Stanford MEDICINE | Department of Biomedical Data Science

BIODS 260A

The Celestial Impact of Omics: A Conceptual Framework for Data Science Focused on Human Intersectionality

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November 2, 2023

1:30PM-2:50PM

MSOB X303

Abstract:

The development and application of multi-omics and the broader spectrum of data science must be embedded in the human condition and human intersectionality with science and our real-world environment. Despite the emergence of the social determinants of health and environmental exposomes, our application of scientific method and development of algorithms essentially represents an *in vitro* approach to achieving translational impact in clinical care and population health. In vitro in this case means disconnected from real-world human experience and context. Science devoid of an ethical framework is a primary example. Other examples of scientific breakthroughs that have had minimal impact on public health and health disparities will be noted. Finally, we will discuss the re-engineering of our thinking about problem solving with data science to achieve greater positive impact on the human condition.

Bio:

Dr. James Washington is the Project Director for AIM-AHEAD initiative to build AI/ML capacity at minority serving institutions and to develop a pipeline of underrepresented minority scientists in AI/ML and Staff Scientist for Morehouse School of Medicine's Cardiovascular Research Institute. Dr. Washington is also a data science ethicist, minister-scientist and researcher who possesses over 20 years of experience in the healthcare and nonprofit sectors. His global mission experience serving diverse nationalities on four continents has given him a broader perspective on health and healing. He encourages the development of translational science that is embedded with health equity and social justice goals. As a project management aficionado,

he has excelled at mobilizing multidisciplinary teams and multisectoral partners into successful collaborations. In two different tenures within the nonprofit sector, at the American Cancer Society and later at United Way, he devised strategies and implemented programs that impacted nearly a half-million Chicago area residents. For AIM-AHEAD, he created a network of local hubs among minority-serving institutions to help build institutional capacity and to tailor regionalized support services at the local levels, while also administering a mentoring and support structure for the Southeast region's 27 combined pilot project awardees, fellowship recipients, and data science trainees. In 16 years as a research strategist and grant writer, he has secured over $20 million in combined government and private funding. As an emerging data scientist, his knowledge base is rapidly expanding and reflected in recent Cardiovascular Research Institute research projects that utilize digital epidemiology and mobile health platforms. He has specialized training in Computational Genomics and Community-Based System Dynamics (CBSD), a community-engaged simulation method for problem solving, plus education in coding with Linux, Python, and R.

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