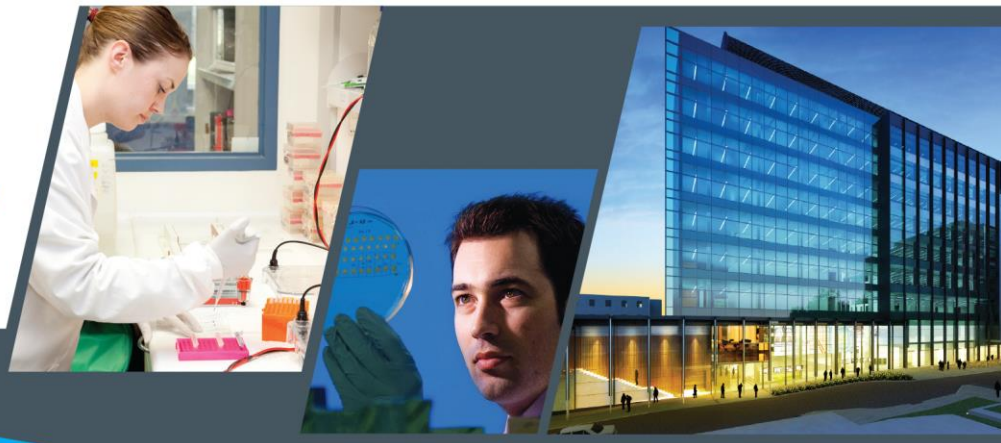
HARRY PERKINS INSTITUTE
OF MEDICAL RESEARCH



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PERKINS Seminar Series

WEDNESDAY 27 JANUARY

Professor Ian Campbell

Head, Cancer Genetics Laboratory
Research Division, Peter MacCallum Cancer Centre

"Breast and ovarian cancer genetics and genomics: the application of technology for discovery and translation"

Professor Campbell is co-Head of the Cancer Genomics and Genetics Program at the Peter MacCallum Cancer Centre. He is a Professor in the Department of Pathology and the Sir Peter MacCallum Department of Oncology at the University of Melbourne and an NHMRC Principal Research Fellow. He completed his PhD in Microbiology from the University of Western Australia in 1986. His first post-doctoral position was at the Imperial Cancer Research Fund Laboratories, London (Now *Cancer Research UK*) and was subsequenly recruited as head of the cancer genetics laboratory at the University of Southampon, UK. In 1999 he returned to Australia as a group leader at the the Peter MacCallum Cancer Centre, Melbourne. The focus of his research over the last 25 years has been the genomics and genetics of ovarian and breast cancer. In particular he has a strong track record in deciphering the aetiology of ovarian cancer precursor lesions. For example, he was the first to provide conclusive evidence that, unexpectedly, some subtypes of ovarian cancer do not arise in the ovary; a paradigm that now dominates our thinking about how to treat and manage ovarian cancer. In addition he has gained international recognition for his work on the discovery of new familial breast and ovarian cancer predisposition genes through the application of exome sequencing. Prof Campbell has a strong vision for the implementation of genomics in medicine and to this end has cultivated strong linkages with large clinical databases and cohorts. In particular he is Principal Investigator of *LifePool* (Lifepool.org), which is a cohort of >53,000 Victorian women who attend BreastScreen clinics and has become a major and internationally unique resource for women's cancer research. Professor Campbell has over 170 career publications with over 8816 citations and an h-index of 52.

ABSTRACT

Over the last several decades, advances in technology for genomic analysis of cancer have revealed a complex interplay of germline and somatic factors as the cancer develops from benign precursors to fully invasive disease. A detailed understanding of the molecular pathogenesis of cancers, including their cell of origin and factors which promote or suppress progression, will provide opportunities to develop novel treatments and preventative strategies. A clear demonstration of the power of this approach is revealed in the vastly different way we now view ovarian cancer. In the early 1990s, epithelial ovarian cancer was considered to be a single disease that originated from the ovarian surface epithelium. Using newly developed PCR based genomic technology we were the first to show that in fact endometriosis (originating from the uterus) and not the ovarian surface epithelium, was the major precursor of endometrioid and clear cell ovarian cancers. For the first time this demonstrated that epithelial ovarian cancers represented a diverse range of diseases with distinct aetiologies, with the important clinical implication that treatment should be tailored to reflect this diversity. In the past, it was imagined that the bottleneck in identifying and exploiting the vulnerabilities of cancer would be technical. However, because of the extraordinarily rapid advances in genome sequencing technologies, in the near future any clinical practice will have easy access to detailed genetic and genomic data on the same time-line as a conventional pathology report. The clear challenge now is to make sense of this vast volume of data. In the future, advances in personalized medicine will only be achieved through close cooperation of clinical and laboratory based researchers to develop sophisticated databases that can robustly link specific mutations with clinical outcome.

4:30pm till 5:30pm

SEMINAR ROOM 272, LEVEL 2, HARRY PERKINS INSTITUTE OF MEDICAL RESEARCH, NORTH CAMPUS


Your Guide to the
Perkins
HARRY PERKINS INSTITUTE
OF MEDICAL RESEARCH
Aberdare Rd
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Winthrop Ave
Kings Park
Hospital Ave
Gairdner Dr
Campsie St
Kingston St
Verdun St
Monash Ave
Hampden Rd
Caladenia Cres
Waiting Walk
E Street
G Street
Main Entrance
Main Entrance & Admissions
EMERGENCY
Emergency Helipad
Visitor Car Park 1
Visitor and Staff Multi Deck Car Park
(Entry off Winthrop Ave Only)
To Harry Perkins
Multi Deck Car Park Phase 2
Under Construction
Lions Eye Inst
Child Care
HARRY PERKINS INSTITUTE
PathWest
Staff Car Park 4
Visitor Car Park 3A
Western Power Sub Station
Staff Car Park 3
Car Park 7B
Visitor Car Park 7 8.00am - 4.00pm
Staff Car Park 6
Staff Car Park 7A
UWA Car Park
Under Construction (New Children's Hospital)
Hollywood Private Hospital
To Stirling Hwy
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