**Comments and fact check by Weidner and Ehm regarding DAC and MAP programs**

**Introduction to XPE – diamond cell and multianvil program**

**Comments on the PU agreement.**

While the history of the PU agreement may not be important at this point, I want it to be correct.

There were three PI’s on the PU proposal, Weidner (lead PI), Ehm, and Bass. The proposal was agreed upon by the PI’s. Weidner and Ehm carried out most of the negotiations/discussions with the NSLS II people. Dierker, director of the NSLS II, wanted one lead PI on the proposal and one point of contact with the PU team. The proposed agreement, in response to the proposal, was sent to the lead PI with only the lead PI signature indicated. Immediately upon receiving the proposed agreement, the PI circulated it to all of the other PI’s. It is common understanding that if a PI does not agree with a proposal or with the response to the proposal, it is that PI’s responsibility to either remove their name from the proposal or to change the terms of the final agreement. Other than acknowledgement, virtually no discussion, comments, desire to have additional signatories on the agreement, constraints on the budget information, discussion of possible changes in program priorities, etc came from the COMPRES PI. Assuming silence meant consent, the lead PI, after due time, signed the agreement and returned it to Dierker. It was not until about a year later that we found out that COMPRES did not agree with continuing the DAC program, which is an integral part of the agreement.

***Summary following Charge (Multi-anvil program summary)***

Point 4. Some funds are in the current COMPRES budget for capital equipment upgrades for the multi-anvil program (these funds are being held at COMPRES central). NSLS II agrees to add enough funds to upgrade all of the motors/motor drivers required for both MAP and DAC.

**NSLS X71DAC program**

We would like to reiterate that the vast majority of experiments at X17DAC at NSLS have been conducted by scientists from COMPRES Member Institutions and Foreign Affiliates. This has been clearly stated by the PI T. Duffy during the site visit and can be fact checked through a review of the annual reports submitted to COMPRES.

**User Community**

While Ehm has been correctly quoted that the user community for the DAC program is not at the stage that it could be, the finding that the community has not been engaged is rather false. First, users for vested in the DAC program have been at the site visit and could have been interviewed by the site visit committee.

Furthermore, leading up to the close of the NSLS, the PIs have been organizing or co-organizing a number of workshops and prepared white papers and beamline proposals. Below is a list of workshops that included the high pressure program:

Workshop: X-ray Diffraction and Spectroscopy to Study Dynamic Phenomena under Extremes,

NSLS/CFN User Meeting (May 2011)

Workshop: Supercritical Carbon Dioxide-Materials Interactions, BNL (March 2011)

Workshop: Nanoscale Diffraction of Materials, NSLS/CFN User Meeting (May 2010)

Workshop: High Pressure Science: Planning Workshop for a Beamline Construction Proposal, NSLS-II

(April 2010)

Workshop: Characterization of Advanced Materials Under Extreme Environments for the Next Generation

Energy Systems, BNL/JPSI/NSLS (September 2009)

Workshop: Advances in High-Pressure Science Using Synchrotron X-rays, NSLS (October 2008)

Workshop: Future Directions in High Pressure Research, NSLS/CFN User Meeting (May 2008)

The priorities over the past two years have been to decommission the NSLS DAC program and to create a program at NSLS with infrastructure and experimental capabilities on the floor. This is a time intensive effort that leaves very little time to continue community building efforts. However, Ehm stated clearly in his presentation that the community building will take priority again, once the installation process is on track. We felt that after the 7 workshops mentioned above, that the community needs results before more workshops will be effective. The PI’s welcome input and guidance from COMPRES on building a user program.

**Laser heating**

Laser heating was the highest priority that Tom Duffy, PI on the NSLS DAC beamlines through the end of NSLS, held. To Tom’s credit, in situ laser heating experiments were accomplished by the time that the NSLS shut down. This was highlighted in Hong’s poster at the site visit. The system is working and will need to go through the installation and commissioning process at the NSLS II. It is expected to be one of the resources available to users at the NSLS II.

**Staff: Professional Development and Mentoring**

The basis for the findings of lack of mentoring and staff development is unclear to the PIs, especially since this has not been part of the questions to PIs or discussions with the PIs during the site visit.

All staff members in the high pressure program are receiving mentoring and professional development in a number of different settings (e.g. group, individual and institutional):

1. The team (scientific and professional staff) involved in the high pressure efforts is part of a weekly group meeting, where operation (APS), work planning (NSLS-II and APS), science, resource allocation, and tasks assignments are discussed.
2. The Stony Brook/Brookhaven based members of the team have the opportunity to attend the XPD weekly group meeting, where beamline development, ongoing experiments, staff science, work planning, resource allocation etc. are discussed.
3. The Stony Brook/Brookhaven staff is part of the bi-weekly meeting with the XPD team discussing installation related issues such as: work planning, safety issues, documentation, resource assignment etc.
4. All staff members have access to the PIs on individual base.
5. Stony Brook University provides additional resources for professional development and peer-to-peer mentoring to all employees. These opportunities are facilitated by Stony Brooks School of Professional Development and The Office for the Integration of Research, Education and Professional Development. The activities of the above mentioned institutions at Stony Brook University are broadly announced to all members of the campus community and the PIs regularly encourage the staff to participate.

Since the notice from COMPRES leadership in January about the intent to close the Diamond Anvil Cell part of the high pressure program at XPD (NSLS-II) we have changed Dr. Hongs assignments:

1. He has been given time to increase his research profile:
   1. Dr. Hong produced in the past month three first author manuscripts, two accepted for publication and one in the stage of revisions, which strengthened his profile and increased his competitiveness on the job market.
   2. We have enabled Dr. Hong to attend two conferences, the SRI2015 and the ICXOM23, in the past month, to showcase his exceptional technical developments for the X17-DAC beamlines and high quality science facilitated by these developments. Such conferences are also excellent opportunities for networking and job hunting.
2. Dr. Hong has been updated by of any development concerning the status of the DAC program and his employment on a regular basis by the PIs.

**Consequences**

We need to be clear as to the consequences of closing the DAC program as suggested by this review.

1. There will be little or no support for DAC x-ray users at the nation’s flagship synchrotron.
2. The high pressure village will not exist. The beamlines will be there, but the intellectual, interactive program will not. The energy barrier for outside users to develop proper experimental protocol and access to the beam lines will be high.
3. COMPRES will break the PU agreement with NSLS II. As stated above, removing the DAC program will be considered as a breach of the PU agreement.
4. As a result of the breach, the multi-anvil program may be closed by the NSLS II.
5. Future developments at the NSLS II will be much more difficult to accomplish.
6. All negotiations with NSLS II management must be made by COMPRES personnel.
7. Implications on COMPRES renewal must be considered.