Gene-Environment Interactions in Cardiovascular Disease: Air Pollution and Stress

Dr. Elizabeth Hauser
Professor,
Duke Molecular Physiology Institute (DMPI),
Department of Biostatistics and Bioinformatics,
Department of Medicine,
Duke University School of Medicine

Abstract:
Cardiovascular disease is a common multifactorial disease that has a number of robust environmental risk factors, including air pollution and psychosocial stress. In addition genetic variation has proved to be an important risk factor and very large collaborative studies have implicated multiple genetic variants using genome-wide association studies. Genome-wide interaction with environmental factors are a next logical step in advancing our understanding of risk of cardiovascular disease. Our current studies explore the extent to which genetic factors interact with environmental factors in increasing cardiovascular disease risk. I will present genome-wide gene-by-environment interaction studies from our ongoing studies of air pollution and psychosocial stress in cardiovascular disease and discuss strategies for replication of the results of those studies.