



### **Words from the Director Stephen Hall**

There has been a lot of activity at LINXS during the first months of 2021! We are delighted to announce a number of new and exciting activities and initiatives.

To begin with, we are launching a new webinar series at LINXS focusing on science and scientific breakthroughs at some of the world's largest research facilities. These webinars also have the aim to help researchers to identify the best facilities and beamlines for their particular research questions. We are also organising two workshops on magnetic materials in the spring, as well as workshops on membrane proteins. At the end of this week, we will have a workshop on amyloids. Furthermore, in recent weeks LINXS has hosted some interesting discussions on the potential to establish a structural biology centre in Science Village Scandinavia between ESS and MAX IV.



We are happy to announce that we will host and co-organise, in collaboration with SNS and SwedNess, the (virtual) 2021 Swedish Neutron Week 10th-12th May. This event we hope will initiate new collaborations and discussions on neutron science. Also in the pipeline are three doctoral schools in collaboration with SwedNess, which we are hoping to run before the summer: on neutron imaging, SANS, and life sciences application of neutrons.

In June, we will have the second Northern Lights on Food workshop, following up from the very successful workshop we had in 2019, and the recent Masterclass on Food.

In this newsletter, we have gathered interviews with some of the researchers who are organising activities at LINXS, to give you an insight into some of the challenges and opportunities within their fields, and to stimulate interest in the activities and sow the seeds for new initiatives and collaborations. We also share some career opportunities and other related news.

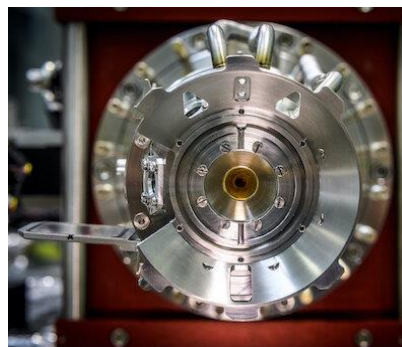
Take care and stay safe!

### **New webinar series at LINXS!**

A new webinar series at LINXS will introduce the latest scientific breakthroughs and developments at large scale research facilities from all over the world. The aim is to support researchers, from academia and private sectors, to choose the best suitable beamlines for their science.

– For the first time, science directors from different x-ray and neutron facilities will explore - together with the participants - the science, the methods, the applications and the collaborations carried out at their research site, says webinar organisers Anurag Kawde, post-doc at LINXS, and Veronica Lattanzi, PhD-student at the CMPS and LINXS board member.

[Read an article about the new webinar series at LINXS.se](#)



### **Membrane Proteins: problem solving without "one size" size fits all solutions**

Despite the recent advances in structural biology, membrane proteins remained notoriously difficult to study. These proteins are crucial to all forms of life, and are involved in essential cellular and physiological processes. At LINXS, two workshops on how to overcome the challenges of membrane protein structure determination will be organised this year.

– Problem-solving where there is no universal solution. This is how I would describe working with membrane protein structural biology. We want to discuss benefits and disadvantages of different expression systems and methodological pipelines, says Erika Tóth, postdoctoral fellow at Functional Zoology at Lund University, and member of the working group on membrane proteins.

[Read an article with Erika Tóth at LINXS.se](#)



### **Introducing and implementing micromagnetic simulation techniques in the study of magnetic materials**

User-friendly computational models are key to take neutron science to the next level. But today many researchers lack both the tools and the time to apply more refined theoretical models in their own work. Two LINXS workshops on magnetic materials aim to introduce numerical simulation techniques and methods, and discuss possibilities of how to implement them in small angle neutron scattering and reflectometry.

– To analyse your scattering data you need a model. It is not enough to have your interesting sample, your



neutron technique; you also need a theoretical model. But the underlying equations are often so difficult and complex that you cannot write down their solution on a piece of paper; you must use numerical computation, says Andreas Michels, associate professor in Physics and Materials at the University of Luxemburg.

[Read an article about the upcoming magnetic material workshops at LINXS.se](#)

### **Exploring the potential for an ISB centre at Science Village Scandinavia**

Examples from Hamburg in Germany and Grenoble in France show that there are many benefits of bringing together structural biology researchers in a dedicated centre – with laboratories, equipment, and physical spaces to meet.

At LINXS, a first workshop has been held to explore the potential to set up a similar structural biology centre in Sweden. It would be located between MAX IV and ESS, in Science Village Scandinavia, an area in the North-East of Lund currently being developed to house research, industry, and science outreach.

– While there are many positives with a physical centre, we want to start with the community here in Lund. Is there an interest among researchers to do this? If it is, we need to figure out how to do it in an optimal way, says Karin Lindkvist, Integrative Structural Biology Core Group Leader at LINXS, and Professor in Medical Structural Biology at Lund University.

[Read an article about the discussions at LINXS.se](#)



### **Open Meetings in the New Materials Theme**

Working group 2 (charge transfer materials) and 3 (light harvesting processes) under the Theme New Materials have open meetings every Thursday for researchers and collaborators. Once every month the meetings are open to researchers from the LINXS community with an interest to discuss research related to charged transfer materials and light harvesting processes.

For more information on times and set up for the meetings, contact [Jens Uhlig](#).

### **Funding and career opportunities in x-ray and neutrons**

- [New Scientist position open for the MAIA \(Materials Imaging and Analysis\) beamline at the Elettra synchrotron facility \(Trieste, Italy\)](#)



### **LINXS events and related events**

Here is a list of all the current events and activities taking place at LINXS, in partnership with LINXS or related to LINXS.

Events are open to all researchers from academia and industry.

[LINXS Event - Catalysis Working group Webinar - "Research in Catalysis at MAX IV" by Andrey Shavorskiy, 2 March](#)

[LINXS Related Event - LENS Webinar #9, Global Health Threats: Elucidating amyloid aggregation mechanisms behind neurodegenerative diseases, 4 March](#)

[LINXS Event - Amyloid Workshop - Heart and Mind: linking in vitro science to the clinical context, 5 March](#)

[LINXS Related Event - Introductory workshop for vibrational spectroscopy applications in environmental sciences, 12 March](#)

[LINXS Related Event - LENS Webinar #10, Global Health Threats: Drug development & drug delivery systems, 25 March](#)

[LINXS Event - Magnetic materials: linking scattering data to magnetic simulations, Part I, 25 - 26 March](#)

[LINXS Event - Magnetic materials: linking scattering data to magnetic simulations, Part II, 8 - 9 April](#)

[LINXS Partner Event - BigScience@LU • Defining areas of Strength for LU in Big Science, 15 April](#)

[LINXS Partner Event - Swedish Neutron Week 2021, 10 - 12 May](#)

[LINXS Related Event - QENS/WINS 2021 Online Conference, 17 - 21 May](#)

**LINXS Event - Structural Resolution of Membrane Protein: From Expression to Sample Preparation, 25 - 26 May**

[LINXS Partner Event - Northern Lights on Food 2, 9-11 June 2021](#)

[LINXS Related Event - The 2021 CINEMAX VI PhD summer school and online course, 23 - 27 August](#)

[LINXS Related Event - SCIENTIFika, January 2020 - December 2021](#)



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