

# Seminar

## Translational and Clinical Wyss Zurich Projects

Tuesday, August 28, 2018 at 12:30 – 13:30

Kleiner Hörsaal OST,  
University Hospital Zurich

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### Magnetic blood purification – Status quo within the Wyss Zurich hemotune project

Many clinical conditions such as intoxications, systemic infections, or autoimmune diseases are caused by substances that are distributed via the blood circulation. Selective removal of these disease-causing factors would be in many cases the most direct way of cure. However, current blood purification methods are not able to selectively and efficiently remove larger biomolecules such as bacterial toxins or antibodies directly from a patient's blood.

To overcome the physical limitations of traditional technologies, hemotune develops a novel nanotechnology-based approach. In contrast to using rigid blood filters, hemotune employs tiny, strongly magnetic beads that are equipped with specific binding sites. Due to their nanosize, they offer a large accessible surface area as well as superior mobility while they are not causing shear stress on the blood. In addition to the nanosorbent, hemotune develops a proprietary dialysis-like machine that is directly connected to the patient and performs the therapy.

After successful pre-clinical proof of principle and safety studies in animal models, the team now focuses on the development of a medical device for human application and prepares a first-in-man clinical trial.



**Organizer:** Prof. Dr. Simon P. Hoerstrup, PhD

**Execution/Chair:** Dr. Flora Vajda

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