



Guest Lecture

Martin H. Brutsche

**The Relevance of Digital Health
for Chronic Pulmonary Conditions:
Research Directions & Innovative
Interventions**

Wednesday, November 18, 2020, 4:15 p.m. - 5:45 p.m.

Webinar via Zoom: ethz.zoom.us/j/99737652365

About Martin H. Brutsche

Professor Dr. med. et phil. Martin Brutsche was born in the Valais and studied medicine at the Universities of Zürich and Berne. His doctoral theses on high-altitude pulmonary oedema brought him into the field of pulmonary medicine. He gained professional experience in hospitals in Visp, Montana-Crans, Geneva, Manchester, Basel and Aarau before becoming Chefarzt of the Klinik für Pneumologie und Schlafmedizin at the Kantonsspital St. Gallen in 2009.

Through his years of clinical activities, he continued with scientific projects and finalized his PhD thesis in immunology at the University of Manchester, UK, in 2000. He got his Venia legendi and professorship from the University of Basel 2002 and 2008, respectively. From 2014 to 2020 he is member of the presidency of the Swiss Society for Pneumology.

About the Lecture

What's the case for telemedicine in chronic pulmonary conditions? – Chronic pulmonary conditions are affected by a high burden of disease in terms of lives and costs. Most of them could be prevented by a healthy lifestyle. When occurring, they are affected by stochastic events like exacerbations, therapeutic challenges and issues of long-term treatment adherence.

Where do we stand now? – Starting 2015, we focussed on the effect of telemedicine for patients with COPD. At that time, it was still unclear whether elderly COPD patients would accept interacting with a smartphone. The intervention hosted within the Evita-app by Swisscom follows an algorithm-based hybrid strategy. At the occurrence of red flags, health care professionals get into an analogue interaction with the patients. Studies so far showed that selected COPD patients are suitable for a smartphone-based intervention and that the approach was safe, as >90% of exacerbation events were identified.

In a multicentre phase 3-trial, we could show a positive impact on the disease evolution, with trends for fewer hospitalisations, less generated costs (under review). Another aspect of research included the validation of passive monitoring for future integration in telemedicine strategy. In collaborative studies with the empa St. Gallen, we are jointly developing a textile ECG-belt, which is meanwhile able to identify sleep apnea events. With the University of St. Gallen and ETH Zurich, we documented the feasibility and efficiency of an AI-facilitated smartphone-based cough monitor in the context of COVID-19 pneumonitis and the prediction of asthma exacerbations and attacks. The latter consists of the largest asthma trial ever done in Switzerland to our knowledge. **Where to go?** – Telemedicine still has to stand the proof of reality. Apart from the many open research questions, it directly impacts on the business model of the different players of the health care sector. Nevertheless, there is no doubt that the future of medicine will follow the anytime-, anywhere- and individualized-concept of telemedicine!

We kindly invite you to join this guest lecture.

Prof. Dr. Tobias Kowatsch Assist. Professor, Digital Health, University of St.Gallen (HSG) & Scientific Director, CDHI, ETH Zurich & HSG

Prof. Dr. Alexander Geissler Professor of Management in Healthcare; Director, School of Medicine, University of St.Gallen

Dr. Filipe Barata Head of AI & Digital Biomarker Research, CDHI, ETH Zurich

Prof. Dr. Elgar Fleisch Professor of Information Management, ETH Zurich & Professor of Technology Management, HSG

Prof. Dr. Florian von Wangenheim Professor of Technology Marketing, ETH Zurich & Head of Department MTEC, ETH Zurich