Research Portfolio

I have spent the last decade of my career exploring how to connect my interest in health disparities, my formal training in epidemiology and biostatistics, and my knowledge of end-stage disease and transplantation to translational and clinical research related to the care of my patients. In the process, I have obtained a Master of Public Health from the Johns Hopkins Bloomberg School of Public Health, published 51 peer-reviewed articles (including 27 as first or senior author), and obtained intra and extra-mural funding for my research. Through the scholarship of discovery, I have made significant scientific contributions to the field of transplantation in the following areas:

(1) Transplant Immunology: Early in my career, I studied patterns of antibody mediated rejection (AMR) and outcomes after kidney transplantation in highly sensitized end-stage renal disease (ESRD) patients. Through this work, I identified risk factors for the development of AMR, as well as, novel treatment strategies for this historically devastating complication of kidney transplantation. By providing evidence and outlining clinical approaches to the care of the sensitized patient, this body of work has created the standard of care for the treatment of AMR in the field of kidney transplantation, and has garnered more widespread acceptance of the practice of incompatible kidney transplantation.

Relevant Publication (selected from 12 topic specific publications):

- Locke JE, Zachary AA, Haas M, Melancon JK, Warren DS, Simpkins CE, Segev DL, Montgomery RA. The utility of splenectomy as rescue treatment for severe acute antibody mediated rejection. *American Journal of Transplantation*, 2007; 7(4), 842-846. PMCID: 17391127

Relevant Funding Sources:

- NIH Ruth L. Kirschstein National Research Service Award (NRSA) 1F32 DK072593 (completed)

Additional Academic Appointments:

- UAB-UCSD Nephrology Research and Training Center (NRTC) - Faculty

(2) Transplantation of HIV-infected end-stage patients: My interest in better understanding complex immune responses to kidney transplantation has extended to the care of the ESRD patient infected with human immunodeficiency virus (HIV). Through this work, I have characterized long-term outcomes among HIV-infected transplant recipients, defined appropriate immunosuppression regimen to reduce the risk of acute rejection in this at-risk population, as well as, provided evidence for the continued and routine practice of kidney transplantation among select HIV-infected ESRD patients; and in so doing, helped to shape the HIV Organ Policy Equity (HOPE) Act 2015 which amended the National Organ Transplant Act (NOTA, 1984) to legalize the procurement of organs from HIV-infected donors. Most recently, my study examining center-level experience and outcomes after HIV+ kidney transplantation has further influenced national health policy by informing guidelines developed by the Secretary for Health and Human Services' for the implementation of the HOPE Act.

Relevant Publication (selected from 7 topic specific publications):

- Locke JE, Mehta S, Reed RD, MacLennan PA, Massie A, Nellore A, Durand C, Segev DL. A national study of outcomes among HIV-infected kidney transplant recipients. *Journal of the American Society of Nephrology,* 2015; 26(9): 2222-2229. PMID: 25791727

Relevant Funding Sources

- NIAID R34 AI123023 (PI: Durand) – Observational trial of HIV-to-HIV transplantation (ClinicalTrials.gov – NCT02602262)

Additional Academic Appointments

- UAB Center for AIDS Research (CFAR) – Associate Scientist

(3) Living Kidney Donation: Through an institutional pilot project funded via the Charles Barkley Health Disparities Research Award, I have worked with the Birmingham African American community to examine barriers to living kidney donation. Data analyzed to-date demonstrate that lack of knowledge about risks associated with living kidney donation is the most significant predisposing factor associated with lower living donation rates among African Americans. During the course of this pilot study, I realized that significant knowledge gaps exist with regard to long-term outcomes of African American living kidney donors. To better understand these risks and better serve my patients, I am currently conducting two funded research studies on long-term health outcomes of African American donors.

Relevant Publications (currently have 3 additional manuscripts under review on this topic)

- Locke JE, Qu H, Shewchuk R, Mannon RB, Gaston R, Segev DL, Mannon EC, Martin MY. Identification of strategies to facilitate organ donation among African Americans using the nominal group technique. *Clinical Journal of the American Society of Nephrology,* 2015; 10(2): 286-93. PMID: 25635038

Relevant Funding Sources

- American Society of Transplantation (AST) Clinical Science Faculty Development Grant
- NIH K23 Mentored Career Development Award 1K23 DK103918
- Pittman Scholar 2016 – UAB School of Medicine

Additional Academic Appointments

- UAB Minority Health & Health Disparities Research Center (MHRC) – Associate Scientist

(4) UAB Comprehensive Transplant Institute (CTI) Outcomes Research Center (ORC): I am the founder and director of the ORC, a multidisciplinary collaboration between the School of Medicine (Transplant Surgery and Medicine), the School of Public Health (Epidemiology and Health Services), UAB CFAR, UAB MHRC, UAB NRTC, as well as, Johns Hopkins University, Vanderbilt University, The University of Pennsylvania, the Scientific Registry of Transplant Recipients (SRTR), and the European Consortium. The ORC now employees 3 full-time master's level and 1 full-time PhD level biostatisticians/epidemiologists and collaborates with more than 30 investigators across UAB and in the broader national academic community. Since its inception, I have acquired and currently maintain data from multiple national registries and longitudinal cohort studies including SRTR, United Network for Organ Sharing (UNOS), CMS claims data (including IMS pharmacy claims), United States Renal Data System, Coronary Artery Risk Development in Young Adults (CARDIA), Atherosclerotic Risk in Communities (ARIC), National Health and Nutrition Examination Survey (NHANES), North American AIDS Cohort Collaboration on Research and Design. These data are stored on a secure and redundant computing cluster (SAS, STATA, and R capable) that can be remotely accessed by investigators within the CTI.

(5) External Peer Review: The expertise I have garnered is highly reputed in the national and international transplant community, as evidenced by invited peer review for extremely high impact journals and transplant meetings. I am a regular peer reviewer for the *American Journal of Transplantation*, *American Journal of Kidney Disease*, *Transplantation*, *Liver Transplantation*, *Clinical Journal of the American Society of Nephrology*, the *Journal of the American Society of Nephrology*, and the *New England Journal of Medicine*. I also serve as an abstract reviewer for the annual American Transplant Congress and World Transplant Congress. Currently, I serve as an Associate Editor for *Transplantation*. In this role, I routinely manage 3-5 new manuscript submissions per month.