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## Words from the Director Trevor Forsyth

We are heading into May with an extremely busy set of activities! Following our attendance at the <u>recent kick-off</u> <u>meeting of the HALRIC project</u> in Copenhagen, we are now rapidly approaching the next <u>LINXS Science Day on</u> <u>the 4th May</u> – the number of registrations is even higher than last year but there are still a few places left before the real life participation will have to close. The programme contains presentations from senior managers at MAX IV, ESS, and ISIS (UK) on developments at the large facilities, as well as on plans for LINXS itself as it charts its way towards a new future on the Science Village.



There will also be a session driven by contributions from young researchers, as well as updates on three new Themes that will start in the autumn. These were selected by the LINXS management, drawing heavily on the advice of the Science Advisory Board (SAB) – who put a great deal of effort into the evaluation of the two stage application process.

The successful Themes are a (i) Heritage Science, submitted by Mikael Fauvelle (Lund Department of Achaelogy and Ancient History), and jointly led between Sweden and Norway, (ii) Chemistry of Life, submitted by Andrew Hudson (Leicester University, Institute for Structural and Chemical Biology, UK), (iii) Environment and Climate submitted by Dimitrios Floudas (Lund Biology Department). Representatives from each of these new Themes will make short summary presentations at the Science Day.

You can read more about these further down in this newsletter.

Yesterday, we had a great guest seminar with <u>Tamim Darwish from ANSTO in Australia</u>. who spoke about the DeuNet consortium of deuteration facilties – highly relevant of course to neutron science in the life sciences, soft matter, and chemistry.

Other events coming up soon include <u>a catalysis workshop as part of the New Materials theme</u>, and a <u>Small-Angle Scattering Clinic</u> being run as a pilot during the spring. There will also be webinars by <u>Mikael Lund on Antibodies in Solution as part of the LINXS-NIST webinar series</u> and one on <u>Bubbles in Colloid Science by Vincent Craig and Barry Ninham (ANU, Australia).</u>

On the 9th May there will be a workshop on 3D histology with X-ray micro-tomography as part of the Integrative Pharmacology and Drug Discovery (IPDD) theme, and on the 24th May IPDD will have its annual theme meeting. There are also some guest seminars and workshops coming up including one from Yuri Gerelli (Sapienza, Italy) on Planar biomembranes and neutron reflectometry, another from Pau Bernado (Montpellier, France) on A Structural Perspective of the Pathological Threshold in Huntington's Disease, and one from Michael Adams (Luxembourg) on Atomistic simulations of the magnetic neutron scattering from nanoparticles. In early June, Northern Lights on Food will hold its 4th major conference.

We also wish to welcome two guest researchers to LINXS: <u>Andrew Boothroyd (Oxford, UK)</u>, and <u>Andreas Stadler (Juelich)</u> - both will be guests at LINXS over the spring/summer period, and will I'm sure be delighted to interact with you all throughout their stays.

A final note on LINXS communications efforts - orchestrated by <u>our communications</u> <u>officer Noomi Egan</u>. Since we are growing from three to six themes, as well as a corresponding increase in LINXS activities, we will begin to send out event-focused emails weekly to remind you of what is happening during the week. We hope that this effort will make it a bit easier to follow what is happening here at LINXS!

Below please see some articles on recent theme activities, interviews, and some information on another of the ESS in-kind projects, from the commissioning scientist on the imaging instrument ODIN.

Take care and stay safe!

### HALRIC kick-off

On 20th April, LINXS had a stand at the



kick-off of HALRIC in Copenhagen.
HALRIC is an EU-supported initiative to increase the utilisation of the strong and unique life science research infrastructures and competences present in Northern Europe - more precisely Denmark, Southern Sweden, the Hamburg region, and the Oslo region.



## Three new themes to start at LINXS in September 2023!

LINXS is delighted to announce the outcome of its first national and international Theme call, opened in 2022! As noted above, three new themes will start in September: the **Heritage Science Theme**, the **Chemistry of Life Theme**, and the **Environment and Climate Theme**.

The new themes will run for three years, until August 2026.

- The incoming themes will make outstanding additions to the existing portfolio of LINXS activities, greatly strengthening the effort to develop X-ray and neutron-based research throughout Sweden and internationally, says Trevor Forsyth, LINXS Director.
- We are especially glad that they represent three very different topics and approaches. The Heritage Science Theme will take LINXS into a relatively new area, and build important links with actors outside academia, and researchers from the humanities, whereas the Environment and Climate Theme will shed light on important processes associated with environmental issues and climate change. The Chemistry of

Life Theme will take innovative approaches over a broad range of science, stimulating interactions between structural and chemical biology.

#### Read about the new themes



## Welcome to the LINXS Science Day

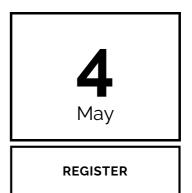
Time: 08.30 - 17.00 CET

See you at LINXS! Most people are registering for real life participation but online participation is also possible.

The Science Day will feature presentations from senior staff at **MAX IV, ESS,** and **ISIS** (UK). We will also discuss LINXS developments and future plans in expanding the LINXS community.

There will also be presentations on **early-stage researchers' science** and initiatives.

Join us at LINXS for a day of science and some mingle!





Young Researchers' Symposium Life Science -

### a resounding success!

With more than 60 participants from national and international universities and synchrotron facilities, the recent Young Researchers' Symposium Life Science in March was a great success. – There is a big need to gather, exchange ideas, and discuss science in an informal setting, says postdoctoral researcher Daniel Sarabi, who organised the event together with Swati Aggarwal, postdoctoral researcher at MAX IV.

- The day addressed all the issues we were hoping for in terms of programme content and scientific interactions. We had great and lively discussions, with many varied questions after each session. Some people would ask about methodology, some about how to prepare samples, or about the technique, says Daniel Sarabi.

Read an article about the Young Researchers' Symposium Life Science



## The Northern Lights on Food Hackathon builds crucial knowledge on data analysis

LINXS has organised Image Analysis hackathons since 2017. The aim is to build capacity within 3D data analysis and image quantification through interactive workshops. The most recent hackathon, in March, gathered almost 30 researchers and data analysts over the course of two days.

- As experiments at MAX IV, and soon ESS, increase in numbers, we are going to get more and more 3D and 4D data that we need to handle, says Stephen Hall, senior lecturer at Solid Mechanics at Lund University.
- Now, we are at a stage where you can produce these nice images with X-ray imaging, but we still have far to go when it comes to quantifying what we are seeing. We have to train people to understand what you can get out of the data, and show them ways to make the work flow more efficient.

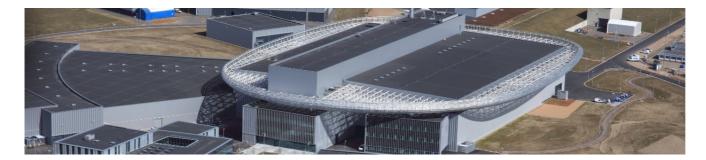
#### Read an article about the Hackathon

# Meet LINXS Guest researcher Andreas Stadler

LINXS is happy to welcome incoming guest researcher Andreas Stadler to the Institute. He will stay at LINXS from May to June, and contribute with his expertise to the IPDD theme. Andreas Stadler is a senior scientist at the Jülich Centre for Neutron Science (JCNS) at Forschungszentrum Jülich in Germany. In his research projects, he investigates the extent to which biological macromolecules can be described physically as soft matter, and which differences emerge due to their specific biological properties.

Read an interview with Andreas Stadler





## Stephen Hall leads ESS in-kind project to develop the ODIN instrument

Stephen Hall, former LINXS Director, is leading an ESS in-kind project to support the

development and commissioning of the ODIN instrument at ESS. The project is one of four in-kind projects approved by the Swedish Research Council in 2022. They are part of the Swedish contribution to ESS and comprise, for example, technical equipment or personnel, from Swedish universities to ESS.

- It is great to be part of the development of ODIN. By supporting the commissioning, we can make sure that the instrument is ready to perform well in time for the user programme and provide input from a user perspective, says Stephen Hall, senior lecturer at Solid Mechanics at Lund University.

Read an interview with Stephen Hall about the project

### Calendar

Our upcoming scientific activities within our Themes and Working Groups, and related events.

**3** May Antibodies in Solution: a LINXS - NIST Webinar Series

- Protein Interactions with Mikael Lund, Lund University, Sweden

Register

4

The LINXS Science Day

May

Register

**5** May ECIS: Bubbles in Colloid Science - LINXS partner event

<u>Register</u>

9

Integrative Pharmacology and Drug Discovery

May

- 3D histology with x-ray micro-tomography: workshop on Biomedical Imaging

Register

11

LINXS workshop

May

- Planar biomembranes and neutron reflectometry workshop with Yuri Gerelli

Register

24

Integrative Pharmacology and Drug Discovery

May

- Annual Theme Meeting

Register

31

LINXS Guest Seminar

May

- A Structural Perspective of the Pathological Threshold in Huntington's Disease with Pau Bernado

Register

**7**June

Antibodies in Solution: a LINXS - NIST Webinar Series

- Christina Bergonzo, Nist, USA

Save the date

**7-9** 

Northern Lights on Food

- Northern Lights on Food Conference IV: Why

bother about the structure of food?

#### Register

11-

LINXS outreach event

14

- BSR14 - 14th International Conference on Biology and Synchrotron Radiation

June

<u>Register</u>

**15** 

LINXS Guest Seminar

June

- Atomistic simulations of the magnetic neutron scattering from nanoparticles: towards the understanding of complex spin structures beyond the super spin model, with Michael Adams

Save the date

**MORE LINXS ACTIVITIES** 



www.linxs.se | info@linxs.lu.se | Phone: +46 70 575 2244

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