

Interdisciplinary Colloquium Regenerative Medicine I

Tuesday, 23 Feb 2016 at 12:30 – 1:30 pm

Kleiner Hörsaal Ost, HOER B5

University Hospital Zurich

Dr. Barbara Röhrnbauer

Wyss Translational Center Zurich, ETH Zurich

Towards smart blood pumps

Ventricular assist devices (VADs) have become a lifesaving treatment option for end stage heart failure patients – in particular with regard to the immense lack of donor hearts. The outcome of this treatment, however, is subject to frequent incidences of severe adverse events. This hinders an even broader and in particular more effective use of VADs in early stage heart failure today. Therefore, further technological innovation is inevitable, the first priority being the reduction of adverse events rates, followed by an increase of patients' quality of life. The long-term vision is to make the VAD a forgettable system.

Our project focusses on control strategies for VADs. Patient specific speed adaptation will restore the physiologic perfusion of the body, and cardiac-cycle synchronized artificial pulsatility will load and unload the cardiovascular system according to the specific therapeutic strategy. Such smart controllers are not only poised to improve the clinical outcome, but they also open a platform for diagnostic monitoring and patient specific therapeutic options.

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

Execution/Chair: Dr. Steffen M. Zeisberger

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