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The APS Renewal: SAC Perspective

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SAC Membership

- The APS SAC includes expertise on all of the major research areas supported at the APS. It also includes the experience of directors or associate directors from the ALS, SSRL, Photon Factory and ESRF facilities.

List includes Members from 2008 thru 2009

Miles Klein (Chair) **Univ. Illinois Urbana-Champaign**	**Experimental Condensed Matter Physics**
Jens Als-Nielsen **Neils Bohr Institut, Copenhagen**	**X-ray Physics**
Michelle Buchanan **Assoc. Dir. ORNL**	**Molecular analysis, protein interactions**
Howard Einspar **Research Fellow** **Bristol-Myers-Squibb (ret)**	**Protein Crystallography** **drug design**
Britt Hedman **Dep. Dir. SSRL**	**Biophysical, inorganic and structural chemistry; XAS**
Louise Johnson **Oxford Univ.**	**Molecular Biophysics**
Janos Kirz **Sci. Dir. ALS**	**X-ray microscopy**
Dan Neumann **NIST Center for Neutron Research**	**Structure and dynamics in molecular materials**
Piero Pianetta **Dep. Dir. SSRL**	**X-ray microanalysis at surfaces interfaces**
William Stirling **Dir. Gen. ESRF**	**Magnetic scattering**
Soichi Wakatsuki **Dir. Photon Factory**	**Protein Crystallography**
Glenn Waychunas **ESD LBNL**	**Geochemistry and Environmental Science**
Don Weidner **SUNY Stony Brook**	**Geophysics**
Wei Yang **Chief, Structural Biology Section NIH**	**Molecular Biology, Protein Crystallography**
Laurence Lurio **N. Illinois Univ. Chair, APSUO**	**Coherent x-ray scattering** **Physics of soft materials**
Denis Keane **Dir. DND CAT** **Chair, APS Partner User Council**	**Surface x-ray scattering**

Charges to the SAC for the Renewal process

- Advise on specific scientific themes featured in renewal application
- Conduct scientific reviews focused on areas critical to the renewal
- Advise on significant issues/strategy affecting the renewal
- Advise on and monitor stepwise developments needed for renewal
- Comment on specific scientific, management and staffing considerations with respect to the renewal

Charges to the SAC for the Renewal process

- Advise on specific scientific themes featured in renewal application

Key issues:

Identify current scientific strengths and uniqueness of the APS (e.g. high energy, pulse structure) to be protected and extended

Identify science areas where renewal presents opportunities (e.g. large extension of current capabilities; entire new scientific direction)

Identify specific investigations that showcase potential new science areas (a Renewal Workshop charge)

Evaluate theme proposals/initiatives and instrumentation developments for scientific merit, agency interest, user community

Charges to the SAC for the Renewal process

- Conduct scientific reviews focused on areas critical to the renewal

Cross cut reviews 2008

Geological, Environmental, and Planetary Science (Waychunas)
Atomic, Molecular, Optical, and Chemical Sciences (Buchanan)

Future Cross-cut Reviews to be based on Renewal themes

Interactions with relevent subgroups/committees

Teleconferencing/ e-mail discussions as needed (e.g. evaluate LOI's or peer reviews of beamline proposals)

Charges to the SAC for the Renewal process

- Advise on significant issues/strategy affecting the renewal plan

Key identified Issues:

Overall vision is crucial ingredient; focus on where APS will be in seven years (science, user community, beamline layout)

Are there areas where modest investments can create great enhancements in capabilities?

Should there be collateral development in analysis software for users? Long term consequences for support of such software?

Addressing of legacy issues; can current beamline locations be changed readily?

Improved integration of overall plan to include Life Science beamlines and “standardization” of PX beamlines

Charges to the SAC for the Renewal process

- Advise on and monitor stepwise developments needed for renewal

Suggested sequencing:

Define process for renewal with milestones at
User Meeting, Fall SAC meeting (hopefully with CD-0 in hand)

Begin development of the components of the Conceptual Design Report (CDR)

Develop initial floor plan accounting for vision, current
SAC approved proposals

Present plans to SAC at the January 2010 meeting including proposed upgrade components (beamlines, accelerator, infrastructure), iteration of proposed beamlines and beamline floor plan, etc.

Charges to the SAC for the Renewal process

- Comment on specific scientific, management and staffing considerations with respect to the renewal

Key issues:

Meshing of renewal plans with funding for existing CATs for buildout/reinstrumentation of reconfigured beamlines

How to handle new CAT proposals during renewal reconfiguration period?

Summary

- Excellent scientific expertise on SAC to evaluate programs critical for renewal;
  Significant management experience on SAC, including other facility renewals
- Ongoing SAC attentiveness to development of renewal strategies, to scrutiny of scientific areas emphasized in renewal, and to sequencing of renewal preparations
- Strong commitment of SAC to work with management and scientific staff to ensure a well-conceived and highly optimized renewal plan

  And also (my own perspectve):

  Excellent job done by APS management to engage SAC in all pertinent aspects of renewal process