Sponsored Research

Co-PIs: Alfred George, Jr., MD, chair of Pharmacology, and Elizabeth McNally, MD, PhD, director of the Center for Genetic Medicine

Sponsor: National Heart, Lung, and Blood Institute

Title: "Channelopathies and Cardiomyopathies Among Sudden Deaths in the Young"

Genetic disorders of heart rhythm (channelopathies) and myocardial function (cardiomyopathies) are blamed for approximately a quarter of all cases of sudden unexplained death (SUD). Screening first-degree relatives of a SUD victim for genetic disease may identify additional family members at risk for sudden death. George and McNally plan to develop a three-tiered research study designed to uncover the prevalence and mutational spectrum of channelopathies and cardiomyopathies among cases of sudden death collected by the Sudden Death in the Young Case Registry that occur in the absence of epilepsy and have a high likelihood of having a cardiac etiology. The work will generate whole human genome sequence data on 500 SUD cases, allowing the investigators to perform a targeted analysis of several genes responsible for various heart disorders that can cause sudden death. Key collaborators include Greg Webster, MD, MPH, assistant professor of Pediatrics, and Steven White, MD, PhD, adjunct assistant professor of Pathology and Cook County's assistant medical examiner.

Read more about this project.

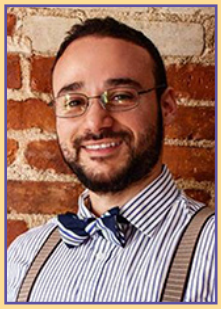
PI: Hongxin Dong, MD, PhD

Sponsor: National Institute of Mental Health

Title: "Age-Related Histone Modification Effect on Antipsychotic Action"

The use of psychotropic medications in the elderly population generates a number of obstacles, including increased incidence and severity of neurological side effects. Although aged-induced changes in pharmacokinetics (how an organism modifies a drug) may contribute to increased sensitivity to side effects of antipsychotic drugs (APD) in the elderly, age-related changes in pharmacodynamics (how a drug modifies an organism) at the target receptor level likely play a key role, too. Recent findings from Dong's lab suggest that age-related histone modifications at the gene promoters of target receptors could affect APD action. In this project, Dong aims to identify a novel mechanism by which epigenetic alterations during aging contribute to the increased severity of motor and cognitive side effects in the elderly. This work will also determine the therapeutic benefits of histone deacetylase inhibitors to reduce the severity of antipsychotic induced side effects using mouse models of aging.

Read more about this project.



Welcome New Faculty

Pablo Penaloza-MacMaster, PhD, joins as assistant professor of Microbiology-Immunology. His research examines the basic mechanisms of immune regulation and uses the information to develop vaccines to fight chronic infections such as HIV and HCV, as well as cancers. He comes from the Harvard Medical School where he was an assistant professor of virology and vaccine research. He earned his PhD in Immunology and Molecular Pathogenesis from Emory University. He then completed postdoctoral training at Beth Israel Deaconess Medical Center, focusing on virology research and vaccines. He is the principal investigator on an NIAID K22 Career Development Award and has published more than 18 peer-reviewed journal articles.