

EASL Basic School of Hepatology

The Spatial Biology of Liver Disease

Center for Molecular Medicine, University Medical Center Utrecht, Utrecht, NL

ORGANISERS

Kristof Van Avondt, Yvonne Vercoulen, and Saskia van Mil.

PROGRAMME OVERVIEW

Day 1

08:30 – 09:00 Registration & Welcome Coffee.

09:00 – 09:20 Welcome.

09:00 – 09:05 *Welcome to the Institute.* Saskia van Mil.

09:05 – 09:20 *Introduction and Learning Objectives.* Kristof Van Avondt, Yvonne Vercoulen.

09:20 – 10:00 Visit of the facility – walkround in 4 groups. *Andreas Sonnen, Mojtaba Amini, Robin Geene, Nalan Liv.*

10:00 – 12:00 State-of-the-art: Spatial technologies for studying liver disease.

10:00 – 10:45 Keynote lecture 1 and Q&A. Chair: Kristof Van Avondt.

Navigating through the field of spatial biology – applications, challenges and opportunities for hepatology. Prof. Dr. Martin Guillems, Ghent, BE.

10:45 – 11:15 Coffee Break.

11:15 – 12:00 Keynote lecture 2 and Q&A. Chair: Yvonne Vercoulen.

Identifying the spatial immune architecture of hepatocellular carcinoma – from basic research to therapeutic applications. Prof. Dr. Dr. Bertram Bengsch, Freiburg, DE.

12:00 – 12:45 Lunch.

12:45 – 17:15 Spatial liver biology HACKATHON (refreshments will be provided throughout).

Kristof Van Avondt, Mojtaba Amini, Robin Geene, Ies Nijman.

Participants will be asked to find other 4 people with diverse background. The more diverse the team is, the better.

12:45 – 13:15 Introduction

13:15 – 14:45 Level 1

14:45 – 15:15 Disclosure solution Level 1

15:15 – 16:45 Level 2

16:45 – 17:15 Conclusion

17:15 – 18:00 Keynote lecture 3 and Q&A. Chair: Ies Nijman

ML-driven modeling of tissues with spatial omics data – analytical challenges and clinical applications. Prof. Dr. Yvan Saeys, Ghent, BE.

18:00 – 19:00 Welcome drinks and group picture.

19:00 – 21:30 Dinner with networking with the Faculty.

Day 2

09:00 – 09:15 Summary of day before & questions.

09:15 – 09:45 Flash talks.

09:15 – 09:25 *Spatial proteomics of liver disease.* – Yvonne Vercoulen.

09:25 – 09:35 *Impact of spatial technologies in the clinic.* – Andreas Sonnen.

09:35 – 09:45 *Application of spatial transcriptomics technologies to liver biology.* – Ies Nijman.

09:45 – 11:45 Practical session with coffee break.

Participants will be divided in 3 groups for small group hands-on experience in the lab.

Module 1. Unlocking the spatial biology of liver disease with multiplexed tissue imaging.
Mojtaba Amini

Module 2. Bench to bedside: Mass Spectrometry Imaging for topographic biomarker discovery.
Andreas Sonnen

Module 3. Single cell and spatial transcript profiling in hepatology.
Robin Geene

11:45 – 12:30 Roundtable discussion. Chair: Kristof Van Avondt

Contextualizing liver biology in space: Does it truly matter? Andreas Sonnen, Ies Nijman, Yvonne Vercoulen, Saskia van Mil.

12:30 – 13:00 Post-school survey.

13:00 – 13:30 Concluding remarks and announcement of the Hackathon winning team.

13:30 – 14:00 Lunch bag and depart.