SWEDNESS/LINXS DOCTORAL COURSE ON NEUTRON IMAGING

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SWEDNESS Local Study Director (Lund)

LUND INSTITUTE OF ADVANCED NEUTRON AND X-RAY SCIENCE LINXS

LINXS - an advanced study institute focused on neutron and x-ray based sciences

- Setting the stage for optimal use of ESS and MAX IV

We are dedicated to becoming the nucleus for national and international scientific activities in Science Village Scandinavia situated between MAX IV and ESS.

The LINXS project will develop a national competence centre, research networking hub and think tank for the education of future generations of neutron source and synchrotron users.

The institute will rely on a stream of highly motivated world-leading scientists who are invited for short-term focused topical research visits in the spirit of a Kavlí institute.

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2017 – 10/2018:
Central Lund - Gamla Kirurgen

11/2018 - 2022:
Ideon delta 5
Visitor offices, meeting rooms, large seminar room

SCIENCE VILLAGE SCANDINAVIA

Long-term:
Science Village Scandinavia
40-80 Desks, Lounge, Meeting rooms

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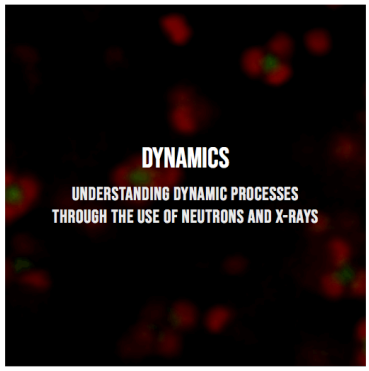
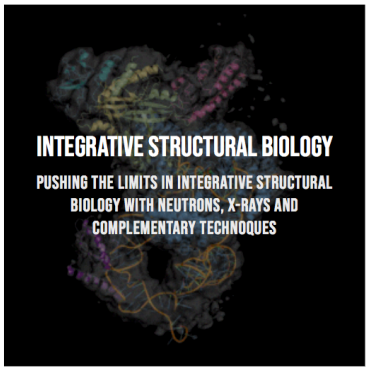
Current THEME areas:

- Imaging
- Dynamics
- Integrative Structural Biology





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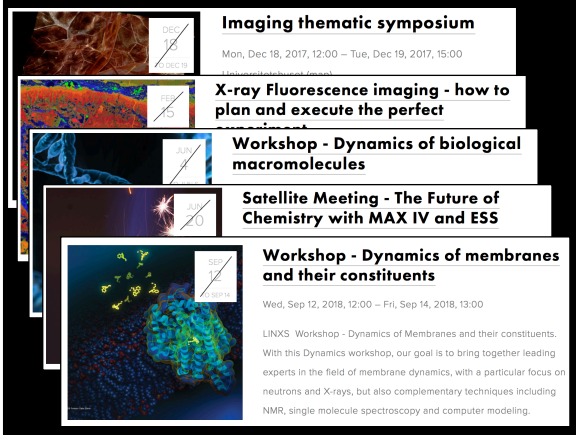
Previous events:



Imaging thematic symposium

Mon, Dec 18, 2017, 12:00 – Tue, Dec 19, 2017, 15:00

X-ray Fluorescence imaging - how to plan and execute the perfect

Workshop - Dynamics of biological macromolecules

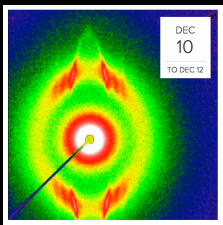
Satellite Meeting - The Future of Chemistry with MAX IV and ESS

Workshop - Dynamics of membranes and their constituents

Wed, Sep 12, 2018, 12:00 – Fri, Sep 14, 2018, 13:00

LINXS Workshop - Dynamics of Membranes and their constituents. With this Dynamics workshop, our goal is to bring together leading experts in the field of membrane dynamics, with a particular focus on neutrons and X-rays, but also complementary techniques including NMR, single molecule spectroscopy and computer modeling.

Upcoming events:

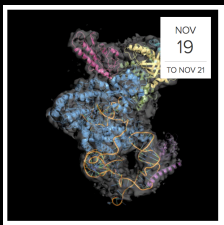


Workshop - Scattering and Dynamics of Flowing Soft Material

Mon, Dec 10, 2018, 12:00 – Wed, Dec 12, 2018, 13:00

Elite Hotel Ideon (map)

The Lund Institute of Advanced Neutron and X-ray Science (LINXS) is organizing its first thematic workshop titled Scattering and Dynamics of Flowing Soft Material. The goal is to bring together leading experts in the field of flows of soft materials, with a particular focus on neutrons and X-rays, but also complementary techniques including NMR, confocal microscopy, theory and computer modeling.



First symposium - Integrative Structural Biology

Mon, Nov 19, 2018, 12:00 – Wed, Nov 21, 2018, 12:00

The first symposium, which is the kick-off event for the new LINXS theme, will focus on advanced, cutting-edge research in the fields of macromolecular crystallography, Cryo-EM, small angle scattering, electron diffraction, mass-spectroscopy, NMR, and use of XFELs etc. The target group is primarily from academia but also from several large-scale facilities (MAX IV, ESS, etc) and industry.

- Joint SWEDNESS/LINXS Doctoral course on Neutron Imaging
- ***QuantIm*** 3D image analysis Hackathon
- …

Lecturers / Organisers

Markus Strobl
PSI

Anders Kaestner
PSI

Nikolay Kardjilov
HZB

Robin Woracek
ESS

Stephen Hall
Lund U.

Erika Tudisco
Lund U.

Course aims

- To introduce different neutron imaging modalities
  - Build awareness of different possibilities with neutron imaging
  - To provide the theoretical background to the methods
- To demonstrate the use of neutron imaging in research through real examples
- To provide the opportunity to discuss with experts in the field and with fellow researchers
- To enable effective use of neutron imaging in research
  - identification of the best methods
  - understand the strengths of different facilities
  - understand the importance of data analysis
- Gain insight into the future possibilities in neutron imaging

Course assessment

- 3 ECTS
- Summary notes for each topic
  - Neutron Tomography
  - Scattering-contrast methods
  - Energy-selective methods
  - Polarised neutron imaging
- Beamtime proposal

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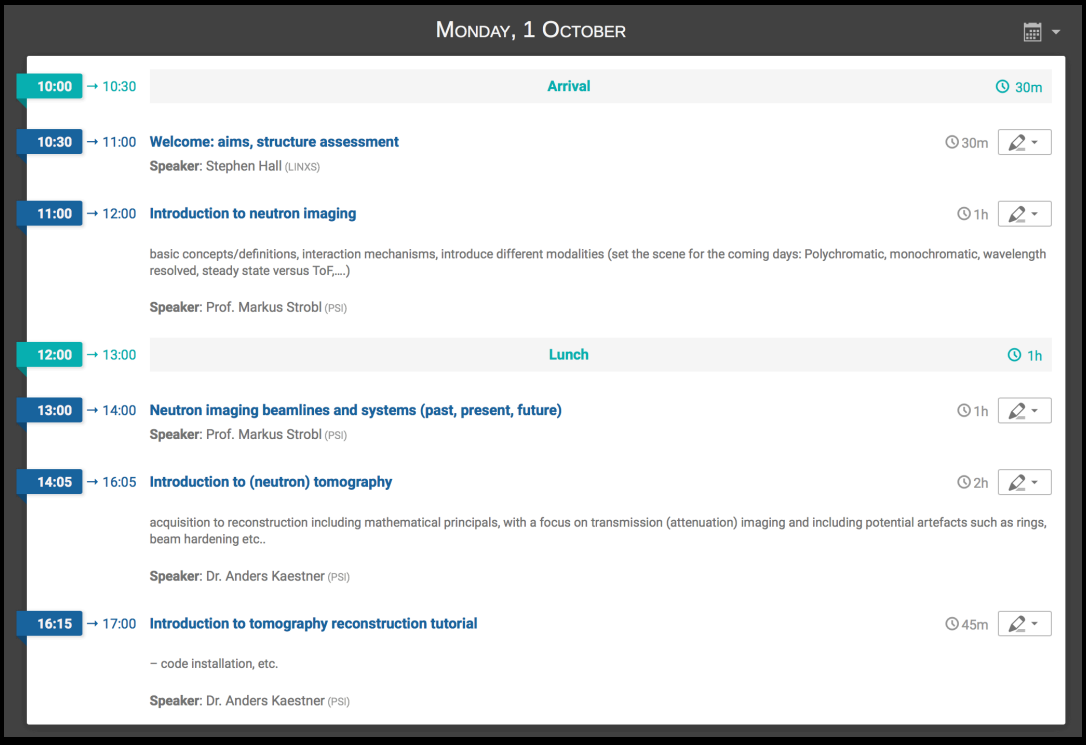

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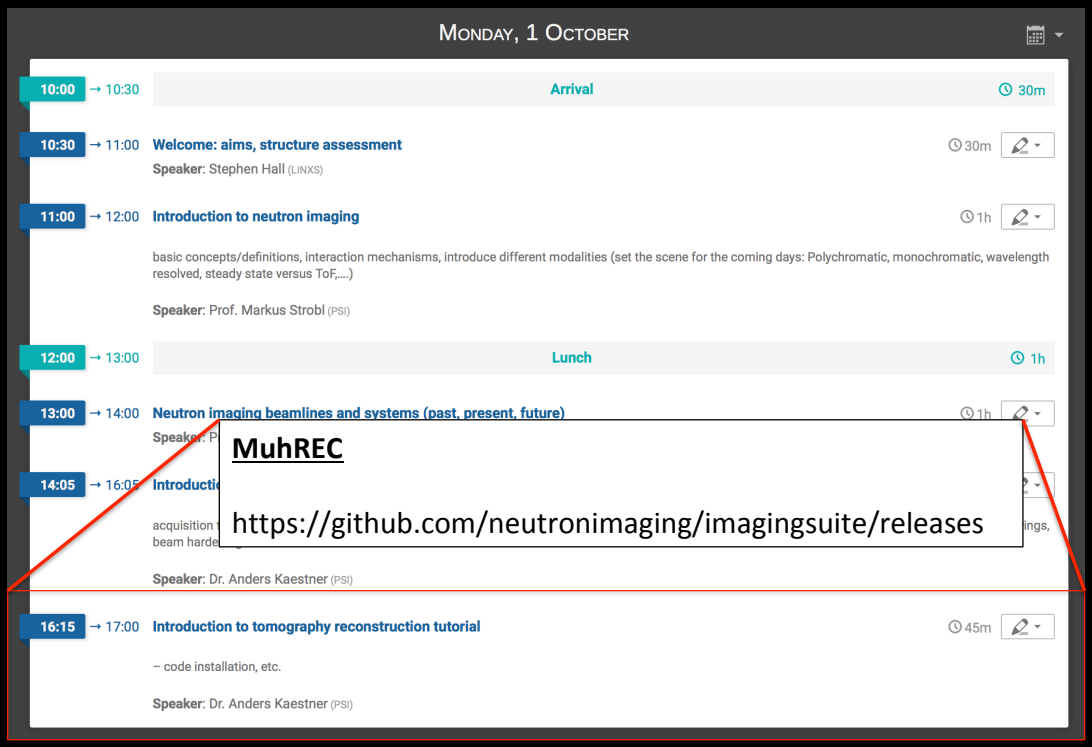

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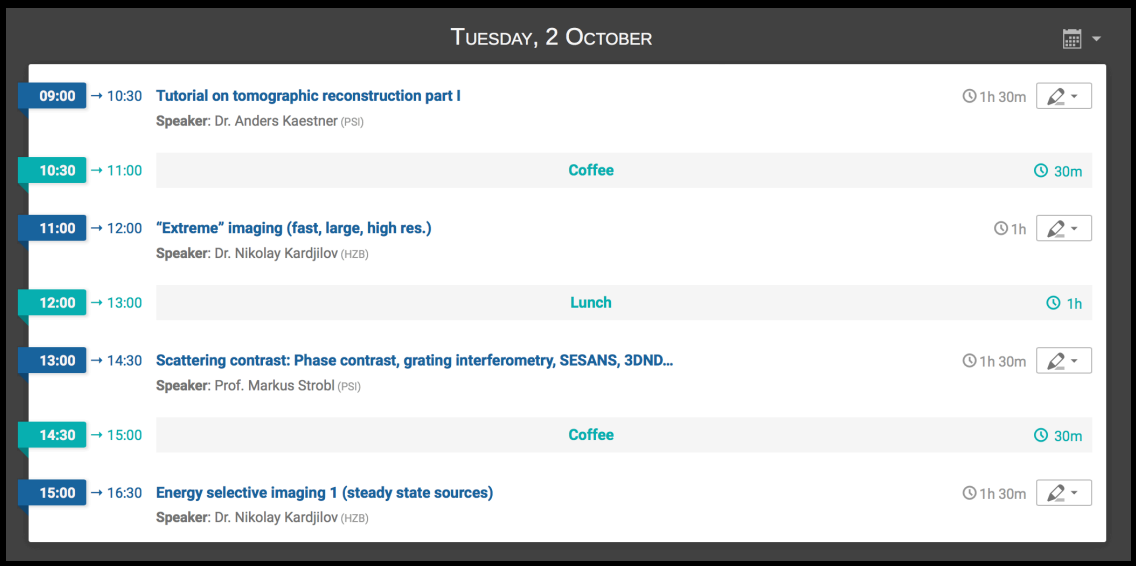

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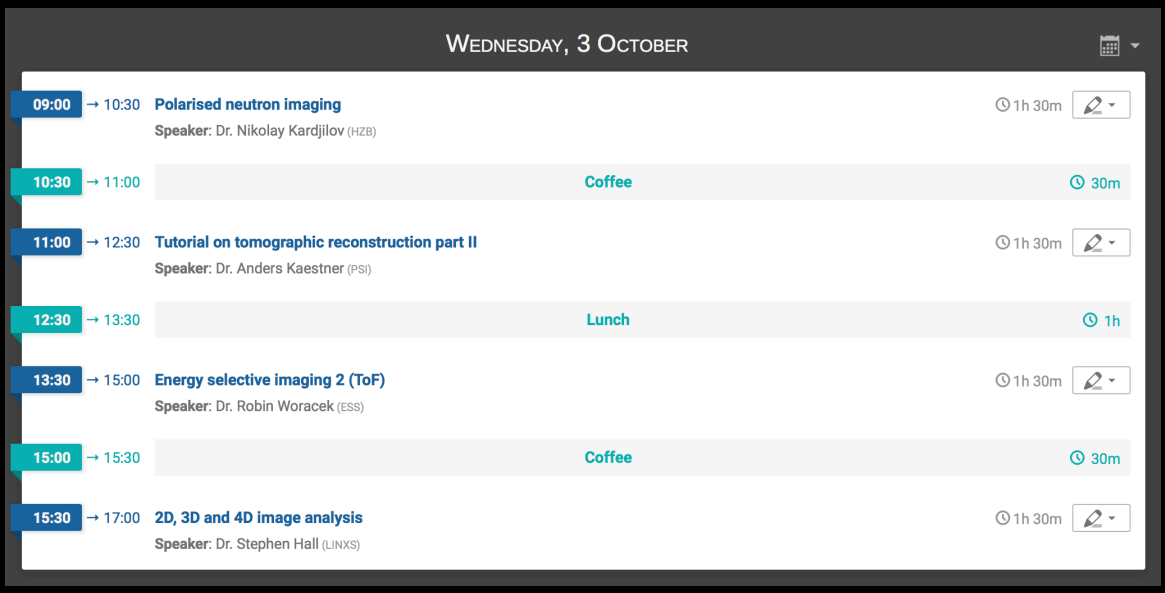

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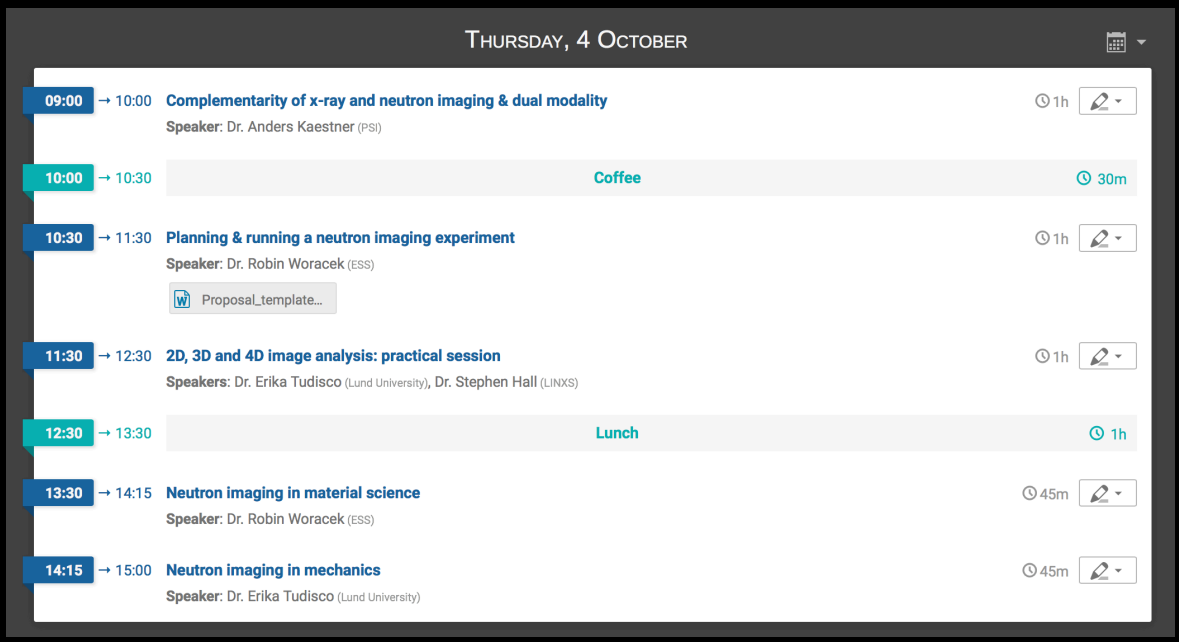

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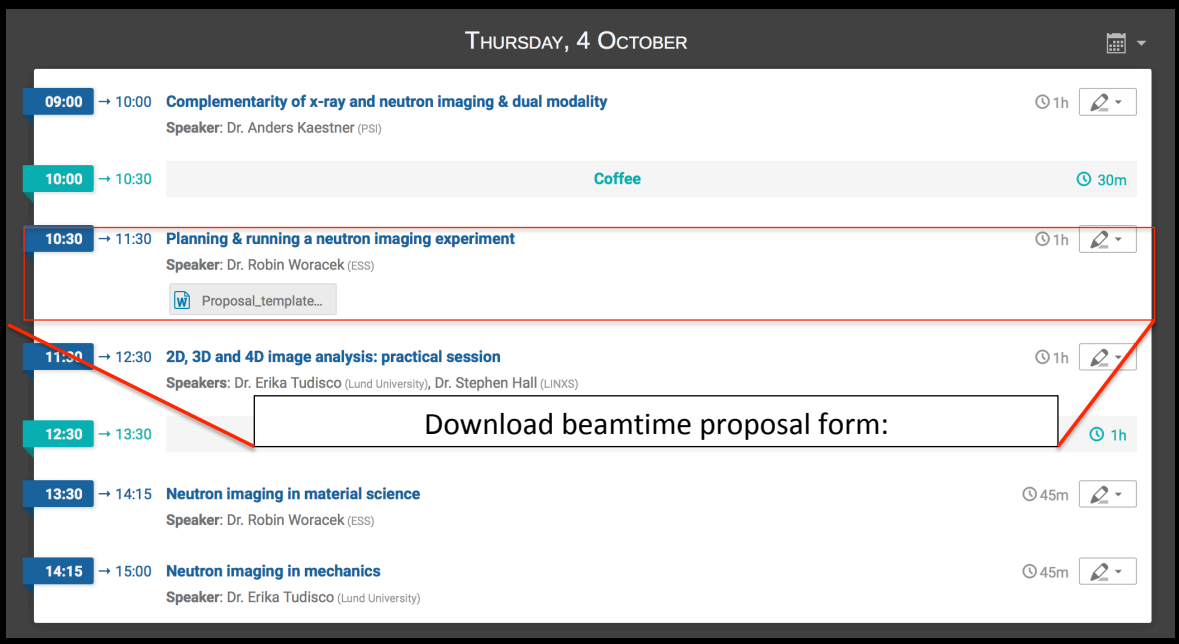

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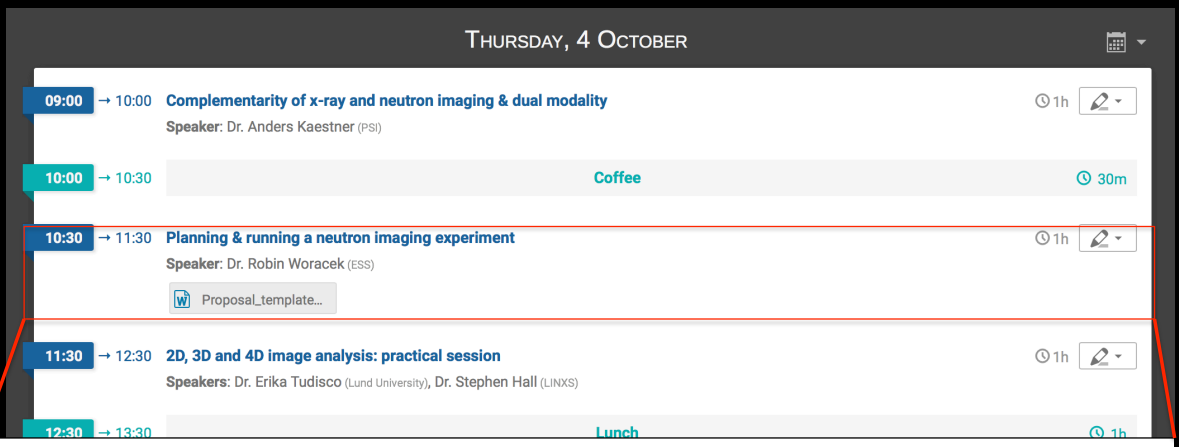

1. Presentation on basics for planning an experiment and proposal writing
2. split into 3-4 groups
3. Each group will get the same number of proposals (but not their own) and read it. They should make quick evaluation with ratings. (35min)
4. Each group prepares a presentation with good and bad examples of the proposals they reviewed.
5. Each group presents
6. Based on feedback refine proposal and submit 1 week after course ends