



BME@LiU 2025

Programme



Programme overview

Session 1 - Welcome and introduction (Hugo Theorell)

Session 2 - Coffee, posters and Research & Innovation Arena (Ljussgården)

Session 3 - Choose one of these parallel sessions

**Novel instruments,
Biosensors and
Biomaterials (Granit)**

**Modeling and AI
(Hugo Theorell)**

**eHealth and clinical
implementation
(Dolomit)**

Session 4 - Lunch, posters and Research & Innovation Arena (Ljussgården)

Session 5 - Choose one of these parallel sessions

**Life Science Technologies (LSX)
(Hugo Theorell)**

**Medical imaging and visualisation
(Granit)**

Session 6 - Coffee, posters and Research & Innovation Arena (Ljussgården)

Session 7 - International keynote speaker (Hugo Theorell)

Session 1 - Welcome and introduction

08:30-08:40 Welcome and introduction (Hugo Theorell)

- **08:30-08:35 Welcome to the BME@LiU day**
Elin Nyman, Head of Department, IMT
- **08:35-08:40 Overview of programme**
Gunnar Cedersund, IMT, chair of programme committee

08:40-10:00 Keynote 1 and 2 (Hugo Theorell)

- **08:40-09:30 BME@LiU 50 years - history, the present, and the future**
Joint presentation by several speakers including e.g.: Karin Wårdell (IMT), Daniel Simon (ITN), Tino Ebbers (CMIV/HMV), and Matts Karlsson (IEI/LiU leadership)
- **09:30-10:00 Reimagining MRI-Based Body Composition: A LiU Spin-Off is Shaping Weight-Reduction Drug Trials**
Mikael Forsgren (HMV, AMRA medical AB)

Session 2 - Coffee, posters and Research & Innovation Arena

10:00-10:30 Coffee will be served in Ljussgården, situated just outside the lecture rooms. Here, you will also find posters featuring scientific presentations and the Research & Innovation Arena with presentations from companies and organisations.

Session 3 - Parallel sessions

10:30-12:00 Novel instruments, Biosensors and Biomaterials (Granit)

Session organisers: Daniel Aili (IFM), Rolf Saager (IMT), Daniel Simon (ITN)

- **10:30-10:45 Soft and stretchable neural electrodes based on gold nanowire composites**
Klas Tybrandt* (ITN, LiU)
- **10:45-11:00 All-optical physiology for neuronal circuit dissection**
Janos Fusik* (IMT, LiU)
- **11:00-11:15 Novel materials and methods for in situ formed substrate free organic bioelectronics**
Tobias Abrahamsson*, Daniel T. Simon, Magnus Berggren, Xenofon Strakosas (ITN, LiU)

- **11:15-11:35 Seeing what matters: k-edge imaging for detection of arterial plaque in photon-counting CT**
Julia Andersson*, Martin Stridsberg*, Caroline Brommesson, Anders Persson, Kajsa Uvdal (IFM, LiU)
- **11:35-12:00 Advancing Precision Diagnostics for Delineation of Basal Cell Carcinoma in Hyperspectral Images**
Paulina Ibek* (Lund University)
and **Non-invasive bioimaging of non-melanotic skin cancers**
Magne Stridh* (Lund University)

10:30-12:00 Modeling and AI (Hugo Theorell)

Session organisers: Gunnar Cedersund (IMT)

- **10:30-11:00 Usage of structured graph modeling to identify mechanisms of actions for drugs - theory and examples**
Oleg Sysoev* (IDA, LiU) and Jonathan Mangion (AstraZeneca)
- **11:00-11:15 Deciphering epigenetic data to predict cardiovascular and metabolic health and biological age using Explainable AI**
Mika Gustafsson* (IFM, LiU)
- **11:15-11:30 Foundational AI models for orthopedics**
Anders Eklund* (IMT, LiU), Iulian Tampu (IMT, LiU), Jörg Schilcher (RÖ, BKV, WCM, LiU)
- **11:30-11:45 Using machine learning models and post-mortem metabolomics for prediction of ketoacidosis-related deaths**
Ralph Monte* (IMT)
- **11:45-12:00 Reprogramming of Glial Cells to PVALB Neurons - A Computational Study**
Alexander Degener* (Lund University)

10:30-12:00 eHealth and clinical implementation (Dolomit)

Session organisers: Tiny Jaarsma (HBMV, coordinator of eHealth Strategy Area) and Gunnar Cedersund (IMT)

- **10:30-10:50 A digital twin app for prevention of cardiometabolic diseases**
Greta Nilsson* (IMT, LiU)
- **10:50-11:10 The Medical Device Regulation (MDR) - Surprisingly fun and useful once you get the hang of it**
Ella Wilhelmsson*, Malin Silverå Ejneby* (Medos AB)
- **11:10-11:30 Medtech4Health Accelerating Swedish Medtech - Insights from 9 years of innovation support**
Lena Strömberg* (MedTech4Health)

- **11:30-11:50 Internet-based cognitive behavioral therapy**
Speaker TBD (IBL, LiU)
- **11:50-12:10 TELE-FASTER-HF - Tele-monitoring for fast optimization of heart failure patient treatments**
Tomas Mellberg* (MD, Sahlgrenska University Hospital)

Session 4 - Lunch, posters and Research & Innovation Arena

12:00-13:30 Lunch, posters and Research & Innovation Arena (Ljusgården)

Lunch will be served in Ljusgården, situated just outside the lecture rooms. Here, you will also find posters featuring scientific presentations and the Research & Innovation Arena with presentations from companies and organisations.

Session 5 - Parallel sessions

13:30-15:30 Life Science Technologies (LSX) (Hugo Theorell)

Session organisers: Daniel Aili (IFM), Daniel Simon (ITN), Rolf Saager (IMT)

- **13:30-13:45 Introduction to LSX**
Daniel Aili (IFM)
- **13:45-13:59 Programming the Tumor Microenvironment for Off-the-Shelf Cancer Vaccination**
Johan Karlsson* (IFM), Judit Svensson Arvelund* (BKV)
- **13:59-14:13 Steerable Guidewires: The Next Step in Enhancing Navigation and Precision in Percutaneous Coronary Intervention (PCI)**
Jose G. Martinez* (IFM), Elin Good (HMV)
- **14:13-14:27 A synergy of bioelectronic devices and bioengineered 3D cultures to advance precision nucleic acid therapeutics**
Pierfrancesco Pagella* (IFM), Theresia Arbring Sjöström* (ITN)
- **14:27-14:34 Short break**
- **14:34-14:48 Navigation to Neuromodulation: Investigating Magnetoreception Mechanisms Using Xenopus Oocytes**
Rozalyn Simon (HMV)
- **14:48-15:02 Proof-of-Concept Study: NMR Metabolomics and Lipoprotein Profiling for Investigating Cholesterol Metabolism in Multiple Myeloma Cell Lines**
Padraig D'Arcy* (BKV), Alexandra Ahlner* (IFM), Ilona Dudka (Umeå University)
- **15:02-15:16 Temporal inflammatory profile in skin sebum after oronasal mask application**
Amanda Feldt* (HMV), William Lövfors* (IMT), Elin Nyman (IMT), Peter R. Worsley (University of Southampton), Bijar Ghafouri (HMV) and Sara Bergstrand (HMV)

- **15:16-15:30 Can we make an at-home test for male fertility?**
Anita Öst* (BKV), Zhangjun Hu* (IFM)

13:30-15:30 Medical imaging and visualisation (Granit)

- **13:30-14:00 Usage of whole-body composition when diagnosing liver patients**
Mattias Ekstedt (HMV, RÖ, LiU) and Mikael Forsgren (HMV, LiU, AMRA Medical AB)
- **14:00-14:15 Impact of Virtual Left Atrial Appendage Occlusion on Atrial Hemodynamics in Sinus Rhythm**
Sophia Bäck (HMV, LiU)
- **14:15-14:45 Exploring Generative AI in Medical Education**
Karin Stacke (Sectra AB), Gabriel Eilertsen* (ITN, LiU), Nithesh Karthikeyan* (ITN, LiU)
- **14:45-15:00 Short break**
- **15:00-15:15 Advancing melanoma diagnostic surgery using non-invasive spectral precision diagnostics**
Malin Malmström*, Magne Stridh, Paulina Ibek, Victor Olariu, Aboma Merdasa (Lund University)
- **15:15-15:30 Using Hyperspectral Imaging for the Detection of Malaria**
Michelle Müller*, Muyideen Kolapo Tijani, Kristina Persson, Philippe Grellier, Jérémie T. Zoueu, Malin Malmström, Aboma Merdasa (Lund University)

Session 6 - Coffee, posters and Research & Innovation Arena
(Ljusgården)

15:30-16:00 Coffee will be served in Ljusgården, situated just outside the lecture rooms Hugo Theorell, Granit and Dolomit. Here, you will also find posters featuring scientific presentations and the Research & Innovation Arena with presentations from companies and organisations.

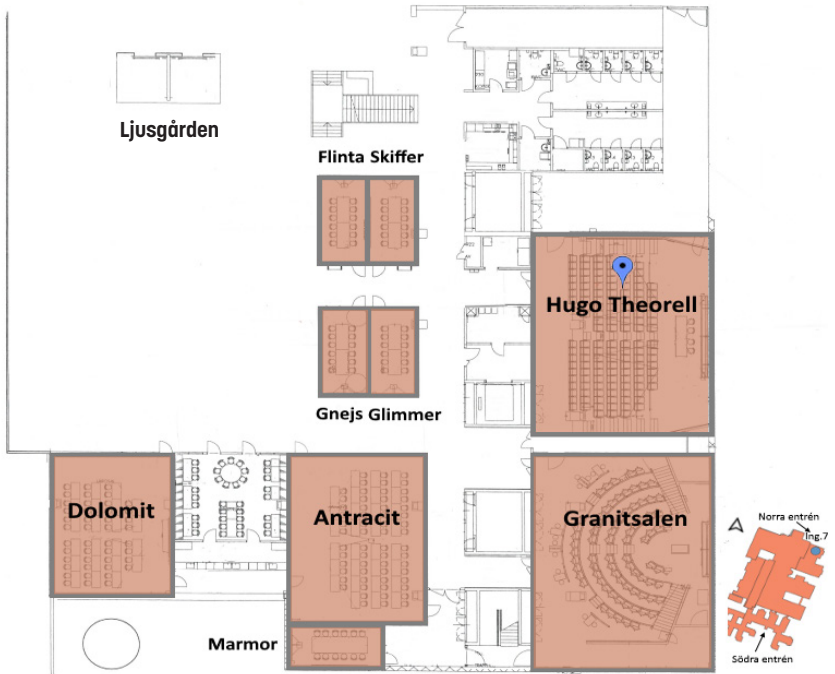
Session 7 - International keynote speaker

16:00-16:30 Final keynote (Hugo Theorell)

- **SMART - a comprehensive heart monitoring and automated feedback delivery system for heart failure patients**
Ralph Maddison (Deakin University, Australia)

16:30-16:40 Final words (Hugo Theorell)

Map





Scan this QR-code
to access the programme online.