



8.00-8.30 Registration, coffee on floor 9
Mounting of posters Digitalis, floor 11

Welcome to SciLifeLab

Hasselquist, floor 9/10 and live broadcast in Valeriana floor 11

8.30 Welcome words

Fredrik Elinder – Director of SciLifeLab Site Linköping, Professor with research in the field of voltage-gated ion channels.

Research Infrastructure from the perspectives of Linköping University and Region Östergötland

Matts Karlsson - Deputy Vice-Chancellor of Research at Linköping University, examining future infrastructure needs and leads the management for the National Academic Infrastructure for Supercomputing in Sweden (NAISS).

Lena Jonasson - Dean, Faculty of Medicine and Health Sciences, Linköping University. Professor with research in the field of cardiology.

Mats Ulfendahl – Director of Research, Region Östergötland

8.45 Impact of Research Infrastructure

Olle Stendahl - Professor emeritus in Medical Microbiology
Dean of the Medical Health University, Linköping University, 1984-87
Prorector, Linköping University, 1989-95
Secretary General of the Medical Research Council, 1994-2001

8.55 SciLifeLab Sweden

Olli Kallioniemi – SciLifeLab Director
Annika Jenmalm Jensen – SciLifeLab Infrastructure Director

9.10 Flash talks from the ten Technology Platforms

Moderator Henrik Gréen – Professor at Linköping University with research in Genetics and Toxicology in Cancer Chemotherapy and Forensic Sciences.

Drug Discovery and Development

Per Arvidsson - Platform Director

When you know your target, you come to the Drug Discovery and Development Platform. We offer industry-standard expertise and strategic support for technology development or help with projects to progress towards a preclinical proof-of-concept. We work with small molecules, human antibodies, oligonucleotides, and new modality therapeutics.

Clinical Genomics

Eva Berglund - Platform Coordination Officer

Aims to accelerate the development and use of new genomic methods for diagnostics and facilitate precision medicine. Our key technologies include short- and long-read sequencing, transcriptome analysis, single-cell analysis, and ultrasensitive variant detection, complemented with diagnostic and medical expertise within the focus areas (rare diseases, solid tumors, hematology, and clinical microbiology).

Location

Campus US. Växthuset
Entrance 76



Participants

... are mainly from
Linköping University
Region Östergötland
Local SciLifeLab Facilities
National SciLifeLab Facilities
National Board of Forensic Medicine
Industry Partners

[Link to list of participants](#)

Note that this list is available until 11.11.2023.

Metabolomics

Hans Stenlund - Swedish Metabolomics Centre

At the Swedish Metabolomics Centre, we analyze metabolites and lipids with mass spectrometry. At the Exposomics unit we do small molecule mass spectrometry in human and environmental samples, to characterize what we are exposed to and how these exposures interact with risk factors for disease. Also, comprehensive trace analysis by liquid and gas chromatography with high-resolution mass spectrometry using Orbitrap technology is available at the Metabolomics platform.

Integrated Structural Biology

Cecilia Persson - Platform Coordination Officer

We offer hands-on support with Structural Proteomics, Cryo-Electron Microscopy and Nuclear Magnetic Resonance. In close collaboration with the National Bioinformatics Infrastructure Sweden (NBIS), Protein Production Sweden (PPS), Biophysical characterization (ProLinC), MAX IV and ESS we can guide researchers to the optimal techniques for a specific question within Structural Biology, as well as support throughout the project.

Genomics

Yanara Marincevic-Zuniga - Project Coordinator National Genomics Infrastructure (NGI)

We provide state-of-the-art services relating to genomic and transcriptomic analysis, including de-novo genome sequencing, resequencing, genotyping, epigenetics, short- and long-read DNA-sequencing, single-cell analysis, spatial analysis, and associated bioinformatics support. We also provide proteomics analysis with DNA sequencing as readout, as well as specialized DNA extractions and DNA sequencing library preparations.

Cellular and Molecular Imaging

Linda Sandblad - Director of Umeå Centre of Electron Microscopy

Offers a broad range of technologies to visualize biological systems, from molecular to tissue levels. Cryogenic Electron Microscopy (Cryo-EM) enables the reconstruction of near-atomic structures, super-resolution microscopy makes it possible to produce images with light at the cellular nanoscale, and with expansion and light-sheet microscopy it is possible to reconstruct small organisms, or even entire organs, in detail.

Spatial Biology

Charlotte Stadler - Platform Co-Director and Coordination Officer

We apply the most recent spatial omics methods to study genes, transcripts, proteins, and small molecules in intact tissue sections or within cells. Some of the methods we offer are in situ sequencing, spatial transcriptomics, single-molecule FISH and in house design of FISH probes as well as custom conjugation of antibodies. In addition, we offer spatial Mass Spectrometry for imaging of neurotransmitters, metabolites, and lipids as complement to DNA, RNA, and protein readout.

Chemical Biology and Genome Engineering

Bernhard Schmierer - Platform Coordination Officer

The platform consists of the three units; the Chemical Biology Consortium Sweden (CBCS), Chemical Proteomics, and CRISPR Functional Genomics. We provide cutting-edge chemical, proteomic, and genetic methods for mechanism-of-action elucidation and target discovery downstream of small compound screens. Here, researchers can; explore complex biology by developing and applying small molecule tools with access to an extensive small-molecule library, use the latest Mass Spectrometry-based proteomic technologies and get support with advanced gene-editing CRISPR/Cas systems in cell lines.

Clinical Proteomic and Immunology

Claudia Fredolini - Platform Coordination Officer

We support clinical research by offering services such as; phenotyping of immunoresponse by mass-cytometry profiling, quantification of cytokines and chemokines, in depth molecular profiling of biofluids, single cells and tissue biopsies, characterization of protein variants, as well as health monitoring techniques. By combining techniques, such as Mass Spectrometry and Olink Explore, we can answer research questions from different angles.

Bioinformatics

Björn Nystedt - Platform Coordination Officer

Bioinformatics supports all other platforms with expertise in most areas of bioinformatics, including -omics analyses, genome assembly/annotation, image analysis and biostatistics. The National Bioinformatics Infrastructure Sweden (NBIS) is a distributed national research infrastructure with staff members at all six SciLifeLab sites, serving researchers dependent on the expertise needed rather than location. AIDA Data Hub in Linköping is a unit within the bioinformatics platform, offering support with data sharing and services for the Swedish medical imaging diagnostics AI research community.



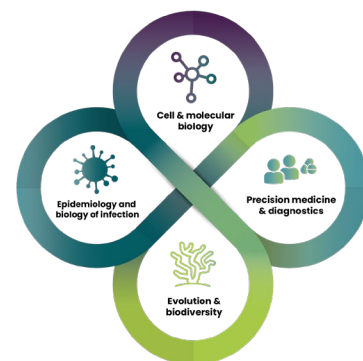
Linköping Cathedral

9.45 Data-Driven Life Science

Olli Kallioniemi - Program Director

The SciLifeLab och Wallenberg national program for data-driven life science (DDL) was formed to make use of all the massive amount of data produced at SciLifeLab, and to fill the gap between life science researchers and the data community. It's a national research program funded by Knut and Alice Wallenberg Foundation with 3,1 billion Swedish kronor during twelve years.

The program focuses on four strategic areas for data-driven research, as shown in the picture to the right, all of which are essential for improving the lives of people as well as animals and nature, detecting and treating diseases, protecting biodiversity and creating sustainability.



Discussion on DDL

Maria Lerm – Professor, Linköping University, with research in the field of Medical Microbiology, epigenetics and infectious diseases, focusing on tuberculosis and post-COVID. Head of Unit for CBCS Linköping.

Claes Lundström – Adjunct Professor, Linköping University, with research in the field of data-driven medical diagnostics. Director of the Analytic Imaging Diagnostics Arena (AIDA), Scientific Director for the AIDA Data Hub, and Research Director at Sectra AB.

Inauguration

Fredrik Elinder – Director SciLifeLab Linköping
 Josefine Sandström – Coordinator SciLifeLab Linköping
 Olli Kallioniemi – Director SciLifeLab and Program Director DDL
 Annika Jenmalm Jensen – Infrastructure Director SciLifeLab
 Mia Phillipson – Co-Director SciLifeLab
 Matts Karlsson - Deputy Vice-Chancellor of Research at Linköping University
 Lena Jonasson - Dean, Faculty of Medicine and Health Sciences, Linköping University
 Johan Ölvander – Dean, Faculty of Science and Engineering
 Mats Ulfendahl - Director of Research, Region Östergötland
 Maria Lerm – Head of Unit CBCS Linköping
 Claes Lundström - Scientific Director for the AIDA Data Hub
 Henrik Gréen – Professor at Linköping University
 Colum Walsh – Scientific Director Clinical Genomics Linköping

Anders Fridberger – Trumpet player and Deputy Dean at the Faculty of Medicine and Health Sciences, Linköping University. Professor in the field of hearing

10:15-10:45 Celebration fika

Digitalis, floor 11

Poster session, exhibition and networking

Take the opportunity to network and ask all the questions that popped up during the first session. Meet researchers from Linköping University at their research posters, Infrastructure Experts, SciLifeLab Service and more by the posters and exhibition. Scroll down to find a list of all participants of the poster session and exhibition.

Menti for DDL

Follow the link to participate

<https://www.menti.com/alzqgkchg1d>



Fika

... with poster session
and exhibition
Digitalis, floor 11

SciLifeLab in Linköping

Hasselquist, floor 9/10 and live broadcast in Valeriana floor 11
10.45 Site Linköping

Fredrik Elinder – Director SciLifeLab Site Linköping
Josefine Sandström – Coordinator SciLifeLab Site Linköping

[National Supercomputer Centre \(NSC\) and National Academic Infrastructure for Supercomputing in Sweden \(NAISS\)](#)

Björn Alling – Director of NSC
NSC is a provider of leading edge national supercomputing resources. We provide a wide range of high performance computing and data services to members of academic institutions throughout Sweden. Application experts provide support for life-scientists in need of large-data handling.
NAISS is the infrastructure organization for high-performance computing, storage, and data services for academic users in Sweden. NAISS is hosted by Linköping University but acts independently with a national perspective and responsibility.

[AIDA Data Hub](#)

Erik Ylipää – Artificial Intelligence (AI) Application Expert
AIDA Data Hub provides support with data processing and sharing services for medical imaging AI. It is a national data infrastructure supporting the Analytic Imaging Diagnostic Arena (AIDA).

[Chemical Biology Consortium Sweden \(CBCS\) in Linköping](#)

Maria Lerm – Head of Unit
Nina Ottosson – Application Specialist
The CBCS Linköping unit offers services within two areas: Screening in biosafety level 2 and 3 environments with time lapse microscopy of bacterial infection of cells and electrophysiology with automated patch clamp recordings.

[Clinical Genomics Linköping](#)

Colum Walsh – Scientific Director Clinical Genomics Linköping
Clinical Genomics Linköping provides a research hub and infrastructure for molecular genetic analyses serving basic and clinical scientists. It has organized its services around focus areas including cancer, rare diseases, complex diseases, and microbiology translating research to the clinical setting and implementation in health care.

[PROtein folding and Ligand Interaction Core facility \(ProLinC\) and Swedish Nuclear Magnetic Resonance \(SwedNMR\)](#)

Maria Sunnerhagen – Head of Unit
At ProLinC at Linköping University we aim to help researchers who want to characterize shape and structure, stability and binding of biomolecules such as proteins, DNA, carbohydrates, lipids and drug candidates. Linköping University contributes to the SwedNMR with an expert node for studies of molecular dynamics.

[National Bioinformatics Infrastructure Sweden \(NBIS\) Linköping](#)

Malin Larsson- Bioinformatics Expert
In Linköping NBIS has two staff members; Malin Larsson and Claudio Mirabello, supporting both local and national researchers. We support projects based on next generation sequencing (NGS) data, where we can develop algorithms to analyse and visualize the data.



National Supercomputer Centre, at Campus Valla, Linköping University

11:30 User Stories

Moderator – Colum Walsh, Professor at Linköping University with research in the field of genetics

Solving murders with the use of investigative genetic genealogy and good collaboration

Andreas Tillmar - Associate Professor and Senior Lecturer, Forensic Genetics, Linköping University
Siri Aili Fagerholm - Senior Forensic Expert, Swedish National Forensic Centre

Data-Driven Precision Medicine for Clinical Diagnostics

Wen Zhong - Assistant Professor and DDLS-fellow at Linköping University

How Single-Cell Sequencing Aids in Understanding the Conserved Mechanisms of Acute Pain

Marcin Szczot - Associate Professor Linköping University

Improving the Performance and Capabilities of AlphaFold using Aggressive Sampling

Björn Wallner – Professor at Linköping University

Introduction to Capability Session

Stefan Bertilsson – Scientific Lead for Planetary Biology (PB)
Staffan Svärd – Scientific Lead for Pandemic Laboratory Preparedness (PLP)
Päivi Östling – Scientific Lead for Precision Medicine (PM)

12:30 -13:30 Lunch

Digitalis floor 11

Poster session, exhibition and networking

Take the opportunity to network. Scroll down to find a list of all participants of the poster session and exhibition.



Capabilities

The Capabilities combine infrastructure technology with expertise and networks on three areas that are large societal challenges.

Precision Medicine

Hasselquist, floor 9/10

13:30-13:45 Introduction to Precision Medicine Capability
Päivi Östling, Scientific Lead for Precision Medicine, SciLifeLab

13:45-14:00 Data-driven precision medicine and clinical diagnostics
Wen Zhong, Assistant professor and DDLS fellow, Linköping University

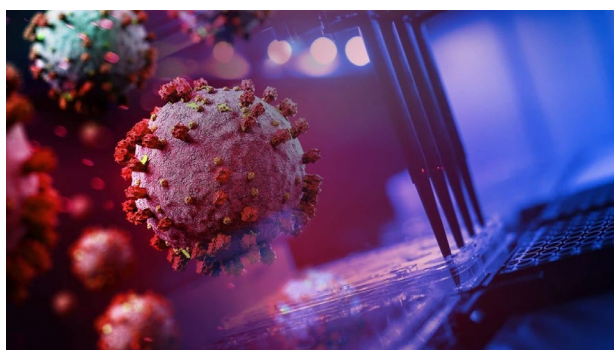
14:00-14:15 Prediction models for chemotherapy induced toxicities
Henrik Green, Professor, Linköping University, National Board of Forensic Medicine

14:15-15:00 Panel discussion - how can SciLifeLab contribute to accelerating research and implementation of precision medicine in Linköping and nationally?
Moderator: Åsa Johansson, Scientific Lead for Precision Medicine, SciLifeLab

Panelists

Martin Hallbeck, Professor and Senior consultant pathologist, Region Östergötland, Linköping University
Margareta Nordling, Clinical Laboratory Geneticist and Adjunct Senior Associate Professor, Region Östergötland, Linköping University
Claes Lundström, Adjunct professor, Director Analytic Imaging Diagnostics Arena (AIDA), CMIV, Linköping University, and Research director, Sectra AB
Tobias Strid, Head of Precision Medicine Laboratory, Region Östergötland, Co-chair for informatics, Genomic Medicine Sweden (GMS)

Contact: Coordinator PM
Eva Berglund,
eva.berglund@scilifelab.uu.se



Contact: Coordinator PLP
Alice Sollazzo, alice.sollazzo@scilifelab.uu.se

Pandemic Laboratory Preparedness

Belladonna, floor 10

Chair: Ulf Ribacke, KI, SciLifeLab Scientific Co-Lead for PLP capability

13:30-13:40 Welcome & Introduction of SciLifeLab Pandemic Preparedness Program, PLP - Staffan Svärd, UU SciLifeLab Scientific Lead for PLP capability

13:40-14:00 SARS-CoV-2 and Hantavirus transmission and pathogenesis
Jonas Klingström, Linköping University

14:00-14:20 Metagenomic sequencing for pathogen identification and analysis
Jenny Welander, Linköping University

14:20-14:40 Human Nose Organoids: A novel model to study respiratory infections and zoonotic risk of avian flu - Marie Hagbom, Linköping University

14:40-15:00 Panel discussion (what can be done in PLP nationally)
Staffan Svärd, Jonas Klingström, Jenny Welander, Marie Hagbom



Planetary Biology

Valeriana, floor 11

13:30 - 13:45 Introduction to the PB concept and capability leads.
Stefan Bertilsson (SLU) & Jacob Höglund (Uppsala University)

13:45 - 14:30 Scientific talks by local researchers from Linköping University

Urban Friberg, Department of Physics, Chemistry and Biology (IFM)
Alex Enrich Prast, Department of Thematic Studies –Environmental Change (TEMA-M)
Dominic Wright, Department of Physics, Chemistry and Biology (IFM)

14:30 - 15: 00 Joint discussion



Contact: Coordinator PB
Anabella Aguilera, anabella.aguilera@slu.se

Posters

Digitalis, floor 11

Research projects

1. Understanding neural representations of behaviour - Melisa Beatriz Capitan
2. MethyIR: a graphical interface for comprehensive DNA methylation array data analysis – Jyotirmoy Das
3. Modulation of the Kv7.1/KCNE1 channel from rabbit and guinea pig by estrogen compounds – Lucas Dauga
4. Federated learning for efficient radiotherapy treatment planning – Anders Eklund
5. Precision cut liver slices and liver metabolism – Karin Hedin
6. Development of line scanner for tomographic blood flow measurements in burn wounds – Johannes Johansson
7. Characterizing interactions between estrogen hormones and the Kv7.1/KCNE1 channel – Veronika Linhart
8. Animal-free 3D cell culture modular hydrogel platform – Sajjad Naeimipour
9. The time-resolved impact of Wnt/beta-catenin signaling - Pierfrancesco Pagella
10. Bioprinting of 3D breast cancer model – Fatemeh Rasti Borojeni
11. Quantitative sensing of microscopic features over wide fields of view – Rolf Saager
12. Autonomic Modulations to Cardiac Dynamics in Response to Affective Touch: Differences between Social Touch and Self-Touch - Paula Salamone
13. Systems Biology Analysis Reveals Putative Role of CHI3L1 and SERPINA3 in Bipolar Disorder- Leandro Tiburske
14. CAV2.1 Channels divide into two populations at resting membrane potentials – Kaiqian Wang
15. Metagenomic sequencing for pathogen identification and analysis – Jenny Welander

SciLifeLab Sites

16. Linköping – Josefine Sandström
17. Gothenburg – Maria Smedh
18. Lund – Esther González-Padilla
19. Umeå – Linda Sandblad

Local Infrastructure in Linköping

20. Chemical Biology Consortium Sweden - BSL3 Drug Screening & Life Cell imaging – Blanka Andersson
21. Chemical Biology Consortium Sweden – Maria Lerm
22. National Bioinformatics Infrastructure Sweden (NBIS) – Malin Larsson
23. Core Facility at the Faculty of Medicine and Health Sciences – Vesa Loitto
24. Clinical Genomics Linköping – Malgorzata Lysiak
25. Electrophysiology at CBCS – Nina Ottosson
26. PROtein folding and Ligand Interaction Core facility (ProLinC), SwedNMR, MOSBRI – Maria Sunnerhagen
27. AIDA Data Hub – Erik Ylipää

SciLifeLab National Units

28. Cryo-EM – Linda Sandblad
29. Single-Cell Genomics – Abraham Hernandez Hernandez
30. National Genomics Infrastructure (NGI) – Kristina Benevides
31. National Genomics Infrastructure (NGI) - Yanara Marincevic-Zuniga
32. CRISPR Functional Genomics – Bernhard Schmierer

SciLifeLab Platforms

33. Clinical Proteomics and Immunology Platform – Claudia Fredolini
34. Cellular and Molecular Imaging - from organisms to compounds imaging – Marta Carroni
35. Spatial Biology – Charlotte Stadler
36. Metabolomics – Hans Stenlund
37. Integrated Structural Biology – Cecilia Persson
38. The Chemical Biology & Genome Engineering platform – Anna-Lena Gustafsson

Capabilities

39. Pandemic Laboratory Preparedness – Alice Sollazzo
40. Precision Medicine – Eva Berglund

SciLifeLab Support and more

41. Operations Office – David Gotthold
42. Economy at SciLifeLab – Isabel Tengkrans
43. SciLifeLab Data Management Support – Elin Kronander
44. Infralife – Josefine Lundgren Gawell
45. Infralife – Clare Lyons
46. Data Centre and SciLifeLab Data Platform – Katarina Öjefors Stark
47. Data Centre – Parul Tewatia
48. SciLifeLab Training Hub – Cat Halthur

Exhibition

Roll-up or table

1. NBIS Linköping – Malin Larsson
2. Biobank Facility – Lena Thunell
3. National Genomics Infrastructure Uppsala - Yanara Marincevic-Zuniga
4. Clinical Genomics Platform – Eva Berglund
5. Forum Östergötland, Forum Sydost, Kliniska Studier Sverige - Dzeneta Dernroth
6. Planetary Biology Capability – Stefan Bertilsson

Organisation Committee



Fredrik Elinder



Josefine Sandström



Henrik Gréen



Colum Walsh