement of estrogen when the tumors secrete pro IGF-II. We are currently identifying the mechanism involved with this effect.

Stephanie DeLoach, M.D.

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Research Interests

I am interested in assessing the role of central blood pressures and measures of wave reflection in the evaluation of cardiovascular risk among patients with chronic kidney disease and hypertension. African Americans have an increased prevalence of hypertension and kidney disease that leads to more cardiovascular disease that often emerges at an earlier age. Therefore, preclinical markers of cardiovascular disease, including inflammatory biomarkers, vascular dysfunction, and genetic determinants in this population, are also a focus of my research.

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Research Interests

My research interests are in the area of chronic kidney disease (CKD) and health disparities, with particular focus on the implications of limited health literacy on patient safety in CKD. Awareness of CKD is remarkably low among both at-risk patients and providers, and eliminating barriers such as limited health literacy may be a way to mitigate the disparate outcomes noted in minorities with CKD. My colleagues and I are working on using SMS texting as a potential means to overcome limited health literacy, and to improve patient education regarding potential safety hazards in CKD.

Alejandro Diez, M.D.

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Research Interests

My interests relate to the interaction of HIV and subsequent development of chronic kidney disease (CKD) and progression to end-stage renal disease (ESRD). My current research is based on the association between HIV infection and proteinuria; particularly the determination of the clinical significance and outcomes of proteinuria in HIV-infected patients. Our study subjects are HIV-infected patients who present to a university outpatient HIV clinic. We are using a computerized medical records database to obtain and manage longitudinal data. We hypothesize that HIV-infected individuals have a higher long-term risk of proteinuria and CKD, despite being on HAART, which in turn will lead to worse renal outcomes. Ultimately we aim to describe the attributable risks of HIV for the development of CKD and progression to ESRD in the setting of proteinuria.

Nelson Cesar Di Paolo, Ph.D.

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Research Interests

I had been working with Adenoviral Vectors (AdV) for more than 10 years. These vectors have a number of important characteristics that make them the vector of choice for gene therapy applications for a wide range of human diseases, including but not limited to diabetes and cancer. However, they also induce a strong innate and adaptive immune response that limits their applications. Briefly, my current research efforts are aimed to better define the molecular and cellular components of the innate immune response that are responsible for the acute toxicity induced by these vectors. I am also trying to characterize the sensors that recognize AdV in macrophages. Finally, I am trying to identify the moieties in the AdV capsid that are recognized by the host when injected with these vectors, results that I hypothesize will provide the basis to engineer a vector platform that will not be recognized by the host. It is expected that when these goals are fulfilled, researchers studying a wide range of human diseases will have available a biological tool to deliver and express proteins of interest specifically in the target tissue without inducing any toxicity or inflammation, a possibility that today is not available with pharmacological drugs.

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Research Interests

I am interested in a better understanding of the molecular basis of vascular occlusive diseases in general and the adaptive process that occur following vessel occlusion. I am particularly interested in the influence of diabetes on the development of vessel occlusion and its impact on the normal adaptive processes that occur following occlusion.

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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 am also 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.

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Research Interests

My research interests are in health disparities using the sickle cell model at several levels of analysis, including cells, proteomics, genomics, community, and individuals. As seen from my resume, I was one of the early graduate students at Wayne State University Comprehensive Sickle Cell Center in Detroit, Michigan. I worked on red cell membrane protein phosphorylation in sickle cell disease. My subsequent research was focused on changes in red cell membrane surface topology (transmembrane signaling) in sickle cells as a predictor variable for adhesion to endothelial cells. Finally, we were able to publish, in 2009, studies on how fetal hemoglobin may be regulated through the effect of transcription factors, including Stat3 and GATA-1.

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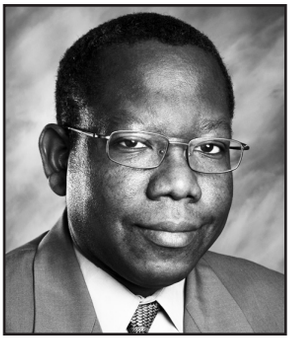
Research Interests

My research interests are in elucidating better biomarkers for assessing renal injury due to salt-induced hypertension. I am also interested in the role of dietary supplements in reducing the development of chronic kidney disease in Dahl rats. My other research interest lies in understanding the causative mechanisms responsible for increased blood pressure in women following menopause.



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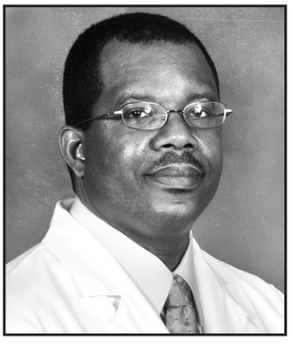
Research Interests

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.



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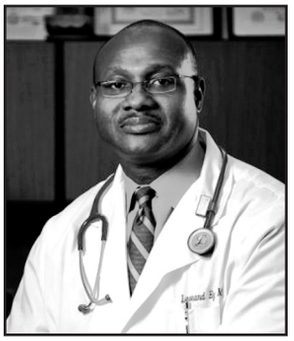
Research Interests

My current research interests focus on primary aldosteronism. The current focuses include: (1) identifying a candidate gene for aldosterone producing adenoma (APA); (2) defining the possible molecular role of type-4 serotonin receptor in APA; (3) evaluating outcomes (hypertension resolution in particular) in APA patients following surgical versus medical treatment; (4) developing novel noninvasive diagnostic tools for lateralizing APA; and (5) identifying more sensitive and specific steroid biomarkers for primary aldosteronism.



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Research Interests

I 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 have published extensively in this area of research in a variety of peer-reviewed journals. I am a member of National Institutes of Health scientific review study sections, regularly serve as an *ad hoc* reviewer for National Institutes of Mental Health special emphasis panels in the areas of mental health service delivery and ethnic disparities, and serve on VA health services research study sections. I currently serve as a Deputy Editor for the *Journal of General Internal Medicine* and am on the editorial board of *Current Diabetes Reviews*. I am a member of the National Advisory Council of the Robert Wood Johnson Physician Faculty Scholars Program.

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Research Interests

PCOS is a common endocrine disorder characterized by a state of hyperandrogenism and oligo-ovulation. It is associated with obesity and insulin resistance, with resultant hyperinsulinemia leading to hyperandrogenism. PCOS affects 1 in 10 women of reproductive age. Both obesity and insulin resistance constitute a public health problem by increasing health-care costs and increasing the risks for premature death from cardiovascular disease, type 2 diabetes, and cancer. However, the cause of both PCOS-related insulin resistance and obesity are largely unknown. My research is focused on defining the molecular basis of obesity and insulin resistance in PCOS.

Robert Ferry, Jr., M.D.

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Research Interests

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

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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.

Nketi Forbang, M.D.

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Research Interests

My main interest is in peripheral arterial disease (PAD). My investigations during these next few years will follow the spectrum of genesis, progression, and hopefully their relationship to management. My first project will be on disease progression. I will be investigating change in ankle brachial index (ABI), a measure of PAD, in individuals diagnosed with both diabetes and PAD. Comparisons will be made with individuals having only PAD. The idea is to see how diabetes compounds the effects of PAD, using this particular measure of disease. My second project will be investigating vitamin D deficiency and its relationship to the higher risk of development of PAD in African Americans (AA). Numerous studies are showing AA with a higher rate of both vitamin D deficiency and PAD. Vitamin D deficiency is proving to be an important risk factor, which may help explain the higher prevalence of the disease in AA.

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Research Interests

My current research investigates the role excessive fatty acid effluent to the liver via the hepatic portal vein plays in insulin resistance. To accomplish this, I use rodent models to differentiate the role of anatomical location and/or origin of adipocytes in influencing a number of metabolic outcomes, including glucose tolerance, plasma lipids, and hepatocyte activity. An important model I use is that of adipose tissue removal (lipectomy) and/or transplantation. In these studies, samples of individual fat pads (e.g., mesenteric, epididymal) are removed from some animals and in some cases transplanted into other animals, or alternatively into different anatomical sites in the same animals. We are finding that there are adipose-depot autonomous functions of adipocytes that may have important clinical implications. Another focus of my work is identifying the link between increased visceral adipose tissue mass and metabolic dysregulation, especially as it relates to hepatic activity (i.e., gluconeogenesis, fatty acid oxidation, hepatic lipogenesis, and liver triglyceride content [i.e., fatty liver]) and insulin resistance.

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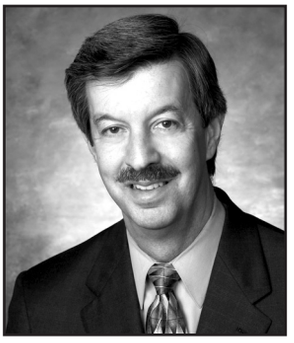
Research Interests

My area of interest is in the epidemiology of Non-Alcoholic Fatty Liver Disease (NAFLD), specifically in the African-American population. I am also interested in the treatment of NAFLD.



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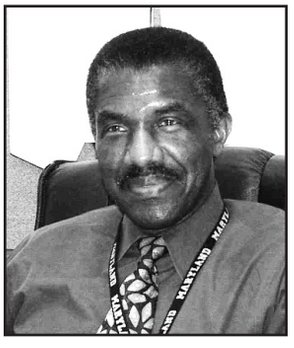
Research Interests

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.



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Research Interests

My interests are in prostate cancer and prostate biology. This research involves hormone regulation of gene expression in prostate epithelial cells and the mechanisms and regulation of Zn uptake by prostate epithelial cells.

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Research Interests

I am a second-year Robert Wood Johnson Foundation Clinical Scholar at the University of California, Los Angeles. I am the first Clinical Scholar sponsored by the American College of Surgeons conducting research at UCLA/RAND, deferring the completion of my General Surgery residency training at Yale New Haven Hospital. I graduated from the University of Michigan with a bachelor's degree in Biology/Sociology, earned my medical degree from the Albert Einstein College of Medicine, and earned a master's degree in Public Health at Columbia University as a Macy's scholar. I am interested in quality of surgical care, appropriateness of care, and health care disparities. Transitioning to a surgical career in urology, my research focus includes understanding patterns of screening and awareness of prostate cancer among minorities within health care systems and in community settings. I am also conducting research on the risk factors associated with perioperative infections (e.g., catheter-associated urinary tract infections) and developing preventative guidelines with ACS NSQIP. In addition, I endeavor to develop metrics and policies in order to decrease risk factors, increase patient's access to treatments, and improve quality of care.

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Research Interests

The main focus of my research is on vaccine development, particularly on the development of adjuvants that can safely enhance immunity to acute or chronic infectious diseases. For several years, we have investigated the innate and acquired immune responses induced by vaccination with novel adjuvant delivered in combination with antigens derived from bacterial viral and fungal parasites. The main thrust of my research is to develop and evaluate needle-free vaccines that can be delivered directly on mucosal surfaces or via transdermal patches. A few years ago, I had collaborations with faculty members in the Tulane Department of Urology, and we worked on several projects related to the development of vaccines against Urinary Tract Infections, and also on cryptic bacterial infections as a cause of interstitial cystitis. I am keenly interested in rekindling this line of research in my laboratory.

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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.

Trudy Gaillard, Ph.D.

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Research Interests

I am currently Assistant Professor of Medicine (Research) in the Division of Endocrinology, Diabetes, and Metabolism. In this position, I am responsible for exercise research aimed at examining the benefits of aerobic exercise on metabolic risk factors for cardiovascular disease (CVD) and Type 2 diabetes in African Americans. I am interested in studying the metabolic correlates and nontraditional metabolic risk factors that lead to the development of Type 2 diabetes and CVD in African-American women. I believe that understanding of the nontraditional risk factors may lead to future development of primary prevention protocols that could possibly curtail the higher rates of the disease in this population. African-American women have the lowest rates of reported leisure time physical activity. I am interested in designing culturally specific and relevant exercise programs for women and examining the benefits of exercise in the prevention of diseases in African-American women. Finally, I am interested in examining other nontraditional risk factors for CVD and Type 2 diabetes. For example, the role of aspirin in the prevention of atherosclerosis and the functionality of high-density lipoprotein cholesterol (HDL-C) and its correlations to heart disease in African-American women. I believe understanding of the role of HDL functionality on the vasculature (structure and function) could provide (1) new insights into the mechanisms of the atherocardioprotective effects of aspirin in African-American women compared to white American women, and (2) the potential to develop novel and therapeutic armamentarium to improve HDL as a nontraditional approach to preventing CVD.

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Research Interests

Currently, I am a postdoctoral scholar in Dr. Francisco Andrade's laboratory in the Department of Physiology at the University of Kentucky. My research focuses on respiratory and craniofacial muscle metabolism and mitochondrial function. I have also been involved in teaching, both as a mentor and supervisor at the University of Kentucky and as an instructor at Eastern Kentucky University.

Senta K. Georgia, Ph.D.

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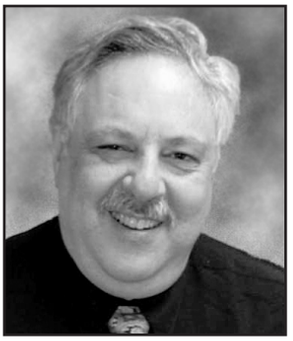
Research Interests

Currently, my research focuses on how methylation restricts cell fate decisions during pancreatic organogenesis, and how methylation restricts beta cell self-renewal in adulthood. I hope to apply my expertise to methods of expanding beta cell mass, either *in vivo* or *ex vivo*, as a potential therapeutic for patients with diabetes.



Sidney H. Golub, Ph.D.

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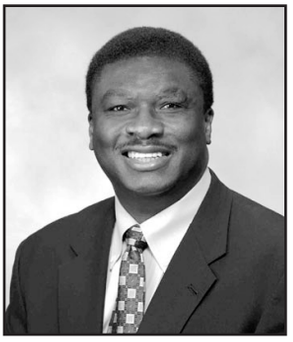
Research Interests

Currently, my interests focus on issues of science policy and research ethics. My laboratory research program has followed two closely related themes: the *in vitro* regulation of cytotoxic cells by cell interactions and regulatory cytokines and the *in vivo* expression of cytotoxic cell function in cancer patients.



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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.

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Research Interests

My research interest is racial/ethnic disparities in chronic kidney disease. I am specifically interested in research to: (1) identify patient and health care provider behaviors that impact these disparities, and (2) develop novel interventions designed to modify these behaviors with the goal of improving kidney disease outcomes among traditionally disadvantaged populations. My current research focus includes improving awareness and knowledge of chronic kidney disease among ethnic/racial minorities.

Diana S. Grigsby-Toussaint, Ph.D.

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Research Interests

My research efforts focus on elucidating socio-environmental risk factors associated with obesity and diabetes in youth and vulnerable populations.

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Research Interests

I am interested in nonalcoholic fatty liver disease (NAFLD), with a special focus on epidemiology. Previously, researchers from our group studied the ethnic differences in the prevalence of NAFLD from participants of the Dallas Heart Study. I expanded these findings using a multivariate approach. Using a combination of proton magnetic resonance spectroscopy (1H-MRS), dual energy x-ray absorptiometry (DEXA), and multislice abdominal MRI to simultaneously determine HTGC and body composition/distribution, we studied the relationship between these and other important risk factors for NAFLD among the major ethnic groups in the United States. Additionally, I am interested in noninvasive methods to determine hepatic fatty acid composition. I have done preliminary work using 1H-MRS at 7 tesla to determine saturation and unsaturation of hepatic fatty acids in livers with and without steatosis. Lastly, I have recently begun characterizing our experience with hepatocellular carcinoma (HCC) at the Dallas VA. Specifically, we aim to determine if differences exist among the major ethnicities in the presentation and treatment of HCC.

Absalon D. Gutierrez, M.D.

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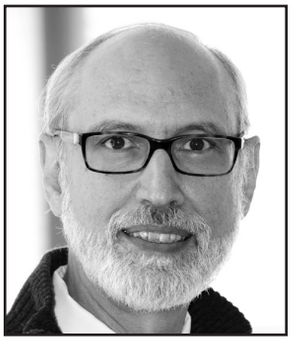
Research Interests

My clinical and translational research focuses on the effects of glucoincretin 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.

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Research Interests

We recently completed 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." 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 have a strong interest in epidemiologic studies that may shed light on ways to reduce health disparities. Currently, I am working to expand research opportunities among undergraduate students in the areas of nutrition and related sciences.

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Research Interests

Urolithiasis is the second most prevalent kidney disease in the United States, after hypertension. Seventy to 80 percent of stones are composed of calcium oxalate, and minor changes in urine oxalate affect the stone risk. As part of my thesis work in the Yale Investigative Medicine Ph.D. program, I found that PKC-δ activation negatively regulates Slc26a6 activity expressed in *Xenopus* oocytes by reducing its surface expression. PKC-δ activation also inhibits transepithelial oxalate secretion across isolated mouse duodenal tissue mounted in a Ussing chamber, a process largely mediated by SLC26A6. I also found that the novel WNK4 kinase negatively regulates SLC26A6 activity, by reducing its surface and total expression, when co-expressed in *Xenopus* oocytes. In view of the significance of SLC26A6-mediated intestinal oxalate secretion in oxalate homeostasis and prevention of hyperoxaluria and kidney stones, current and future studies are directed at identifying the neurohormonal factors acting upstream of PKC-δ and WNK4. These studies will be conducted in human intestinal cell lines, mouse and rat native intestinal tissues mounted in a Ussing chamber, as well as *in vivo* experiments in different animal models, and will include elucidation of the involved signaling pathways. My overall goal is to elucidate the molecular mechanisms/signaling pathways regulating SLC26A6 and hence intestinal oxalate transport, which are currently largely unknown, and how these pathways might pertain to the risk of hyperoxaluria and calcium oxalate urolithiasis.

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Research Interests

My main research interest is in health disparities in kidney disease among minority populations. I am focusing on environmental exposures (lead, cadmium, and mercury) as potentially modifiable risk factors for the progression of chronic kidney disease among Hispanics. I am also interested in increasing the participation of Hispanic patients in therapeutic trials for glomerulonephritides.

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Research Interests

In our society, metabolic bone disease is related to increased costs and significant morbidity and mortality. Little information is available on some factors that may be associated with metabolic bone disease and increased fracture risk, including diabetes mellitus, inflammatory bowel disease, and bariatric surgery. This is especially true for Puerto Rican and Hispanic subjects. My research interests lie in these areas, and in discovering possible preventive measures for this population.

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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 (IR); (2) cognitive function; and (3) cytokines and neurotrophic factors. I am currently 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) disabled individuals (i.e., 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. The National Alzheimer's Association features my research on the effects of exercise on dementia on its "Maintain Your Brain™—the Science Behind the Recommendations" website.

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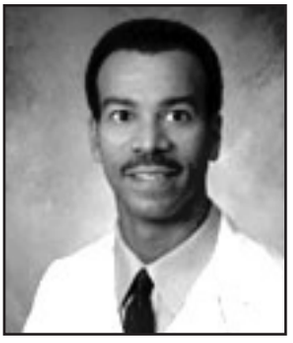
Research Interests

In the field of nephrology, it is well appreciated that patients with chronic kidney disease are at an increased risk of death above that of the general population. From early stages of kidney disease to end-stage renal disease or failure, the high morbidity and mortality rates in such affected individuals are recognized. Despite renal transplantation, cardiovascular disease serves as the leading cause of death. Given these factors, my research interest has been focused on identifying risk factors, markers, and predictors of mortality. A cardiac biomarker, cardiac Troponin T, is used to diagnose myocardial infarction and ischemia in those with chest pain symptoms. Troponin T is also elevated in asymptomatic patients with chronic kidney disease and has been linked as a predictive marker of mortality in this already high-risk population. As such, we have been studying the predictive value of Troponin T in renal transplant candidates immediately prior to renal transplantation and in renal transplant recipients. We believe that this marker and others will aid in increasing awareness of those at elevated risk, ultimately allowing time for intervention prior to such anticipated outcomes. My research also encompasses recurrent diseases following renal transplantation, primarily, focal segmental glomerulosclerosis. In addition, I am currently involved in a chronic kidney disease clinic initiative and plan to utilize this experience to formulate new hypotheses, developing additional research points of interest.



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Research Interests

I consider myself to be a molecular physiologist. My work currently focuses on regulation of the thiazide-sensitive sodium chloride cotransporter by phosphorylation. In general, I am interested in the molecular explanations of the physiology of ion transport processes.

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Research Interests

Our laboratory is investigating the pathways that lead to chemoradioresistance in rectal cancer. We have developed *in vivo*, *in vitro*, and *ex vivo* models of chemoradioresistance and have begun various radiosensitizing modalities to overcome such tumor resistance. We are investigating apoptosis and hypoxia as possible mechanisms of action leading to a radioresistant phenotype with the goal of establishing a profile that could lead to appropriately selecting patients for neoadjuvant chemoradiation.

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Research Interests

My research interests involve advancing our molecular understanding of diabetes and neurological disease by combining sensitive biophysical methods with systems biology. As a graduate student, I employed quantitative imaging techniques to study the structure and trafficking of the GABA transporter, GAT1, a neurotransmitter transporter involved in inhibitory neurotransmission and targeted in the treatment of epilepsy. These studies uncovered GAT1 trafficking motifs and novel interactions with the cytoskeleton with implications for epilepsy research. For the first time, the dynamics of the GAT1 containing vesicle were quantified, and the number of transporter molecules on vesicles were confirmed—advancing our understanding of GAT1 trafficking onto the membrane. In my current research, I apply similar quantitative-fluorescence approaches to determine the angiogenic balance in healthy and diseased tissue by measuring pro-angiogenic and anti-angiogenic receptor density and dimerization. Furthermore, I am currently designing high-throughput methods of analyzing the angiogenic balance and combining these approaches with computational models of angiogenesis to determine novel targets for the treatment of type I and type II diabetes.

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Research Interests

Our interest in the epigenetics of metabolic syndrome stem from new methodological issues regarding the Mendelian assumptions of linkage analysis used in genome-wide scans for complex traits and the emerging area of intra-uterine fetal metabolic programming via nutritional effects on gene expression that might set the stage for the cluster of adult-onset diseases that underlie the metabolic syndrome. Our goal is to identify and characterize parent-of-origin effects in imprinted candidate genes and establish epigenetic associations between these genes and the metabolic syndrome using algorithms designed to test for imprinted transmission of disease alleles. In this regard, an R15 application for a pilot study is under development for submission to the NIDDK next month to look at the epigenetics of Pdx-1, a gene highly expressed in pancreatic beta cells in the diabetic mouse, to ascertain if there are epigenetic changes in Pdx-1 and if so, if they are triggered by the onset of Type 2 diabetes or vice versa. We are also interested in exploring the genetic underpinnings of the disproportionate burden of metabolic disease in minority populations, especially American blacks. Essential hypertension (EH) is increasingly recognized as the archetypal polygenic disease of complex inheritance with a sexually dimorphic component. We recently submitted a grant application as a subproject on an institutional NIH-RIMI grant to explore these relationships using family-based studies of polymorphisms in Y chromosome genes in a mouse model, to be followed by analyses in a population-based human sample drawn from the Multi-Ethnic Study of Atherosclerosis (MESA) project.

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Research Interests

Our laboratory is working to understand the hormonal links between nutrient ingestion and bone formation. We have identified several hormones of interest—in particular, glucose-dependent insulinotropic peptide, an enteric hormone that rises on nutrient ingestion and appears to be able to both stimulate bone formation and inhibit bone breakdown. We are using a variety of genetic models to study this link.

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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 of renal carcinoma. My previous research projects have examined the role of Prostaglandin EP1 and FP receptors in the regulation of blood pressure, the effects of a high salt intake on the development of hypertension, the renin-angiotensin system in two kidneys, one-clipped Golblatt Hypertension, the effects of verapamil and captopril on renal function, the role of renal α1-adrenoceptors in hypertension, renal potassium adaptation, the effect of calcium blocker in kidney and MDCK cells, and the expression of α1-adrenoceptors in the heart.

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Research Interests

Work in my laboratory is aimed at understanding mechanisms that influence the development and progression of diabetic kidney disease. Hyperglycemia plays a pivotal role in the pathogenesis of diabetic micro- and macro-vascular complications, but is insufficient to account for all of the complications of diabetes mellitus. We, and others, have found that the hexosamine pathway may mediate some adverse consequences of hyperglycemia. Accordingly, one focus of our work is to determine the contribution of hexosamine pathway flux to the pathogenesis of diabetic kidney disease. To further explore these mechanism(s), ongoing research involves: (a) use of transgenic mice in which enzymes in the hexosamine pathway are targeted to glomerular cells (podocytes and mesangial cells) to study the role of the hexosamine pathway in modulating susceptibility to diabetic glomerulopathy and to ascertain how products of this pathway (glucosamine, N-acetyl glucosamine) may interact with cytokines like connective tissue growth factor (CTGF) to influence disease progression; and (b) utilization of *in vitro* cell culture approaches (MEF, MC, EC) to study signaling responses to high glucose and hexosamine. A second focus in the laboratory is to study the role of key cytokines, like CTGF, in diabetic and hypertensive kidney disease. To accomplish this we, in concert with our collaborator at the University of North Carolina at Chapel Hill (Dr. Nobuyo Maeda), have developed mice and stable mouse embryonic fibroblasts (MEFs) that possess variable CTGF gene copy numbers. Through the above approaches, we hope to determine how glucose disposal and cytokines like CTGF may contribute to kidney disease in diabetes.

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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 am also interested in chronic kidney disease awareness and knowledge, and in the development of educational interventions.

LaDonna Jones, Pharm.D.

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Research Interests

My research interests involve outcomes associated with the incidence and prevention of medication events within an acute care setting. I am also interested in pharmacists' interventions associated with the impact of patient care as a whole.

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Research Interests

My goal is to improve our ability to diagnose the genetic cause of epispadias (E), bladder exstrophy (BE), cloacal exstrophy (CE), and urological anomalies with different degrees of anterior midline defect by using high coverage array comparative genomic hybridization (aCGH). The incidence of these conditions is not common (1:100,000 for E; 1:30,000 for CBE; and 1:300,000 for CE). However, treatment of all of them requires a number of surgeries over the first several years of life to achieve bladder control and normal-appearing genitals, which can be costly and traumatic. In some patients, incontinence and sexual dysfunction progress through their lives, ending with morbidity due to chronic and recurrent renal infections. The majority of cases are sporadic and nonsyndromic, with normal karyotype and unknown etiology. However, abnormal karyotype and association with syndromes, malformations, and other congenital diseases have been identified in more than 20 patients. Even though most of the genetics studies have failed to find a specific gene that causes the disorder, evidence indicates a strong genetic component. Since the etiology of this malformation is still unknown, this project seeks to improve our ability to diagnose structural and numerical genetic abnormalities in children born with genitourinary defects. Also, we will seek to correlate the clinical features of children with urological defects with new discoveries at the molecular level and to better understand the disease processes and thereby develop new and more effective treatment and diagnostic modalities. Our findings could be extrapolated to a mouse model that will help us to understand the mechanism of bladder formation. I am also interested in identifying new genetic causes of infertility. At the present time, using the same aCGH technology cited above, we are searching for new genes responsible for male infertility. I have been able to identify some potential genes and also to associate other unrecognized genomic syndromes in infertile men.

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Research Interests

I am interested in the genetic architecture of complex traits. My current research is focused on using cerebrospinal fluid protein levels as intermediate traits, or endophenotypes, to identify genetic risk factors for Alzheimer's disease. I also have collaborative projects examining mitochondrial and nuclear genetic factors that influence mitochondrial genome copy number and genetic variation that may influence adiponectin levels. I collaborate with several large clinical centers and focus on data analysis and bioinformatics.

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Research Interests

The overall goal of our research is to elucidate the major factors that contribute to bone formation during growth, development, and aging to develop more effective preventative strategies for osteoporosis.

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Research Interests

My principal interests are in chronic disease management, continuing medical education, quality improvement, and providing healthcare 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 healthcare. 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.

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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 factors associated with the racial disparity in disease and the geographic patterns of disease through the assessment of population-based cohort studies around the world. I am currently collaborating with Professor David Barker at the Medical Research Council with a study of the fetal origin of adult chronic diseases. I am also involved in population diabetes and high blood pressure control efforts. I am also developing global health research projects focused on health disparities. A major component of this effort is the training of international collaborators in research methodology.

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Research Interests

Our laboratory's focus is directed toward gaining a better understanding of the mechanisms by which the immune system minimizes damage to self-tissues, a process called tolerance. In general, immune system tolerance is highly effective; however, the self-tissue damage that occurs in rheumatoid arthritis, Type 1 diabetes, multiple sclerosis, and lupus is mediated by aberrant immune responses. Recently, a subset of immune system cells known as regulatory T cells has been shown to play a significant role in moderating immune responses. However, it is not clearly understood how variations in the environment where regulatory T cells develop and are activated influence regulatory T cell function. In addition, the ability of regulatory T cells to prevent autoimmunity by migration to potential autoimmune tissue sites is poorly understood. Current projects include: (1) the characterization of the regulatory T cell population in a mouse model where immune system damage to self-tissues results in death; and (2) the examination of intracellular processes occurring within regulatory T cells during effective immune regulation.

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Research Interests

I am interested in studying the associations between metabolic and reproductive disorders and oral health outcomes. I am currently developing a proposal exploring the association between PCOS and periodontal disease for submission to the National Institute of Dental and Craniofacial Research (NIDCR). I am partnering with the Center for Androgen Related Disorders (CARD) in developing my current proposal. I am also working on developing a proposal on the role of insulin resistance in the observed association between obesity and periodontal disease. Although I am an epidemiologist with a background in oral health research, the numerous studies over the past decade showing links between periodontal disease and systemic diseases such Type 2 diabetes, obesity, and coronary disease demonstrate a need for a more interdisciplinary approach to help reduce health disparities within the United States.

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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 are also 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.

Shirleatha Lee, Ph.D.

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Research Interests

I recently completed my Ph.D. in Nursing in May 2009. My dissertation examined the effects of pre-diabetes and elevated blood pressure on heart rate variability, QT interval duration, and left ventricular hypertrophy in overweight-obese youth. Childhood obesity continues to be a growing concern and the development of co-morbidities such as type 2 diabetes in this population is steadily increasing. An imbalance in cardiac autonomic dysfunction increases the risk of sudden cardiac death and has been found to be associated with pre-diabetes and type 2 diabetes. I am very interested in pre-diabetes and cardiac autonomic dysfunction in obese youth and recently had my first manuscript accepted for publication from work completed in my dissertation. As a new researcher, 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.

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Research Interests

My research interests include the molecular characterization of normal and abnormal genitourinary tract development in order to define the etiology of these congenital defects. Genomic, environmental, and hormonal insults sustained *in utero* are associated with adult onset diseases even with apparently successful medical interventions. In patients with genitourinary developmental abnormalities, decreased fertility in adulthood correlates with time at which medical interventions are obtained. 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 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 in humans. My long-term career goals include a tenure track faculty position with primary responsibilities for developing and sustaining a research program focused on studying development and diseases of the male genitourinary tract. My research program will be an integral component of my other goal, which includes the training of graduate and undergraduate students. I plan to work in an interdisciplinary manner, using animal and cell culture model systems to explain disease etiology. My postdoctoral fellowship in the laboratory of Dr. Dolores Lamb will provide me an opportunity to acquire the necessary skills to pursue independent research at the interface of developmental biology and molecular pathology. Given the human health impacts of diseases of the genitourinary tract and the need to understand basic mechanisms of disease development, my postdoctoral fellowship in the Lamb Laboratory will help me to further define my research interests by appreciating and incorporating human health impact into my research goals. So my journey continues through unfamiliar destinations. I am only sure of my preparedness to meet these challenges thanks to the many mentors I had (and still have) during my journey through academia.

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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, 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.

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Research Interests

I recently completed a Ph.D. in the Joint Doctoral Program in Public Health, Epidemiology at UCSD and SDSU through the mentorship of Dr. Steffanie Strathdee (UCSD Global Public Health). The title of my dissertation was "Factors Associated With Early Initiation Into Sex, Work, and STI Among Female Sex Workers in Two Mexico-U.S. Border Cities," based on a sexual behavior intervention study among female sex workers in Tijuana and Ciudad Juarez. Other research experiences and interests lie in ethnic health disparities research, particularly in the cross-section between diabetes and cardiovascular disease. I presented a poster entitled "Association Between Coronary Artery Calcium and Urine Albumin to Creatinine Ratio and the Variation by Ethnic Group" at the NMRI meeting in April 2010 under the mentorship of Dr. Happy Araneta (UCSD Epidemiology). I am currently teaching epidemiology and statistics as assistant professor at the University of Texas at El Paso (UTEP College of Health Sciences) and continuing with border health research in HIV/STI prevention among the high-risk populations in the El Paso del Norte Region.

Neali Hendrix Lucas, Ph.D.

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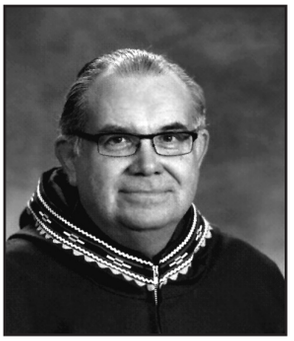
Research Interests

My research focuses on the role of disintegrin proteases (ADAMs) in prostate cancer, which is the second leading cause of death of men in the United States. In particular, my project involves investigating the mechanisms by which ADAM15 promotes disease progression. ADAM15 is located on chromosome 1q21.3 that maps to a region of known amplification in metastatic cancers that include: prostate, breast, ovarian, colon, and melanoma. Comprehensive expression profiling studies published by our group, utilizing cDNA microarray and multitumor array technology, demonstrated significantly increased expression of ADAM15 in multiple adenocarcinomas and a highly significant correlation with prostate cancer progression to metastatic disease. The goals of my project are to: (1) validate E-cadherin is a substrate of ADAM15 in prostate cancer cells; (2) determine whether soluble E-cadherin generated by ADAM15 can bind to EGFRs and activate downstream signaling and malignant progression of prostate cancer cells; and (3) identify novel substrates of ADAM15.



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.

José Manautou, Ph.D.

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Research Interests

My research emphasizes mechanisms of toxicant action/interaction. My laboratory studies the role of multidrug resistance proteins in the hepatobiliary disposition of toxicants and the changes in expression of transport proteins in response to chemical liver injury. My group also investigates the biochemical and genetic determinants associated with the hepatoprotective actions of peroxisome proliferators and other chemicals that prevent drug liver injury. I have published numerous seminal articles on these research areas in both toxicology and liver-related journals. I have been an active member of the Society of Toxicology (SOT) since joining as a student member. In 2003, I was elected Councilor of the SOT and have also served on key committees and task forces for the society. I was the recipient of the 2006 SOT Achievement Award and the 2008 AstraZeneca Traveling Lectureship Award. I have served as a member of the National Research Council Committee Assessing the Human Health Risks of Trichloroethylene and currently am Associate Editor of the journal *Toxicology and Applied Pharmacology*. I am also on the editorial board of four other journals. I recently completed a 4-year term as a member of the National Institutes of Health Xenobiotic and Nutrient Disposition and Action (XNDA) Study Section and also served as an external reviewer of grants for the European Commission. I received my B.S. in Pharmacy from the University of Puerto Rico, Ph.D. in Pharmacology and Toxicology from Purdue University, and postdoctoral training in biochemical toxicology at the University of Connecticut. I also conducted sabbatical research at the Amsterdam Liver Center of the University of Amsterdam, The Netherlands.

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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 II diabetes mellitus, initially my primary research focus was to identify undiagnosed Type II 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-diabetics; 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 (ED) 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.

Becky Marquez, Ph.D.

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Research Interests

I am interested in understanding the relationship between obesity, diabetes, and breast cancer. Obese women who develop type 2 diabetes are at an elevated risk for breast cancer recurrence. Diabetes is a significant condition among Latinas due to a higher prevalence of obesity. As the number of Latina breast cancer survivors rises, diabetes will serve as a major risk factor for recurrent breast cancer and death. I am currently looking to identify biological predictors of cancer recurrence using a large biological database of over 3,000 breast cancer survivors in the Women's Healthy Eating and Living (WHEL) Study. The next step is to conduct a randomized clinical trial to determine the effects of obesity reduction on biomarkers of recurrence among patients with diabetes.

Pamela Martin, Ph.D.

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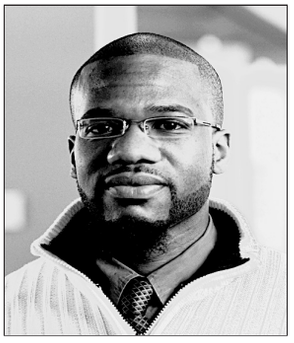
Research Interests
Studies in my laboratory focus on the expression and functional role of retinal transport proteins in diabetic retinopathy.



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 (CKD) 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.

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Research Interests
My research interests include: urinary and fecal incontinence, postpartum depression and fecal incontinence related to obstetrical injury, African-American women understanding of incontinence and uterine prolapse, inflammation and its role in postpartum depression, and preterm labor.

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Research Interests

My main project is to investigate the role of the Isc1 protein in cell cycle progression and in the regulation of the G2/M checkpoint when cells are treated with genotoxic agents such us hydroxyurea. Using the budding yeast *Saccharomyces cerevisiae*, I am studying the interconnection between the Isc1 enzyme which catalyzes the chemical reaction that produces signaling lipid molecules like phytoceramide and the downstream effect of those molecules on cell cycle progression and response to damaging agents. We found that ISC1 influences the phosphorylation status of the key regulator of the G2/M checkpoint in the cyclin dependent kinase Cdc28p. In an attempt to identify the connecting link between ISC1 and the key players in the G2/M phase, we started a collaboration with Dr. Jim Zheng at MUSC. Dr. Zheng is a bioinformatician who is helping us identify proteins that may be involved in the regulation of SWE1 and CDC28 in an ISC1-dependent manner. My projects are defined as basic science research investigating the role of sphingolipid metabolism enzymes in the regulation of key cellular processes such as the regulation of the cell cycle. Although these investigations are not done directly on specific diseases, they are fundamental for understanding the involvement of sphingolipids in these diseases at the molecular level.

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Research Interests

My research is focused on the association of inflammation, Benign Prostatic Hyperplasia (BPH), and Prostate Cancer (PCa), and seeks to understand the role of the inflammatory infiltrate observed in these diseases and to elucidate the effect of the proteins (chemokines and cytokines) secreted by the inflammatory cells to determine whether they act to promote or prevent the progression of BPH and/or PCa.

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Research Interests
My research interests include dysphagia.

Jennifer McGee, M.D.

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Research Interests
My research examines outcome inequities by race and gender in kidney transplantation. I am interested in understanding the etiologies of disparities and finding solutions for elimination. Currently, through clinical and basic science, I am working toward building research models to test risk-reduction protocols in vulnerable kidney transplant populations, specifically black recipients and gender mismatched transplants, such as female recipients of male kidneys.

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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 (HPVs) 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.

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Research Interests

I completed my doctoral training in the Neurosciences Graduate Program at the University of California, San Diego. Through my dissertation research in Professor Jerold Chun's laboratory, I investigated the distribution of lysophospholipid receptors in the embryonic, neonatal, and adult mouse brain. My work supports a role for lysophosphatidic acid and sphingosine 1-phosphate receptors in neurogenesis and gliogenesis in the brain as well as angiogenesis. My work also shows that lysophospholipid receptors are expressed at high levels in the kidney. After completing my doctoral research work, I first completed a United Negro College Fund-Merck Postdoctoral Science Research Fellowship at the University of California, San Francisco, in Professor Edward Goetzl's laboratory. My project involved a study of the subcellular trafficking of the sphingosine 1-phosphate receptor 1 in response to its native ligand and pharmaceutical drugs. I am currently engaged in postdoctoral training with Professor S. Thomas Carmichael in the Neurology Department at the University of California, Los Angeles. My project involves the use of laser capture microdissection combined with microarray analysis to detect genetic differences between brain regions that differ in their response to stroke. Stroke is the leading cause of adult disability in the United States. For me, the study of diabetes and kidney disease represents a means to further my interest in lipid signaling molecules in development and disease. I also see the prevention and effective treatment and management of diabetes as a powerful weapon in the fight against stroke.

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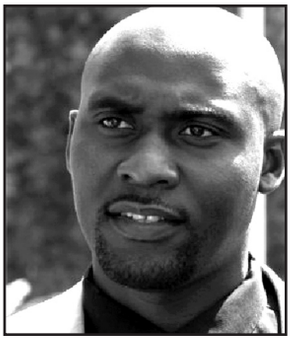
Research Interests

Investigating the control of female reproductive hormones is my primary research interest. During my doctoral studies, I investigated the neural mechanisms in which mating stimulation results in a unique prolactin secretion from the pituitary gland during the first half of pregnancy in the rat. My focus was to determine the role of oxytocin neurons of the hypothalamus on this unique prolactin secretion. I pursued these questions using surgical techniques including brain cannulation and jugular catherization, immunohistochemistry, and high-performance liquid chromatography coupled with electrochemical detection. In addition to studying the interactions of reproductive hormones, I am also interested in the mechanisms by which hormones involved in metabolism affect the synthesis and secretion of reproductive hormones from the pituitary gland. During my postdoctoral studies, I will investigate the role of metabolic hormones on gonadotrophin synthesis and secretion. In order to explore my research interests, I aim to compliment the *in vivo* approaches learned throughout my doctoral studies with *in vitro* approaches I plan to learn during my postdoctoral training.



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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.

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Research Interests

My overall research interest and goal includes the use of population genomics, and quantitative and statistical genetics methods to understand human genome variation and utilize this information to dissect complex diseases, particularly allergy disorders, through approaches and methods ranging from linkage, association, admixture mapping and transcriptional profiling analysis. Complimentary 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 genes prioritization procedures from linkage and expression studies. My long-term goals are to reduce childhood morbidity and mortality associated with metabolic and allergic disorders, and to eliminate the significant racial disparities in asthma and asthma-related outcomes. To enhance my analytical skills for verifying statistical properties of biological problems as applied to admixed populations such as ancestry inference, disease gene localization, evolutionary relationship, patterns of molecular diversities, and population structure in disease genetics, I will be actively involved in the Network of Minority Research Investigators (NMRI) program. As a new faculty member at UC/CCHMC, the participation will provide an opportunity to boost my career in this critical early stage of my faculty appointment.

Amosy E. M'Koma, M.D., Ph.D., M.S.

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Research Interests

My research is focused on understanding the molecular biopathophysiology basis of inflammatory bowel disease (IBD), particularly on diagnostic accuracy methodologies and surgical management of ulcerative colitis (UC) and Crohn's colitis, specifically relating to the physiology of restorative proctocolectomy (RPC) or ileal pouch anal anastomosis (IPAA). The current research efforts are directed toward developing strategic methodologies based on matrix-assisted laser desorption-ionization mass spectrometry (MALDI-MS), proteomics, and recombinant single-chain antibodies (scFv) to identify protein patterns that are differentially expressed between inflammatory colitides. Innovation: To our knowledge, our study is the first report using histology-directed MALDI-MS technology to compare proteomic patterns in the colonic tissue layers individually, in order to distinguish differences between UC and CC. The novelty in this proposal stems from our findings (M'Koma et al. 2011) of novel mass-to-charge ratio discriminatory features in IBD specimens. Proteomics, evaluation of colonic mucosal and submucosal layers individually, and detection accuracy will not only create new therapeutic options for maintenance of remission but will open new avenues for absolute indication in surgical approach specifics in order to prevent occurrence of dysplasia/neoplasia in the remaining rectal tissue in the anal transit zone (ATZ) and also to avoid unnecessary surgeries.

Bruce Molitoris, M.D.

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Research Interests

My research interests have centered around the cell biology of acute renal failure, with an emphasis on proximal tubule cell injury secondary to ischemia or nephrotoxins. Studies have utilized both *in vivo* and *in vitro* cell culture techniques to understand plasma membrane and actin cytoskeletal interactions and alterations. We have documented rapid duration-dependent loss of surface membrane lipid and protein polarity, opening of cellular tight junctions, and polymerization and redistribution of the actin cytoskeleton during ischemia. We are now pursuing the mechanisms responsible for these alterations. A second area of study within the laboratory involves the pathophysiology of nephrotoxin-induced cellular injury, primarily aminoglycosides. Questions being asked include: How does gentamicin traffic within the cell to subcellular organelles? How does gentamicin induce cellular toxicity? How do cells adapt to continuous gentamicin administration? Specific techniques employed include confocal microscopy; multiphoton microscopy; fluorescent analogue cytochemistry; cell microinjection; and immunocytochemical, immunogold, and quantitative biochemical techniques, including protein isolation, characterization, and Western blotting.

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Research Interests

Currently, I have a collaborative project studying one of the members of the insulin-like growth factor (IGF) family, IGFBP-2. IGFBP-2 has been implicated as a negative regulator of somatic cell growth. Current research focuses on the role of this protein in normal and abnormal cell proliferation (cancer) based on its expression (mRNA, protein) patterns. The objective of this project is to establish bovine and human cell culture systems using renal cell lines differing in IGFBP-2 genotype/haplotype and evaluate their proliferation patterns, which will be correlated to the polymorphisms found within the IGFBP-2 gene. Because recent evidence suggests that genetic variation in the IGFBP-2 gene is associated with cancer in populations of African descent (such as Puerto Ricans), we are performing amplifications of the identified SNP regions (intron #2) and others selected from the NIEHS Panel 1. Another collaborative research investigation is in the area of diabetes, studying the effects of plants found in Puerto Rico with anti-hyperglycemic effects *in vivo*. As the result of an ethnopharmacological survey covering 11 municipalities in Puerto Rico, our team identified a series of medicinal plants that are frequently used as diabetes adjuvants by the surveyed population. The purpose of this investigation is to document and study the biological activities of these lesser known and commonly used anti-diabetic medicinal plants and verify their antioxidant capacity and their anti-diabetic effects *in vivo*. Additional research interests are the study of miRNAs in cancer progression, effects of natural compounds as complementary therapies for cancer, nutritional effects of diet and cancer, and the biology of disease.

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 am currently using animal models to help elucidate the pathophysiology of intestinal dysmotility and shortened intestinal length seen clinically and in our model of gastroschisis. We are also interested in amino acid metabolism in intestinal failure and adaptation.

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Research Interests

Diabetes and obesity are interacting complex diseases in which the genetic and environmental factors control the development. We are using a different strain of congenic rats with the following natural mutated genes, *Cckar, Lepr, and Gimap5*, to elucidate the molecular mechanism of diabetes, obesity, and diabesity.

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 cardiovascular diseases such as hypertension and atherosclerosis. I have studied various signaling pathways in my career, starting with alpha-1 receptor signaling in the vasculature and then angiotensin II signaling. I am currently 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.

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Research Interests

My research interests include diabetic nephropathy and other kidney diseases. My basic science work involves investigating and assessing the pathophysiologic mechanisms and morphometric analyses of diabetic nephropathy, with the goal of finding novel therapeutic targets. I am involved in engineering vault nanocapsules for drug delivery in the treatment of Types 1 and 2 diabetic nephropathy and other kidney diseases. I also am involved in a genetic clinical study that identifies genes responsible for diabetic nephropathy and their linkage relationships to nephropathy and retinopathy in Mexican Americans and African Americans and in a project to assess the progression of diabetes in patients with end-stage renal disease.

Keith C. Norris, M.D.

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Research Interests

My research interests include the impact and outcomes of chronic kidney disease in African-American and Latino populations, the role of vitamin D and calcium management in chronic kidney disease, the mechanisms and epidemiology of hypertension and cardiovascular risk factors, the systems approach to and self-management of hypertension and diabetes, transcendental meditation in cardiovascular disease, and health disparities.

Phyllis A. Nsiah-Kumi, M.D., M.P.H.

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Research Interests

I conduct research focused on health disparities, health literacy, and type 2 diabetes prevention in minority communities. My goal is to improve the health of these communities and ensure that they have culturally and literacy appropriate health information available to them in plain language. I am working with minority communities to prevent type 2 diabetes in children using qualitative, quantitative, and clinical research methodologies. My recent and ongoing studies include "Predicting Insulin Resistance in Native American Youth," "Engaging North Omaha Youth in Type 2 Diabetes Prevention," "Developing Health Literacy Curriculum for English Language Learners," and "Developing a Community-Based Lay Navigator Program: Improving Culturally-Appropriate Breast Cancer Support Services in Douglas County, Nebraska." All of these studies use some element of community-based participatory methodologies.

Samuel Nurko, M.D.

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Research Interests

I am a full-time clinician investigator in the Division of Gastroenterology at Children's Hospital Boston. My present research focuses on defecation disorders, esophageal motility problems, functional bowel disorders, and motility complications after gastrointestinal surgery. I have designed and conducted prospective randomized studies, including multicenter trials that have been funded by different institutions. One of my aims has been to understand the mechanisms of fecal continence in children. To that end, I have studied and defined different aspects of anorectal and colonic function. I have also tried to understand the pathophysiology of gastroesophageal reflux and other esophageal problems. I have developed standards for the prolonged study of esophageal motility in children, and I am actively engaged in the study of nonacid gastroesophageal reflux and the implementation of impedance technology for the study of gastroesophageal reflux.

Diana N. Obanda, Ph.D.

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Research Interests

My research interests include the role of botanical actives in the treatment of Type 2 diabetes. I am working on a project using the extract of *Artemisia dracunculus L* (Russian tarragon plant) to reduce the contribution of lipid metabolites such as ceramides and diacylglycerides to insulin resistance. It will involve mass spectrometry-based metabolomics. The extract enhances insulin sensitivity, but the exact mechanisms involved are not known. In this project, an unbiased screening approach will classify samples based on metabolite patterns or fingerprints that change in response to introduction of free fatty acids, insulin, and *Artemisia dracunculus* in skeletal muscle cells and tissue, with the ultimate goal being to identify discriminating metabolites. The study will make connections between the metabolites identified and biological processes. It will shed light on the metabolites' composition, their dynamics, alterations, interactions, and responses to interventions by *Artemisia dracunculus*.

Angela Odoms-Young, Ph.D.

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Research Interests

My research is focused on understanding behavioral and contextual factors that contribute to overweight/obesity in minority and low-income populations, with a particular focus on African-American women. Specifically, my work seeks to examine three main questions: (1) What is the relationship between neighborhood/home food environments, dietary practices, and weight status? (2) How do culture and ethnicity contribute to weight status and influence participation in weight management efforts? and (3) How can community-based participatory approaches and policies be used in obesity prevention and treatment? My work involves using multimethod approaches to measure food environments in African-American and low-income households and neighborhoods and identifying mechanisms underlying relationships between food environments, food acquisition patterns, and dietary intake. I am currently working on several studies in this area. My dissertation examined the role of religion and religious doctrine in the food choice practices of African-American Muslim women. Using a grounded theory approach, this investigation emphasized identifying multiple social and cultural factors that shape dietary behavior, including ethnicity, religion, and gender. Lastly, I am very interested in identifying ways in which community-based participatory approaches and policies can be used in obesity prevention and treatment. I completed a Community Health Scholars postdoctoral fellowship in community-based participatory research at the University of Michigan School of Public Health. My primary project, Healthy Eating and Exercise to Reduce Diabetes (HEED), involved working with community-based organizations to develop a training program for lay health advisors to educate their communities about reducing the risk for diabetes.

Olorunseun Ogunwobi, M.D., Ph.D.

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Research Interests

My current research is focused on understanding the mechanisms of cancer metastasis, using hepatocellular carcinoma and colon cancer as models.

Moshood Olatinwo, M.D.

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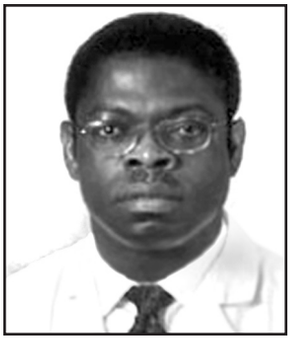
Research Interests

Currently, I am an assistant professor in the Department of Obstetrics and Gynecology at the University of South Alabama. In this capacity, I am working on developing a career as a clinician scientist that will integrate basic science expertise to study clinical problems as a translational researcher. I am particularly interested in health disparities pertaining to gynecologic malignancies and women's reproductive health. This opportunity allows me to work closely with the team of oncologists at the Mitchell Cancer Institute. The University of South Alabama's Mitchell Cancer Institute is the first academic cancer research institute in the upper Gulf Coast region and was recently established to provide state-of-the-art patient care through innovative treatment that integrates both clinical and basic science research. This is a unique center that serves an area that is equally populated by Caucasians and African Americans. A major focus of this facility is to make cancer treatment available to all patients, regardless of their ethnicity and/or socioeconomic status.



Kwame Osei, M.D.

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Research Interests

My research interests include type 2 diabetes mellitus; endocrine and metabolism; and ethnicity.

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Research Interests

My main area of interest is liver disease, where I am currently working on an NIH-funded study looking at two genes of interest in liver cancer—Sulfatase 1 (SULF1) and Sulfatase 2 (SULF2). This study involves generating transgenic mice overexpressing the above genes and monitoring the respective effects on the development and progression of liver cancer in these mice. Besides further elucidating the role of these genes in liver cancer, we expect to generate enough data that will hopefully lead to effective chemotherapeutic modalities against this disease. I am also interested in working on Hepatitis B and C viruses in the pathogenesis and progression of liver cancer, with the aim of developing a cure for these viral infections and the cancers they cause. At this time, I am involved in another study that will potentially better characterize the main markers for cancers of the liver. It involves comparing the standard marker (alfa-feto protein) with a relatively new one (Desgamma Carboxy Prothrombin) in liver-transplanted patients for cancer as compared with those with liver cirrhosis.

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 estrogens, the regulation of calcium handling in the kidney by estrogens, and the application of *in vivo* imaging to study the expression and function of specific molecules and disease pathogenesis.

Andre Palmer, Ph.D.

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Research Interests

My research interests encompass the development of novel hemoglobin-based oxygen carriers for a variety of transfusion applications and the use of these oxygen carriers to enhance and target oxygen delivery to mammalian cell cultures.

Fernanda Payan, M.D.

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Research Interests

I am interested in studying kidney disease among Hispanics, specifically examining health disparities among this growing segment of the U.S. population. Following is a description of my current project: End-stage renal disease (ESRD) affects racial/ethnic minority populations in the United States at a disproportionate rate. Numerous studies have shown age- and sex-adjusted incidence rates of ESRD to be greater in blacks compared to whites and have tried to account for this difference by studying differences in access to care, socioeconomic status, and presence of comorbidities. However, fewer studies have detailed these same differences between the Hispanic population and other ethnicities. Overall, the goal of my study is to obtain an understanding of the percentage of hospitalizations in the State of Texas in 2004 and 2005 that were due to Chronic Kidney Disease (CKD). Specifically, the aims are to: (1) describe the incidence of hospitalizations due to Chronic Kidney Disease (ICD-9-CM 585) in the State of Texas by County; (2) determine if there is a significant difference in the prevalence of hospitalizations due to CKD among patients that are Hispanic, non-Hispanic white, black, and other (all other ethnic groups); (3) establish the prevalence of certain comorbidities among patients with CKD; (4) determine if there is a significant difference in the prevalence of the comorbidities mentioned above among patients that are Hispanic, non-Hispanic white, black, and other; and (5) determine the adjusted Odds Ratio (OR) for the relationship between ethnicity/race (Hispanics, non-Hispanic whites, blacks, and other) and the comorbidities listed. OR will be adjusted for possible confounders such as age, gender, and insurance status.

Rocio I. Pereira, M.D.

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Research Interests

My research focuses on adipose tissue dysfunction in obesity. I am particularly interested in adipose tissue determinants of whole body energy expenditure, insulin action, and atherosclerosis progression, as well as in regulation and consequences of adipose tissue regional deposition. I am currently on year 4 of a National Institutes of Health National Center for Research Resources Clinical Research Training Award, K23. My K23 project aims to better understand the adipose tissue regulation of the adipokine adiponectin in lean and obese individuals. In addition, I am collaborating with several individuals on the University of Colorado at Denver campus on projects related to adipose tissue function. Specifically, we are measuring the effects of estrogen on regional cortisol production, studying changes in adipose tissue insulin action following weight loss with low-fat versus low-carbohydrate diets, and characterizing pre-adipocyte proliferation in pre- and postmenopausal women.

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 of the intracellular signaling changes leading to their expression.

Velvie Pogue, M.D.

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Research Interests

I am a nephrologist with an interest in hypertension and its complications. I have participated in various multicenter studies in these areas, including: the HOT Study, ALLHAT, SHHS, AASK Clinical Trial, and AASK Cohort Study. In addition, I have worked with my colleagues at Harlem Hospital Center/Columbia University to report on various areas in clinical nephrology. We have reported on kidney disease in patients with HIV and HCV infections, renal and electrolytes complications of illicit drug abuse, and other areas of interest to clinical nephrologists.

Elvin Price, Pharm.D., Ph.D.

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Research Interests

My research interests include the association of nuclear receptor genetic variability with pharmacologic response and therapeutic outcomes in diabetes, nephrology, hypertension, and dyslipidemia.

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 primarily work with primary culture systems (liver, kidney, heart, and skin) as well as 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*) as well as 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 am also 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 as well as investigating the mechanism of cholesterol transport on the following transporters: ABCA1, ABCG5/G8, and NPIC1L1 using *in vitro* models as well as *in vivo* methods to evaluate cholesterol homeostasis.

Anthony Quinn, Ph.D.

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Research Interests

Our laboratory focuses on delineating the mechanisms that are involved in the activation and uncontrolled expansion of pathogenic autoimmune responses by microbial organisms. Conversely, we are also engaged in studies to reveal the regulatory responses that seem to provide protection to normal individuals.

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

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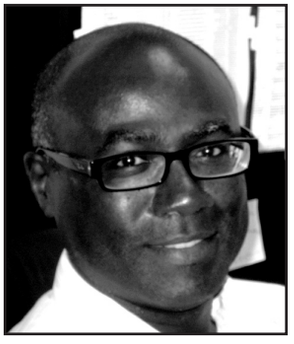
Research Interests

My research interests include minority health and health disparities among aging women with co-morbidity, HIV/AIDS, type 2 diabetes, cancer, and osteoarthritis. Additionally, my research interests include the use of Games for Health to assess the experience and management of chronic and experimental pain, physical activity, and functional mobility among minority women. I am a recipient of the NIH/NIMHD's DREAM (Disparities Research and Education Advancing Mission) Career Transition Award (K22). This award supports career training and development in health disparities research.



Gerald Rameau, Ph.D.

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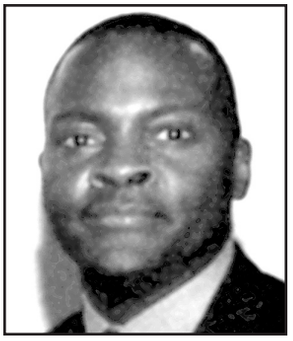
Research Interests

My research interests include molecular regulation of excitatory synaptic transmission, control of energy metabolism, synaptic remodeling, and neuronal cell death. Our laboratory is interested in mechanisms that regulate synaptic plasticity, neuronal cell death, and glucose transport. Neurons communicate via neurotransmitters that are released at synapses. Glutamate, a neurotransmitter released at synapses, activates the N-methyl-D-aspartate receptor (NMDAR), an ionotropic glutamatergic receptor that gates the entry of Ca2+. The NMDAR forms a complex with neuronal nitric oxide synthase (nNOS), the enzyme that synthesizes nitric oxide (NO), is regulated by calcium-calmodulin protein binding, and undergoes chemical modification by phosphorylation. Normal production of NO, under NMDAR control, regulates mechanisms of synaptic plasticity, whereas overproduction of NO due to overstimulation of NMDAR leads to neuronal death during neurodegenerative diseases and stroke. One of our objectives is to examine the mechanism by which the NMDAR induces allosteric regulation of phosphorylation of nNOS, consequent production of NO, and implications for mechanisms of synaptic plasticity and cell death.



Titus A. Reaves, Ph.D.

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Research Interests

My research interests involve epithelial cell biology and neutrophil (PMN) migration. PMN migration is the immune system's first line of defense against infection, serving as a major component of the acute innate inflammatory response. We are investigating the protein receptors that modulate neutrophil transmigration into the lumen of the gut. Currently, we have a particular focus on toll-like receptors and their interaction with DAP-associated activating proteins and how this interaction leads to PMN activation and migration. In addition, the epithelium also plays a role in efficient PMN migration into the intestinal lumen. Studies have shown that when exposed to inflammatory cytokines, the GI epithelium becomes more immunogenic, and PMN migration through this epithelium may be altered. Consequently, the primary focus of my research is to understand the molecular events that regulate PMN migration and the process of how the epithelium interacts with PMN to facilitate such migration.

Henry Reinhart

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Research Interests

I began my research career as I attended the prerequisite undergraduate classes at the University of Texas in El Paso. My first laboratory experience included identifying a novel growth factor and assisting in the analysis of visceromotor responses to stress and the involved neural pathways. While at Southwestern, I have continued my research in a more clinical sense. Some colorectal cancer tumors respond well to ionizing radiation (IR), while others do not. With the goal of identifying those individuals that will not respond to IR and possibly implementing radiosensitizing modalities prior to surgery, I have obtained CRC specimens from pathology that have had differing responses to IR. Utilizing these specimens, several pathways leading to radioresistance will be investigated via immunohistochemical analysis with antibodies specific for cell cycle, apoptosis, and hypoxia mediators. Chemotherapeutic interventions will also be tested, *in vivo*, in mice bearing radioresistant (HT-29) cells. Clinical trials of these modalities in the near future are an exciting prospect.

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

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Research Interests

Research in my laboratory is focused on the molecular pathogenesis of hepatocellular carcinoma. My current projects include the function of cloning and characterization of genes at the sites of hepatitis B virus integration in hepatitis B virus-induced liver cancers; and modulation of heparin-binding growth factor signaling in hepatocellular carcinoma by the SULF1 and SULF2 sulfatases.

Beatriz Rodriguez, M.D., Ph.D.

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Research Interests

My research interests include diabetes and its complications, particularly in ethnic minority populations, as well as health disparities.

Rudolph A. Rodriguez, M.D.

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Research Interests

Two of my research interests include the interaction of HIV and kidney disease; and 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

The main research goal of my laboratory is to define the signal transduction pathways involved with the regulation of cation transport mechanisms across the cell membrane as they affect human cardiovascular disease. The central hypothesis for our research is that cellular cation metabolism plays a major role in the pathophysiology of cardiovascular disease by regulating the production of reactive oxygen species, nitric oxide, and cellular volume. To this end, we are currently studying the role of cellular magnesium homeostasis in the pathophysiology of diabetic complications and the dysregulation of the renin-angiotensin-aldosterone system on the *in vivo* regulation of K+ and Mg2+ transporters. Furthermore, because of our expertise in cation metabolism in erythrocyte volume regulation and its role in the pathophysiology of sickle cell disease, we maintain a productive collaboration with Dr. Ronald Nagel, from the Montefiore Medical Center, with whom we are studying the *in vivo* role of nitric oxide on the Ca2+-activated K+ channel and the K+/Cl− cotransporter in mice and humans.

Yvonne Romero, M.D.

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Research Interests

My research interests include Barrett's esophagus, esophagus cancer, and genetic epidemiology.

Sylvia E. Rosas, M.D.

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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 National Institutes of Health (NHLBI and NIDDK) and the Veteran's Health Administration. I am also interested in health disparities research and in the professional development of minority faculty.

Omaima M. Sabek, Ph.D.

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Research Interests

My research interests encompass islet, acute pancreatitis, and allograft rejection studies. (1) Our center has isolated human islets from more than 350 cadaver donors to improve human islet recovery, engraftment, and functioning, with an emphasis on donor variables, isolation methods, and islet preservation. We have developed a culture media that can maintain human islet in culture for up to 2 months without compromising islet viability. We also have identified a gene expression profile that can predict islet function, with an interest in improving islet vascularization (angiogenesis) and suppressing host-specific and nonspecific immune response. (2) Regarding acute pancreatitis, we have studied the systemic manifestations of acute pancreatitis, particularly the effects of neutralization of TNF- with monoclonal antibody on the morbidity and mortality associated with acute pancreatitis. (3) Experiments to monitor allograft rejection in renal, pancreas, and islet transplant recipients have identified HLA-DRA mRNA upregulation as a marker for renal acute rejection; in addition, we have been the first to report the possibilities of using a noninvasive method to monitor the increase in T-cell activation markers gene expression as a marker of pancreas allograft rejection.

Juan Sanabria, M.D.

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Research Interests

My areas of interest include metabolomics in liver and pancreas transplantation, metabolomics in liver cancer, islet cell transplantation, and ischemia-reperfusion injury.

Zoila Vichot Sánchez, Ph.D., R.N.

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Research Interests

My program of research focuses on improving health outcomes in the Hispanic population through: (1) health promotion; (2) culturally sensitive interventions; (3) culturally centered health education to nurses, other health care professionals, and community lay persons; and (4) rigorous research. Other interests are nursing recruitment, education, and mentoring.

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 began to investigate the mechanism of expression of the alpha-subunit of the pituitary glycoprotein hormones under the guidance of Dr. E. Chester Ridgway and his Ph.D. associates, Drs. William Wood and David Gordon. I collaborated on other projects within the laboratory, including the regulation of thyrotrope cell growth by thyroid hormone. I also have explored other areas of investigation, including the expression of the glycoprotein hormone alpha-subunit gene in solid tumors, specifically lung cancer. Currently, I am conducting translational studies to identify the genes that predispose the development of autoimmune thyroid disorders and the various phenotypes seen in these patients.

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

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Research Interests

I am trained in medicine and nutrition science. My interdisciplinary research interests focus on aging, chronic disease prevention/management, and health promotion. My work centers on the development, evaluation, and dissemination of nutrition and exercise interventions to promote health in older adults. I conduct translational research (randomized controlled trials, RCTs; and participatory community-based interventions) to examine the effects of nutrition and exercise on health-related quality of life and disease outcomes. I target my research on chronically ill, frail, older adults, with particular emphasis on Hispanic Americans, who bear a disproportionate burden of health disparities. My research in nutrition provided the evidence used by the Institute of Medicine in revising the Dietary Recommended Intake for protein. My pioneering research on resistance exercise in diabetes and chronic kidney disease has been translated into clinical practice by the American Diabetes Association in the most recently published guidelines on physical activity and exercise, as well as by the American College of Sports Medicine and American Heart Association revised guidelines for exercise in older adults. Currently, I am the Principal Investigator of a participatory community-based intervention to develop a Heart Healthy Action Program for Puerto Rican older adults living in MA. This is one of five projects in the Center on Population Health and Health Disparities, newly funded by the NIH. I lecture frequently nationally and internationally and am an active member of the American Society for Nutrition, the Gerontological Society of America, the American Diabetes Association, and the Massachusetts Public Health Association. I am a board member of various nonprofit and academic organizations.

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/NIGMS). 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 the National Science Foundation, we are investigating the mechanism by which ACTH signaling controls inter-organelle substrate trafficking and post-translational modification of CYP enzyme activity and stability.

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Research Interests

My primary research interests involve studying the causes of morbidity and mortality due to cardiovascular disease in renal patients. In a society in which diabetes and hypertension are prevalent, the rates of renal disease will continue to rise. It is my hope to be able to serve this community of persons as well as those disproportionately affected. In addition, I hope to find solutions through research to slow or reverse disease progression that can lead to the need for renal replacement therapy. As an undergraduate, I became involved with research at Emory University on the relationship between angiotensin II and glucose-stimulated insulin secretion in angiotensin converting enzyme (ACE) knockout mice as well as studies of nephropathy in rat models, including the obese Zucker rat and the streptozotocin-induced diabetic rat. While in medical school, I was awarded the opportunity to continue my research efforts as one of the Dean's Summer Research Fellows in the Vascular Biology Department at the Medical College of Georgia, mainly investigating the effects of the imbalance between COX-2 and cytochrome P450 arachidonic acid metabolites as contributors to the progression of renal disease. Currently, in my residency, I am working with Dr. Amber Podoll, a Fellow in the Division of Nephrology under the advisement of Dr. K. Finkel at the University of Texas Health Science Center, on a retrospective review to evaluate the efficacy of radiologic tests that are routinely ordered in the ICU setting to evaluate obstructive uropathy as a cause of acute renal failure. As a Fellow in the Department of Hypertension and Renal Diseases, it is my ambition to continue research that contributes to the body of knowledge in the field of nephrology with the aim of understanding and preventing the progression of reno-vascular disease.

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Research Interests

My main research interest is to study mechanisms that regulate gene expression. One of these mechanisms is DNA hypermethylation, which is an epigenetic event that inactivates gene expression through addition of a methyl group at the 5′ carbon position of the cytosine base, and is catalyzed by DNA methyltransferases (DNMTs). In cancer, promoter hypermethylation is an important mechanism for transcriptional silencing of tumor suppressor genes. Additionally, I am interested in studying promoter regions to find regulatory sequences for two sulfatase genes, SULF1 and SULF2. These sulfatases desulfate cell surface heparan sulfate glycosaminoglycans and regulate growth factor signaling. Further, I am interested in studying chronic hepatitis B virus infection and its association with liver cancer in recent African immigrants in the United States.

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Research Interests

Currently, my research has investigated the metabolic rate during rest and exercise using mouse models of cystic fibrosis. We are investigating whole-body energy expenditure in the basal state as well as the mean values of exercise intensity and duration, and energy expenditure and RQ during exercise sessions and during maximal oxygen consumption (VO2 max).

Debora Sinner, Ph.D.

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Research Interests

As a postdoctoral fellow in Dr. Zorn's laboratory, my project focuses on the role of zygotic transcription factors in endoderm formation using *Xenopus laevis* as a model organism. In particular, my research has focused on the transcription factor Sox17, which is a key component in the cascade leading to endoderm formation. This transcription factor is not just important in the developmental context but also in the disease context, as recently we published our findings that Sox17 may have a potential antitumorigenic role in colon cancer by antagonizing the canonical Wnt pathway. This modulation of the canonical Wnt pathway is not just restricted to Sox 17 but also seems to be a common mechanism for other sox proteins in several contexts. In fact, I have recently started to study the mechanism by which SoxC proteins modulate this pathway and in this way may impact organ formation and disease outcome. Currently, I am looking for an independent position to move my career forward and continue researching how the endoderm is formed and may instruct or repress the formation of other germ layers. In addition, by studying these early steps, my ultimate goal is to understand the molecular clues that instruct undifferentiated cells to differentiate into specific endoderm cell lineages. Furthermore, I would like to apply this knowledge toward the design of protocols that efficiently will promote differentiation of stem cells into specific endoderm cells (i.e., hepatic cells, pancreatic beta cells).

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Research Interests

My work takes a multidisciplinary approach to assess the role of chronic stress in the development of psychopathology and obesity in rodents. I use a variety of molecular, genetic, and behavioral approaches to assess the interactions of stress hormones on central estrogen receptor (ERα and ERβ) signaling. In addition, my work is aimed at understanding how antidepressants and anxiolytics impact metabolic function. My long-term career goal is to build an independent and thriving research laboratory aimed at investigating the interactions between stress hormones and estrogen receptor signaling in the development of depression and obesity in females.

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Research Interests

I am an African-American female conducting research in the field of diabetes and oral disease and am a U.S. citizen. My areas of interest are in periodontal disease and diabetes, oral cancer and diabetes, and the impact of oral disease in special populations. I have worked closely with leaders in the field of evaluating the impact of oral infection on systemic disease progression (Steven Offenbacher and Dr. Jim Beck, both at the University of North Carolina). I was a member of the Center for Oral and Systemic Diseases and the Lineberger Comprehensive Cancer Center. I have been an investigator on the Dental Atherosclerosis in Communities Project (Dental ARIC; PI–Dr. Jim Beck) that was associated with the Atherosclerosis in Communities (ARIC) Project funded by the National Heart, Lung and Blood Institute. I also received a 3-year minority supplement grant associated with this project. I am currently working on several papers from data collected during this project. Some of the titles include "Evaluating the Relationship Between Periodontal Infection and Fasting Glucose Levels" and "The Relationship Between Periodontitis and Diabetes Associations With Measures of Atherosclerosis and CHD." I have published in the area of diabetes and periodontal disease and continue to be actively involved in research in the area. Currently, I am funded under a Health Resources and Services Administration project looking at the impact of oral disease on HIV overall health outcomes called the UNC HIV Demonstration Project and will soon be implementing a project detecting SCCa antigen in head and neck cancer patients pre- and post-treatment. We will also focus on the patients who have diabetes in this study.

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Research Interests

My research is in the area of hypertension and chronic kidney disease (CKD). I am particularly interested in the association of sleep-disordered breathing and kidney disease. Both disordered sleep and CKD are known to increase the risk of cardiovascular disease. Unfortunately, there is a high prevalence of CKD in minorities who are known to have reduced sleep duration and sub-optimal sleep quality. I am interested in investigating how downstream factors generated in the setting of poor sleep affect blood pressure as well as lipid metabolism, and whether these lead to end organ injury (example kidney dysfunction). It will be interesting to know whether appropriate management of sleep disorders in CKD patients modifies their risk of cardiovascular disease.

Charmaine Stewart, M.D.

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Research Interests

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

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Research Interests

My research interests are in botanicals and metabolic syndrome. Specifically, one of my research projects evaluated the effect of blueberries on insulin sensitivity in obese, non-diabetic, and insulin-resistant humans. We found that insulin sensitivity was improved after consuming blueberries for 6 weeks. The next steps are to elucidate the pathophysiologic mechanisms that lead to improvements in insulin sensitivity when consuming blueberries. In addition, I am interested in studying the effects of other berries on metabolic syndrome and markers of cardiovascular disease (i.e., high blood pressure, endothelial dysfunction, and inflammatory markers).

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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 SERCA2a 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.

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Research Interests

My postdoctoral research focuses on stem cell biology and cancer biology. Within stem cell biology, I am looking at the epigenetic regulation of embryonic stem cells and at the impact of specific genes on mesodermal induction and hematopoietic development. Within cancer biology, I am looking at stem cell niches in the liver and in the bone marrow, which could serve as possible sites for tumor initiating cell growth and am also investigating if SNPs in stem cell genes contribute to oncogenesis in hematopoietic and gastrointestinal cancers.

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Research Interests

My areas of research interest include complement regulatory genes and sickle cell pathophysiology, antigenic diversity and drug resistance in *Plasmodium falciparum,* and metagenomics and gene expression in cutaneous leishmaniasis.

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Research Interests

Residency and Fellowship at MetroHealth Medical Center have enabled me to pursue a career as a clinical researcher in nephrology while remaining committed to the underserved. During the second year of residency, my desire to pursue a career as an academic researcher was solidified. Under the direction of my mentor, Dr. John Sedor, I was granted the opportunity to participate in an independent molecular-based research project in nephrology. I utilized site-directed mutagenesis to demonstrate that Wit-1 potentiated the effect of WT-1, a gene found to be in linkage disequilibrium with Focal Segmental Glomerulosclerosis in the African-American population. My participation in this research project allowed me to apply the molecular knowledge and laboratory skills that had been developed during my undergraduate training in microbiology. Training at Metro has also enabled me to note the disparities in health care that are specific to nephrology. In line with this approach, I am actively researching genes believed to be responsible for renal disease. In addition to my initial work, which further characterized WIT-1, I am presently attempting to identify diabetic nephropathy susceptibility loci in multiplex African-American (AA) and Caucasian families.

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Research Interests

My research interests are centered on low-cost sensors for point-of-care diagnostics. My group is working on various protein-based as well as polymer-based recognition elements for metabolites and other biomarkers. Our two projects that are of particular interest to the NMRI mission are: Binding proteins—These soluble proteins are being converted into optical sensors by mutagenesis and chemical labeling with fluorescent probes. The plan is to have a collection of these binding proteins to be used as an array or singly in various applications. Additionally, special sites for immobilization on a surface are being engineered on these proteins to preserve their activity. A low-cost metabolic monitor—a one-use, disposable device for use by soldiers in the field—is being developed to measure glucose, glutamine, and lactate (USAMRMC-funded). A continuous version of this device is also being developed for diabetes care (NIDDK-funded). The optoelectronics of the sensor and the microfluidics for the sample cells are being optimized. Preliminary evaluation in comparison to commercially available glucose meters is ongoing. Application to monitoring nutrients in cell culture through a microdialysis sampling procedure provides close to real-time determination of glucose and glutamine and proof-of-principle that this method can be applied to diabetes care.

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Research Interests

I have had the opportunity to be involved in both clinical and translational research. My most recent project is looking at fibroblastic specific protein in cirrhotic livers. We are investigating its significance in liver fibrosis, which may help to contribute toward future antifibrotic therapy. I have been involved in the above project since my residency training. I am now a first-year Gastroenterology Fellow, and I plan on seeing through the above project. I am very interested in exploring other research options in the Gastroenterology field, specifically in diseases that predominantly affect the Hispanic community. Unfortunately, I have not had the opportunity to come across any mentors that have experience in this. I feel that the NMRI can provide such mentorship and guidance in my career.

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Research Interests

My laboratory is interested in understanding the mechanisms used by enterohemorrhagic *Escherichia coli* (EHEC) strains to adhere to and colonize the intestinal epithelia. Our major goal is the characterization of novel adhesins and the regulatory network controlling their expression during intestinal colonization. A second main project of our laboratory is defining the importance of bacterial surface structures in the pathogenesis of Adherent-Invasive *Escherichia coli* (AIEC) isolates and their role in the development of an inflammatory response. We are determining whether certain serotypes of AIEC strains are associated with inflammation, as observed in patients suffering from Crohn's disease and ulcerative colitis. Furthermore, we have recently completed the genome sequence of our prototype AIEC strain and now are establishing whether specific virulence factors expressed by AIEC strains are associated with chronic inflammation using *in vitro* and *in vivo* models of infection. Finally, my laboratory has initiated a new area of investigation focusing on the pathogenic mechanisms of *Burkholderia mallei* and the development of candidates for vaccine testing. Currently, we are characterizing the type III secretion system found in this pathogen using *in vitro* approaches and testing multiple virulence factors as vaccine candidates to protect against aerosol infection.

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Research Interests

I am currently interested in intervention and prevention strategies with respect to pediatric obesity and type 2 diabetes in youth.

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Research Interests

My research interests include diabetes, nephrology, the kidney, and cancer.

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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.

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Research Interests

Research in my lab focuses on receptor signaling and regulation of non-voltage-gated calcium channels (particularly Transient Receptor Potential Canonical [TRPC] channels) in endothelial dysfunction/inflammation associated with cardiovascular complications derived from metabolic diseases such as diabetes, metabolic syndrome, and obesity. Particular emphasis is put on molecular and cellular events that take place in atherosclerotic lesion formation as one of the major vascular complications associated with those diseases. Some of our current projects are: (1) the role of TRPC3 in regulated expression of cell adhesion molecules and monocyte recruitment in coronary endothelium; (2) calcium channels and oxidative stress in coronary endothelium; (3) TRPCs in macrophage survival/apoptosis; and (4) impact of TRPC3 expression/function in atherosclerotic lesions in mouse models of metabolic syndrome and Type 2 diabetes. We use a multifaceted approach that includes real-time calcium imaging; real-time amperometric measurement of nitric oxide and reactive oxygen species; patch-clamp measurements of cationic currents; and siRNA and *in vivo* evaluation of atherosclerotic lesion onset, burden, and complexity using TRPC3 transgenic and TRPC3 knockout (global and conditional) mice.

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Research Interests

My Ph.D. is in immunology, and I completed my thesis work in the area of B cell development. My goal is to complete a fellowship in nephrology and then develop a basic research focus on inflammatory or autoimmune disease processes in the kidney.

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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 has also 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 timeframe.

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Research Interests

My major research interest is to understand the role of hemoglobin S and other variant hemoglobins in malaria chemotherapy. My research focus has been to elucidate the mechanism of action of antimalarials such as artemisinin and new lipophilic iron chelators in sickle cell malaria. Other areas of interest include neurophysiology, electrophysiology, the patch clamp, neurodegenerative diseases, neurogenetics, neuropharmacology, and ion channels.

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Research Interests

My research interests include implementing evidenced-based health programs within community and clinical settings to improve health outcomes and decrease health disparities among African Americans. One of my research interests is (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/individuals to develop, implement, and evaluate programs developed specifically to meet the unique needs of African Americans living with chronic diseases. In addition, my interests include examining the psychosocial effects resulting from changing health behaviors. Another interest is implementing evidenced-based health programs in clinical settings to improve health outcomes and decrease health disparities among African Americans and determine the effectiveness of patient-centered medical home models to improve patient satisfaction and health outcomes.

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Research Interests

My research examines cardiovascular risk factors (e.g., diabetes and insulin resistance, hypertension, obesity, and hypercholesterolemia) in Alzheimer's disease. A growing body of evidence indicates that cardiovascular risk factors are Alzheimer's disease risk factors, and with our nation's changing population demographics, these risk factors represent relevant targets to delay or prevent Alzheimer's disease. My other research interest is addressing health disparities, particularly for minority elderly, through increasing participation in clinical research.

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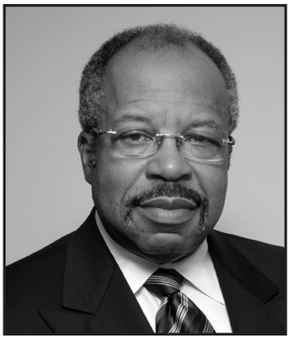
Research Interests

I am interested in the pathogenesis of autosomal recessive polycystic kidney disease (ARPKD). We have been studying the tissue-specific regulation of the gene, Pkhd1, the gene mutated in ARPKD in humans. My initial studies have focused on the relationship of the transcription factor HNF-1b and PKHD1. I have been able to establish a transcriptional relationship *in vivo* regarding HNF-1b and PKHD1 (manuscript in preparation). To further understand the expression profile and role of PKHD1 in cystogenesis, we created a PKHD1 knockout mouse that develops kidney cysts, ductal plate malformations, biliary dysgenesis, and dilated exocrine pancreatic ducts. In the exploration of Pkhd1 gene expression patterns, we have discovered that Pkhd1 is also expressed in previously unrecognized tissues, including the urogenital tract and cerebellum. The role of PKHD1 in these tissues remains unclear, but other ciliary proteins have recently been shown to play roles in development of these organs. We are currently studying the mechanisms that lead to cyst formation in PKHD1 knockout mice and the role of PKHD1 in the urogenital tract and cerebellum.



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Research Interests

I am Professor of Medicine and Program Director of the William T. Dahms Clinical Research Unit at Case Western Reserve University (CWRU) and Director of the Clinical Hypertension Program at University Hospitals Case Medical Center. My research interests include long-term clinical outcome trials, particularly in black populations. I served as Vice Chair of the Steering Committee for the African American Study of Kidney Disease in Hypertensives Trial and first authored its primary results paper. I also chaired the Executive Committee and was Vice Chair of the Steering Committee for the Antihypertensive and Lipid-Lowering to Prevent Heart Attack Trial (ALLHAT). I am now Co-PI (initially PI) of one of seven clinical centers in the Chronic Renal Insufficiency Cohort (CRIC) Study (40% black) and PI of one of the five clinical center networks in the Systolic Blood Pressure Intervention Trial (SPRINT).

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Research Interests

My research interests focus on investigating the epidemiology of racial and ethnic differences in chronic kidney disease (CKD) incidence and progression and modality selection for end stage kidney disease. My specific research projects include three main areas: (1) the evaluation of the epidemiology, disease progression, and disease management of diabetic kidney disease in systems where equal access to care is available; (2) racial and ethnic barriers to renal transplantation among patients with late stage CKD; and (3) racial and ethnic differences in the selection, transplantation, and home hemodialysis modalities among patients with late stage CKD. Currently, our research program receives NIH funding that supports several co-investigators and graduate students.

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Research Interests

My interests are primarily in hepatology. Currently, I am looking at extrahepatic hepatitis C viral replication, as well as HCV viral evolution in HIV-infected subjects. I also have a clinical interest in transplant hepatology as well as general hepatology.

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

Network of Minority Research Investigators
9th Annual Workshop

April 21 – 22, 2011
Bethesda Marriott Hotel at Pooks Hill
Bethesda, Maryland

Summary Report

THURSDAY, APRIL 21, 2011

INTRODUCTIONS

Dr. Sylvia Rosas, Assistant Professor, University of Pennsylvania, Philadelphia, PA, and Dr. Lawrence Agodoa, Director, Office of Minority Health Research Coordination (OMHRC), National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), Bethesda, MD

Dr. Rosas, Chair of the Network of Minority Research Investigators (NMRI) 9th Annual Workshop welcomed participants and asked attendees to introduce themselves and tell why they were attending the workshop. The purpose of this exercise was to let everyone hear the research interests of attendees and what involvement they have had in the NMRI in past years.

After introductions, Dr. Agodoa, Director of NIDDK's OMHRC, welcomed everyone on behalf of Dr. Griffin Rodgers, NIDDK Director, and said that the mission of the NMRI is to assist in the advancement of NMRI members in academia, as well as to provide an opportunity to hear from colleagues on the types of high-quality research being conducted by NMRI members around the country. He said that this workshop was a wonderful opportunity for new members to meet those who have been involved in the Network for many years, and he encouraged them to network as much as possible over the next 2 days.

KEYNOTE ADDRESS

Dr. Lynda Szczech, President, National Kidney Foundation, Associate Professor, Division of Nephrology, Department of Medicine, Duke University Medical Center, Durham, NC

Dr. Szczech provided an overview of her career and the many steps along the way that allowed her to achieve what she sought. A few of the main points she has learned during her career were that individuals should make sure that, if they cannot perform in their job, they tell people before it is noticed so that their colleagues will know that they want to do the job but are having difficulties. Also, it helps to have a strong personality; teaching and academic medicine are much like marketing, because a patient's attention is needed to promote a message, and the patient needs to hear a message that he or she can understand.

Dr. Szczech offered suggestions based on her career development experience that young investigators might consider as they plan their careers. General areas included the following:

- **Choosing a topic for research.** When beginning a career, it is imperative to choose a research topic that represents an area that is not overpopulated by current researchers. In her case, Dr. Szczech chose HIV and the kidney because few researchers were involved in this research, although there was a great need to better understand the topic. The research topic also should be aligned with the patient population served by a young investigator's institution.

- **Choosing good mentors.** This may be one of the most important decisions a young researcher can make. Young researchers should take time to know what they want in a mentor and select those who compliment their research interests and style. It also is important to have a content mentor and a methodology mentor, because both areas will be important to a young researcher's career.

- **Stacking projects logistically.** Researchers should begin a project with the power calculation and work backward toward the question. There must be enough epidemiological information to develop the power calculation; if it does not exist, it must be developed. An advantage of proceeding in a logical manner is that from design to implementation there are many opportunities to publish that will show the logical process. Other advice is that as the project nears the implementation phase, the researcher already should have begun the process of developing another project so that there are continual opportunities to publish and advance the field.

- **Stacking projects financially.** A must for any researcher is knowing how to develop a budget, where funds are coming from, and new sources that can be sought. In an era of intense financial scrutiny, it is vital that researchers understand what funds can be used for what part of a project. Research is not an individual sport but a team sport that must be conducted in the interest of the institution. Young researchers should talk to division chiefs, chairs, or colleagues to gain a better understanding of the budget.

- **Writing as much as possible.** Researchers should attempt to add to the literature in their research topic at every opportunity. Writing can place a researcher at the center of a topic. Grammar and facts must be accurate. The more an individual writes, the better the writing becomes. Good writers allow readers to focus on the content.

- **Understanding what motivates others.** This is especially important, depending on the type of funding that motivates individuals or institutions. Many institutions encourage the use of funding from pharmaceutical companies, but some do not. The National Institutes of Health (NIH) is the most prestigious source of research funding.

- **Staying out of trouble.** Many researchers are not good managers and find themselves having problems in their funding or managing of people. Researchers should seek to avoid charges of fraud by exercising a high level of oversight in their research. They should remember that they will be audited and must be able to account for their time and money. The regulatory files probably are the most important files to keep organized, and it is best to keep them all in one place. If a researcher deviates from approved plans, it is important that this be documented before the audit.

- **Reaching out to national thought leaders.** Young researchers should not be afraid to foster relationships with people who are leaders in their chosen field of study. This also will allow them to have name recognition among those in their chosen field.

Dr. Szczech provided a brief overview of the science she has pursued since beginning her research career. At the time she began, few researchers were working in the field of HIV and the kidney

(e.g., end-stage renal disease, ESRD) and, in fact, the incidence of HIV-related kidney disease was declining. Still, very little was known about why the risk and mortality were declining. The decline became the subject of her research. Working with collaborators, she was able to develop a model to explain the decline—the use of protease inhibitors—that also predicted that the rise may begin again because of the increase in the number of people living longer with HIV.

In developing her project, Dr. Szczech looked for databases that did not have nephrologists associated with them but that collected renal data, such as the Womens Interagency HIV Study (WIHS). Analyses of these data found that risk factors for proteinuria included a low CDC4 count, high viral load, race, and the hepatitis C antibody. This led her to speculate that these also were risks for kidney disease, which led to additional research on HIV-associated nephropathy (HIVAN). This, in turn, led to her observations that in membranous glomerulopathy not associated with HIVAN, deposits in the glomerulus were one of the characterizations of the condition. Speculation later confirmed by colleagues was that this condition might respond to the same antiretroviral treatment used in HIVAN. A small informal consortium was formed to pull together biopsies from patients with kidney diseases; this resulted in the finding that patients with HIVAN received a benefit from antiretroviral therapy that was not seen in patients without HIVAN. This supported the idea that a biopsy is not needed to confirm HIVAN but is needed to confirm that the patient does not have HIVAN, and to help direct treatment.

Other findings from the WIHS data indicated that albuminuria is a predictor of proteinuria in HIVAN patients. Next steps in this research include developing aims and objectives needed to better define the clinical landscape of the disease, including HIVAN; identifying markers for cardiovascular disease (CVD); and identifying biomarkers for prevention of the disease.

In summary, Dr. Szczech asked attendees to remember that their passion may not "pay the bills," so they may have to have other areas of research interest. It also is important to volunteer for administrative roles during times of fiscal shortages. In addition, she offered the following clichés to live by:

- If you are not afraid that something will slip through the cracks, you are not doing enough.
- Get it off your desk.
- If you don't get one rejection letter, you won't know whether you are shooting high enough.
- Throw 10 darts at the dart board and hope one of them sticks.
- Don't take it personally; they can't all be gold.

Finally, she urged the attendees to remember what is really important in their lives: the science, their patients, their family, and their self-esteem; not so important are the images others may have of them.

Discussion

One point that must be stressed is that promotion policies differ at each institution. Researchers must know the rules going into the promotion process and follow them according to what is expected from the institution.

Many institutions encourage collaborations but do not value collaborations in promotion policies—for example, giving little value to middle authors on publications. Unfortunately, being a first or last author is more valued.

One challenge for young or middle-aged researchers is the potential lack of longevity at institutions. Skipping from one job to another may be practical for an individual, but this often leads to a sense that there is a lack of commitment to specific areas of research. This is an individual choice and is dependent on the needs of the individual.

NATIONAL INSTITUTES OF HEALTH (NIH) MINORITY HEALTH AND HEALTH DISPARITIES

Dr. Joyce Hunter, Deputy Director, National Institute on Minority Health and Health Disparities (NIMHD), NIH, Bethesda, MD

The NIMHD became an NIH Institute in the past year, emerging from the former National Center on Minority Health and Health Disparities (NCMHD). Dr. Hunter presented an overview of the NIMHD and its mission, which includes leading, coordinating, supporting, and assessing the NIH effort to reduce and ultimately eliminate health disparities. NIMHD meets its mission by conducting and supporting basic, clinical, behavioral, and social science research; promoting the development of research infrastructure and training; implementing outreach programs and public communication to minority and other health-disparity communities; and fostering emerging programs.

Dr. Hunter highlighted various NIMHD programs of interest to NMRI members. The Institute is trans-NIH and works in all diseases or conditions that affect minority or underserved populations. The NIMHD Centers of Excellence offer support for smaller institutions through P20 mechanisms, and larger institutions through the P60. NIMHD also is unique among NIH Institutes and Centers (ICs) in accepting endowments to fund institutional chairs, support curriculum development, and support fellowships for students and faculty.

Other NIMHD programs include the Loan Repayment Program (LRP), which will be discussed later; the Community-Based Participatory Research (CBPR) program, supported by R24 funding; and a program for Building Research Infrastructure and Capacity (BRIC), supported by the P20 mechanism.

The CBPR program is the only 11-year program at the NIH. It includes a 3-year planning phase, a 5-year intervention phase, and a 3-year data dissemination phase. The program supports interventions in the community using CBPR methods for any disease or condition that is important to that community. During the planning phase, researchers go to the community to plan the intervention through collaborations with community programs. It is expected that the intervention can be sustained after the intervention and data dissemination phases are completed.

The NIMHD also supports NIH's Small Business Innovation Research (SBIR) program (R43), the Small Business Technology Transfer (STTR) program (R44), the Minority Health and Health Disparities International Research Training (MHIRT) program (T37), and Scientific Conference Grants (R13).

The R01 program at the NIMHD is just beginning and supports applications that are very broad based and can include any disease or condition that impacts disparity populations. The goal of the R01 program is to support all investigators whose current research focuses on diseases/conditions that disproportionately affect ethnic racial minorities, underserved populations, and rural and low-income populations. There are two types of R01 programs: one for NIMHD Health Disparities Research, and one for NIMHD Social Determinants of Health research. These R01s may be given to established investigators or young investigators. In addition, NIMHD funding is available through the R21 mechanism for the NIMHD Innovative Faith-Based Approaches to Health Disparities Research program and through the R25 mechanism for the NIMHD Science Education Initiative.

NIMHD-awarded grants with a focus on diabetes, kidney, and digestive diseases include the following:

- R01: Trans-generational Impact of Maternal Obesity and Diabetes on Health Disparities

- R01: Understanding Health Disparities in the Progression of Type 2 Diabetes
- R01: Evaluating Payment Reform and Provider Practices to Improve Health Outcomes in Chronically Ill Disparity Groups: An Application to Renal Dialysis
- P20: Oklahoma Center on American Indian Diabetes Health Disparities
- P20: San Diego Partnership to Reduce Diabetes and CVD in Latinos
- P56: Cross-talk Between Mesenchymal Cells and Beta-cells During Islet Regeneration

Dr. Hunter explained that the NIH has five LRPs, two of which are conducted through the NIMHD:

- Health Disparities Research (HDR-LRP)—Encourages health professionals to engage in basic, clinical, or social and behavioral research that is directly relevant to health disparities issues. The program seeks to recruit and retain highly qualified health professionals in research careers that focus on minority health disparities research related to the medically underserved.
- Extramural Clinical Research (ECR-LRP)—Encourages health professionals from disadvantaged backgrounds to conduct clinical research. The emphasis on "clinical research" and on individuals from "disadvantaged backgrounds" highlights the need for the involvement of a cadre of physician-scientists in clinical research to strengthen the 21st century biomedical and behavioral workforce.

For both grant types, the amount of loan repayment is $35,000, plus taxes and interest per year for 2 years, and awardees can re-apply after the 2-year period. The application deadline is December 1 of each year for each of the LRPs. In most years, the NIMHD can support approximately 300 applications. Since the program began in 2000, NIMHD has supported more than 2,500 loan recipients who now are conducting health disparities research, many with R01s. The LRP offers an opportunity to merge all educational student loans that are issued in the name of the applicant. Most student loans qualify. Basic eligibility requirements are a doctoral-level degree, student loan debt equal to at least 20 percent of annual salary, U.S. citizenship or permanent residency, and a nonfederal government job. Additional information is available from the website www.lrp.nih.gov.

The race and ethnicity distribution of NIMHD LRP recipients is 36 percent Caucasian, 34 percent African American, 14 percent Latino, 8 percent Asian, 3 percent American Indian and Native Alaskan, 1 percent Hawaiian and Pacific Islander, and 4 percent other/no response.

In conclusion, Dr. Hunter presented research topics of LRP recipients. She encouraged participants to think about minority health and health disparities and to submit grant applications to the NIHMD.

Discussion

In applying for grants or other funding, the study sections are put together based on the science in the application. Because NIMHD applications may be broad and trans-NIH, every attempt is made to establish panels that can conduct an accurate review of these applications. It is vitally important that each application receives a review by peers, whether it is basic science, clinical science, or a surgical project. The application must be clear so that reviewers who are not in a specific field can understand what the applicant is trying to do, how he or she plans to do it, and the outcome that is the focus of the project.

NIH/NIDDK FUNDING OPPORTUNITIES

Dr. Judith Podskalny, Program Director, Division of Digestive Diseases and Nutrition, NIDDK, Bethesda, MD

Dr. Podskalny provided an overview of funding mechanisms available through the NIDDK and an update regarding changes in the NIH peer review process. The NIDDK offers a wide range of funding for training grants (T32 and T35) and fellowships (F30, F31, and F32) for graduate and postgraduate medical students, as well as various K-awards for junior faculty and those in transition to higher positions. For newly independent investigators, the NIDDK offers R-series grants (R01, R03, and R21); and for more independent and experienced investigators, the R-series grants and U-series grants, such as U01s, for independent projects. It is expected that those who move from medical school to independent investigator will become mentors for the next generation of young investigators. Dr. Podskalny provided details of the grant types offered by the NIDDK and qualifications and specifications for applications. Highlights included the following:

- **T-series (Training).** These are institutional grants. The Principal Investigator (PI) of the grant appoints students/fellows. There is no peer review of individual projects/students/fellows.

- **F-series (Fellowship).** These are individual grants, wherein the student/fellow is the PI. Applications are peer reviewed.

- **K-awards.** These awards are for early faculty or postdoc-to-faculty transitions and are awarded to protect time for developing a research career. The K08 and K23 awards are for physician-scientists, K01s are for Ph.D.s, and the K99s/R00s are for postdoctoral students who anticipate a job offer within 2 years.

- **Research Project Grants (R01).** The R01 is NIH's most commonly used grant program and is used to support a discrete, specified, circumscribed research project. The R01 can be renewed. There are no specified dollar limits unless noted in the Funding Opportunity Announcements (FOAs). Advance permission is required for applications requesting $500,000 or more (direct costs) in any year, and the R01 generally is awarded for 3 to 5 years. All NIH ICs use the R01. The parent FOA may be found at URL PA-10-067.

- **Small Grants (R03).** The R03 provides limited funding for a short period of time to support a variety of types of projects, including: pilot or feasibility studies; collection of preliminary data; secondary analysis of existing data; small, self-contained research projects; development of new research technology; and more. R03s are limited to 2 years of funding, with direct costs generally up to $50,000 per year, and are not renewable. Although the NIDDK does not participate in the parent R03 program, more than one-half of NIH ICs do. The parent FOA is at URL PA-10-064.

- **Exploratory/Developmental Research Grants (R21).** The R21 program, in which the NIDDK does participate, encourages new, exploratory, and developmental research projects by providing support for the early stages of project development. These sometimes may be used for pilot and feasibility studies. The R21 is limited to up to 2 years of funding with a combined budget for direct costs usually of no more than $275,000. No preliminary data generally are required, and most ICs utilize this mechanism. The web link for the R21 is at PA-10-069.

- **High Priority, Short-Term Project Award (R56).** This mechanism funds, for 1 or 2 years, high-priority new or competing renewal R01 applications with priority scores or percentiles that fall just outside the funding limits of participating NIH ICs. It was noted that investigators are not allowed to apply for R56 grants.

- **Diversity supplement program**. Features of this program include 1-2 years of support via a supplement to an already funded NIH grant. For the NIDDK, the contact person is Dr. Kevin McBryde (mcbrydekd@mail.nih.gov).

The FOAs have a new look, including being shorter and containing less administrative information not relevant to the application, but they still are template-driven. Numerous policy changes occurred in 2011, including restrictions on page limits throughout the sections of the application. Complete information may be found at http://grants.nih.gov/grants/guide/notice-files/NOT-OD-11-021.html.

For career development awards (K-awards), a new 12-page limit applies to portions of the candidates' information combined with the research plan, plus 1 page for a description of training in the responsible conduct of research, 6 pages for the mentoring plan, a 1-page description of institutional environment, and the 1-page Commitment to Candidate's Research Career Development attachment. Statements by mentors, co-mentors, and contributors are limited to 6 pages, but this may change. Complete information may be found at http://grants.nih.gov/grants/guide/notice-files/NOT-OD-11-027.htm.

One important administrative change is that there no longer will be an error correction window. This means that applicants will no longer have the option of making changes to their applications once the due date has passed. It also means that submitting early should be a high priority for applicants.

Postsubmission materials also have changed. They include possible revisions of the budget page if changes occur, addition of biosketches for new key personnel, inclusion of letters of support or collaboration for changes to key personnel, and adjustments due to natural disasters. Postsubmission materials not allowed include updated specific aims and research strategies, late-breaking research findings, supplemental pages, or new letters of support or collaboration not resulting from a change to key personnel.

The NIH will eliminate the 5-day grace period for receipt of letters of reference. These now will be due on the application due date. This change is effective as of April 8, 2011, for Fellowships, and June 12, 2011, for Individual Career Development awards (K-awards). Complete information may be found at http://grants.nih.gov/grants/guide/notice-files/NOT-OD-11-036.html.

The new policy for resubmission applications requires that these be submitted within 37 months of the original submission. The policy on late submission of applications has not changed but has been reiterated in a policy notice found at http://grants.nih.gov/grants/guide/notice-files/NOT-OD-11-035.html.

Single-project U01 applications will be required to transition to mandatory electronic submission as of May 25, 2011. Soon, only letters of recommendation will be required for Fellowship applications, and the current form that referees use will be eliminated. Also, applicants soon will be able to submit Change of Grantee Institution (Type 7 applications) and Administrative Supplements (Type 3 applications) electronically.

WELCOME REMARKS

Dr. Griffin Rodgers, Director, NIDDK, Bethesda, MD

Dr. Rodgers welcomed participants and noted that, except for a recent vote by the Congress, this meeting would not have been held because of a government shutdown.

He reviewed the mission of the NIDDK, the many chronic diseases that are the responsibility of the Institute, and the organizational structure that includes three extramural Divisions focused on diabetes, endocrinology, and metabolism; digestive diseases and nutrition; and the kidney, urology, and hematology. The diseases being researched at the NIDDK are among the most devastating to society, including types 1 and 2 diabetes, cystic fibrosis, obesity, chronic kidney diseases (CKD), urological diseases, and ESRD. The hematological diseases, including anemias, sickle cell disease, and other blood diseases, are some of the diseases on whose study the Institute was founded more than 60 years ago.

NIDDK's intramural program has been a leader in research in many areas. There are more members of the National Academy of Sciences in the intramural program at the NIDDK than at almost any other NIH ICs.

The integrated science at the NIDDK is illustrated by the focus on obesity, which impacts type 2 diabetes and can lead to CKD. Evidence from NIDDK studies among the Pima Indians has shown these connections, but there is a message for the general U.S. population as well. The economic impact of these diseases is significant, with approximately two-thirds of the U.S. population being overweight or obese, resulting in a direct cost of $147 billion each year related to obesity; for type 2 diabetes, the cost is approximately $200 billion for the 26 million Americans who have the disease; 23 million Americans suffer from CKD, costing approximately $27 billion per year. Because most people with CKD do not die from ESRD but heart disease, when the impacts of type 2 diabetes, CKD, and ESRD on the U.S. cost of medical care are combined, it approaches 25 to 30 percent of the Medicare budget.

The NIDDK budget has declined continually over time. The 2010 budget of $1.931 million was mostly for investigator-initiated research, which is the driving force among medical breakthroughs in our country. The recent American Recovery and Rehabilitation Act (ARRA) funding helped fund programs in 2009 and 2010, but it now has ended. In constant dollars, the NIDDK budget has declined since 2006, and R01 paylines have slowed in a time when there has been an increase in applications for funding.

A few of the resources available from the NIDDK for researchers include GUDMAP, the nuclear receptor-signaling atlas, and central repositories with numerous types of tissues and other samples available for use. The 11 NIDDK Centers also focus on specific diseases and conditions relevant to NIDDK research. To bring these together and manage them properly, the NIDDK has developed various strategic planning documents in the past few years, as well as ongoing program review and staff activities to support the core principles of the NIDDK. These core principles are to:

- Maintain a vigorous investigator-initiated research portfolio.
- Support pivotal clinical trials and studies given the importance of the diseases and conditions within the NIDDK research mission.
- Maintain a stable pool of talent, including new investigators.
- Foster exceptional training programs.

- Ensure that the knowledge gained through NIDDK research is translated to the wider scientific and medical communities.

Dr. Rodgers concluded his presentation by showing NIDDK's commitment to supporting new investigators through K-awards and T-awards. He asked that members of the NMRI contribute to the goals and mission of the NIDDK and improve the health of the Nation and the world through their research. He asked that they submit ideas that the NIDDK can use in a period of flattening budgets to improve the processes of research. Everything is under review at this point, and it is important that NMRI members participate in strategic planning for the future. He said that one way to improve chances of success in the NIH grant process is to take part in NIDDK-specific study sections, because knowing what is important to members of the study sections can improve understanding of what is expected. Another method of involvement is to participate in NIDDK-sponsored clinical studies. This is especially true in minority communities.

Discussion

NIDDK efforts in translation are significant, including the National Diabetes Education Program (NDEP), the National Kidney Diseases Education Program (NKDEP), the Weight-control Information Network (WIN), and others. These programs are funded each year to ensure that NIDDK's research is reaching the right populations and medical communities in the locales that are relevant to higher incidence and prevalence of these conditions. These programs and the NMRI are important for finding patients for NIDDK clinical trials and other studies.

In response to a question about the recruitment of American Indians into NIDDK clinical trials and the enviable position some trials have of there being too many people available and willing to participate, Dr. Rodgers said that exclusion criteria should determine recruitment members. Even recruits that are excluded could be involved in other studies or at least kept on a list for future studies.

IMPACT OF HEALTH CARE REFORM ON ACADEMIC MEDICINE AND RESEARCH

Dr. Ricardo Azziz, President, Georgia Health Sciences University, Augusta, GA

Dr. Azziz presented a different kind of lecture; rather than science, he discussed health care reform and how it will impact academic medicine. In 2010, Congress passed health care reform based on the recognition that the country needed to do something about health care expenditures. Health care spending in the United States rose 1 percent to 17.6 percent of Gross Domestic Product (GDP) in 2009, the largest 1-year increase in history, mainly attributable to a 1.7 percent decline in the GDP, the largest decline since 1938. Our 17.6 percent of the GDP spent for health care in the United States represents the highest rate of spending on health care in the world among developed countries. However, it is not just cost that is driving the health care reform issue, but the need to have the country feel as if we are getting good health care for the large amounts of money being spent. In fact, this is not the case. Thirty-five other developed countries have higher life expectancies than the United States, which has higher infant mortality rates, HIV/AIDS prevalence, and health inequities than other developed countries; clearly we are not getting the care we need for the money we spend. One of the starkest comparisons among the United States and other developed countries relates to where the money is spent. For example, the United States spends almost double the amount of health care dollars on acute/emergency care than other developed countries. This is brought about by the high number of uninsured citizens, who seek care only when their conditions reach acute or emergency levels. In fact, the United States also has one of the highest uninsured rates (16.9%) of the developed countries, with disparities varying by region within the country. The Northeast United States has the lowest rate of uninsured persons at 12.4 percent, and the South has the highest at 19.7 percent.

The negative impact of health care on our economy has many origins, including relatively poor health habits (e.g., obesity and sedentarism, smoking, atherogenic and diabetogenic food types), a large number of uninsured who seek only acute care, the profusion of technology, lack of outcomes-based medicine, the significant firewall between consumers and health expenditures, and the need for the health care industry to recover research and development costs. The outlook for health care costs is worsened by the increasing age (higher costs) and lesser youth (lower tax revenue) going forward; and the recessive economic environment. Worst of all, the promise of better health has not been kept because our costly health care system has not resulted in a healthier population.

Dr. Azziz provided an overview of reasons for the current economic recession and how the "recessive environment" is likely to become the "new normal" for the foreseeable decade or more. One must understand what is driving the economy to understand how health care reform will be implemented within the economy.

Health care reform became law in 2010 through the Patient Protection and Affordable Health Care Act and the Affordable Care Act, which was more than 1,000 pages long. The pillars of the Act are "cost, quality, and access." It is hoped that there will be a reduction in the cost of care and improved health among the population. Wellness and prevention services will be expanded, and a series of proposals within the Act provide incentives to state and local agencies and private employers to provide preventive services. The new law will reduce the number of uninsured from approximately 17 percent to 6 percent. Dr. Azziz explained many of the intricacies in the new law. One of the basics of the new law is reducing waste in the system and the use of duplicate or unnecessary tests. Best practices in medical care will be expected; outcomes will determine reimbursement, which is a controversial aspect of the new law.

Much of the concern about the new law is how to pay for it, especially for the large number of participants in the health care system and the expansion of coverage. As written, the new law is cost neutral, although this will not be known until the entire law is enacted by 2014.

Dr. Azziz described academic health centers (AHCs), how they are funded, and the impact of the new health care law on academic medicine. The growth of AHCs has occurred since the passing of the laws establishing Medicaid and Medicare in the 1960s, which specified that there would be money for academic research. Studies in the 1990s showed that the number of medical schools increased from 86 to 125 and the number of full-time medical faculty grew from approximately 11,000 to 90,000 between 1960 and 1995. The impact of federal money on AHCs also has allowed more medical education to be offered, although some educational expenses are paid from the clinical enterprise margin.

Future challenges for the AHCs include the following:

- A further erosion of already lean clinical margins by increased costs (IT infrastructure, primary care investments, etc.) and decreasing reimbursement.
- Disappearing cross-subsidy support for research and education.
- The decrease in the relative amount of federal and state support for education and training.
- The decrease in the relative amount of federal support for research.
- The expansion of multimission faculty.

Opportunities include the growth in the experience of identifying and implementing novel and innovative approaches to solving problems, in research inquiry, and in experience in the development of standardized care plans; development of existing opportunities for interprofessional training; readiness of multispecialty faculty practice groups and AHCs to be aligned/integrated; and ability to imbed quality, efficiency, and performance improvements into the training and education of students and residents, and subsequently staff and faculty.

Dr. Azziz's comments on the importance of education included a focus on developing, to the extent possible, faculty as either clinician-teachers, clinician-researchers, or researcher-teachers, rather than emphasizing the goal that every person be able to do everything. There must be an increase in faculty and staff leadership development and in the frequency of conversations around health care reform. In addition, there is a need to develop greater training and systems emphasizing the role of interprofessional teams and methods for coordinating care throughout the health care continuum. Another issue for education is how more physicians can be found to serve the increased numbers of patients, especially in the elderly population. A shortage of approximately 130,000 physicians by 2025 has been projected.

In the future, there is a need to: improve research by expanding the field of competitive effectiveness, outcome, and health care delivery investigation, and chronic disease prevention; focus on developing collaborations and partnerships to enhance the translation, efficiency, and outcomes of research; and improve fundraising and technology transfer.

Major issues for the future include the following:

- Build a stronger research base to support the increased needs in the health care system.
- Spend resources on comparative effectiveness research (CER) to evaluate the approaches used in disease prevention, treatment, and outcomes.
- Create a system that emphasizes evidence-based medicine, possibly through a patient-outcomes research institute.

On the clinical care side of the health care system, it will be critical to implement systems to monitor/report quality in real time; begin pilot testing novel methods of health care delivery and maintenance; begin developing primary care affiliations; implement an effective, broad-based IT platform; align and integrate clinical and academic enterprise; and change the culture and incentives of clinical faculties and chairs. It also is important to embrace and measure quality as a primary goal and determine the best care model to ensure the health of the population.

Dr. Azziz said that the impact on hospitals will change in the next decade as they move to more of an outpatient base than an inpatient base. Hospitals must adapt to changing paradigms or risk becoming obsolete.

One model that has gained attention in the past few years is the Accountable Care Organization (ACO). ACOs are nonintegrated and discordant organizational structures that have limited experience in coordination of care across the entire health care spectrum. They lack a primary care culture and infrastructure (e.g., IT infrastructure), strategies to alleviate the burden of training, a decentralized departmental structure, and a chair/clinical leader and faculty incentives and culture.

In conclusion, the AHCs must lead changes in health care delivery to address the concerns of cost, quality, and efficiency; ensure that our educational programs generate the physicians and researchers required for tomorrow's health care systems; and understand that research is critical to the effective realization of health care reform.

Discussion

As the population ages, the hazard of end-of-life care must be addressed. It is estimated that one-third of an individuals' lifetime cost of medical care occurs at the end of life. AHCs take care of many uninsured during this period; it is anticipated that with the new health care reform, AHCs will be better off because they will have greater coverage for these individuals.

ACOs are similar to Health Maintenance Organizations (HMOs), with very high costs for out-of-network services. It is important to remember that economics is a social science, and medicine must rely on many other disciplines to solve some of the problems seen in both the current and future health care system after full implementation of the new law.

There was a discussion about the individual mandate for health insurance and the role of government in advocating for healthy lifestyles. The example was given of those who say they do not want the government becoming so involved in their lives (e.g., health care requirements or food recommendations), but when they get sick, they expect the government to pick up the tab. This conflict may border on irresponsibility, but it is part of the unique American personality. It is important for the medical system to be aware that these conflicts exist in society.

There is good reason to understand how the clinical enterprise and research enterprise interact in the health care system. The AHCs have many bright individuals who understand that the research side and business side need to work together. This involves measuring outcomes and resources to improve quality. This will take input from both the clinical and research sides.

LUNCH AND NETWORKING (INFORMAL)

During the lunch period, NMRI members chose to sit at tables labeled by topic. This offered an opportunity for attendees to meet one another and discuss areas of research interest. Topics included diabetes, digestive diseases, hematology, kidney/nephrology, liver/nutrition, and obesity.

MOCK STUDY SECTION

During a breakout session, participants attended one of the Mock Study Sections. Leaders of the session were provided with sample grant applications (some from meeting participants) to review and provide critical feedback. The Scientific Review Officer (SRO) led a discussion of the feedback sessions. One of the most useful activities during the session was the grading of the sample applications by "study section" participants, with direct feedback on why they would have scored the application as they did. The three study sections were comprised of the following chairs and SROs. Each mock session included experienced researchers who had been successful in grant applications; they provided real-life experiences about their quest for funding, often after being unsuccessful in their first attempts.

Mock Study Section 1
SRO: Dr. James Hyde, Senior Advisor, Research Training and Career Development Programs, Division of Diabetes, Endocrinology, and Metabolic Diseases, NIDDK, Bethesda, MD
Chair: Dr. Susanne Nicholas, Associate Professor of Medicine, University of California, Los Angeles, CA

Mock Study Section 2
SRO: Dr. Lakshmanan Sankaran, Scientific Review Officer, NIDDK, Bethesda, MD
Chair: Dr. Eddie Greene, Associate Professor, Mayo Clinic, Rochester, MN

Study Section 3
SRO: Dr. Barbara Woynarowska, Scientific Review Officer, NIDDK, Bethesda, MD
Chair: Dr. Bessie Young, Associate Professor, University of Washington, Seattle, WA

ROLE OF SCIENTIFIC SOCIETIES AND PROFESSIONAL ORGANIZATIONS IN FUNDING RESEARCH AND THE ROLE OF PHARMACEUTICAL COMPANIES IN FUNDING MEDICAL EDUCATION THROUGH GRANTS

Boehringer Ingelheim Pharmaceuticals, Inc.
Dr. Amy Shabazz, Associate Director, Cardiometabolic Medical Affairs, FBM
Dr. Jene Martins-Richards, Senior Medical Liaison, Cardiometabolic Medical Affairs, FBM

Drs. Martins-Richards and Shabazz described their backgrounds and provided information on clinical trials and research being conducted by Boehringer Ingelheim (BI) Pharmaceuticals, Inc. Therapeutic areas of BI drug development include cardiovascular and respiratory diseases, and virology; BI currently is moving into the areas of oncology and diabetes, although BI does not have any approved drugs in these areas as yet.

BI was the original developer of tissue plasminogen activator (tPA), one of the most commonly used drugs post-stroke, which was relicensed to Genentech.

BI grants are issued for education to patients, physicians, providers, or the general public. The educational grants are meant to address unmet medical needs and bridge the gap between what the pharmaceutical industry knows and what it does from a patient and physician perspective. Grants can be awarded for Continuing Medical Education or other programs for organizations, but not for individuals.

Drs. Martins-Richards and Shabazz demonstrated the information available on the BI website regarding funding opportunities. The website URL is http://www.bipigrants.com/index.html. For each area of interest, links are presented to BI grants available in that area. A website tutorial includes definitions relevant to the grant process. The area reviewed was related to educational grants and included application requirements and timelines. The website section labeled "investigator-initiated studies" includes instructions for applying for grants in specific disease areas such as diabetes and endocrinology. It was noted that grants for diabetes and endocrinology cannot be approved until the U.S. Food and Drug Administration (FDA) approves the interventions, which should occur in the second or third quarter of 2011. Dr. Shabazz encouraged participants to consider applying for BI grants.

Discussion

BI will consider any grant application, for example for hepatitis, but it depends on the concept.

American Liver Foundation
Ms. Susan Robinson, Vice President, Programs, American Liver Foundation, New York, NY

Ms. Robinson provided an overview of grant awards and values offered by the American Liver Foundation (ALF). ALF's 2011 Research Awards Program sponsors research integral to the work of the ALF and of the American Association for the Study of Liver Diseases (AASLD). The goal of this program is to improve treatment and find a cure. Since 1979, the program has provided more than $23 million in research funding to more than 750 qualified scientists and physicians.

In April 2010, 12 scientists representing 12 medical and research institutions were awarded nearly $1,000,000 to support their research in the areas of acute liver failure, biliary fibrosis, hepatic inflammation, hepatitis C, liver cancer, nonalcoholic fatty liver disease (NAFLD), and nonviral hepatitis.

There are numerous volunteer opportunities through ALF that support mission delivery. They include:

- **Education.** The core program is *Love Your Liver*, an interactive liver wellness education program targeted to elementary, middle, and high school students. The program educates students about the liver and the actions they can take to maximize their liver health and prevent liver disease. It can be tailored to students in both school and after-school settings.

- **Hepatitis C Program.** This program is just beginning and will focus on patient information and treatment options.

- **Nonalcoholic Fatty Liver Disease (NAFLD).** This is a program with educational resources for patients and families.

- **Congressional Outreach.**

- **Board of Directors.**

These programs represent some of the most relevant programs that are of high interest to liver disease researchers and organizations. Ms. Robinson encouraged attendees to consider applying to the ALF grant program.

American Society for Bone and Mineral Research (ASBMR)

Dr. Kristy Nicks, Research Fellow, ASBMR Minority Subcommittee, Mayo Clinic, Rochester, MN

ASBMR's mission is to be the premier society in the field of bone and mineral metabolism by promoting excellence in bone and mineral research, fostering integration of clinical and basic science, and facilitating the translation of that science to health care and clinical practice. Key objectives of the ASBMR are the nurturing and development of future generations of basic and clinical scientists, dissemination of new knowledge in bone and mineral metabolism, and proactive shaping of research and health policies based on scientific advances in the field.

ASBMR was founded in 1977 and has approximately 3,800 members, almost equally divided between U.S. and international scientists and physicians. The predominant specialties of ASBMR members are endocrinology, cell biology, and molecular biology, with the largest subset in basic research. Approximately 20 percent of current ASBMR members self-identify themselves as a minority.

ASBMR support for young investigators includes awards for abstracts at the Annual and Topical meetings, travel grants and awards to cosponsored events and other research meetings, Junior Faculty Osteoporosis Research Awards, and Career Enhancement Awards.

Dr. Nicks presented the ASBMR Minority Subcommittee Goals. The Subcommittee is charged with increasing membership, facilitating participation, and promoting professional development of underrepresented minorities in ASBMR. The Subcommittee's objectives are to:

- Increase the number of underrepresented minorities engaged in the bone and mineral research field by providing access to resources and training through the development of a mentoring program.

- Promote the advancement of research and careers for underrepresented minorities through job opportunities and leadership positions within the Society.

- Develop relationships with other organizations to foster collaboration and raise awareness of ASBMR.

Dr. Nicks described the accomplishments of the Subcommittee, which included compiling and disseminating an annual list of research funding opportunities for underrepresented minorities and sponsorship of networking events at the ASBMR 2005, 2006, 2010, and 2011 Annual Meetings (e.g., Minority Breakfasts, Receptions, Focus Groups).

Discussion

If an NMRI member wants to submit an application for a grant or other award, the member first needs to join the ASBMR. With the exception of ASBMR Young Investigator and Travel Awards, all other Society grant and award programs are available only to current members. Membership is available to any individual with an interest in the field of bone and mineral metabolism. Individuals can apply for membership at www.asbmr.org.

SCIENTIFIC PRESENTATIONS

Lead Exposure and Chronic Kidney Disease Among Hispanics

Dr. German Hernandez, Assistant Professor of Medicine, Texas Tech University Health Sciences Center at El Paso, TX

Dr. Hernandez explained that his talk would focus on: (1) understanding the link between lead exposure and kidney function at the population level; (2) describing the association between low-level lead exposure and the progression of CKD, regardless of the primary etiology; and (3) describing the cross-sectional association between blood levels and kidney function among Hispanic patients with CKD in the El Paso, TX, region.

In providing background, Dr. Hernandez noted that racial and ethnic minorities have a higher burden of ESRD. Blacks, for example, have been shown to have the highest rates of ESRD among racial groups, and Hispanics have higher rates of ESRD than non-Hispanics. Despite attempts to modify known risk factors such as hypertension, proteinuria, and glycemic control, disease progression still occurs. This raises the possibility of the existence of other factors that have not yet been identified. These could include factors such as health literacy, which often is not measured in studies. Similarly, environmental exposures as risk factors for CKD progression have not been studied fully.

Dr. Hernandez noted that residents in the vicinity of El Paso were exposed to lead from a local smelter. During the period 1969 to 1971, the smelter released 1,116 tons of lead into the environment. Lead smelting operations in the area ceased in 1985. Lead acts similarly to calcium and is deposited in the bone, where it accumulates, making the El Paso population (81.4% Hispanic) an appropriate group in which to study the effects of lead exposure on CKD.

Dr. Hernandez described the use of lead throughout human history, including sources of exposure. Lead has no known biologic function, so there is no known "safe" level. In addition, lead can affect almost any organ system. Lead is a known nephrotoxicant at high levels of exposure (blood lead levels of 70-80 mcg/dL). Such high levels of exposure generally are not seen any more in the United States. Early changes seen at this high level include: proximal tubular dysfunction (mainly in children); aminoaciduria; glycosuria; phosphaturia; eosinophilic intranuclear inclusion bodies; swollen mitochondria in tubular lining cells; distorted cristae; and a decline in glomerular filtration rate (GFR). These changes are reversible with removal of exposure, treatment with chelation (Ca-EDTA or DMSA/succimer), or both. Continued exposure, however, leads to chronic lead nephropathy, also called overt lead nephropathy, which clinically may involve: inactive urinary

sediment, some proteinuria (< 1-2 grams), hypertensive vascular changes, "saturnine" gout, and chelatable lead (body lead burden) > 600 mcg/72 hr urine following the administration of 1 gm of IM/IV Ca-EDTA. Treatment of lead nephropathy involves identifying and removing the source of lead exposure and Ca-EDTA treatment. More common in the United States today, however, are lower levels of lead exposure, with racial and ethnic minorities showing a higher burden of lead exposure, according to the National Health and Nutrition Examination Survey (NHANES). In discussing low-level lead exposure and CKD progression, Dr. Hernandez described studies in Taiwan that showed that low-level lead exposure may act as an additional risk factor for CKD and its rate of progression. However, all of these studies were conducted at a single center in Taiwan; other populations have not been studied.

Dr. Hernandez and colleagues' El Paso study is called the Paso del Norte Kidney Disease Study (PNKDS). The immediate aim of the study is to determine the prevalence of lead exposure among mainly Mexican-American patients with CKD in El Paso as a first step in studying lead exposure as a risk factor for CKD progression in the El Paso region. Study findings thus far include: in the El Paso region, predominantly Hispanic patients with CKD of varying stages do have measurable levels of lead exposure; the relationship between blood lead levels and estimated GFR (eGFR) appears to be modified by diabetes mellitus; and among nondiabetic patients, there is a strong and significant cross-sectional association between higher blood lead levels and lower eGFR. Further studies are planned, including an attempt to replicate the Taiwanese studies.

Discussion

Oral chelation via succimer has not been fully studied yet, so comparisons between oral and intravenous chelation therapy cannot be made at this time. With chelation, it is important to make certain that patients do not have a continued source of lead exposure. If they do, chelation may do more harm than good because it may recirculate the lead in their bodies. This is less of an issue in patients with low blood lead levels, but it should be investigated on an individual patient basis.

To ascertain lead exposure in PNKDS, researchers modified the Texas State Department of Health lead exposure questionnaire. Items addressed included age of housing and use of specific traditional Mexican remedies. In Dr. Hernandez's previous work at a public hospital in San Francisco, patients were asked about sources of lead exposure. If none was found, patients were chelated initially to determine if they would have met entry criteria for the Taiwanese trials. If they did meet the Taiwanese criteria, chelation continued. Again, it is important to question patients thoroughly to ascertain all possible sources of lead exposure (e.g., a supplement they may be taking, especially if it is obtained from another country).

All PNKDS patients had CKD (stages 2-4) prior to enrolling in the observational study. None were true "lead nephropathy" patients. Some remediation has occurred in the areas of exposure near the smelter. The potential impact of the planned removal of the smelter is unknown.

The Taiwanese investigators postulated that lead might increase oxidative stress and reduce nitric oxide availability; thus, removing the lead might create a better vascular environment that might result in an improved eGFR.

In the Atlanta region, a significant detrimental effect was observed in children whose lead levels measured < 10 mcg/dl. The PNKDS does not involve children, but they may be more susceptible to the effects of lead because their bodies still are developing. In addition, children are at greater risk because they are more efficient at absorbing lead from the gastrointestinal tract. The idea that chelation may be detrimental to patients who have a current source of lead exposure should be considered carefully in children, as well.

Neurobiology of Obesity
Dr. Tiffany Beckman, Assistant Professor of Medicine, University of Minnesota, Minneapolis, MN

Obesity in American Indians (AIs) is a major public health problem. Some AI tribes such as the Pima Indians have the highest prevalence of obesity in the world, and obesity-related medical conditions are among the top causes of death in AIs. AI women are 1.4 times more likely than Caucasian women to be obese, which contributes to childhood obesity. In addition, 75 percent of Pima women in the United States are obese, compared to only 20 percent of Mexican Pima women.

To account for this, it must be noted that a transition occurred in the 1950s from lower calorie traditional foods to a mainstream American diet that includes fast food. To illustrate the impact of environmental factors rather than genetic factors, it has been shown that the Pima Indians who live in the Sierra Madre mountains of Mexico retain a traditional lifestyle of hunting and gathering in which they haul their own water, grow their own food, and remain physically active; they have far less obesity than their American counterparts. The Pima Indians who live in the U.S. desert reservation of Arizona eat a high-fat diet of government commodities and are sedentary. They cannot grow their own food in the desert climate.

Dr. Beckman provided an overview of the biologic pathways that influence eating behavior. Human eating behavior is driven by complex regulatory factors that are coordinated by the brain. For example, adiposity signals, such as leptin, insulin, and ghrelin, reflect the state of energy balance in the periphery and act in the hypothalamus. Satiety signals that communicate about the presence of food in the gut act in the hindbrain, specifically in the nucleus of the solitary tract. However, food has rewarding or pleasurable properties such as smell, taste, and appearance, and the reward value of these inputs is processed in pathways that include the midbrain's ventral tegmental area and the striatum, including the nucleus accumbens. In addition, cognitive factors such as social situation, emotional state, or any attempts to volitionally control one's eating also affect eventual food intake. Centers that regulate behavior can be found in the prefrontal and orbitofrontal cortex and other brain regions.

Dr. Beckman described a study to examine the impact of cognitive factors on the brain's response to food intake. The study used naltrexone, an FDA-approved drug for alcohol and opioid dependence, to determine its viability for the control of eating behavior. The study in rats indicated that naltrexone was able to control eating behavior if injected into the amygdala.

Functional Magnetic Resonance Imaging (fMRI) to study brain activity during feeding or viewing foods was a strategy used to better understand the brain's response to food. One study in people has shown that brain activation to fattening food cues in reward pathways differs from that to nonfattening food. This response is enhanced in obese women compared to lean women, which suggests that obese women have overactive reward circuitry in the brain when exposed to food.

An ongoing randomized, placebo-controlled, double-blind, crossover pilot study of 30 obese and 30 lean AI women investigated naltrexone and visual stimuli, using fMRI to compare study groups. Preliminary data were presented from the first group of participants in this pilot study. The aims of the study were to use fMRI to compare brain activation associated with the response to visual food cues in obese versus lean AI women, to use fMRI to compare the effects of naltrexone versus a placebo on brain activation associated with response to palatable food cues, and to compare the effects of a single dose of naltrexone versus a placebo on caloric consumption. Results indicated the following:

- Food cues trigger robust responses in brain areas central to the regulation of food intake.
- Responses to food cues, especially high-energy, "fattening" foods, appear to be a regulated aspect of feeding behavior.

- Opioidergic neurons in specific brain regions appear to be important.
- Functional neuroimaging studies can inform us about the brain mechanisms underlying our perception of appetite and satiety.
- More work in this discipline is needed.

Discussion

Other receptors such as dopamine and pathways in the brain other than opioid receptors are involved in food behavior. Naltrexone is specific for the opioid receptor and is used for other pleasure-seeking behaviors such as cocaine use and gambling.

One of the observations over the years is that the AI diet is becoming more Westernized. There are few data prior to the change to the Western diet, although it is known that fewer calories were consumed by AIs prior to Westernization.

MARCO CABRERA POSTER AND NETWORKING SESSION—OVERVIEW

Participants were invited to see the posters submitted to the NMRI Annual Workshop. This year, 27 posters were submitted in three categories: Basic Science, Clinical Science, and Translation. During the poster review, judges observed the posters and chose winners for each category; the awards were given to recipients on the second day of the workshop.

DINNER ADDRESS

Genetic Diversity, Race, and Health: What Are We Learning?

Dr. Charles Rotimi, Director, Center for Research on Genomics and Global Health, National Human Genome Research Institute, NIH, Bethesda, MD

Dr. Rotimi presented information on the emerging genomic era and the fact that scientists have been able to produce the complete DNA sequences of many organisms, including genomes of humans, microbes, insects, animals, and plants. The postgenome era presents scientists with unprecedented opportunities and challenges, with a major challenge being understanding how differences in DNA sequences inform our understanding of human history and health. An important teaching from the new information about the genome is what it can tell us about human history.

This history of human migration from Africa approximately 200,000 years ago resulted in genetic diversity in human alleles, although approximately 90 percent of human alleles are shared. The study of alleles has resulted in the identification of population-specific variations that allow an understanding of the human diaspora from Africa. One finding is that interbreeding occurred in the Middle East but not in Africa between early man (i.e., *Homo sapiens*) and what is known as Neanderthal man.

One of the techniques for looking at genetic differences among humans is to look for single nucleotide polymorphisms (SNPs), common points in the genome where there are different base pairs. Most genetic variation is evenly distributed around the world, but some—such as the genetic variation for light-colored skin found in Europeans and the reduced ability to sweat found in East Asian populations—are unique to geographic locations. The HAPMAP project has determined that 99 percent of human DNA is shared by all humans on earth. Genetic variation is not constant across animal species. Those species that have not had evolutionary bottlenecks, such as gorillas, chimpanzees, and *Drosophila pseudoobscura*, have a great amount of genomic diversity; those that have had evolutionary bottlenecks, such as humans and cheetahs, have far less genomic diversity.

As an example of local diversity impacting human disease, the *LARGE* and *DMD* genes found in populations in Nigeria protect against Lassa fever (sleeping sickness), an evolutionary variation

that has relevance to that location but serves no advantage in other populations, such as those in Northern Europe. Similar variations are seen in the genetic influences that account for the 15 to 20 percent lower level of bilirubin observed in African Americans compared to their white counterparts in the United States, and in the variation in the number of copies of the human amylase gene among populations. Amylase copy number is related to the intake of starchy foods, as seen in the lower numbers in African and Asian populations, but higher numbers in European populations. These variations illustrate how the environment has shaped our genome.

An interesting aspect of genetic variability is self-reported ethnic label and genetically determined ancestry. Anecdotes indicate that it is difficult to know whether a person who self-reports that he or she belongs to one racial or ethnic group is accurate without confirmation by genomics. One marker that has been described in the literature is lung function determined by forced expiratory volume in 1 second (FEV_1). Data from the Coronary Artery Risk Development In Young Adults (CARDIA) study indicated that African ancestry was inversely related to FEV_1.

There also are human genetic variation implications for differential response to drugs. For example, SNP rs12979860 near the IL28B gene, encoding interferon-lambda-3, is associated with about a twofold difference in response to treatment for hepatitis C in patients of European ancestry and African Americans. Because the genotype leading to better response is in substantially greater frequency in European than African populations, this genetic polymorphism also explains approximately one-half of the difference in response rates between African Americans and those of European ancestry.

This leads to the question of whether race or ancestry is the issue; for example, "black" is used for a wide range of individuals from different backgrounds and different genetic makeups. This can be illustrated by the genetic variant at the HLA-B*5701 (rs2395029) allele, which significantly reduces the incidence of abacavir hypersensitivity in patients being treated for HIV. Because this allele existed in only 1 percent of Africans, it was thought that there was no reason to genetically test African patients for the allele before beginning treatment. (It was noted that the allele is present in 8 percent of whites, and therefore these patients were genetically tested before beginning abacavir treatment.) HAPMAP studies, however, showed that although the prevalence of the allele was near 1 percent in all Africans, it was distributed differently among African subpopulations such as the Yoruba in Nigeria (0%), Luhya in Kenya (3.3%), and Masai in Kenya (14%). This indicates that ancestry should be considered for the individual, not just membership in a racial group.

The same situation has been seen in the use of beta-blockers for CVD and hypertension. Approximately 40 percent of African Americans have a variant (G protein-coupled receptor kinases [GRKs]-Leu41) that provides a natural beta-blocker. If a physician treats the 60 percent who do not have GRKs-Leu41, these patients do very well on beta-blockers. However, the 40 percent who have the allele do not have any effect. Data that combines the two groups will give the result that beta-blockers are not effective in African Americans. The take-home message from this example is that individuals cannot be treated as representative of all those who physically resemble them or who have some of the same ancestry.

Although studying human genetic variation is important for many reasons, it does not support the concept of "race." The following comment on race was published recently and may be as accurate a definition as can be supported by science:

> *"Race, in countries like the U.S. at least, is a fuzzy social construct by which people with one or two superficial similarities are often clumped together. It reflects simplistic cultural habits reinforced by the questionable practices of government statisticians and medical researchers, among others. Ethnic binning may simplify thought processes and, in some cases, negate them altogether. But using genetics to define race is like slicing soup. You can cut wherever you want, but the soup stays mixed."*

A misperception of the genetics and drug issue is that we will someday have drugs for white people and drugs for black people (or other racial groups). This is not true. What we will have is drugs for people with certain genetic characteristics regardless of their race or ethnicity. It is likely that in these groups there will be individuals from every human racial or ethnic group. Dr. Rotimi gave an example from his childhood in Nigeria. It was not unusual to get malaria a few times during the year, and he and his family would be treated with chloroquine. Dr. Rotimi would take the drug and have severe reactions and not sleep for days; his grandmother would take the chloroquine and have no reaction. Clearly, there are genetic variants at work within the same family.

Dr. Rotimi provided a brief look back at his past, from his childhood in Nigeria through his undergraduate work at the University of Mississippi to his present position at NIH's National Human Genome Research Institute. As a child, he did not accept anything on faith, but wanted to find out for himself. He loved math and science as a child and high school student and later, at the University of Mississippi, he questioned why there was such a high incidence of disease in the state and community among African Americans. This led him into the field of biochemistry and genetics. He pursued his Ph.D. in epidemiology, statistics, and genetics, primarily due to his experiences as an administrator in a 268-bed hospital in Greenville, MS. These experiences fueled a lifetime search for the causes of health disparity.

He spoke of the importance of mentors in his career and the ability to recognize where a person is in his or her career development. The following are good points to remember as one develops a scientific career:

- **Science is vast.** Don't be afraid to follow your interests as they develop.
- **Enjoy what you do**. Not everyone enjoys looking through a microscope.
- **"A to B" is not one road.** Don't be afraid to take the road less traveled.

Dr. Rotimi concluded his presentation by providing quotations from scientists that express the love of science and exploration that must be present for success in science, but also advised those in pursuit of a scientific career to have patience because the scientific process often is long and slow. His final advice for scientists was to remember that "what makes you get up in the morning and want to come in every day is curiosity."

FRIDAY, APRIL 22, 2011

BUSINESS MEETING AND COMMITTEE REPORTS

Oversight Committee Report

Dr. Shirley Blanchard, Associate Professor, Creighton University, Omaha, NE

Dr. Blanchard, past Chair of the NMRI Oversight Committee, reviewed the membership and procedures of the Committee. She noted that the Committee consists of 10 members from various constituencies of the NMRI, and members serve a 3-year term. Terms are staggered so that 50 percent of the members rotate off at the end of each year, and terms are congruent with Planning Committee terms. The Chair serves 4 years for reasons of continuity: 1 year as Chair-elect, 2 years as Chair, and 1 year as past-Chair. The Chair and Chair-elect are appointed by Committee members. The Committee convenes by conference call every 3 months, with the fourth meeting coinciding with the NMRI Annual Workshop.

The Committee's mandate is to facilitate the development of active mentoring between senior and junior members, facilitate outreach, establish groupings of Network members based on interests and goals, and match mentors and mentees. The Committee coordinates with professional societies that support NMRI regional and annual meetings, evaluates NMRI effectiveness, pursues the retention of NMRI members, and ensures that members fall within the specific programmatic areas of the NIDDK.

Committee goals for the past year included monitoring the formalized mentoring program for member career development, identifying specific learning activities, scheduling a focus group to brainstorm how to recruit and retain members, and producing a DVD for recruiting new members. The DVD, which is now in production, will require NMRI members to sign a consent form to allow their pictures/video to be posted on the NIDDK website and be included in the NMRI marketing video.

Results from the 2010 NMRI Questionnaire were presented and discussed, with comparison to the 2009 NMRI Questionnaire. Dr. Blanchard reported that the number of members completing the questionnaire rose from 28 in 2009 to 111 in 2010, which makes the value of the data more significant. The questionnaire had 24 questions in 2010. Highlights included the following:

- **Academic Status:** Of the 111 respondents, approximately 46 percent were Assistant Professors, 21 percent were Associate Professors, and 5 percent were Professors. Approximately one-third were tenured; two-thirds were not.

- **Meeting Attendance:** Ten percent of respondents reported that they have attended all NMRI meetings; approximately 74 percent have attended more than one meeting.

- **Reasons for Attending:** The five most common answers for why members attend the NMRI meetings include professional mentorship (73%); research opportunities (69%); to enhance grant-writing skills (65%); assistance in developing management skills (51%); and continuing education (37%).

- **Career Development:** Of those responding to the question of how the NMRI has helped them in their career, multiple members answered that the NMRI allows them to interact with administrators and stay current in NIH policies; supports them in mentoring undergraduate researchers; teaches best practices to succeed as a minority investigator; and provides knowledge on how to submit a focused grant application. Above all, mentoring was cited most often as the benefit

most valued by NMRI members. On a scale of 1 to 10, NMRI members rated career development at the NMRI as an 8.

- **Assisting the Tenure Process:** The NMRI has built a track record of scholarship and service for assisting in the progression of members toward tenure. This is accomplished through letters from the NMRI to faculty institutions, mentoring, making sure research remains the focus of NMRI members, and giving assistance in understanding the tenure process.

- **Mentorship:** More than 70 percent of NMRI members would like to be a mentor, and more than 60 percent would like to have a mentor.

- **Grants:** Of those responding regarding the number of grants they have submitted this year, 41 members have submitted 61 grants, with 16 grants having been funded. This is impressive given the difficult economic times that have made grant seeking more competitive.

Dr. Blanchard asked NMRI members to continue to report their publications, presentations, grants, and tenure and promotions, and to complete the NMRI Questionnaire during the coming year. She also asked that they complete the evaluation for this workshop. As for the coming year, she asked that each member recruit one or more new members and contact at least one organization or society to support the NMRI.

Dr. Virginia Sarapura presented data and information on the NMRI Mentoring Program. The Program provides learning activities on how to be an effective mentor and mentee, helps match mentors and mentees, and creates a framework for continued communication between mentor and mentee. Possible mentors and mentees can find information on the NMRI website at http://nmri.niddk.nih.gov. There have been 23 pairs of mentor/mentees matches in the past 3 years and, by all accounts, these have been very successful.

The Mentorship Program has a structure that encourages communication between mentors and mentees, but also includes the responsibility to have regular contact and to document interactions. Dr. Sarapura asked attendees to ask questions of any of the members of the Oversight Committee if they were interested in taking part in the Mentorship Program.

Planning Committee Report

Dr. Sylvia Rosas, Assistant Professor, University of Pennsylvania, Philadelphia, PA

Dr. Rosas thanked the Planning Committee members and recognized them with a round of applause. She announced that Dr. Juan Sanabria had volunteered to be the Chair of the 2012 NMRI Annual Workshop. She asked for volunteers for the Planning Committee for next year's workshop and asked that people step forward soon so planning could begin.

Dr. Rosas also encouraged attendees to complete the Workshop Evaluation sheet so that planners could see what had been valuable at this year's workshop.

POSTER SESSION AWARDS

Dr. Rosas

Dr. Rosas thanked poster judges for volunteering to review and score each poster during the previous evening's Poster Session. She then announced the poster award winners:

Clinical Science Award: Rasheed A. Bologun, Associate Professor of Medicine, Department of Medicine/Nephrology, University of Virginia, Charlottesville, VA

GDS-15 as a Predictor of Mortality in Elderly Hemodialysis Patients
Rasheed A. Balogun[1], Seki A. Balogun[2], Alyson L. Kepple[3], Jennie Z. Ma[4], Faruk Turgut[5], Csaba P. Kovesdy[1,6], and Emaad M. Abdel-Rahman[1]
[1]Division of Nephrology, [2]Division of General Medicine, Geriatrics, and Palliative Care, Department of Medicine, [3]School of Medicine, [4]Division of Biostatistics and Epidemiology, Department of Public Health Sciences, University of Virginia Health System, Charlottesville, VA; [5]Division of Nephrology, Iskenderun State Hospital, Hatay, Turkey; [6]Division of Nephrology, Salem Veterans Administration Medical Center, Salem, VA

Translation Science Award: Ayotunde Dokun, Assistant Professor, University of Virginia, Charlottesville, VA

Impaired Ischemia-Induced Expression of Dual-Specificity Phosphatase (Dusp) in Type II Diabetes
Ayotunde O. Dokun[1], Rebecca Maddox[1], Caitlin Azzarello[1], and Brian Annex[2]
[1]Division of Endocrinology and [2]Cardiovascular Medicine, Department of Medicine, University of Virginia, Charlottesville, VA

Basic Science Award: Jorge Artaza, Assistant Professor, Department of Internal Medicine, Charles Drew University/University of California, Los Angeles, CA

Vitamin D Promotes Myogenic Differentiation by Inhibiting Cell Proliferation and Modulating the Expression of Pro-Myogenic Growth Factors and Myostatin in Skeletal Muscle Progenitor Cells
Leah A. Garcia[1], Keisha K. King[1,2], Monica G. Ferrini[1,2], Keith C. Norris[1,2], and Jorge N. Artaza[1,2]
[1]Department of Internal Medicine, Charles R. Drew University of Medicine and Science, Los Angeles, CA; [2]Department of Medicine, David Geffen School of Medicine at the University of California at Los Angeles, Los Angeles, CA

Basic Science Award: Michelle Foster, Research Assistant Professor, Department of Psychiatry, University of Cincinnati, Cincinnati, OH

Visceral Adipose Tissue Removal or Transplantation-Induced Improvement in Glucose Tolerance in Mice: Prospective Role of Hepatic Triglyceride Storage
Michelle T. Foster[1], Haifei Shi[2], Randy J. Seeley[3], and Stephen C. Woods[1]
[1]Department of Psychiatry, University of Cincinnati, Cincinnati, OH; [2]Department of Zoology, Miami University, Oxford, OH; [3]College of Medicine, University of Cincinnati, Cincinnati, OH

POSTER SESSION PRESENTATION

Social Determinants of Racial Disparities in Chronic Kidney Disease
Dr. Deidra Crews, Assistant Professor of Medicine, The Johns Hopkins University School of Medicine, Baltimore, MD

Dr. Crews provided data showing that approximately 26 million Americans have kidney damage or decreased kidney function. CKD generally is conceptualized along a continuum, with most people having normal kidney function, some being at increased risk of developing CKD, some developing kidney damage, and some progressing to ESRD. Approximately 500,000 Americans have ESRD. After more than two decades of increasing incidence rates of ESRD in the American population, there appears to be a slight decline in the past few years.

ESRD incidence is up to four times greater in racial and ethnic minorities, with a higher prevalence and onset at a younger age. For example, the average age of ESRD onset is 65 years in

American whites, 58.7 years for African Americans, 56.6 years for AIs, and 60.0 years for Asian Americans. For Hispanics, the median age at onset is 58.5 years; for non-Hispanics, it is 63.5 years.

To understand whether patients with CKD will progress to ESRD, there must be a definition that defines pre-ESRD based on the stages of CKD. In the Reasons for Geographic and Racial Differences in Stroke (REGARDS) study, patients were characterized by an eGFR of less than 60 ml/min per 1.73 m^2 (i.e., the standard from the Modification of Diet in Renal Disease [MDRD] study). REGARDS results indicated that blacks had a lesser degree of the defined eGFR than whites, but a greater prevalence of stages 4 and 5 CKD, which is more advanced CKD and may lead to earlier mortality.

In the Multi-Ethnic Study of Atherosclerosis (MESA), whites had a greater or equal prevalence of pre-ESRD CKD (eGFR < 60 by MDRD) and cystatin-C-based equations (a biomarker of kidney function) when compared to black, Chinese, or Hispanic individuals. Differences were more striking among women in the study than among men. Data from NHANES III indicate that racial/ethnic minorities with and without diabetes have greater odds of albuminuria compared with whites.

The Atherosclerosis Risk in Communities (ARIC) Study showed that socioeconomic disparities also exist in CKD. Results from ARIC illustrated that individuals living in the most impoverished neighborhoods in the United States have more than a threefold increased risk of ESRD when compared to those in the wealthiest neighborhoods. It also showed that the differences among blacks are not as great as in the general population for those living in low socioeconomic status (SES) neighborhoods and those living in higher-SES neighborhoods. SES also has an impact on the prevalence of albuminuria, with lower SES individuals having a higher prevalence of macro-albuminuria than higher-SES individuals.

Dr. Crews said that her research question has been, after looking at data from the previous studies, whether there is an interaction between race and SES. She described the Healthy Aging in Neighborhoods of Diversity Across the Lifespan (HANDLS) study, a prospective cohort study on differential influences of SES and race on a number of different health outcomes. Unique design properties of HANDLS are that there are approximately the same number of blacks and whites, and approximately the same number from each SES level. The first wave of data collection has been completed on this 20-year study, which includes participants from 12 neighborhoods in Baltimore, MD. Baseline results show that lower SES blacks have a higher prevalence of CKD. These differences did not exist among whites. In addition, results from logistic regression models confirmed racial differences in the relationship between low SES and CKD, even after adjustment for diabetes and hypertension.

In the past decade, genetic polymorphisms have been found that are associated with CKD (specifically nondiabetic proteinuric kidney disease) and African ancestry. To determine if SES influences the relationship between ancestry and CKD among African Americans, Dr. Crews and colleagues examined albuminuria in the HANDLS study. It was found that there were no statistically significant differences in albumin/creatinine ratio by ancestry, but there was a relationship between poverty and albuminuria. In looking at income categories among these participants, there was an inverse relationship between albuminuria and SES level. Further analyses of the REGARDS study found a similar relationship between income and albuminuria.

Many factors might be responsible for disparities in CKD, such as SES, biology, education, alcohol and drug abuse, and segregation. Poor nutrition was one factor that was investigated, and it was found that lower SES individuals often do not have access to healthy food and do not have the resources to buy healthier foods. In the HANDLS study, participants are being asked questions about food security. The results were to be known in a few months.

Dr. Crews said she does not know the answers to each of the questions posed during her presentation, but further studies will try to find logical answers to some. These further studies should be able to identify the most important factors that influence the higher rates of kidney diseases among different racial and ethnic groups, as well as groups separated by socioeconomic disparities.

Discussion

A research gap exists in Hispanic populations in this area, and this is an area that should be studied. Some of the same challenges seen in studying African Americans and SES/CKD are likely seen in the Hispanic community. One of the most challenging aspects is finding enough high-SES Hispanics to be able to make appropriate comparisons to whites.

The intervention for the high-risk population that Dr. Crews has identified in her work has not been determined. Dr. Crews is exploring possibilities for the intervention and is focusing on lifestyle interventions.

The issue of food insecurity is one that will be investigated in the Food Inventory assessment of the HANDLS study. Dr. Crews plans to conduct a separate geospatial study, which will examine the SES status of the county, which can influence a better living environment in a wealthy county regardless of the SES status of individuals. The CHEERS program in Memphis is exploring these issues and working with grocery stores to improve access to healthy foods.

Psychosocial factors also are important and can impact poverty. Heart-rate variability is an indicator of stress, and a few studies have shown that African Americans have a low heart-rate variability, which can lead to higher rates of CVD and possibly future risk of ESRD. Data on heart-rate variability have been collected in the HANDLS study.

SO YOU THINK YOU KNOW PubMed®?

Ms. Rose Foster, Group Manager, Health Promotion and Outreach, Oak Ridge Institute for Science and Education, Oak Ridge, TN

Ms. Foster reviewed resources available through the National Library of Medicine (NLM), located on the NIH campus in Bethesda, MD. The NLM is the world's largest collection of biomedical information, and also includes toxicology and environmental health resources. PubMed is the most widely known resource available through the NLM. It is one of several databases under the National Center for Biotechnology Information's (NCBI) Entrez retrieval system; has links to full-text articles at participating publishers' websites, as well as biological data, sequence data, and more from other Entrez databases and from third parties; and provides literature searches through MEDLINE.

In PubMed, it is possible to find a specific citation; embargoed articles; journals that comprise PubMed Central (PMC); citations to articles reporting research conducted with specific methodologies, including those that report applied clinical research; and systematic reviews. Other functions include the use of My NCBI Collections to save search results indefinitely, build a bibliography or collection, submit NIH-funded research directly into PMC, and access more than 700 texts in life sciences and health care.

Ms. Foster provided a demonstration of PubMed and highlighted specific resources available and how best to use them. She described the use of the Limits function, Medical Subject Headings (MeSH), and MESH database. Using access to the Internet, Ms. Foster navigated through the various resources in PubMed and MEDLINE, giving examples of specific searches and limits imposed on the search.

Ms. Foster encouraged NMRI members to register for My NCBI. It is an easy way to store searches, update stored searches to see the latest entry, display links to web resources (LinkOut), choose filters to group search results, and build My NCBI collections.

Tools in PubMed include the following:

- **Single Citation Matcher**: If you know the citation or parts of the citation, this function allows you to move directly to the PubMed record for that citation.

- **Clinical Queries**: Three search filters are available in Clinical Queries. They are clinical study categories, systematic reviews, and medical genetics.

- **Topic-Specific Queries**: This function provides specialized PubMed searches on health care quality and costs.

- **PubMed Mobile/PubMed for Handhelds**: This is a new function of PubMed that allows a simplified mobile-friendly web interface to PubMed and uses the same basic search functionality and content as Standard PubMed. It displays the article title, first author's name, journal abbreviation, and year of publication and uses the link to Standard PubMed for MeSH vocabulary.

NLM resources provide the ability to conduct specialized searches to inform discussions on or relating to CER. Search strategies can be designed to compare the benefits and harms of different interventions and strategies to prevent, diagnose, treat, and monitor health conditions in "real world" settings.

The websites for submitting research potentially are a valuable NLM resource. NIH Public Access provides a policy on public access to NIH-funded research results (publicaccess.nih.gov).

There also is an NIH Manuscript Submission System for submitting final manuscripts for inclusion in PubMed Central (nihms.nih.gov). Resources also include a section of My NCBI on Managing Compliance Policy Using My Bibliography, which helps facilitate management of publication compliance (nlm.nih.gov/pubs/techbull/jf10/jf10_myncbi_redesign.html), and Research Reporting Guidelines and Initiatives for many organizations with charts that list major biomedical research reporting guidelines (nlm.nih.gov/services/research_report_guide.html).

Discussion

A benefit of using an institutional account for PubMed rather than an individual account is that the institution may be able to allow access to more journals than might be accessible to the individual.

NLM has a function for individuals to get e-alerts through the registration for My NCBI. It is possible to schedule regular updates to searches that individuals have conducted.

A comment was made regarding the statement that NIH has an "open access" policy. In fact, this is a "public access" system. The difference is that "open access" would mean that journal access would be available immediately after publication. Although this is true for some journal articles, most are kept from being placed on PubMed for a period of time, such as 1 year before the full article is available. Another criticism is that PubMed Central contains only NIH-funded research, which accounts for only approximately 10 percent of all published work. MEDLINE/PubMed contains all published journal articles, albeit sometimes only the abstract of the full article with a link to where the full article may be purchased.

PARALLEL INTERACTIVE WORKSHOPS

How to Balance Personal/Professional Life

Dr. Joan Von Feldt, Professor of Medicine, University of Pennsylvania, Philadelphia, PA

Dr. Von Feldt provided insights into challenges researchers face in balancing their personal and professional lives. The research environment often is not a "9-to-5" job because of the need to perform steps in investigations that are directed by protocols or study requirements. Hearing from participants, many of the challenges involve giving up parts of their social lives, demands of family life, and other personal life stresses that are part of any job.

Dr. Von Feldt asked participants to describe the current balance between their personal and professional lives, and to rank it on a scale from "not satisfied" to "very satisfied." A second activity was to rank how a child, significant other, or other person involved in their lives would rank the balance. This activity was used to begin the discussion about differences in the way participants feel about the balance and how others around them feel about it. Generally, those around them feel that the balance is better than the researcher does.

The next activity involved listing personal achievements and goals, personal challenges, professional achievements and goals, and professional challenges. After discussing these topics, participants were asked to write a mission statement that they live by or that they want to live by.

The following overview statements were collected during discussions following the activities:

- For more experienced researchers, the pressure to achieve more in one's professional life becomes greater, while at the same time, their personal life often is demanding more as children become older and home relationships mature.

- By and large, those involved in the researchers' personal lives understand the demands of the professional position and work. They understand that there are times when they cannot have the time needed for every event in their lives.

- Things become easier as researchers age, although there still is a need to balance needs in both personal and professional lives.

Dr. Von Feldt asked that participants add "be kind to yourself" to the mission statement. Often, people do not spend enough time meeting their needs; this becomes more important the longer one is in a job.

The last activity was to draw two parallel lines on a map of the United States from Maine to the West Coast, and to write achievements on the two lines: two past achievements, two current achievements, and two future achievements. Obstacles were added to the map, and colors were used to distinguish them at each step of the career ladder. Lines were drawn between achievements and obstacles that reflected those that had intersected during their career or their personal life. For example, a child's illness would affect both personal and professional spheres, but a denial of tenure would affect mainly the professional life. The point of this exercise was to show that everyone has obstacles that they need to overcome, with both personal and professional impacts. Everyone has detours, which can enrich a person's life because they develop resiliance and allow one to reassess one's strengths and weaknesses. The exercise also showed that most people have time to change their personal and professional lives as they progress in their careers.

How to Budget and Manage Your Funds (Basic and Clinical)
Dr. Keith Norris, Executive Vice President for Health Affairs and Research, Charles R. Drew University of Medicine and Science, Los Angeles, CA

After introductions, Dr. Norris presented advice based on his experiences on how to build a laboratory and/or a research team, and how to budget and manage funds.

The laboratory depends on the personality of the leader, the drive, and the goals. Successful laboratories begin with an end in mind that focuses the research area and helps clarify who one needs on the team and what resources are needed. It is important to identify a senior mentor or mentors to get the best available advice. Identify the "go to" person for grants, contracts, and/or finances, and the "go to" colleague who can help. Next, understand the criteria for promotion within the organization.

Hiring decisions can influence the access a researcher will have to funding and the types of projects developed. It is important to understand the type of individuals that will be needed to enhance project goals. Other advice regarding personnel is to pick persons who will stay, because training takes money, and time and quality are better than quantity. Above all, realize that time goes by quickly and it is better to "hit the ground running" because there always is more to do than there is time to do it.

Regarding the budget, the following are important steps along the way to realizing a research agenda:

- **Detail the needs in the budget.** Salary/benefits, supplies, travel, equipment and maintenance, phone, postage, publication fees, dues for professional organizations, and Institutional Review Board (IRB)/Institutional Animal Care and Use Committee (IACUC) preparation support should be included. Also include advertising for positions, temporary staff, cost-of-living expenses over the life of the project, participant stipends, animal costs, core laboratory charges, and intellectual property (IP) filing costs.

- **NIH grant management.** Grants are awarded to grantee organizations on behalf of the PI. Expenditures need to address aims, and certain expenses generally are considered to be institutional costs and not covered by a grant. Carrying forward more than 25 percent of an unobligated balance requires NIH approval, and rebudgeting requires approval by the sponsored programs and/or the NIH. The NIH encourages PIs to maintain contact with the NIH Program Official with respect to the scientific aspects of the project and appropriate contact with the Grants Management Officer concerning the business and administrative aspects of the award.

- **OMB Circular A-21.** This establishes the principles for determining costs applicable to grants, contracts, and other funding mechanisms. The tests of allowability of costs are: (a) they must be **reasonable**, (b) they must be **allocable** to sponsored agreements under the principles and methods provided herein, (c) they must be given the **consistent** treatment of generally accepted accounting principles, and (d) they must conform to any limitations or exclusions set forth in these principles or in the sponsored agreement as to types or amounts of cost items.

- **Allocable cost:** A cost is allocable to a sponsored agreement if certain requirements are met. Researchers should work with the sponsoring agency to identify allocable costs before beginning to spend funds.

- **Be wise concerning how the money from the startup package is spent.** If extramural funding is received, the researcher needs to know whether the money from the startup package can be kept. This usually is money that has fewer restrictions on how and when it can be spent compared to a grant. Whatever the situation, the details should be obtained in writing.

- **Keeping detailed records.** Researchers should keep accounts separate and align expenses with funding sources using an Excel or other spreadsheet. Clarity should be obtained regarding institutional versus grant-related resources (OMB circular/OSP), and quarterly progress reports should be completed with budgets for the project area and grants. It also is wise for researchers to meet with grants/finance officials often to ensure that their records match.

- **Managing time:** Managing time is one of the most important aspects of budgeting and implementing a project. Certain tasks must be completed before others are started, but researchers must be balanced and create mandatory fun and personal time.

How to Find a Successful Collaboration (Basic and Clinical)

Dr. Jackson T. Wright, Jr., Professor of Medicine, Program Director, William T Dahms Clinical Research Unit, Clinical and Translational Science Collaborative, Case Western Reserve University, Cleveland, OH

Dr. Wright described his experiences in collaborating in the African-American Study of Kidney Disease (AASK), "Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial" (ALLHAT), Chronic Renal Insufficiency Cohort (CRIC), Losartan Intervention For Endpoint Reduction in Hypertension (LIFE), Avoiding Cardiovascular Events through Combination Therapy in Patients Living with Systolic Hypertension (ACCOMPLISH), and the Systolic Blood Pressure Intervention Trial (SPRINT) studies. He indicated that he was able to work with an outstanding group of collaborators in all of these trials. He posed two questions to participants: (1) Is it necessary to have collaborators? (2) What strategies are most effective in developing these collaborations?

He shared several observations:

- In general, strategies for developing collaborations in basic and clinical research areas are nearly identical. It is important to note that most research is conducted by research teams rather than individual investigators, and collaborative research in the future increasingly will involve multidisciplinary teams of researchers, particularly given the national focus on Clinical and Translational Science Awards (CTSAs).

- No one listed as an author of 100 publications is first author on every paper. Each member of the team has to contribute; each assists each other in his or her research projects and participates in the publication productivity. A successful research career depends on successful collaborations.

- Potential collaborators can be identified and contact with them initiated by multiple methods in this age of international communications.

- Collaborations can be in one's own institution, within departments, multi-institutional, and even international (e.g., the ACCOMPLISH trial). Mentors and an individual's academic base serve as the initial base of one's research team. The eventual transition to developing one's own network of collaborators often corresponds with the transition from mentee to mentor. Associations with past mentors should be maintained, and all collaborators should be respected; the scientific community is small, and reputations (both positive and negative) can travel quickly.

- Those seeking collaboration or assistance on a project should consider the search as similar to going on a job interview: the researcher should be prepared with relevant questions to ask and be able to show that the assistance to be provided would have a good chance of producing a measurable result or benefit. Mentoring and collaborative activities are investments, and all parties involved should be committed. A good approach prior to scientific meetings is to identify individuals to interact with and meet at the conference and contact them via email as a pre-introduction.

- A follow-up plan after meetings with possible collaborators should be developed. This could simply be a letter thanking the person for taking the time to meet, or it may involve a specific proposal containing ideas or roles. Researchers should be cautious, however, and remain in control of their ideas; subtlety is involved in expressing ideas and proposals. When possible, researchers should identify a niche that is complementary to those that they intend to work with to show their value.

- Clear roles should be delineated in the collaboration. Although collaborations can produce lifelong friends, the primary function of collaboration is not to make friends. One does not have to like one's collaborators personally but always should be able to respect their expertise and ability to produce.

- All collaborators should be cognizant of what they hope to obtain from the collaboration. In many collaborations, a researcher will bring a perspective from his/her community; it is that researcher's responsibility to make sure that data are appropriate and results are not misinterpreted.

Discussion in answer to questions

The order of authorship and roles assigned to a publication should be and usually are developed early in the collaboration. The first and last authorship generally are not controversial; whoever received the grant and wrote the first draft is assumed to be first author (even if trainee or junior investigator). Discussions of first and last author usually only arise with large clinical trials and involve a contract and a steering committee. Most senior investigators generally do not feel the need to be first author on publications. Medical students would have to be exceptional to be first author; if the article centers on a trainee/mentee's thesis, he or she should be first author. The senior or first author usually decides on the order of names in the publication; most often this is based on the amount of work done in the study and on the manuscript. Mentors can play a role in the placement of the authors in the middle of the author list.

Some publications provide opportunities for spinoff articles for which a middle author might serve as the lead author.

A good approach when meeting with potential collaborators is to already have identified one's role on a project and one's specific niche in a collaboration.

In some cases, journal reviewers will raise questions about areas not discussed. In team research, however, everyone should have his or her part of the project, thus allowing all to have the opportunity to contribute to the manuscript.

A common approach to resolving collaborations that are not working is to complete that project and invite other collaborators on the next project. Collaborations are project specific.

When conflicts exist among the project team, stay focused on producing the data and the manuscript. Every team member was included on the team because of what he or she could add to the project; each member should be able to meet his or her commitment to the project regardless of personality issues. If face-to-face contact becomes too challenging, it may be reasonable to conduct interactions via electronic media (email).

How should a researcher solicit letters of recommendation or support (e.g., for promotions or tenure) when involved with a large number of collaborators? A challenge in considering potential collaborations is that researchers may not write letters of recommendation for fellow collaborators. This can result in limiting participation in collaborations. An option is to identify and screen the people who might write the letter. In some instances, this may include seeking people who may

not know the researcher personally but who can examine the researcher's CV. In such instances, one strategy is to prepare an initial draft letter for them.

How to Develop a Research Idea and Establish a Research Program (Basic and Clinical)

Dr. Carlos Isales, Professor of Orthopaedic Surgery, Georgia Health Sciences University, Augusta, GA

Ideas can occur at any time and from any place. The best ideas often come from informal discussions. There are two kinds of ideas: (1) incremental knowledge—extensions of current knowledge, and (2) paradigm shifts—ideas that will change processes in a significant way. One approach to working with both types of ideas is to obtain funding for incremental ideas while working on the side on any paradigm-shifting ideas. It often is easier to obtain funding for incremental ideas. Dr. Isales encouraged attendees to persist with their ideas, particularly the paradigm-shifting ones.

The next step is to conduct due diligence about the subject matter of interest—that is, to determine the level of knowledge about the subject. The literature, both past and current, should be reviewed widely to identify what has been published about the idea or the general subject.

It is important to work with people who are trained in using specific laboratory or other tools, or to obtain the necessary training. Unproven ideas will be viewed with skepticism. Newer researchers should identify people who are experts in the area and solicit feedback from them regarding the idea.

Funding can be obtained from various sources, including: small intramural grants from the researcher's institution; pilot grants supported by large grants (e.g., P30s) from the NIDDK and NIH; and grants from small foundations (e.g., the Lions Club offers grants to help Veterans). Obtaining grant funding from the NIH is easier if the researcher has a funding track record. The NIH "K" (training) award grants specifically can help provide training in weak areas and strengthen R01 applications. The NIH is a proponent of training, and funding rates for its K awards currently are much higher than for R01s.

A successful approach to selling one's idea(s) is to get the idea published in the literature and also presented at national meetings where thought leaders are present. People's perceptions change once an idea has been published. Although the goal is to publish in the most renowned journals, publishing in lesser known journals is a way for an investigator to build a foundation and name recognition. A strategy would be: identify specialty journals read by study session reviewers, build up a number of publications in a given area so that people associate a researcher with that area, and then move on to publish in more renowned journals. If the proposed idea is novel but the author has no publications in that area, the ideas likely will be dismissed.

Feedback is important and should be attended to seriously. A mentor can help introduce the mentee to people who can provide feedback regarding ideas, both within the institution and elsewhere (e.g., poster sessions). The idea is for other people to see the work. Comments from grant and journal reviewers should be read carefully and addressed but not taken personally. The reviewers try to make comments that are helpful, and professional attitudes should be maintained. In the grant application, no specific number of aims is required, but researchers should have data for all the aims provided.

Investigators now work in teams, especially on NIH grants. Researchers should identify people who might be interested in collaborative efforts. After identifying the team, researchers should follow their applications through the review process, including by reviewing the reviewer rosters on the NIH Center for Scientific Review (CSR) webpage. Personal interactions with reviewers can make a difference in the application review. Researchers should ensure that reviewers are cognizant of the study area being described in their applications. A cover letter could request a specific study session or Institute or even list several preferred study sessions; this can be particularly helpful for grants that address very specific niches.

Discussion

Ideas can be shared without being "stolen." Initially, a researcher should discuss the idea(s) with someone who can be trusted and is respected. Another strategy is to share the idea more widely, as it can be harder for one person to steal an idea if multiple people are aware that it originated with another researcher. A good mentor is important; the mentor should truly support the mentee's career and not use the mentee to advance his or her own career.

Participants echoed the need for a great mentor and encouraged focus on and elaboration of specific research over time. One attendee shared her experience in being open to a different approach to her area; she was able to partner successfully with bariatric surgery experts and study data that bariatric surgeons had collected.

Multiple funding sources provide greater assurance that an individual's research career will continue.

WRAPUP, NEXT STEPS, ADJOURNMENT

Dr. Rosas and Dr. Agodoa

Dr. Rosas asked NMRI members to stand and tell everyone if they had received a promotion in the past year. The following members reported having been promoted:

Deidre Crews—Assistant Professor
Sophia Hassan—first K-award
Lewis Roberts—to Professor
Rasheed Balogun—Assistant Dean at the University of Virginia
Michelle Foster—Assistant Professor, University of Cincinnati

Dr. Agodoa repeated that the NMRI is devoted to its members' academic and research success. He wanted new NMRI members to know that the Network belongs to the members and the NIDDK supports them in many ways. He commented that he and Dr. Rodgers had received an email that morning from Dr. Leon McDougle of Ohio State University. In the email, Dr. McDougle said the following:

> See the good news below [referring to the body of the email].
>
> *This week we received good news from Dr. Bob Burstein, Vice-Dean of Academic Affairs, that the Provost is recommending four of our faculty for promotion and/or tenure effective October 1, 2011. All that remains is for members of the Board of Trustees to approve the recommendations at their June meeting. Leon McDougle, M.D., M.P.H., is one of the four and has been recommended for Assistant Professor of family medicine and for tenure. Although I was unable to attend the NMRI conference this year, I want to extend my heartfelt thanks to this great career development program, and would not have reached this milestone in career advancement without attending the NMRI conferences. The conferences were especially helpful in my learning how to write an exciting and fundable grant application. Please extend my sincere thanks to all involved with supporting this very important career development program. Now I can continue to assist others who are, or should be, in the academic medicine pipeline as we seek healthy equity.*

Dr. Agodoa said that this is what the NMRI is all about and he congratulated the senior members who helped those like Dr. McDougle.

The success of the Network depends on its senior members who have supported the NMRI through the years. He stressed that once a person is an NMRI member, he or she remains a member until they let the Network know that they no longer want to belong. Dr. Agodoa thanked the senior members who were present.

Dr. Agodoa said that the NIDDK is the only NIH IC with a Network such as the NMRI, but he suspects they all will want to follow the lead because of its success. He talked about the success of the NIDDK summer internship program for minority high school and undergraduate students that began many years ago. At the time, no other IC was interested in taking part; this year, almost all ICs have put out a Program Announcement for a student internship program. This led him to believe that other ICs will begin looking at the success of the NMRI and try to develop their own networks.

Dr. Agodoa presented certificates to Dr. Rosas for chairing the 9th NMRI Annual Workshop, to Dr. Blanchard for chairing the NMRI Oversight Committee, and to Dr. Omaima Sabek for chairing the November 2010 NMRI South Regional Workshop in Houston, TX. He thanked Dr. Juan Sanabria for accepting the Chair-elect position for the 10th Annual NMRI Workshop, to be held in the spring of 2012.

The NIDDK also is planning to hold another regional workshop in the Midwest Region and is seeking volunteers to host the workshop. Dr. Agodoa asked that volunteers email Ms. Winnie Martinez if they have ideas for the regional workshop.

Dr. Agodoa thanked all those who helped plan this meeting, including NIDDK staff. Ms. Martinez asked that everyone complete an evaluation for the meeting and said that she would be emailing a request for information for the NMRI Directory.

The meeting was adjourned at 12:40 p.m.

APPENDIX

NMRI Oversight Committee Report
Evaluation Report From the 2010 NMRI Annual Workshop
(Presented at the 2011 NMRI Annual Workshop)

The survey included 23 questions, and 112 attendees responded.
(Note: All answers are not included in this report.)

A. Academic Status of Respondents:

Faculty Member – 81 (80%)
Postdoc – 14 (14%)
Researcher – 4 (4%)
Student – 3 (3%)

B. Status of 81 Faculty Members

Professor – 6 (5%)
Assistant Professor – 51 (46%)
Associate Professor – 23 (21%)
Professor Emeritus – 1 (5%)
Instructor – 4 (4%)

C. Tenure Status

n = 104
Tenured = 22 (21%)
Non-tenured = 82 (79%)

D. Question: What motivates you to attend NMRI? (May choose more than one answer.)

Professional mentorship – 81
Research opportunities – 76
Enhance grant-writing skills – 72
Assistance in developing management skills – 56
Continuing education – 41
Poster presentation – 34
Assistance in applying for tenure – 20
Oral presentation – 14
Networking – 10

E. Question: How has NMRI helped with career development and mentoring?

- **Grant study sections:**
  - Exposed me to grant-writing and review process
  - Collaborations and valuable information on grants
  - What to do and not do when writing a grant proposal
  - Keeps me informed of changes to the NIH grant process

- **Identify funding resources:**
  - Understand NIH process
  - Helped me get my current grant
  - Develop contacts outside NIH for funding

- **Mentorship**
  - Collaboration
  - Provide national exposure
  - Brainstorming research ideas
  - Positive environment for review of posters
  - Interaction with colleagues in different fields

F. Question: On a scale of 1-10, 10 being the most opportunity for professional growth, rate your professional development associated with the annual NMRI meetings.

n = 97
Total score 7.9/10.0

G. Question: Are you willing to be a mentor?

Yes – 73 (66%)
No – 25 (23%)
No answer – 13 (11%)

H. Question: Are you interested in having an NMRI member as a mentor?

Yes – 68 (61%)
No – 30 (27%)
No answer – 13 (12%)

I. Research topics identified for mentorship:

Adipose tissue biology
Administration support
Biochemistry of nutrition
Cardiovascular epidemiology
Career Development Award grant development
Choosing mentors
Chronic kidney disease
Clinical nephrology
Community-based participatory research
Comparative Effectiveness Research
Diabetic cardiomyopathy
Disparities in health and health care
Faculty development
Genomics
Getting published
Glutathione redox system
Human population genetics
Inflammatory bowel disease
Islet cell biology
Islet cell transplantation
Laboratory management
Lifestyle behavior/behavioral medicine
Lipoprotein metabolism and cardiovascular diseases
Liver transplantation
Metabolic syndrome
Metabolomics
Nephrology
Obesity and energy expenditure
Obstructive sleep apnea
Pediatric gastroenterology/nutrition/surgery
Research planning
Sickle cell anemia
Sickle cell disease/research
Study of botanicals as alternative medicine in type 2 diabetes
Translational research
Type 2 diabetes in children and teens
Type 2 diabetes: protein glycosylation and diabetic cardiomyopathy

J. Question: Which area do you need the most assistance?

Diabetes research – 16
Grant writing – 12
Kidney disease – 6
Health disparities - 6
Design clinical trial – 4
Journal reviewer – 4
How to use NIH resources – 3
Animal models -1
Time management - 1

K. Total grants submitted 2010

61 grants submitted by 41 members: submitted an average of 1.5 grants per respondent
16 grants were funded

L. Presentations – 2010

Oral/podium/poster: 111 from 50 members = 2.2 average number presentations/posters

NIDDK | NATIONAL INSTITUTE OF DIABETES AND DIGESTIVE AND KIDNEY DISEASES