Aldons "Jake" Lusis Received the 2009 Earl P. Benditt Award
Summary of his Award Lecture by Mark Majesky

April 18, 2009 – New Orleans, LA

Dr. Aldons J. Lusis was presented with the 2009 Earl P. Benditt Award in recognition of his important contributions to our understanding of the genetics of cardiovascular disease. Dr. Lusis is Professor in the Departments of Human Genetics, Medicine, and Microbiology at the University of California, Los Angeles. He is Vice-Chair of the Department of Human Genetics and Director of the Mouse Metabolic Syndrome Phenotype Facility at UCLA. Dr. Lusis presented the Earl P. Benditt Award Lecture, titled "Cardiovascular Traits: From Genetics to Systems Biology" on April 18, 2009 at the Vascular Biology 2009 meeting in New Orleans, LA.

Many chronic diseases, including diabetes, hypertension and atherosclerosis, progress in response to complex interactions between genes and the environment. Genome-wide risk association studies (GWAS) represent a powerful approach to identify genes that contribute to the risk of developing clinically significant disease within a population. They have proven to be very sensitive at identification of new risk alleles in population studies with large sample sizes. However, in most cases the risk alleles identified have conferred only a relatively small contribution to the overall incidence of disease in the population.

Dr. Lusis described alternative approaches to identify risk alleles in human and mouse models of lipid oxidation and atherosclerosis. He discussed unique approaches to the analysis of complex traits that integrate genetic segregation, complex trait phenotypes and whole genome expression array analyses to model functional networks of cell activity and make predictions about the involvement of novel genes in disease pathogenesis. Predictions that emerge from this network modeling analysis can then be tested in transgenic mouse models. This approach was described in a landmark paper Dr. Lusis coauthored with E. Schadt et al (*Nature Genetics*, 2005) and in a series of subsequent papers that confirmed and extended the predictive power of this analysis.

The Earl P. Benditt Award was initiated in 1999 by NAVBO to honor the memory of a "forefather" of vascular biology who directed our attention to a genetic basis for human atherosclerosis with the discovery that a majority of human plaques are monoclonal in origin. More information about Dr. Benditt and previous Benditt Award winners can be found on the NAVBO website (http://www.navbo.org – select Awards from the menu).