



Guest Lecture

Tobias Kowatsch

**Digital Biomarker and Chatbot
Research for the Prevention and
Management of Chronic and
Mental Illness**

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About Tobias Kowatsch

Dr Tobias Kowatsch is Assistant Professor for Digital Health at the University of St.Gallen and the Scientific Director of the Center for Digital Health Interventions, a joint initiative of the Department of Management, Technology and Economics at ETH Zurich and the Institute of Technology Management at the University of St.Gallen (www.c4dhi.org). He is also Partner of Dartmouth's Center for Technology and Behavioral Health (www.c4tbh.org). In close collaboration with his interdisciplinary team and research partners, Dr Kowatsch designs digital health interventions ("digital pills") at the intersection of information systems research, computer science and behavioural medicine. He helped initiate and participates in the on-going development of MobileCoach, an open-source platform for ecological momentary assessments and digital health interventions (www.mobile-coach.eu). Dr Kowatsch is currently project partner in several SNF projects and Lead Principal Investigator of two digital health projects focusing on the prevention of type-2 diabetes and depression co-funded by Singapore's National Research Foundation and ETH Zurich (fht.ethz.ch). In these projects, he partners with the Saw Swee Hock School of Public Health and the Department of Medicine, Yong Loo Lin School of Medicine, National University of Singapore, and the Lee Kong Chian School of Medicine, Nanyang Technological University. He is also co-founder of the ETH Zurich and University of St.Gallen spin-off company Pathmate Technologies that creates and delivers digital clinical pathways.

About the Lecture

In the 20th century, healthcare systems specialized in acute care. In the 21st century, chronic and mental illness is now responsible for around 70% of all deaths worldwide and around 90% of all healthcare expenditures in developed countries. The prevention, management and treatment of chronic and mental illness require an intervention paradigm that focuses on health-promoting behavior in our everyday lives. For example diet, physical activity, stress management and sleep hygiene can reduce the risk of suffering from chronic or mental illness. A corresponding change in lifestyle is, however, only implemented by a fraction of those affected, partly because of missing or inadequate interventions or health literacy, partly due to socio-cultural influences. Individual personal lifestyle coaching of these individuals is neither scalable nor financially sustainable. To this end, the question arises on how to develop evidence-based digital health interventions that allow medical doctors and other caregivers to scale and tailor long-term treatments to individuals in need at sustainable costs. In this context, digital biomarker and chatbot research has received a significant amount of interest from academia and the healthcare industry. To this end, this guest lecture has the objective to help healthcare executives (e.g. medical doctors or executives from digital health companies, public health organizations or pharmaceutical or health insurance companies) to understand better the need, design, implementation and assessment of digital health interventions.