School of Medical Sciences Seminar Series

Wednesday the 10th of March 2021

3:00 – 4:00pm on Microsoft Teams

We ask all attendees to mute and turn off their video

A/Professor Phoebe Phillips
Leader of the Pancreatic Cancer Translational Research Group
Deputy Director of the Adult Cancer Program at the Lowy Cancer Research Centre
Deputy of the Cancer Theme at University of NSW, Australia.

'Therapeutic targets and tools to tackle tumour cells and the fibrotic fortress in pancreatic cancer'.

Bio: A/Professor Phoebe Phillips is internationally recognised for her ground-breaking work into pancreatic cancer (PC) and has >20 years' experience in trying to tackle this deadly disease. She has attracted >$17.1M in funding to try to find a cure for PC (currently funded by NHMRC, Cancer Australia, Cancer Institute NSW, Tour de Cure). The quality of her research has been recognised by several highly competitive awards including Eisenhower Global Fellowship (2019); NHMRC Career Development Fellowship (2012); Cure Cancer Australia Fellowships (2009, 2012, 2013); Cancer Institute NSW Fellowship (2009); Gastroenterological Society of Australia Fellowship (2007). She has developed several promising methods of slowing and reversing the progression of PC in preclinical studies. Following completion of her PhD in 2005, she was recruited on a fellowship to the University of Massachusetts (USA), where she identified a novel potent anti-PC drug (triptolide), which is showing encouraging results in a current Phase-2 clinical trial for patients with PC. In 2007, she returned to Australia and identified a major role for 'helper cells' (Pancreatic stellate cells – stromal cells) in PC progression. Her current research program is designed to develop therapeutic strategies to target two major cell types that contribute to chemoresistance in PC i.e. cancer cells and stromal helper cells. A/Prof Phillips has had major roles in health policy and advocacy in Australia including: Past-President for the Australian Society for Medical Research (ASMR; 2015), ASMR Executive Board of Directors (2012-17), Member of NHMRC Expert Advisory Group for restructure of NHMRC program (2016-17). She has proudly represented the medical research community to government and key stakeholders in these roles. She was awarded an International Eisenhower Fellowship in 2019 (1/23 global fellows in 2019; 22nd Australian to receive honour since 1953) for leadership in research and health policy change to improve global health. The focus of this fellowship was to build a strategic plan to enhance academic-industry partnerships to solve global health challenges.

Abstract: Pancreatic cancer (PC) is the '**cancer of our generation**' predicted to be the 2nd leading cause of cancer death by 2025. This year, >430,000 people worldwide will die from PC 3-6 months after diagnosis. This poor prognosis is due to: 1) <15% of pancreatic tumours are surgically resectable due to local/distant spread; 2) chemotherapies only extend life by ~16 weeks; 3) a dense stromal fibrotic fortress produced by cancer-associated fibroblasts (CAFs), which blocks drug delivery; and 4) treatments ignore CAFs that promote PC growth and chemoresistance. Our research has uncovered a novel way to metabolically reprogram CAFs and reduce fibrosis, and as a consequence reduce pancreatic tumour growth *in vivo*. In

addition, we have discovered a new therapeutic target to remove the brake on pancreatic cancer cell death. I will present our findings on these two new therapeutic approaches and highlight the use of novel nanomedicine to target pro-tumour genes in pancreatic cancer and also present the utility of a new human pancreatic tumour in a dish model for preclinical assessment of cell-cell interactions and testing new therapeutics.

SoMS Seminar Co-convenors

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