The Singapore Bioimaging Consortium (SBIC)
presents a seminar on

# "Magnetic Resonance Spectroscopy during exercise: The muscle, oxygen availability, and the heart"

**Speaker:** **Prof Luke Haseler**
**Research Professor**
**School of Physiotherapy and Exercise Science**
**Curtin University**
**Host :** **Dr Philip Lee**
**Date :** **Wednesday, 7 February 2018**
**Time :** **2.00pm – 3.00pm**
**Venue :** **SBIC Seminar Room**
**11 Biopolis Way**
**Level 2, Helios Building, Singapore 138667**
**(Please enter via Level 1)**

## Abstract

Magnetic resonance spectroscopy and imaging techniques provide a non-invasive means to assess human skeletal muscle metabolism during dynamic exercise. $^{31}P$ MRS allows the determination of skeletal muscle high-energy phosphate metabolism during exercise with excellent temporal resolution and arterial spin labelling techniques provide information on regional perfusion within the muscle during exercise. This presentation considers the effect of altered $O_2$ availability on skeletal muscle oxidative metabolism during submaximal exercise in humans and describes MRI and MRS strategies to assess the matching of perfusion with metabolic demand in the skeletal muscle during exercise. Implications for caution in interpreting mitochondrial oxidative capacity from these measurements in cardiorespiratory and metabolic diseases will be highlighted. Finally, the link between muscle metabolism during exercise and cardiovascular function will be discussed to suggest future research directions

## About the Speaker

Luke Haseler commenced his appointment as a Research Professor in the School of Physiotherapy and Exercise Science, Curtin University, Perth, Western Australia, in mid 2017. Prior to this, he was the Director of the Heart Foundation Research Centre at Griffith University from 2011 - 2016. His international research experience includes postdoctoral appointments at the University of New Mexico, USA, a faculty appointment in the Division of Physiology, University of California San Diego, and a visiting academic appointment at the University of Copenhagen, Denmark. Professor Haseler has an established track record of quality research outputs in the fields of human skeletal muscle and cardiovascular physiology. A feature of his research has been the use of magnetic resonance spectroscopy and imaging techniques to assess

these physiological processes non-invasively during exercise in humans. He has obtained approximately $6 million in research funding as a chief investigator from agencies including the NHMRC, the Heart Foundation, and the Queensland Cancer Council, the National Institutes of Health and the American Heart Association, USA, and the Novo Nordisk Foundation, Denmark. He is a member of the American Physiology Society and the International Society for Heart Research and, in 2015, he was made a Fellow of the American College of Sports Medicine, for his research contributions to the field of human muscle physiology.

***Admission is free and all are welcome ---***