EPI-genomics: Why your DNA sequence is only half the story

Ite Laird-Offringa
Surgery and Biochemistry and Molecular Medicine
Keck School of Medicine

A whole human genome sequence was completed over 15 years ago. Today, sequencing techniques have advanced such that it has become almost routine to sequence the genomes of additional humans, or of diseased cells. But it remains a mystery how, within one individual, a single genome can to give rise to thousands of cells with distinct properties. This is accomplished by controlling access to the genetic material, forcing different cells to use distinct parts of the genome. The study of the information layered on top of the genome to control access is called epigenetics. It is one of the hottest areas of current investigation. The seminar will explain what epigenetics is, how it can be investigated, and how it might be used to diagnose and treat diseases.