**­SHUG EC Conference Call Minutes**

July 8, 2015

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

Hugh O’Neill (For Biology and Soft Matter Division (BSMD) Directory), Jaime Fernandez-Baca (For Quantum Condensed Matter Division (QCMD) Director, Kevin Jones (Research Accelerator Division Director), Richard Ibberson (Chemical and Engineering Materials Division (CEMD) Director), Crystal Schrof, Thomas Proffen (Neutron Data Analysis and Visualization (NDAV) Director), Laura Morris Edwards (User Office).

Next scheduled meeting: TBD, to discuss User Meeting

1. **Previous minutes and agenda:** Clarification about onsite minutes required – approval of previous minutes moved to next meeting, Claire to send comments on minutes to Jen; others encouraged to do the same. No additions to current agenda.
2. **Updates from NScD management:**
   1. Laura Morris-Edwards
      1. SCRAM at HFIR, recovered by Monday.
      2. SNS down for summer shutdown.
   2. Jamie Fernandez-Baca
      1. US-Japan collaboration met this past month; collaboration is over 30 years old, meeting of the sitting committee every year, this year was held at ORNL; several DOE members and high level Japanese figures, program for the next year was approved.
         1. Q: Very few females in the photo; is this a targeted area for outreach? A: It is an area of concern.
   3. Hugh O’Neil
      1. Neutron Applications for structural biology workshop held; 5th year, over 60 students have been trained as a result of the program, and many come back as users. Students attending universities with reciprocal agreements with NCSU get credit for attendance.
         1. Q: How is this program funded? A: Fully funded by ORNL, varies a little each year, between $15-20K, paid for with program development funds.
   4. QCMD Updates (Fernadez-Baca)
      1. Lead free ferroelectrics under electric field; published in Advanced Materials.
   5. BSMD (O’Neil)
      1. Development of thermoresponsive surface for directed cell growth. Neutron reflectivity used to determine temperature dependence of polymer conformity, published in ACS/Applied Materials.
      2. Study of cholesterol localization in vesicles disrupted by bee venom – deuteration of the lipid reveals changes in lipid bilayer membrane from SANS.
   6. CEMD (Ibberson)
      1. Copper nanocluster synthesized; interesting for hydrogen storage. TOPAZ was able to collect high quality/high resolution data for structural determination.
         1. Q: For the non-deuterated samples, do the samples need to be small to reduce absorption? A: Not necessarily, incoherent part is treated as background.
      2. Negative Thermal Expansion materials – hard to produce in ceramic form, making useful application difficult; group started looking at fluoride compounds, CaZeF6 shows much stronger NTE. Diffraction reflects large anisotropic thermal parameters, looking at rigid unit modes as explanation.
         1. Q: Neutron covers low temperature part, data collected from two sources, why was the high temperature portion collected elsewhere? This project could have been done entirely by neutrons. A: Yes, there are available furnaces; not clear why the high temperature portion was collected elsewhere.
      3. NDAV (Proffen)
         1. Three instruments focused on for DAS upgrades; Liquids reflectometer, SEQUOIA, HYSPEC.
         2. New version of Mantid released. Noteworthy features include advances in paraview; availability of non-orthogonal axes for projection, analysis.
         3. Data reduction for liquids reflectometer moving into an automatic mode; being field tested by users currently, improvements targeted for the summer outage.
         4. HFIR diffractometers – data reduction provided in Mantid.
         5. VISION backscattering banks that allow you to do diffraction/PDF work; high data rate precludes useful data; can now select between event and histogram mode to improve speed; can switch back to event mode if required.
         6. CADES (Compute and Data Environment) launch at ORNL – provides computer infrastructure for users/simulations; VISION software VIRTUES (Virtual Experiments in Spectroscopy with Neutrons) running on CADES.
         7. SpinWaveGenie being prepared for release; currently standalone, will likely continue to be standalone for the foreseeable future.
      4. Instrument and Source Division (Ibberson, for Don Abercrombie):
         1. CG-1D installed a new beam tube with larger diameter. Allows them to run with a 60 mm aperture, see an increase in flux.
      5. Instrument and Source Division (Jones, for Don Abercrombie)
         1. Speaking on behalf of Don Abercrombie, addressing target reliability improvement actions. Last week shipped nose samples from target 9 to Babcock & Wilcox facility in Lynchburg where they will be cleaned and dissected for materials analysis (e.g. ductility, yield). Target had 4200 MWh; results in late August/September time frame.
      6. Research Accelerator Division (Jones)
         1. Target 10 – first jet flow target had failed weld; tool designed to cut out the weld for analysis; tool should arrive in August, coupons cut out in September for analysis.
         2. Test loop for helium gas injection into mercury loop has been established; helium gas flow injection is done at J-PARC with some success; SNS had been trying an aggressive push to get this done by the end of the summer outage, but will not be done; safety issues identified with injecting helium into the mercury loop which can’t be properly assessed before the end of the outage. Hopeful for deployment during winter outage.
         3. 2841 hours delivered for neutron production, just over 91% availability. Current target at the end of operation in June has been exposed to 3100 MWh. No indication of leaks or failures.
         4. Neutron production slated to returned 8/14; busy outage – lots of activity. Three big items include installation of re-engineered hardware for the IPPS, complete rebuild of the vacuum system on the drift tube linac to improve speed of tank replacements; addressing issues with radio frequency cavities which prevented running above 1.2 MW during last run cycle – hopeful this will allow running at 1.2-1.3 MW in the fall.
         5. Currently installed target would have reached 5000 MWh in October – had planned to change the target; analysis determined that the exposure limit could be extended to 12 displacements per atom; request made to run the target to the planned outage at the end of December. Made decision to eliminate planned target change and maintain schedule with production running through end of cycle; rest of schedule for fall remains the same. There have been four targets that failed prematurely; once you are above the 1.1 to 1.2 MW threshold targets seem stable; exploring how far one can go on materials issue.
         6. Currently a very long scheduled outage planned for the inner reflector plug in June 2016-Sept. 2016. Discussions still undergoing about the change out. At issue is burnup of decoupler materials and moderator poisons, and whether the materials can last until the summer outage of 2017. Analysis will hopefully allow deferment of this outage to 2017. Window of guaranteed beam delivery 4500-4600 MWh; decision on replacement to be made in first week of October.
   7. User Office Updates (Morris-Edwards):
      * 1. SNS has had 700+ unique users; HFIR approaching 400.
        2. Neutron School a success.
        3. User surveys are being pursued more aggressively; 47% response rate up from 17% of previous FY. 45% of users report to being very satisfied; other subcategory reports are available.
3. Status of EC recommendations:
   1. Discussion of SHUG EC recommendations pushed to next meeting.
4. Coffee Breaks:
   1. Mainly staff concerns that were represented at the HFIR; discussion tabled to next meeting.
5. Beamline awards:
   1. Eugenia and Laura working together; Claire to send some notes to Eugenia about the awards.
6. User meeting:
   1. Claire updating about the SHUG meeting:
      1. Working off agenda discussed in previous call.
      2. Tuesday afternoon switch to STS workshop.
      3. Agenda under discussion.
      4. SHUG User meeting/Town Hall meeting on Monday? Can it be organized that lunch is proximate to the user meeting? Laura: Will discuss with Toni.
      5. Three parallel sessions, six topics in total, topics relate to STS meeting and current interests of users, including data analysis, sustainability. Send out a list on what the sessions should be, mesh with STS meeting.
      6. Poster session scheduled for Monday Evening; should it be combined with STS poster session? No – these are two separate events.
   2. Laura: need to have an agenda and website by the end of July; need to confirm agenda and speakers. Have another conference call in a week to discuss the user meeting.
   3. Alan: Need to redact down to a set of instrument concepts that can be distributed; important that we are at a point to advertise the workshop;
   4. Morten: we are doing well, have approached a number of people:
      1. Should be ready to activate the committee by the end of the week – decide on who will give summary talks for grand challenges workshops for the announcement, have them decide the format and breakout sessions. One thing that needs to be done soon is to solicit ideas for instrument ideas/concept experiments.
         1. Alan: In the TDR, there is a 1 page write up on each of the 8 instrument ideas, rather than the three page version – wanted to do that for each of the 22 instrument concepts, then have a small write up to offer in advance of the workshop, so that users can contribute ideas. If Boris and Morten could look at the simplified versions to ensure they are ok, as it takes time to reduce the descriptions to make them available. Would like to get this done by the end of the month; team positioned to do down-editing quickly. Morten will ask the program advisory committee to respond about the level of technical detail in the one page summaries. Morten would like to send the summaries to the program advisory committee, Alan will clear this with Paul Langan.
         2. When meeting with the advisory committee to get more in-depth briefing on the three source strategy and instrument concepts – option is on the table, would be helpful to get everyone on board.
      2. Claire: how are we advertising these meetings? One bundle? Morten: I think the two together, but more information is needed: speakers for SHUG portion, instrument concepts for STS.
      3. What is needed for website? Agenda. Website templates are available.
      4. Need to think about sessions, plenary speakers and invited speakers.
      5. Laura and Crystal have access to mailing lists for the user meeting. List consists of users from last three years. Need to have information about message. ORNL can send out the notifications for the user meeting, and will do a targeted list for the second target station.
      6. Morten: Request: Staff from NIST is on the PAC for STS, there is supposed to be an MOU between NIST and ORNL regarding paying for travel; actively working with DOE, reluctance to give blanket approval to pay for frequent travel to ORNL; solution identified.
      7. Session topics to be finalized off line; have a final agenda by the end of the month so it can be posted on line. May call another meeting to discuss speaker list, and move forward with inviting. Laura: would still be a good idea to have a brief teleconference; Jen to coordinate with SHUG members about next teleconference, and write up schedule for activities to complete by the end of the month.

Meeting ended – next meeting TBD for discussion about SHUG meeting status.