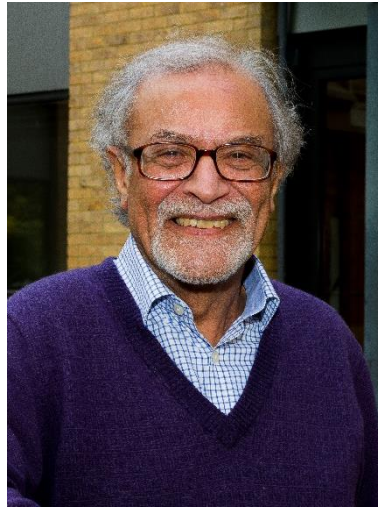




STUDENT OUTREACH & NATIONAL LECTURE PROGRAM

2018 CANADA GAIRDNER INTERNATIONAL LAUREATE



Professor Azim Surani, PhD, FMedSci, FRS

Director of Germline and Epigenetics Research, Wellcome Trust Cancer Research UK Gurdon Institute; Marshall-Walton Professor, University of Cambridge

Awarded “for their discovery of mammalian genomic imprinting that causes parent-of-origin specific gene expression and its consequences for development and disease”

The Work: Together, the work of Dr. Solter and Dr. Surani contributed to the understanding of the developmental consequences and molecular mechanisms of genomic imprinting. In 1984, they released parallel studies that demonstrated the concept of genomic imprinting. All cells in the animal contain two copies of every autosomal gene, one from the mother and one from the father, and in most cases both copies are expressed. However, “imprinted” genes are expressed only from either the maternally or the paternally inherited copy. Genomic imprinting has widespread roles in mammals, affecting embryonic and placental development and transmission of nutrients to the fetus, and regulating critical aspects of mammalian physiology, such as metabolism, neuronal development and adult behaviour. Extensive research based on this discovery led to the identification of numerous imprinted genes whose alleles are differentially expressed depending on the parent of origin.

The Impact: Faulty imprints can lead to developmental, physiological and behavioural anomalies in mice, and result in diseases in humans. There is growing evidence for the importance of imprinting in disease susceptibility from developmental syndromes like Beckwith-Wiedemann, Angelman and Prader-Willi, to a variety of cancers and neurological

disorders and obesity. It also has effects on diverse aspects of mammalian development and physiology, such as stem cells, core body temperature, nutrition and behaviour. Their work is one of the key discoveries that started the field of epigenetics, the study of heritable changes in gene function without changes in the DNA sequence.

Biography: Azim Surani, born in Kenya received his PhD in 1975 at Cambridge University under Professor Sir Robert Edwards FRS (Nobel Laureate, 2010). Surani joined the Babraham Institute in 1979, and discovered 'Genomic Imprinting' in 1984, and subsequently, novel imprinted genes and their functions, with contributions to the mechanisms through establishment and erasure of DNA methylation. In 1992, he joined the Wellcome Trust Cancer Research UK Gurdon Institute as the Marshall-Walton Professor in the Department of Physiology, Development and Neuroscience, and subsequently, Director of Germline and Epigenomics Research at the Gurdon Institute, Cambridge University. More recently he has worked on the genetic basis of germ cell specification in mouse and human, on the derivation of germ cells from stem cells in vitro, and on the mechanism of epigenetic programming in early germ cells. He was elected a Fellow of the Royal Society in 1990, Fellow of the Academy of Medical Sciences in 2001. He is a member of EMBO and a Fellow of the Third World Academy of Sciences. He has received several awards including the Rosensteel Award (2007), Gabor (2002), and Royal medals (2010) from the Royal Society. He is also a recipient of a Nehru Fellowship by the Indian Government, and the International Society of Stem Cell Research's McEwen Award for Innovation (2014).