

DBMR Research Conference

Date **May 3, 2021, 5 pm – 6 pm**

Title **The Effect of Hypoxia on the Genomic Architecture of Human Tumours**

Speaker **Prof. Dr. Robert Bristow, Manchester Cancer Research Centre,
The University of Manchester, Manchester, UK**

Bio: Professor Robert Bristow joined the University of Manchester as Director of the Manchester Cancer Research Centre (MCRC) in August 2017 with a remit to developing a new cancer strategy for Manchester with a cancer team science approach. The MCRC is a unique partnership between Cancer Research UK, The University of Manchester and the Christie NHS Foundation Trust. His primary research interests are in tumour hypoxia, DNA damage signalling and repair in tumours, and the genomics of prostate cancer progression and cancer treatment response. He is particularly interested in novel clinical trials that intensify cancer therapy to prostate cancer patients whose tumours harbour aggressive genetic changes and hypoxic sub-regions. Professor Bristow is currently a senior group leader in Translational Oncogenomics at the CRUK Manchester Institute and was the lead PI for the Canadian component of the ICGC whole genome prostate cancer sequencing project (CPC-GENE). He has served on a number of senior Scientific Advisory Boards and committees for: Prostate Cancer Foundation (USA), the MOVEMBER Foundation, the American Association for Cancer Research (AACR), the German Cancer Centre, Tuebingen Comprehensive Cancer Centre, NKI Amsterdam, the Danish Cancer Society and sits on the Scientific Executive Board for Cancer Research UK (CRUK). He has over 280 published papers and book chapters and is twice a Canadian Foundation for Innovation (CFI) awardee. He was made a Canadian Cancer Society Research Scientist in 2004, an ESTRO Honorary Fellow in 2011 and a Fellow of the Academy of Sciences (UK) in 2019.

Abstract: Understanding the mechanistic basis for transition to late stage aggressive disease is vital for both assigning patient risk status in the localised setting and also identifying novel treatment strategies to prevent progression. Subregions of intratumoral hypoxia are found in all solid tumours and are associated with many biologic drivers of tumour progression. Crucially, more recent findings show the co-presence of hypoxia and genomic instability can confer a uniquely adverse prognosis. In-depth informatic and functional studies suggest a role for hypoxia in co-operating with oncogenic drivers (e.g. loss of PTEN) and suppressing DNA repair capacity to alter clonal adaption and evolution and driving an aggressive mutator phenotype. More specifically, hypoxic suppression of homologous recombination represents a "contextual lethal" vulnerability in hypoxic prostate tumours which could extend the application of existing DNA repair targeting agents such as poly-ADP ribose polymerase inhibitors. Further investigation is now required to assess this relationship on the background of existing genomic alterations relevant to prostate and other cancers, and also characterise the role of hypoxia in driving early metastatic spread.

Prof. Dr. Robert Bristow has been invited by PD Dr. phil. nat. Michaela Medova

The DBMR Research Conference will take place as a webinar via Zoom.

For those wishing to attend, please use this link

<https://unibe-ch.zoom.us/j/66451401531?pwd=V0FNQUU4MU82bExGMnZtUkRLSE5QQT09>

Meeting ID: 664 5140 1531

or scan the QR code for the details

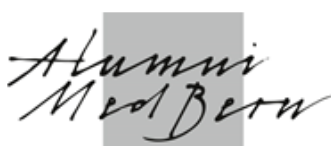


Next DBMR Research Conference

July 6, 2021

Prof. Dr. Larry J. Suva

Title Large animals in biomedical research: CRISPR, bisphosphonates and beyond



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