



Words from the Director Stephen Hall

We are delighted to welcome another new theme to LINXS: “Northern Lights on Food”. This will be our fifth theme since the institute started its operations. The Northern Lights on Food theme has grown out of one of our working groups at LINXS under the Imaging Theme, which highlights how the LINXS model can support the growth of research ideas organically from initial ideas to a full theme with national, international and industry participation.

We also have a new call out for a sixth theme related to any of the LINXS focus areas: hard matter, soft matter and life science. We hope to see a range of innovative proposals and we particularly encourage proposals that involve cross- and trans-disciplinary interactions between experimentalists, theoreticians and modellers to provide new perspectives on x-rays and neutrons. We also encourage researchers from across Sweden and the rest of the world to get involved!



Our new webinar series, “Science at Large Scale Research Facilities” got off to a great start last week with an inspiring first webinar by Sakura Pascarelli from European XFEL, speaking on new science opportunities, start of user operation and first results. If you missed the live event, the video will be made available on LINXS website soon. Keep an eye on the LINXS website for the continuation of this series with presentations on ESRF, ILL, SNS and more. On-line interactions have also continued within the Themes, including a number of successful workshops on magnetic materials, membrane proteins and amyloids.

Coming up, we are organising three graduate schools in collaboration with SwedNess on: imaging, SANS and life-sciences. We are also hosting the Swedish Neutron Week together with SwedNess and SNSS. You can read more about these two initiatives below. In June, we will have the second edition of the Northern Lights on Food workshop.

Finally, we can inform you that our Annual Report Highlights for 2020 is almost done! Here you can get an update on our theme achievements from last year, as well as peruse some statistics on our scientific activities and other operations.

Take care and stay safe!

Northern Lights on Food - New Theme at LINXS

LINXS is delighted to announce a new theme: Northern Lights on Food. It will run from August 2021 to June 2024 and gathers a range of national and international researchers and industry representatives within five working groups.



– Through this theme, we aim to have an impact on the design of instruments and development of neutron and x-ray techniques, advance data analysis methods to fit food-specific research questions, and begin to educate a new generation of food scientists and technical experts, says theme leader Selma Maric, Business and Industry Coordinator at MAX IV.

The theme will bring together expertise in food science and technology with experts in characterisation methods using neutrons and x-rays. This includes the whole food chain from farm to fork and beyond. It will also work closely with industry to help advance the applied aspects of food science.

[Read an article about the new theme at linxs.se](#)

New LINXS Theme Call 2021

LINXS invites proposals for a new Theme relating to the application of x-ray and neutron based science on any topic related to the LINXS focus areas (hard matter, soft matter, life science).

We welcome proposals that involve cross- and trans-disciplinary interactions between experimentalists, theoreticians and modellers to provide new perspectives on x-rays and neutrons. We particularly encourage Theme proposals that expand the scope of neutron and x-ray based research into new areas and to address new research questions.



[Read more about the theme call and apply at linxs.se](#)

Welcome to a Q&A about applying and managing a Theme at LINXS, 6th May

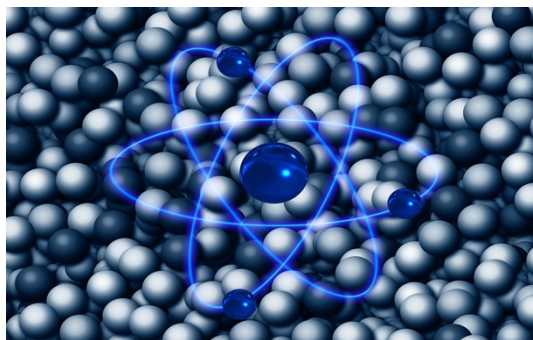
In relation to the new open Theme Call, we wish to welcome you to a Q&A about how to apply and manage a Theme at LINXS.

[Read more about the Q&A and register your attendance at linxs.se](#)

Neutrons, neutrons, neutrons! LINXS hosts Swedish Neutron Week in May

This year, LINXS will host Swedish Neutron Week, taking place in May. The week will bring together and enhance the Swedish community and research involving neutron techniques. The event is organised in collaboration with SNSS (Swedish Neutron Scattering Society) and SwedNess.

– Generally, LINXS' mission is to promote and highlight the x-ray and neutron methods, experiments and tools most appropriate to do science. However, a



special focus, like on neutrons at the Swedish Neutron Week, is a good opportunity to showcase what's going on in a specific area of Swedish research and to maintain and grow the associated community, says Stephen Hall, LINXS Director.

[Read an article about Swedish Neutron Week at linxs.se](#)

Reflections from workshops hosted by the Magnetic Materials Working Group

The Functional Magnetic Materials working group has hosted two workshops this spring as a part of the New Materials theme.

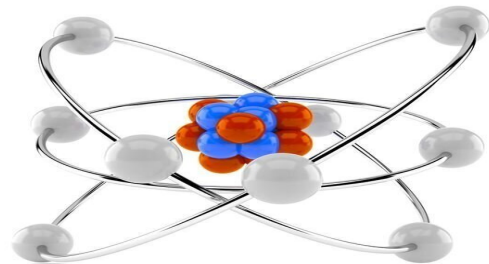
– It is clear that there is growing and sustained interest in the area of magnetic materials. Discussions and presentations during the two workshops highlight some of the most pressing challenges within the field, such as how to be able to confidently link neutron scattering experimental data to well-understood simulations of the magnetization, says theme leader Elizabeth Blackburn, Professor in Physics at the Division of Synchrotron Radiation Research at Lund University.



[Read a summary of the two workshops at linxs.se](#)

Image, Life Science and SANS - three graduate schools at LINXS

Three PhD-level schools – all organised in collaboration with SwedNess, a graduate school with an aim to educate doctoral students to expand Sweden's expertise in neutron techniques – will take place at LINXS this spring and summer. The topics cover imaging techniques, small angle neutron scattering (SANS) and life sciences.



– It is important to host both technique-based graduate schools and more subject-based ones like the one on life sciences, to engage new users and seed an interest in x-rays and neutrons. Subject-based schools enable teachers and students to dig deeper into discussing which techniques are best suited to answer the specific scientific and experimental challenges of the subject areas. Such schools open discussions at an early stage in people's career of what experiments might be best suited to their work and what analysis options are open to them, says LINXS Director Stephen Hall.

[Read more about the graduate schools at linxs.se](#)

Funding and career opportunities in x-ray and neutrons

- [SSF : EU Horisont Europa ansökningsstöd – en hävstång för svensk forskning!](#)
- [Lund University support for EU Horizon projects \(for Lund University researchers\): contact Forskningservice.](#)

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 - WEBINAR: CoWork series - Playing with coherence in soft X-ray scattering, with Claudio Mazzolit, 22 April](#)

[LINXS Event - Webinar: How can researchers at MAX IV benefit from LINXS?, 23 April](#)

[LINXS Event - WEBINAR: CoWork DUO webinar: Holographic tomography as a new tool for bioimaging and 3d Virtual Patho-Histology of Lung Tissue from Covid-19 Patients based on Phase-Contrast X-ray Tomography, 29 April](#)

[LINXS Event - WEBINAR: Science at Large Scale Research Facilities - Neutron Sciences at the Oak Ridge National Laboratory, 5 May](#)

[LINXS Event - Everything you want to know about applying for and managing a Theme at LINXS!, 6 May](#)

[LINXS Event - WEBINAR: CoWork series - Investigating the early life on Earth with nanoscale X-ray coherent imaging, with Lara Maldanis, 6 May](#)

[LINXS Related Event -ESRF-EBS Workshop "Dark Field X-ray Microscopy", 6 May](#)

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

[LINXS Partner Event - SWEDNESS/LINXS Doctoral-level course on neutron imaging, 17 - 20 May](#)

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

[LINXS Event - Catalysis Working group webinar - Oxide formation at Pt-Sn model catalyst surfaces, with Lindsay Merte, 18 May](#)

[LINXS Event - WEBINAR: CoWork DUO webinar: X-ray ptychographic topography, a new tool for strain imaging - Diffraction of X-ray by thin perfect crystals, May 20](#)

[LINXS Event - Membrane Protein workshop: Structural Resolution of Membrane Proteins: From Expression to Sample Preparation, 25 - 26 May](#)

[LINXS Partner Event - SwedNESS PhD school: Small Angle Neutron Scattering \(SANS\), 31 May - 4 June](#)

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

[LINXS Partner Event - SwedNESS PhD school: Neutrons in Life Science and Biomaterials, 14 - 18 June](#)

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

[LINXS Related Event - ESRF/ILL Undergraduate Student Summer Programme on X-Ray and Neutron Science, 5 September - 2 October 2021, Grenoble, France, Sep 5 - Oct 2](#)

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



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