

## Interdisciplinary Colloquium Regenerative Medicine I

**Tuesday, 30 August 2016 at 12:30 – 1:30 pm**

**Kleiner Hörsaal OST, KHO**

**University Hospital Zurich**

### **Prof. Sebastian Kozerke**

**Institute for Biomedical Engineering, University of Zurich and  
ETH Zurich**

## **From Spin to Picture to Computational Models - Biomedical Imaging of Failing Hearts**

Biomedical Imaging technology has become a cornerstone of medical diagnostics and basic clinical research. Among the various imaging modalities, Magnetic Resonance imaging stands out as it provides outstanding soft tissue contrast and allows encoding a range of functional information in a non-invasive fashion and without the use of ionizing radiation.

This talk will introduce advanced concepts of information encoding using the Magnetic Resonance imaging principle. It is demonstrated that images from highly undersampled data can successfully be reconstructed using appropriate prior knowledge. To this end, higher dimensional information can be encoded to obtain very comprehensive anatomical and functional views of the human heart. Beyond diagnostic imaging, in-vivo data-driven biomechanical modeling has advanced significantly to enable predication of disease progression based on an individual patient's data opening up new avenues for personalized medicine and treatment of heart disease.

**Organiser:** Prof. Dr. Dr. Simon P. Hoerstrup

**Execution/Chair:** Dr. Steffen M. Zeisberger

IREM & Wyss Zurich, Univ. of Zurich and ETH Zurich