

Sarah Shaw Murray, Ph.D.

Director of Genetics, Scripps Genomic Medicine

Sarah Shaw Murray, Ph.D., is Director of Genetics at both Scripps Genomic Medicine and the Scripps Translational Science Institute. By translating recent discoveries in genetics and genomics to clinical care, Dr. Murray and her research colleagues hope to advance the development of “personalized medicine,” in which treatment plans will be tailored to an individual’s genetic makeup.

Dr. Murray directs a high-throughput genotyping laboratory aimed at discovering genetic components of health as well as disease, and determining disease risk profiles based on combinations of specific risk alleles in large prospective studies. Her many projects include “Welllderly.” In research on this unique patient cohort of individuals who are at least 80 years old and with no chronic illness, she and her colleagues identified a gene that may be involved with the aging process in humans.



In a recently completed study on the genetic components of cardiovascular disease risk factors in a unique cohort of patients who have been followed for almost 40 years, from childhood to adulthood, Dr. Murray and collaborators discovered genetic risk factors that potentially can be used to identify young individuals who are pre-symptomatic.

In addition, Dr. Murray is directing a study on whether recently identified breast cancer susceptibility genetic factors can improve a physician’s ability to estimate a woman’s risk for breast cancer. More accurate breast cancer prediction will help identify at-risk women who should receive the more sensitive breast imaging above and beyond traditional mammograms.

Dr. Murray also is a member of the research team that studied individuals with one of the CYP2C19 gene variants and their ability to metabolize the drug clopidogrel (Plavix), which is designed to prevent blood clotting in cardiac patients who have undergone a stent procedure. Findings from this study and other published studies prompted Scripps Green Hospital to become the first hospital in the nation to routinely screen elective coronary stent patients for CYP2C19 gene variants. The results of the genetic screen help guide the post-procedure treatment for each patient and thereby help reduce the risk of heart attacks and strokes for those whose genetic makeup prevents the normal metabolism of Plavix.

Reflecting her solid track record in both theoretical and applied genetics research, Dr. Murray has published almost 60 scientific articles on human genetics that focus on the discovery and analysis of DNA sequence polymorphism.

In addition to her roles at Scripps Genomic Medicine and the Scripps Translational Science Institute, Dr. Murray is Associate Professor of Translational Genomics at The Scripps Research Institute.

Before joining Scripps, Dr. Murray was the staff geneticist at Illumina, a San Diego biotech company, where she played a large role in developing the technology vital to large-scale genome-wide genetic studies. She received her Ph.D. from the University of Pittsburgh’s Department of Human Genetics, and was a postdoctoral fellow at Case Western Reserve University’s Department of Genetics.