LUND UNIVERSITY

SciLifeLab

Digital Booklet

SciLifeLab Day in Lund

28.SEP.2023

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SciLifeLab Lund

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SciLifeLab Day in Lund

28.SEP.2023

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9:10 **SciLifeLab's Role in the Swedish Life Science Ecosystem.** Olli Kallioniemi & Mia Phillipson.

9:25 **SciLifeLab: the National Research Infrastructure in Life Sciences.** Annika Jenmalm Jensen.

9:35 **Inauguration of SciLifeLab Lund.** Markus Heidenblad & Esther González-Padilla.

9:55 **Lund in the Spotlight I: MAX IV, ESS & LINXS.** Trevor Forsyth.

10:05 **Lund in the Spotlight II: Region Skåne.** Stefan Jovinge.

10:15 **Data Management at SciLifeLab.** Hanna Kultima & Erik Hedman.

10:25 Coffee break.

Session 2:
Paired talks

Moderators: Karin Tran-Lundmark & Vinay Swaminathan.

Venue: Fernströmsalen

10:55 **DDLS Program & Fellows.** David Gisselsson Nord, Camila Consiglio & Jacob Vogel.

11:10 **Cryo-Electron Microscopy.** Derek Logan & Karin Lindkvist.

11:25 **Structural Proteomics & BioMS.** Simon Ekström & Carl Sandén.

11:40 **Clinical Genomics Lund.** Ulrich Pfisterer, Gustav Smith & Olof Gidlöf.

11:55 **Q&A.**

12:15 **Introduction to Session 3.** Markus Heidenblad & Esther González-Padilla.

12:30 Lunch.

Venue: Foyer

Session 3:
Posters & Capabilities

13:30 **Poster session.**

Venue: Outside Fernströmsalen

14:00 **Capabilities** (Parallel sessions)

- Pandemic Laboratory Preparedness.
- Planetary Biology.
- Precision Medicine.

Venue: E12018
Venue: E12022
Venue: E12015

15:15 Celebratory Mingle.

Venue: Stamstället Restaurant

SciLifeLab Lund

In 2021, the Board of SciLifeLab announced Lund, Linköping, Gothenburg and Umeå as official SciLifeLab sites alongside with the host university sites in Stockholm and Uppsala. The purpose behind this was to strengthen the coordination of SciLifeLab's national mission and activities. The aim of the sites is to bring national infrastructure activities closer to the research communities at these locations, and to contribute to increased synergies and collaborations with multiple stakeholders. These stakeholders include local infrastructures, the Data-Driven Life Science (DDLS) program, and Wallenberg Centers for Molecular Medicine (WCMM).

SciLifeLab Lund was formally launched in 2022 as a cross-faculty initiative between the Faculties of Medicine, Sciences, and Engineering. SciLifeLab Lund is located at Lund University's Biomedical Centre (BMC) on floor D14. The site is governed by a Steering group with representatives from the above-mentioned faculties, as well as from Region Skåne. The site is led at the operative level by a Site Director and a Management Group, which includes representatives from the included Research Infrastructure Units.

Currently, SciLifeLab Lund consists of eight research infrastructure units. Six of these units are part of SciLifeLab's technology platforms, while the remaining two represent core local facilities that are nationally relevant and have missions and objectives similar to those of SciLifeLab.

Units within SciLifeLab platforms:

- **National Bioinformatics Infrastructure Sweden (NBIS)** Link. Head of Unit: Dag Ahrén. Platform: Bioinformatics.
- **Clinical Genomics Lund** Link. Scientific Director: Thoas Fioretos. Platform: Clinical Genomics.
- **Cryo-Electron Microscopy (Cryo-EM)** Link. Scientific Director: Derek Logan. Platforms: Cellular and Molecular Imaging & Integrated Structural Biology.
- **Chemical Biology Consortium Sweden (CBCS) Lund node** Link. Scientific Director: Roger Olsson. Platform: Chemical Biology and Genome Engineering.
- **Structural Proteomics** Link. Head of Unit: Simon Ekström. Platform: Integrated Structural Biology.
- **Human Antibody Therapeutics** Link. Scientific Director: Mats Ohlin. Platform: Drug discovery and Development.

Local core facilities:

- **Biological Mass Spectrometry (BioMS)** Link. Scientific Director: Johan Malmström.
- **Lund Bioimaging Center (LBIC)** Link. Scientific Director: Gunilla Westergren-Thorsson.

Contact Information

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BMC D14, Klinikgatan 32, Lund.

LinkedIn:
SciLifeLab Lund

How to find us

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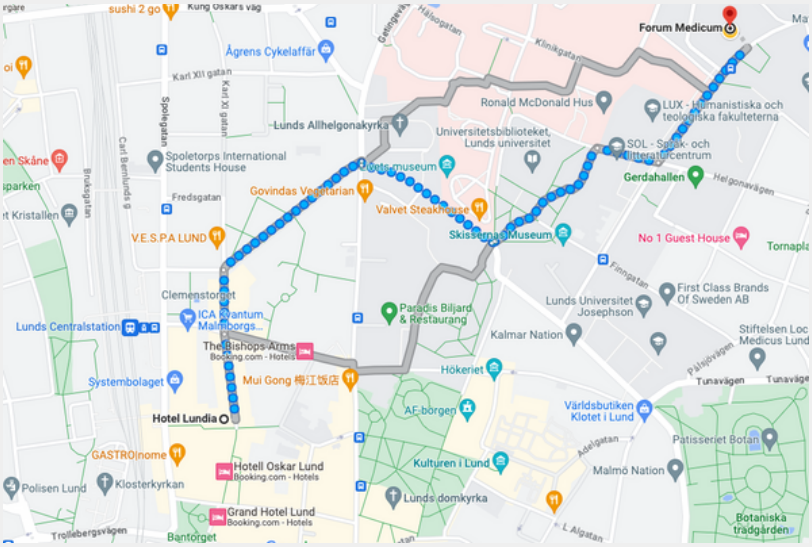


Walk (~20 minutes)
You can take a stroll from Central Lund (see suggested route on the map).

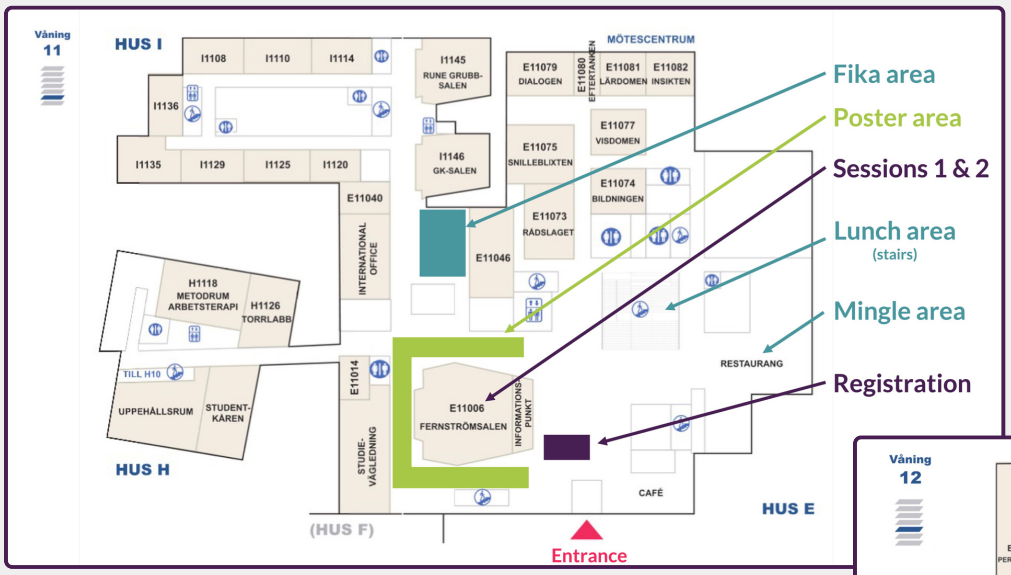
Tram (~10 minutes)
Take the tram from Clemenstorget (Lund C) to LTH (~4 minutes). The only tram line available is Line 1 towards ESS. Then, Forum Medicum is a short walk from there.

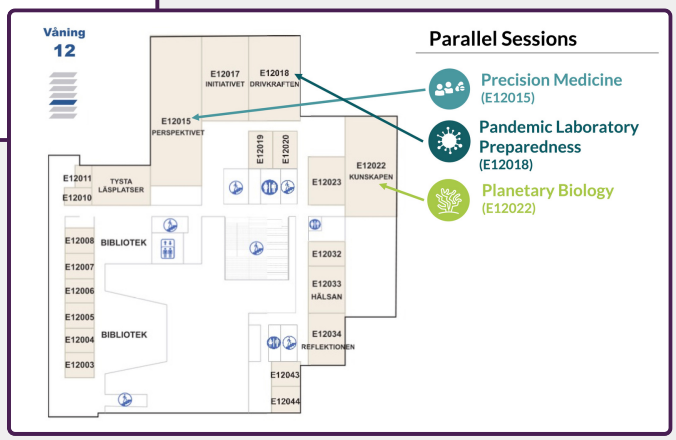
Bus (~7-10 minutes)
Also, from Clemenstorget (Stop K) you can take Line 7 towards Östra Torn and stop at Fysiologen, which is right across from Forum Medicum.
Keep in mind buses tend to be busy at this time of day.

Pro tips

- If you're taking the bus or the tram, buy a ticket before boarding on the Skånetrafiken app or blip your credit card when you board.
- If you're walking, Google Maps is your friend.

Once you are in the building...





Speakers

Kristina Åkesson

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Welcome words

Dean of the Faculty of Medicine at Lund University.

Kristina Åkesson MD, PhD, is a Professor of Orthopedics and senior consultant at the Department of Orthopedics at Skåne University Hospital Malmö and the Faculty of Medicine, Lund University, Sweden. She is currently Dean at the Faculty of Medicine and has previously held a number of faculty appointments. Her research uses a translational approach to identify risk factors for osteoporosis and fracture including genetics, bone markers and epidemiology. This has been accomplished through several large cohorts and the advantage of working within orthopaedics. Research is closely linked to improving patient care initiating the Center for Osteoporosis and Fracture Prevention. Her research is supported by grants from the National Research Councils as well as a number of foundations. She is a member of the IOF Committee of Scientific Advisors, co-chairing the Fracture working-group and Capture the Fracture. She is also member of the ASBMR Bone Marker working-group and former member of the Ethics committee; the board of ACTA Orthopedica, the editorial boards of BMC Geriatrics; Osteoporosis International; reviewer for national research councils, other funding bodies, international congresses and journals. Publications include over two hundred original papers, reviews, book chapters, in addition to guidelines and popular science contributions.

Olli Kallioniemi

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SciLifeLab's Role in the Swedish Life Science Ecosystem

Director of the Science for Life Laboratory (SciLifeLab).

Olli Kallioniemi, M.D., Ph.D. is director of the Science for Life Laboratory (www.SciLifeLab.se), a national infrastructure for life sciences in Sweden and also a professor in Molecular Precision Medicine at the Karolinska Institutet (2015-present). He also directs the national SciLifeLab program on Data-Driven Life Science (DDLS).

Olli Kallioniemi was previously the founding director of FIMM – the Institute for Molecular Medicine Finland at the University of Helsinki, as part of the Nordic EMBL partnership in Molecular Medicine (2007-2015)

Prof. Kallioniemi's research group is today active both at KI/SciLifeLab and at FIMM/HiLife/UH and applies on the functional and spatial precision medicine towards research and therapy development of e.g. acute myeloid leukemia, prostate cancer and ovarian cancer.

Olli Kallioniemi is a member of European Molecular Biology Organization (EMBO), European Academy of Cancer Sciences, the Nobel Assembly at the Karolinska Institutet and the Royal Swedish Academy of Sciences.

Speakers

Mia Phillipson

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SciLifeLab's Role in the Swedish Life Science Ecosystem

Co-Director of the Science for Life Laboratory (SciLifeLab).

Mia Phillipson, Ph.D. is the Co-Director of Science for Life Laboratory (www.SciLifeLab.se), a national infrastructure for life sciences in Sweden, and also a professor in Physiology at Uppsala University. The research of Dr Phillipson has a strong trans-disciplinary approach spanning the fields of physiology, microbiology and immunology, with the outermost goal to uncover immune cell contributions important during development, to maintain health, as well as during development of disease. The Phillipson laboratory today involves 12 co-workers. The most important discoveries of Dr Phillipson include the contributions of distinct immune cell populations in restoring and regulating blood perfusion important for healing injuries, which she has demonstrated can be utilized when developing immunotherapies to accelerate wound healing. As direct results of her research, a spin-off company, Ilya Pharma, was formed, which is currently in Phase 2 clinical development of a drug candidate to accelerate wound healing and to treat colitis by targeting local immune cells by on-site production of human immunoactive proteins by probiotic bacteria. Prof Phillipson is a Knut and Alice Wallenberg Scholar and a member of The Royal Swedish Academy of Sciences.

Annika Jenmalm Jensen

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SciLifeLab: the National Research Infrastructure in Life Sciences

Infrastructure Director of the Science for Life Laboratory (SciLifeLab).

Annika Jenmalm Jensen is a pharmacist by training and finished her PhD in Medicinal Chemistry in 1998 at Uppsala University. She then joined the pharmaceutical industry first at Pharmacia, later at Biovitrum, where she held various positions and for the last many years worked as a project leader. In 2009, Annika left Biovitrum and started to work towards the inauguration of Chemical Biology Consortium Sweden (CBCS) where she was the Director between 2010-2016. In 2016 she was appointed Infrastructure Director at SciLifeLab which she combines being a head of division at MBB, KI. Annika has a passion for Drug Discovery and believes highly in performing the early preclinical research in close collaboration with academia.

Speakers

Markus Heidenblad

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SciLifeLab Lund: Inauguration

SciLifeLab Lund, Site Director.

Markus Heidenblad is a molecular biologist by training and finished his PhD in cancer genomics in 2004 at Lund University. After academic and industrial post-docs in the Netherlands and in Denmark, focusing on rare inherited disorders and microRNA therapeutics, respectively, he returned to Lund in 2009 to head the Clinical Genetics diagnostics laboratory at Lund University Hospital. This was the first of several management roles within the healthcare sector, including the regional Biobank. In 2016, he was recruited to build up a joint large-scale sequencing facility for clinical and translational next-generation sequencing (NGS) needs at Region Skåne and Lund University, a unit which also was included in SciLifeLab in 2016. During this time, he was also a part of the group who initiated Genomic Medicine Sweden (GMS), a national network aiming at implementing genomics-based precision medicine across Sweden, where he's been coordinating activities mainly within the solid tumour working group. While still leading the translational genomics unit at Lund University (Clinical Genomics Lund), he was appointed as the Director of SciLifeLab Lund in 2022, and is now responsible for these two units in parallel.

Esther González-Padilla

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SciLifeLab Lund: Inauguration

SciLifeLab Lund, Site Coordinator.

Esther González-Padilla holds a degree in Medicine from the University of Las Palmas de Gran Canaria (Spain) and a MSC in Public Health by Lund University. Esther completed her PhD studies in the Nutritional Epidemiology group at Lund University, with a focus on sugar intake and cardiovascular disease. Esther has collaborated several research groups in Spain, including the Unit for Bone Metabolism and the Nutrition Group at the Institute of Biomedical and Health Sciences at the University of Las Palmas de Gran Canaria. She has also participated in international programmes in the United States (University of Texas Healthcare Centre at San Antonio) and in the United Kingdom (Unit for Biocultural Variation and Obesity, University of Oxford). Additionally, Esther has been an active member of several student organisations including the Diabetes Program at Lund University's Young Researcher Network (Chairperson) and the Medical Doctoral Student Council at Lund University (Communication officer, board representative). Currently, Esther works at SciLifeLab where she holds two roles. At a local level she acts as Site Coordinator for SciLifeLab Lund, and nationally she serves as Vice-Platform Coordination Officer for Clinical Genomics.

Speakers

Trevor Forsyth

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Lund in the Spotlight I: MAX IV, ESS & LINXS

LINXS for X-ray and Neutron Science in Sweden

Director of LINXS.

Trevor Forsyth arrived in Sweden at the end of 2021, taking up the Directorship of LINXS and a Chair in Biophysics in the Faculty of Medicine at Lund University. He had previously been based in Grenoble at the Institut Laue-Langevin (ILL) where he led the Life Sciences Group and was Senior Fellow in Life Sciences. He played a central role in the development of methodologies for biological science using neutron methods and the combined use of neutrons with X-rays, and was deeply involved in the formation of the Grenoble Partnership for Structural Biology (PSB) in the early 2000s. Prior to that he was a lecturer and senior lecturer in Physics at Keele University in the UK.

Stefan Jovinge

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Lund in the Spotlight II: Region Skåne

The needs/capabilities to bring Precision medicine to the people – The academic hospital perspective

President of Research, Skåne University Hospitals.

Professor Stefan Jovinge, MD, PhD, is a specialist in critical care cardiologist who worked in Sweden and US, received his MD and subsequently received a PhD from the Karolinska Institute. He also received a degree as Global Clinical Scholar in Epidemiology/secondary analysis from Harvard University and trained in Artificial Intelligence strategies from Massachusetts Institute for Technology. He holds an adjunct Professorship at Stanford University and Michigan State University. His research within cardiac regeneration and cardiac intensive care in general and mechanical support in special has generated over 16 000 citations. He has served as a leader in Healthcare and Research over the last 15 years of them eight years as a clinician and Research Director in Michigan, US. He is very much involved in the use of healthcare data and advanced secondary data analysis to provide safer care and deliver care more efficiently, with the help of artificial intelligence, at a time when healthcare is under stress of increased need to provide healthcare with lesser availability of staff with the right competence. Stefan Jovinge currently serves as a President of Research of the Scania University Hospitals and advisor to the Health Committee of the Royal Academy of Sciences in Sweden.

Speakers

Hanna Kultima

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Data Management at SciLifeLab

Vice Head of SciLifeLab Data Centre.

Hanna Kultima, Vice Head of SciLifeLab Data Centre. Leading Data Centre activities focusing on maintenance and support of data services, based on and promoting the group's vision of developing unique and high quality research data services and support for research data management, driven by scientific needs, with a strength in IT and service management, and with open science and FAIR at the centre. SciLifeLab Data Centre is a central SciLifeLab unit, providing IT- and data management services to SciLifeLab infrastructure and research programs, such as the DDLS and PLP programs.

Erik Hedman

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Data Management at SciLifeLab

National Bioinformatics Infrastructure Sweden (NBIS).

Erik Hedman works as a data steward in the Data Management (DM) Team at National Bioinformatics Infrastructure Sweden (NBIS). NBIS is the SciLifeLab bioinformatics platform, providing bioinformatic support, infrastructure and training to the Swedish life science community. As a data steward, Erik and his colleagues offer tools, guidance, training and hands-on support in RDM. The data stewards handle requests in various RDM aspects throughout the data life cycle, such as publishing data, sharing data and code, writing data management plans (DMPs), guidance on sensitive data, and adhering to FAIR data and Open Science. A monthly drop-in session called Meet a Data Steward is jointly arranged with the SciLifeLab Data Centre.

SciLifeLab Data Management

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Data is one of the most valuable outputs of research. Good Research Data Management (RDM) is key to ensure data reuse, and maximise the value of research. SciLifeLab Research Data Management Services and Support is provided in collaboration by NBIS Data Management team and SciLifeLab Data Centre. The joint team offers tools, guidance, training and hands-on support to the Swedish life science community. We support various RDM aspects throughout the data life cycle, such as publishing data, sharing data and code, writing data management plans (DMPs), guidance on sensitive data, and to adhere to FAIR data and Open Science. We maintain the SciLifeLab RDM Guidelines and run monthly Meet a Data Steward drop-in sessions. SciLifeLab offers a DMP-tool specific for life science data Data Stewardship Wizard. SciLifeLab Data Centre is a central SciLifeLab unit, providing IT- and data management services to SciLifeLab infrastructure and research programs, such as the DDLS and PLP programs. NBIS is the SciLifeLab bioinformatics platform, providing bioinformatic support, infrastructure and training.

Speakers

David Gisslesson Nord

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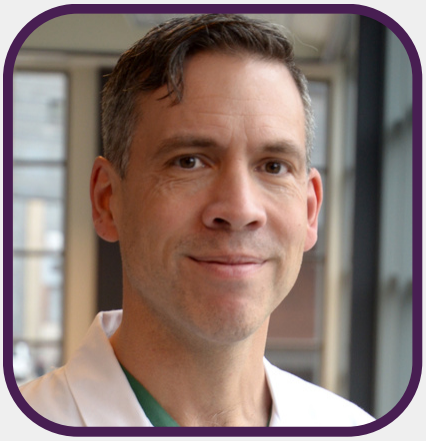

DDLS Program & Fellows

The Data-Driven Life Science (DDLS) Program

Division of Clinical Genetics, Lund University.

David Gisselsson Nord leads the GMS Childhood Cancer Working Group, providing whole genome sequencing to all children diagnosed with cancer in Sweden. He is a clinician-researcher focused on understanding how cancer cells develop resilience against current ontological treatments. He has identified one of the most common mechanisms by which cancer cells alter their genome through repeated breakage of chromosomes with eroded telomeres. Dr. Gisselsson Nord has also established a series of methods for measuring genetic instability of cancer cells that allow better prediction of prognosis and treatment response. Today he divides his time between clinical work as a paediatric pathologist and research on childhood cancer. He combines high-resolution genomics on clinical samples with mathematical modelling and methods from species evolution. By this approach, his team identified four fundamental evolutionary trajectories by which cancer cells compete with each other and evolve towards a higher degree of malignancy. Dr. Gisselsson Nord has received the Fernström Prize to Promising Young Investigators and the SIOP Award for Translational and Basic Research. He is currently vice dean for internationalisation and recruitment at the Faculty of Medicine at Lund University and the representative for Sweden in the WHO IARC's expert group on cancer research.

Camila Consiglio

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DDLS Program & Fellows

Deciphering sex differences in human immunity using systems immunology

Division of Molecular Haematology, Lund University & DDLS Fellow.

Assistant Professor Camila Consiglio, PhD, is a DDLS fellow and Systems Immunology group leader at Lund University. Camila is originally from Brazil, where she obtained her BS and MSc (Federal University of Rio Grande do Sul, in Porto Alegre, Brazil). She obtained her PhD in Immunology at Roswell Park Comprehensive Cancer Center (Buffalo, USA). She then joined Karolinska Institutet (Stockholm, Sweden) as a Marie Skłodowska-Curie Fellow, and utilised computational methods to understand human antiviral immunity. In 2023, she has started her own group at Lund University using systems immunology as a data-driven approach to decipher how biological sex impacts human immunity and disease susceptibility.

Speakers

Jacob Vogel

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DDLS Program & Fellows

Data-driven approaches toward clinical insight for neurodegenerative diseases

Department of Clinical Sciences, Lund University & DDLS Fellow.

Jacob Vogel's lab's main focus is in aging and neurodegenerative disease research, where they take advantage of large data resources to model disease progression and discover contributions to disease pathogenesis. Some of his lab's principal research avenues include characterizing individual difference in disease progression, predicting the neurobiological progression of neurodegenerative diseases, and modeling the earliest biological changes that lead to neurodegenerative syndromes. Their work achieves these goals by blending large neuroimaging and multi-omic datasets and applying to these datasets supervised and unsupervised methods in statistical learning and disease progression modeling. Jacob's research group is also privileged with a large network of collaborators that help push forward the lab's research goals by providing both expert domain knowledge and rare datasets. The group boasts a sophistication in many statistical approaches and an expertise in many types of datasets. They also have a commitment to open science, FAIR principals and contributing to the greater research community. Jacob Vogel's lab is also part of the Swedish BioFINDER study.

Derek Logan

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Cryo-Electron Microcopy

Cryo-EM at Lund University

Biochemistry & Structural Biology, Dept. of Chemistry, Lund University.

Professor Derek Logan has a B.Sc. in Chemistry with Computer Applications from Glasgow University and a D. Phil. in Molecular Biophysics from Oxford University. He has extensive international research experience from the Universities of Oxford, Strasbourg, and Stockholm. In Lund since 2001, his current academic research uses integrative structural biology methods (X-ray crystallography, small angle X-ray scattering, neutron diffraction, and cryo-electron microscopy) to understand biomolecular structure-function relationships at multiple levels of organisation and detail, with primary focus on understanding allosteric regulation in the ribonucleotide reductase family and drug design targeting the galectin family of proteins. For 15 years Derek worked as a part-time beamline scientist at the MAX-lab synchrotron (the precursor to MAX IV) and was involved in the development of facilities for structural biology at MAX IV. He is currently Secretary of the European Synchrotron and Free Electron Laser User Organisation (ESUO), which represents over 20 000 users of these photon facilities in 28 nation states. Derek also serves on an advisory panel to the European Spallation Source. He is director of the new facility for biological cryo-EM at Lund University.

Speakers

Karin Lindkvist

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Cryo-Electron Microscopy

Structural analyses of the glycerol channel AQP7 resolve novel roles in the human body

Department of Experimental Medical Science, Lund University.

Professor Karin Lindkvist, PhD, belongs to the Department of Experimental Medical Science at Lund University. Professor Lindkvist was recruited to Lund University in 2010 in an effort to strategically build up our prioritized research area of structural biology. For Lindkvist this was a strategic move to be able to combine structural biology with microscopy on clinical samples. Lindkvist is heading a group in medical structural biology combining high resolution microscopy with X-ray crystallography and single particle cryo-EM. Lindkvistoffers exceptional know-how in structural biology, and has already made significant contributions to the discipline, providing several milestone structures with 27 unique entries in the protein data bank. At the Faculty of Medicine at Lund University, Lindkvist is the sole PI performing these types of studies, thus Lindkvist research line is unique and very successful and have resulted in several very high impact publications. She has had continued funding from the Swedish research council since 2007 and from Cancerfonden since 2010, and additional funding from Diabetesfonden, NNF, SSF, NordForsk and Vinnova etc.

Simon Ekström

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Structural Proteomics & BioMS

Structural Proteomics and Biological Mass Spectrometry

Structural Proteomics, SciLifeLab and BioMS, Lund University node.

Simon Ekström received his PhD-degree in Electrical measurements (Area: Medical and chemical microsystems) in 2006 from Lund University. The PhD-thesis work was performed in a cross-disciplinary environment involving researchers from the Engineering and Medical faculties in Lund as well as from the company Astra Zeneca, also in Lund. Following the PhD-degree, Simon spent many years developing the area of microtechnology for protein analysis at the Department of Biomedical Engineering, while also working in a start-up company, based on his ideas, where he was responsible for R&D . In 2017 he transferred to the medical faculty and joined BioMS to build up and develop HDX-MS as resource for structural protein analysis, since 2021 he is head of unit for the Scilifelab unit Stuctural Protomics, part of the ISB platform, where he and his colleagues have been very successful in helping researchers and companies understand different aspects of protein structure, dynamics and interaction.

Speakers

Carl Sandén

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Structural Proteomics & BioMS

SLAMF6 as a novel target for cancer inmunotherapy

Division of Clinical Genetics, Lund University.

Carl Sandén, Ph.D. is a senior research scientist at the Division of Clinical Genetics at Lund University. His work aims to identify and characterise novel therapeutic targets on leukaemia stem cells by combining integrative sequencing with experimental in vitro and in vivo model systems. He is also a co-founder and board member of Lead Biologics, which develops antibody therapeutics against cancer and other diseases.

Ulrich Pfisterer

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Clinical Genomics Lund

Clinical Genomics Lund

Clinical Genomics Lund, Single Cell and Spatial Facility.

Ulrich Pfisterer has a master's degree in molecular biology from the Westphalian University Recklinghausen (Germany), and a PhD in Medical Science with specialization in Neurobiology from Lund University (Sweden). Additionally, Ulrich Pfisterer has several years of working experience within single cell sequencing analyses as well as within Neurodevelopmental Disorders such as Epilepsy and Schizophrenia from the Biotech Research and Innovation Centre (BRIC) in Copenhagen (Denmark). During his PhD studies, Ulrich Pfisterer pioneered reprogramming of human skin cells into neuronal cell subtypes for application in cell replacement therapy, disease modeling and drug screening in the lab of Prof. Malin Parmar at Lund University (Sweden). In 2019, Ulrich Pfisterer joined the Center of Translational Genomics (CTG) and SciLifeLab to establish and continuously develop the Single Cell and Spatial platform (CTG). Since 2022, Ulrich Pfisterer is vice head of unit for CTG and leading the Single Cell and Spatial platform at CTG.

Speakers

Gustav Smith

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Clinical Genomics Lund

Single cell profiles of the human heart in health and disease

Department of Cardiology, Lund University and Skåne University Hospital.

J. Gustav Smith is a clinical cardiologist and translational researcher. He has a longstanding interest in the root causes of heart disease and the transition from population-level to individual-level cardiovascular medicine. To this end, his research group leverages big data analysis drawing on methods from genetic epidemiology and functional genomics. He has a particular interest in the pathways leading up to end-stage heart failure and in the transplanted heart. His research has resulted in >200 publications in leading journals including Nature, New England Journal of Medicine, Lancet, JAMA and Nature Genetics. The research group currently bridges across Lund University, Skåne University Hospital, Gothenburg University and Sahlgrenska University Hospital. In addition to his affiliation to the Department of Cardiology, he is also affiliated with the Wallenberg Centre for Molecular Medicine (WCMM) at Lund University, the Lund University Diabetes Centre (LUDC), and the Department of Molecular and Clinical Medicine at Gothenburg University.

Olof Gidlöf

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Clinical Genomics Lund

Single cell profiles of the human heart in health and disease

Department of Cardiology, Lund University.

Olof Gidlöf is associate professor in experimental cardiology and principal investigator of the Cardiovascular Epigenetics unit within the Department of Cardiology at Lund University. OG has a background studying the role of non-coding RNA and epigenetics in cardiovascular disease at Lund University, University of Miami and the Scripps Research Institute. Currently, OG's research is mainly focused on molecular and translational studies of heart failure, including large scale single cell profiling of human hearts.

Capabilities:
Pandemic Laboratory Preparedness (PLP)

Staffan Svärd
Scientific Lead
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Ulf Ribacke
Scientific Co-Lead
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Alice Sollazzo
Coordinator
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About us

The COVID-19 pandemic has had a devastating impact on society and healthcare systems all over the world. But, the extraordinary speed with which the scientific community responded helped bring the pandemic under control.

During a pandemic, scalable laboratory capacity is vital. Resources, knowledge, competence, and technology must be readily available and quickly shareable.

In December 2020, the Swedish government commissioned SciLifeLab to build laboratory capacity to mitigate the effects of future pandemics. We are optimising SciLifeLab's operations to support and complement the work of other government and regulatory entities at a national and local level. Currently the network consists of 21 different units spread over the country working on different aspects of pandemic laboratory preparedness.

We believe pandemic laboratory preparedness can be reached through:

- **Research support** - focused on diagnostics, infection analysis, immunity, and resistance development related to viruses, bacteria, and other disease-causing organisms.
- **Training** in pandemic laboratory preparedness - focused on sequencing, genetic analysis, immunological methods, and big data management.
- Support of **data** management, sharing and open data during pandemics.
- **Collaborations** nationally and internationally with other research infrastructures and governmental institutions.
- Permanent **investments** in infrastructure and capabilities at SciLifeLab that can be used during pandemics and in precision medicine.

Programme

14:00 - 14:20
Welcome and Introduction to the PLP program.
Staffan Svärd (SciLifeLab).

14:20 - 14:40
Establishing sequencing-based viral diagnostics for pandemic and outbreak diagnostics in the clinical laboratory.
Patrik Medstrand (Lund University).

14:40 - 15:00
CoVASC - COIVD Vaccination Antibody structural correlates.
Johan Malmström (Lund University).

15:00 - 15:15
Panel discussion: What can be done in PLP nationally and in Lund?
Moderated by Ulf Ribacke (SciLifeLab).

Venue: E12018

Capabilities: Planetary Biology (PB)

Olga Vinnere Pettersson
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Stefan Bertilsson
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Jacob Höglund
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Anders Andersson
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Anabella Aguilera
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About us

Planetary Biology Capability at SciLifeLab arises from the urgent need for trans-disciplinary and coordinated approaches to study all the different forms of life – the Earth's biodiversity – from single molecules and cells to individual species, species communities, ecosystems, and their functioning on the planet.

The Planetary Biology Capability aims to make use of SciLifeLab's national research infrastructure, technology, and scientific excellence to promote and accelerate ecosystem- to planetary-scale life science research, linking molecular-scale understanding to ecosystem function and biodiversity.

In order to achieve this, we plan to:

- **Build** a strong national Planetary Biology community.
- Increase SciLifeLab's **accessibility** and tailor services for the PB community.
- Promote **knowledge exchange** between the PB community, stakeholders and SciLifeLab.
- **Outreach and engage** with the community, translating knowledge to foster public debate and opinion.

Programme

14:00 - 14:15
Introduction to the PB concept and capability leads.
Anders Andersson (SciLifeLab) & Olga Vinnere Pettersson (SciLifeLab).

14:15 - 15:00
Scientific talks from local researchers using SciLifeLab Planetary Biology Capability.

- Åsa Grimberg (SLU Alnarp)
- Catherine Paul (Lund University)
- Bengt Hansson (Lund University)

15:00 - 15:15
Joint discussion.

Venue: E12022

Capabilities: Precision Medicine (PM)

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About us

Sweden has high ambitions to be a leading nation within precision medicine, and through the Clinical Genomics platform SciLifeLab plays an important role in the introduction of genomics-based precision medicine in healthcare. To further strengthen and coordinate SciLifeLab's contribution to precision medicine using our full range of technology- and data capabilities, the capability for precision medicine was established in June 2021.

An important mission during the first two years has been to define and describe a strategy for SciLifeLab's contributions to precision medicine.

SciLifeLab's Roadmap for Precision Medicine was published in June 2023, and has four strategic objectives:

- Promote **technology**- and **data**-driven precision medicine research at SciLifeLab
- Increase **accessibility** of the SciLifeLab infrastructure for translational research and clinical studies
- Enhance **awareness and competence** on technology- and data-driven precision medicine
- Establish effective **partnerships** between SciLifeLab and key stakeholders in precision medicine

Programme

14:00 - 14:10
Introduction to the PM capability. The SciLifeLab Roadmap for Precision Medicine.
Päivi Östling (SciLifeLab).

14:10 - 14:25
Implementing whole genome sequencing for all children with cancer in Sweden.
David Gisselsson Nord (Region Skåne, Lund University).

14:25 - 14:40
TBA
Sonja Aits (Lund University).

14:40 - 15:15
Panel discussion

- Anders Edsjö (Region Skåne, Genomic Medicine Sweden)
- Stefan Jovinge (Region Skåne)
- Jacob Vogel (Lund University, DDLS Fellow)

Venue: E12015

Moderators

Lena Eliasson

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Session 1: Introducing SciLifeLab to Lund

Vice Dean at the Faculty of Medicine, Lund University.

Lena Eliasson is Professor in Experimental Diabetes Research (2011) at Lund University where she currently also is Vice Dean at the Medical faculty. She is also a member of SciLifeLab board. As Vice dean her areas of responsibility is working environment and research infrastructure, and among other things she is chair for the board of SciLifeLab@Lund. Eliassons research aims to understand cellular mechanisms underlying impaired islet hormone secretion contributing to the pathogenesis of diabetes and she is part of Lund University Diabetes Centre (LUDC). Lena Eliasson has an MSc in Engineering Physics from Chalmers Technical University in Gothenburg (1993) and a PhD in Cellular Physiology from the Medical faculty at Gothenburg University (1997).

Karin Tran-Lundmark

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Session 2: Paired Talks

The Paediatric Heart Center, Skåne University Hospital, Dept. of Experimental Medical Science and Wallenberg Centre for Molecular Medicine (WCMM) Fellow, Lund University

Karin Tran-Lundmark, MD, PhD; is a a cardiologist at Skåne University Hospital and Associate Professor at Lund University. She received her MD/PhD degree from the Karolinska Institute in Stockholm. Her current clinical focus is pulmonary hypertension and advanced heart failure/transplantation. She spends 50% of her time in the clinic and 50% at the Biomedical Center in Lund conducting translational research. The main research focus is vascular remodeling in pulmonary hypertension and the role of the extracellular matrix in pulmonary vascular disease. Over the last few years Dr Tran-Lundmark and her group have started to use synchrotron-based phase contrast micro-CT for visualization of the vascular micro-anatomy in severe pulmonary hypertension. The imaging is non-destructive and can be combined with other methods like immunohistochemistry and RNAscope (in situ hybridization) to determine molecular mechanisms in search for potential therapeutic targets.

Moderators

Vinay S. Swaminathan

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Session 2: Paired talks

Department of Clinical Sciences, Lund University and Wallenberg Centre for Molecular Medicine (WCMM) Fellow.

Associate Professor Vinay Swaminathan is a senior lecturer in the Division of Oncology, Lund and a fellow at the Wallenberg Centre for Molecular Medicine (WCMM) where his laboratory investigates the fundamental mechanisms that govern cellular function downstream of cell-mechanical extracellular matrix (ECM) interactions. The group primarily utilises state-of-the-art high and super-resolution microscopy techniques in combination with approaches from materials engineering and biophysics to dissect pathways known as mechanotransduction pathways in both normal tissue as well as in the context of tumour proliferation and metastasis. Prior to coming to Lund, Vinay was a Research Fellow at the National Institutes of Health, Bethesda, USA and holds a PhD degree in Materials Sciences from University of North Carolina Chapel Hill, USA.

Organisation Committee

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Lund University

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Simon Ekström
Structural Proteomics & BioMS
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