

**Meet the Network and Community Leadership**  
**Network: Translational & Precision Medicine (TPM)**  
**Community: Pharmacometabolomics**



**Community Chair:**  
**Thomas Hankemeier,**  
**BS, MSc, PhD**  
**Leiden University**

Dr. Hankemeier is recognized worldwide for his research to develop analytical tools for metabolomics-driven systems biology in personalized medicine. His research focusses on improving the coverage of 100's to 1000's of metabolites and to obtain quantitative metabolomics data. He developed several innovative analytical and lab-on-a-chip methods to enrich and separate charged compounds, depleted zone isotachopheresis, and several electroextraction methods to enrich for anionic or cationic metabolites from an organic phase to an aqueous acceptor phase, or from an aqueous sample through and organic filter layer into an aqueous acceptor phase for subsequent metabolomics analysis. In various clinical collaborations, he has discovered metabolic biomarkers for better (early) diagnosis and interventions for mainly cardiovascular and metabolic diseases, and dementia. In a systems pharmacology approach, he is aiming to identify treatment options based on these findings.

He developed methods to create and manipulate in-vitro 3D cell models of different types of organs. This organ-on-a-chip platform uses a unique microfluidic liquid handling technique called phaseguides and allows to perfuse 3D co-cultures and to create 96 3D tissues that are individually perfused. He can create blood vessels and can co-culture neurons and astrocytes with such systems. He is cofounder of Mimetas, the worldwide first organ-on-a-chip company, which develop predictive microfluidic 3D cell culture models with organotypic properties for better and more reliable customized medicines.

As he is convinced that multidisciplinary are important to achieve breakthroughs, he has been initiator and scientific director of the Netherlands Metabolomics Centre to translate metabolomics research into industrial and clinical applications, a 53 M€ public-private research program from 2008-2013. He is leading the Cluster Systems Pharmacology at the Leiden Academic Centre of Drug Research at Leiden University. He has been part of the NIH Pharmacometabolomics network lead by dr. Kaddurah Daouk. He has been appointed as Medical Delta professor for Translational Epidemiology at Erasmus Medical Centre.