32nd IOA Annual Colloquium

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Questions?
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Molecular Me: Exploring the Social Implications of the Genomics Revolution
Jason Fletcher, PhD
Director, Center for Demography of Health and Aging; Professor, Robert M. La Follette School of Public Affairs and Dept. of Sociology, UW-Madison

This presentation will describe some of the recent major advances in genomics and their implications for health, aging, policy, and society. One focus will be on how statistical methods applied to “big data” in human genetics, often within private companies, offer new avenues for discrimination as well as targeted interventions and how new policies may be needed to address these rapid changes. Dr. Fletcher is a Romnes Professor of Public Affairs with appointments in Sociology, Agricultural and Applied Economics, and Population Health Sciences. He is also the Director of the Center for Demography of Health and Aging. Prior to coming to the UW in 2013, he held appointments at Yale University and Columbia. A health economist by training, he has worked to integrate genetics and social science over the past decade, culminating in his award-winning book “The Genome Factor: Aging, Authenticity, and the Gift of Mortality” (Polity, 2022).

Identifying Equitable Biomarkers of Cardiovascular Disease Using Mass Spectrometry Lipidomics
Judith Simcox, PhD
Associate Director, WDRC Integrative Omics Core; Assistant Professor, Dept. of Biochemistry; Co-mentor, UW-Madison AISES Chapter

Elevated lipids in our blood, such as triglycerides and free fatty acids, are used as predictive markers to diagnose cardiovascular disease, although currently used markers have failed to predict cardiovascular disease in African American populations. Using mass spectrometry to observe 1000+ lipids, it was found that arachidonic acid containing lipids were elevated with poor vascular function in both African Americans and Caucasians. Arachidonic acid containing lipids are known to regulate insulin sensitivity, inflammation, and vascular function. We aim to leverage these discoveries for novel therapeutics and disease diagnostics. Dr. Simcox received a PhD in Biochemistry from the University of Utah in 2014 and is currently Assistant Professor in the Department of Biochemistry at UW-Madison. Her research focuses on understanding how lipids in the plasma contribute to type 2 diabetes and cardiovascular disease. This research has garnered several awards including the Rising Star in Lipid Research from AS-BMB and JLR, Emerging Investigator Award for the University of Illinois Chicago Diabetes and Obesity Research Day, and receipt of the Building Interdisciplinary Careers in Women’s Health K12 Awards.

Research Impacting Change: The UW Neighborhood Atlas and Brain Health Disparities
Amy Kind, MD, PhD
Associate Dean for Social Health Sciences & Programs; Executive Director, Wisconsin Partnership Program; Director, UW Center for Health Disparities Research; Professor, Dept. of Medicine, Division of Geriatrics, SMPH, UW-Madison

Health disparities, including brain health disparities, abound within and outside the United States (US). These are challenges that require immediate action and new approaches towards solution. The University of Wisconsin Center for Health Disparities Research’s (UW CHDR) innovative data democratization tool, the Neighborhood Atlas (www.neighborhoodatlas.medianet.wisc.edu), has formed a cornerstone of wide-spread policy efforts and real world interventions to mitigate health disparities across the US. In this talk, the linkage of Neighborhood Atlas metrics with brain health, as well as the Atlas’ role in on-going state and national policy initiatives, will be briefly reviewed. Dr. Kind is an international leader in the fields of social determinants of health and mechanistic health disparities research. She led the team that developed the Neighborhood Atlas, a free first-of-its-kind tool that quantifies socioeconomic disadvantage for every neighborhood in the US. The Atlas has been accessed nearly half a million times and has found widespread application including in the US Congress, state policy, NIH, CDC, health systems, and industry. Most recently it has been used to inform COVID resource allocation across a number of US states as a means of mitigating health disparities.