

Meeting Notes and Decisions

Annual General Meeting of the Canadian Institute for Neutron Scattering

Dates: 2006 October 13,14 **Location:** University of Western Ontario

Attendees:

The University of Western Ontario

Ted Hewitt (VP Research)

Prof. Dave Shoesmith

Prof. Jeff Hutter

Dr. Jamie Noël

Dr. Dmitrij Zagidulin

Brent William Alexander Sherar

Pellumb Jakupi

Yimin Zheng

John Zhang

Yang Song

Li Yan

Steve Hudson

Parisa Jamali

Nick Payne

Douglas Keddy

NRC – Canadian Neutron Beam Centre

Dr. John Root

Dr. Zin Tun

Dr. Ron Rogge

Dr. John Katsaras

Dr. Helmut Fritzsche

Dr. Ian Swainson

Dr. Zahra Yamani

Dr. Jeremy Pencer

McMaster University

Prof. John Greedan

Prof. Jacques Barbier

Dr. Sarah Dunsiger

Dr. Shahab Derakhshan

Heather Cuthbert

McGill University

Prof. Dominic Ryan

Brock University

Prof. Thad Harroun

MIT

Dr. Larry Unsworth

General Motors of Canada

Dr. Carl Fuerst

St. Francis Xavier University

Prof. Carl Adams

Prof. Michael Steinitz

Oak Ridge National Laboratory

Dr. Steve Nagler

National Institute for Standards and Technology

Dr. Chuck Majkrzak

York University

Prof. Sylvie Morin

University of Guelph

Prof. John Dutcher

Prof. De-Tong Jiang

Dr. Grzegorz Szymanski

Queen's University

Prof. Lynann Clapham

Prof. Rick Holt

Aaron Percival

FRIDAY, OCTOBER 13

Ted Hewitt (UWO – VP Research) welcomed participants

John Root (NRC – Canadian Neutron Beam Centre) reviewed the current positioning of the CNC, infrastructure for science and industry. He explained how it is important for potential users to express the present and future needs of their programs, to inform a refined technical design of a multi-purpose reactor core. An outline of a user-requirement document was suggested.

Jamie Noël (UWO – Chemistry) described the CFI project “Neutron Reflectometry”, the participation of partners (CFI, OIT, MEDT, NRC) and the ancillary equipment associated with the project, noting impressive generosity of vendors in accommodating the unexpected shortfall of funding from OIT arising from the “national” character of the project.

Zin Tun (NRC – CNBC) provided a project status report. Many components of the Reflectometer are more than 90% complete. The detector housing design is least developed. It needs to accommodate a more advanced (2d) detector that was recommended to be included in addition to the original 1d multiwire detector, and is ready for delivery from Denex.

Helmut Fritzsche (NRC – CNBC) described the way that polarized neutron reflectometry will be handled for specimens in a high magnetic field and spoke about the X-Ray Reflectometer that was acquired with significant funding from NRC, to complement the Neutron Reflectometer and provide a screening capability for specimens before valuable neutron beam time is committed.

Chuck Majkrzak (NIST) described a wide range of neutron reflectometry applications and identified the forefront of the field. He declared that the CFI-funded neutron reflectometer will be a world-class instrument that will enable cutting edge research in several areas of nanotechnology to be carried out at Chalk River.

John Root (NRC –CNBC) gave a status report on the Canadian Neutron Beam Centre, which is attached.

Dominic Ryan (McGill – Physics) described highlights of the NSERC MRS grant application that was submitted on October 1. He pointed out that user fees were being introduced, as a response to strong advice from several quarters. The structure of user fees respects the international standard that public-domain research with on-site participants entail no user fee, but visiting researchers must cover their own travel expenses. Industry clients pay full cost recovery for their access to the facility. What is new, is a user fee applied for public-domain users who do not provide an on-site participant for an experiment. The fee is set to be comparable to the cost of travel, in the instance that it is applied. Discussion was extensive, and it was decided to revisit the matter at the second half of the business meeting. The fee structure is summarized here:

Type of User	Fee	Rationale
Academic, research in the public domain, with at least one user participating on-site.	\$0 for access to the facility, but all travel expenses borne by user.	This is the standard practice at all 6 neutron beam labs in North America, and to penalize users for choosing Canada's facility would be counter-productive as "outreach".
Other research in the public domain, with at least one user participating on-site.	\$0 for access to the facility, but all travel expenses borne by user.	"
Academic, research in the public domain, but no user on-site.	\$1500 per week or part thereof. CNBC reserves the right to decline any service request.	"Virtual access" defeats goals of interdisciplinary networking with other users and facility staff. The fee for this "data collection service" is set comparable to travel expenses of one participant.
Proprietary research for AECL R&D	\$120 / h, about \$20,000 per week. CNBC reserves the right to decline a service request.	This is full cost-recovery (direct salaries, operations, minor capital) for access to the CNBC facility. No overheads for personnel charges.
Proprietary research for any third party.	\$340 / h, about \$57,000 per week. CNBC reserves the right to decline a service request.	This is full cost-recovery for access to the CNBC facility plus the attributed costs of neutrons from the NRU reactor (the latter portion remitted to AECL). Overheads charged for personnel.

John Greedan raised the issue of recognition of prominent Canadian neutron scattering researchers – to increase the profile of CINS and neutron scattering in Canada.

SATURDAY, OCTOBER 14

Interest / focus groups met to refine their presentations of user requirements for neutron scattering instruments in various scientific domains.

Presentations and plenary discussions were led by each focus group, as follows:

- | | |
|---|-----------------------------|
| 1. Neutron Reflectometry: Thin films and surfaces | Helmut Fritzsche |
| 2. Materials Science and Engineering | Lynann Clapham / Ron Rogge |
| 3. Inelastic Scattering and Magnetism | Carl Adams |
| 4. Soft materials, polymers, biomimetics | Thad Harroun |
| 5. Structural Chemistry | John Greedan / Ian Swainson |

Plenary discussion identified cross-disciplinary relationships and enabled a first list of instruments that could be located in the reactor hall (thermal), in a cold-neutron guide hall and possibly associated with a hot source.

Thermal	Cold	Hot
Stress scanner	1 Laue (microbeam) single Xtal	pdf s / liquids.
White-beam stress scanner	1 (or 2) SANS	Hot TAS
Blockhouse (on thermal guide)	1 vert. Ref	
Radiograph/tomograph (on thermal guide)	1 horiz. Ref	
TAS	1 TAS	
USANS	DCS	
1 Developmental TAS ¹ / Texture	Powder	
1 Powder High Res	Backscattering	
1 Powder High Efficiency	Spin Echo	
	Depth Profiler	
	2-axis for Xtal alignment / development/	

Motion (moved J. Root, seconded R. Rogge) – that a committee be appointed to incorporate discussions of the day and original materials into a draft Long Range Plan, with members: J. Greedan, L. Clapham, T. Harroun, C. Adams and J. Root – **Carried unanimously.**

Motion (Moved by J. Greedan, seconded by J. Noël) that the CINS Executive should identify and nominate prominent Canadian neutron scatterers for recognition through awards of the Neutron Scattering Society of America (NSSA), such as the Shull Prize or the Sustained Research Prize – **Carried unanimously.**

[Note: See prizes at <http://neutronscattering.org/NSSAPrizes/NSSAPrizes.htm>]

Motion (Moved by L. Clapham, seconded by R. Holt) that the user fee structure for the NSERC MRS framework be approved by the membership – **Carried 58%**

Election of Officers

Mary Wells (UBC) and Carl Adams (St FX) both agreed to stand nominated for positions as Secretary and Treasurer, respectively. No further nominations were proposed. Both candidates were acclaimed.

Meeting Adjourned

¹ Users expect development to be happening, and the instrument is a good vehicle for educating new users and students.