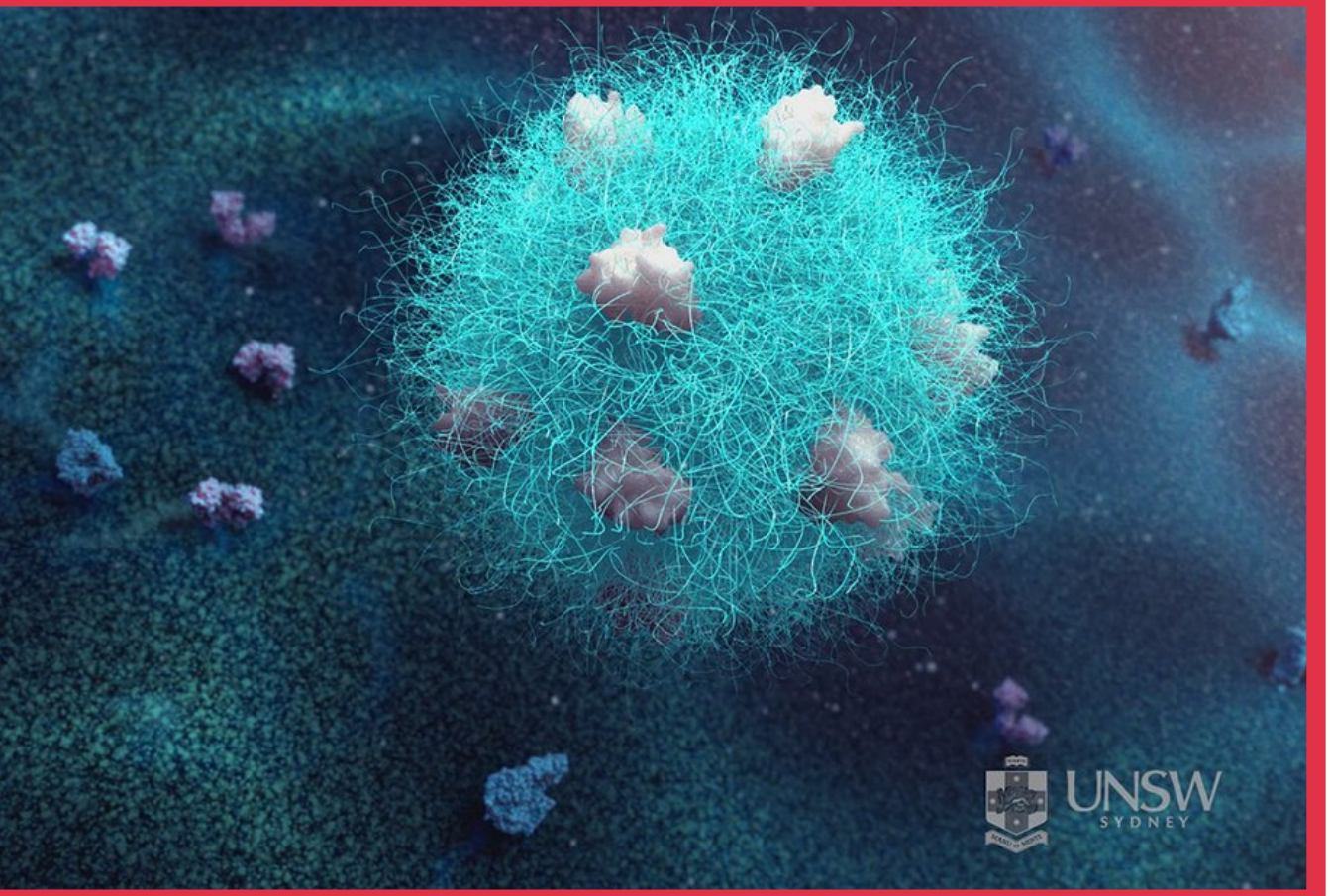
science

YORK UNIVERSITÉ UNIVERSITY

PHAS Colloquium:

Nanobiophotonics for Cancer Applications:

Physics, Chemistry, Biology, Engineering



DATE: November 6th, 2018
TIME: 2:30 PM
LOCATION: PSE 317

SPEAKER

Brian C Wilson PhD

University of Toronto &
Princess Margaret Cancer Centre

THERE WILL BE SNACKS

ALL ARE WELCOME

ABSTRACT

Nanobiophotonics - the convergence between optics/photonics, nanotechnology and life sciences - opens new opportunities in many fields, including medicine. It is also intrinsically multidisciplinary, since progress depends on collaboration between scientists from many different backgrounds, as well as the "end users"- in this case clinical specialists and their patients. Applications in cancer diagnosis and treatment will be illustrated by four examples of current research: surface-enhanced Raman scattering (SERS) nanoparticles for multiplexed tumor imaging; cryogenic nanowire single-photon detectors for measuring excite-state oxygen generated during light-based treatments; multifunctional organic nanoparticles with complementary optical and non-optical properties; and scintillation nanocrystals that convert X-rays to light for molecular excitation. As well as the nanoparticles themselves, a range of biomedical devices is required as photo activators or sensors. We consider also how these complex technology platforms can be moved out of the lab and into clinical practice via commercialization and the challenges that this involves.

Image Description: Nanoparticle approaching cell surface.
Image Credit: 3D Visualization Aesthetics Lab, UNSW
Poster Designed By: Neil McCall (neiltmcl@my.yorku.ca)