



The Singapore Bioimaging Consortium (SBIC)  
presents a seminar

on

**“Multinuclear Magnetic Resonance Spectroscopy (MRS) : A  
tremendously versatile tool to study Metabolism *In-Vivo*”**

**Speaker: Chris Boesch**

**Professor**

**University of Bern, Switzerland**

**Date : Friday, 16 January 2015**

**Time : 3.00pm – 4.00pm**

**Venue : SBIC Seminar Room**

**11 Biopolis Way**

**Level 2, Helios Buiding, Singapore 138667**

**(Please enter Level 1 entrance)**

**Abstract**

Nuclear Magnetic Resonance (NMR) has an enormous and fruitful impact on biology, biophysics, and chemistry. Magnetic resonance imaging (MRI) and spectroscopy (MRS) apply the same principles in vivo in humans and animals. While MRI has become one of the most powerful diagnostic tools in clinical medicine, MRS and in particular multinuclear MRS remained mainly research tools for highly specialized groups. It shall be shown that multinuclear MRS is extremely versatile and can observe non-invasively and without ionizing radiation important biochemical pathways such as the metabolism of glucose, glycogen, lipids, of metabolites around and in the TCA cycle, high energy phosphates, and other reporters of cellular conditions and reactions. In turn, the technical requirements of multinuclear MRS are immense and the support by the vendors cannot be compared to their promotion of proton imaging. This means that the research groups have to overcome many technical obstacles on their own. In addition, radiology often aims at the observation of focal lesions which is an inherent weakness of MRS due to the low spatial resolution. Nonetheless, this presentation shall present the strengths of multinuclear MRS aiming at systemic pathology and physiology, which justifies the high methodological effort.

**About the Speaker**

- 1976 Physics Diploma (Dipl.Phys.ETH), ETH, Zurich, Switzerland
- 1980 PhD Physics (Dr.sc.nat.), ETH, Zurich, Inst.Mol.Biol.Biophys., Prof.Kurt Wüthrich
- 1984 Swiss State License for Medicine, University Zurich, Switzerland
- 1985 MD (Dr.med.), University Zurich

- 1985-1990 Research Assistant University Children's Hospital, Zurich
- 1991-Present Professor of MR Spectroscopy and Methodology, University Bern, Switzerland
- 1992-1999 Executive Committee ESMRMB
- 1996-1999 Board of Trustees ISMRM
- 1996 Chairman Scientific Program Committee (ESMRMB Annual Meeting, Prague)
- 1997-1998 President ESMRMB
- 1998 Chairman Scientific Program Committee (ISMRM Annual Meeting, Sydney)
- 1999-2003 Executive Committee ISMRM
- 2001-2002 President ISMRM
- 2006 Distinguished Service Medal and Fellow ISMRM
- 2006 Fellowship ESMRMB
- 2006 Visiting Professor, Université Claude Bernard Lyon 1, France
- 2008-2013 President Research Commission, University Bern, Switzerland
- 2013-Present Member National Research Council (Swiss National Science Foundation)

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