

Institute for Regenerative Medicine (IREM) in collaboration with  
Wyss Translational Center Zurich (Wyss Zurich), Regenerative  
Medicine Technologies Platform

## Interdisciplinary Colloquium Regenerative Medicine I

**Tuesday, 29 Nov 2016 at 12:30 – 1:30 pm,  
Kleiner Hörsaal OST,  
University Hospital Zurich**

### **Prof. Gerald Schwank**

**Department of Biology, Inst. f. Molecular Health Sciences,  
ETH Zurich**

## **CRISPR/Cas9 and organoids: Tools for disease-modeling and gene-therapy**

We have recently developed CRISPR/Cas9-based protocols for precise gene-editing in intestinal stem cell organoids. Intestinal organoids can grow from single adult stem cells, comprise nearly intact physiology of the epithelium, and consist of all major cell types of the intestine. Our gene-editing protocols have allowed us to introduce tumor driver mutations into organoids, and thus study tumor progression *in vitro*. In addition we could also use the technique to correct disease-causing mutations, such as the 508del mutation in the CFTR ion-channel that causes cystic fibrosis. Here I will present these projects, as well as current efforts of using CRISPR/Cas9-based screening to identify novel tumor driver genes.

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

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

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