

SHUG EC Conference Call Minutes

May 1, 2015

Executive Committee members present: Souleymane Diallo, Claire White, Jen Niedziela (minutes), Morten Eskildsen, Yang Ren, Yang Zhang, Tyrell McQueen, Brad O'Dell, Eugenia Kharlampieva

Other Neutron Sciences Directorate staff present: Thomas Proffen (Neutron Data Analysis and Visualization Division (NDAV) Director), Stephen Nagler (Quantum Condensed Matter Division (QCMD) Director), Rob McQueeney (Deputy Associate Lab Director for Neutron Sciences), Laura Morris Edwards (User Office), Richard Ibberson (Chemical and Engineering Materials Division (CEMD) Director), Volker Urban (Biology and Soft Matter Division (BSMD) Director).

Next scheduled meeting: **MONDAY** June 1, 2015.

- 1) **Previous minutes and agenda:** No comments or corrections to the minutes. Claire moved to approve, and seconded by others. No additions to current agenda.
- 2) **Postpone approval of onsite meeting minutes.** Morten: requests a reminder for reviewing the onsite minutes prior to the next meeting. Rob: postponing to next call is good because the minutes were not widely available. Claire will re-read the minutes and determine whether the minutes should be widely released or just the recommendations.
 - a) **Action Item:** Claire will send an email to remind everyone to review the on-site minutes.
- 3) **Updates from NScD management:**
 - a) McQueeney
 - i) Short shutdown of 1-week. SNS beam power hovering between 1.2 and 1.3 MW. Reliability good. HFIR had 50 year celebration on April 19th, in conjunction with ANS award for nuclear historic landmark. ANS president on-site for the presentation. HFIR scheduled to restart in June.
 - ii) 15 graduate students onsite two weeks ago to do some hands on work with Instrument Scientists. Students mainly from Missouri, Indiana, and NC State.
 - (1) Souleymane gave presentation on the SHUG at this meeting to reach potential new users and to discuss concerns as new users.
 - (2) Claire: Much feedback or input? Souleymane: Some discussion but purely scientific.
 - iii) Claire: What is the spare target situation? Rob: There was one spare during low power operations, now there are two spare targets. Claire: How is the research into target failures? Rob: Report from DOE target review has arrived, but not yet digested; whether they can be distributed to the SHUG EC is TBD. Niedziela: what are the plans for high-power operation? Rob: Target power held at 1.3 MW. May be an excursion to 1.4 MW, but want to achieve steady reliability through October.
 - iv) QCMD: Steve Nagler:
 - (1) Steady progress on Corelli
 - (2) Polarizer in development at PSI for use at HYSPEC.
 - (3) Progress on equipment to allow high resolution work exploiting Larmour techniques for triple-axis suite.
 - (4) Science Highlights:
 - (a) Iron difluoride and Nickel difluoride thin films studies: mixed system ends up with two transitions instead of one transition: end up with a Griffiths phase, an antiferromagnetic glass.

- (b) Phonon measurements: ARCS and HB1. Manganese silicide; tetragonal materials with long c-axis, thermoelectric candidate material. Chimney ladder structures and low-lying optic modes are present; phonons mapped out in great detail along with simulations used to explain the anisotropic thermal conductivity.
- v) BSMD: Volker Urban:
 - (1) Work on cell-adhesion protein; studied on EQ-SANS and used selective deuteration to expose the formation of CD44-Ezrin complex.
 - (2) Growing deuterated switchgrass; part of a larger program that will use neutron scattering. Yang Zhang: What sort of neutron experiment? Urban: Function of enzymes that breakdown biomass; will use contrast mapping to look at the structure of the enzymes using SANS.
- vi) CEMD: Richard Ibberson:
 - (1) Further development of VENUS ongoing; Hassina Bilheux had week of measurement time on SNAP to do proof of principles measurements; SNAP on same moderator as VENUS and similar construction. Help with scaling measurement times, chopper characterizations, etc. Inconel slab with DOE logo used for Bragg edge measurements; lots of data collected over the week to help develop the instrument and software; community outreach area to have users in to see the capabilities of imaging. Yang Ren: What is the area of the sample? Ibberson: ~5cm x ~1 cm; What is the resolution of the Bragg edge imaging? Ibberson: Resolution we have now is around 200 um; Ren: How fast is the imaging? Ibberson: Each image was taking about 1 hour.
 - (2) Diffraction data on new supercatalytic material published in JACS; Mail-in sample on NOMAD.
- vii) NDAV: Thomas Proffen
 - (1) uSANS is now fully upgraded to DAS 2.0. nED, EPICS, and ADARA;
 - (2) Student working on interactive plotting on the web monitor and improvement of the web interface.
 - (3) Code re-done for VISION data reduction; implemented python codes in C++ and speed up data reduction on VISION by a factor of 50. VISION a priority due to the high-data rates; Claire: Will there be more improvements with the speed? Proffen: unless we can find some clever ideas on data parallelization it will be difficult to find more avenues for improvement. Previously it had been difficult to see how the experiments were progressing; getting to the point where the comparison time is getting shorter.
 - (4) New direct geometry planning tools are being deployed; currently available on HYSPEC, and being distributed to other instruments. Have some collaboration with advanced scientific computing research that goes back to images – using random angle selection rather than doing fixed degree measurements; Niedziela: Has there been any progress with event mode data collection? Proffen: updated DAS system will be used to improve reliability in using event-mode data, acquisition and analysis tools still in progress.
- viii) User Office: Laura Morris-Edwards
 - (1) Different user-counting system; Experiment Safety Summaries are now used to achieve compliance with safety as well as counting users;
 - (2) Almost at HFIR Goal
 - (3) 6.5 months in, and more than 50% through the unique user counts for SNS.
 - (4) Last proposal call completed: 809 proposals; 850 submissions. 937, 799 were previous call results. All proposals out for review; Science Review occurring May 11, 12; could use about 50 more reviewers; would need names by August.

4) Action items from last meeting:

- i) On-site meeting and STS workshop
 - (1) There was a bit of back and forth about the on-site user meeting and the meeting about the Second Target Station (STS). Morten and Boris are heading up a subcommittee to organize the STS meeting. It will need to be a distinct meeting from the on-site user meeting.
 - (a) Morten and Boris are going to either come to ORNL or set up a teleconference for discussions with Alan, etc. about the workshop. Reports from focus workshops need to be made available by NScD to Boris/Morten. **Hardcopies are the most likely to be circulated, but Rob will verify. Rob going to work with Alan to set a time for this discussion. Plan for week of May 18th for the onsite, but this getting close.**
 - (b) Week of Oct. 26th appears to work for the on-site. **Needs to be confirmed, date needs to be set before July 1.**
 - (c) **User meeting portion needs to have an agenda/theme.** Morten: Will these run in parallel or back-to-back: Laura: 3-4 days, back to back.
 - (d) How to pay for the STS portion is still not solved. Rob: Should be straightforward to answer what funding will be available for the STS portion. **Rob will talk with Lorie Hickey about the boundary conditions for funding the event.** Morten: Will we need to go back to DOE to ask for funding? Rob: Unclear, but it all falls in the FY16 budget.
 - (2) Since there are two parts to the meeting: Boris and Morten will focus on the STS portion; planning the user meeting part is separate. **Claire or subcommittee of other SHUG EC members needs to move forward on the user portion.** Keep Claire in loop about STS workshop organization – think about how other side gets worked out. If key science areas are presented – STS will be more about future research areas. For user meeting, current research and context of what is being done will be crucial. Morten: currently very little is understood/known about the STS. Rob: budget to support user meeting is available; but the two meetings will need to be distinct. Laura will be the contact for now on organizing the user meeting, **Tyrel will be a resource; will send an overview of what Claire's responsibilities are.**
- ii) Recommendations:
 - (1) Rob: part of Alan's time and Rob's time have been focused on strategic planning exercise; triennial review in August. Discussions had are directly hitting on issues identified in recommendations. Sample environment, delivering better science on the beamlines, etc. Need to come to a full understanding of how to get more impact out of instruments and sample environment. Work in progress. Going through recommendations; were some things that are directly actionable, some information can go into the monthly slides to the SHUG EC; getting EC more information about what users think is important. Science and impact is being worked on –direct actions can happen there. Claire: One thing suggested was for Paul to be more communicative, is that part of the strategic plan? Laura: User newsletter has an "Ask the ALD" section with information/messages from Paul. Rob: strategic planning has been focused on using resources to perform better science on the beamline.
 - (2) Status of the liquids reflectometer? Rob: One of the things that is being stood up is the science productivity steering committee – chaired by Rob; used to plan how to spend the science \$\$, reassessing and re-prioritizing instrument needs. Change priorities of DAS upgrades, LR needs were serious enough that they were pushed up. They will be commissioning with new DAS and reduction

software in January 2016; moved up over TOPAZ; SEQUOIA and HYSPEC to be performed over summer 2015.

- (3) Other recommendations to be addressed as the strategic plan moves forward.
- iii) Discussion about the user coffee breaks and scientist awards will be summarized and sent to the SHUG EC in an email.

5) Next meeting MONDAY June 1, 2015.