



... for a brighter future

APS Monthly Operations Meeting

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January 31, 2007



U.S. Department
of Energy

UChicago ►
Argonne_{LLC}



A U.S. Department of Energy laboratory
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Agenda

- APS Update
- The Four Remaining Sectors at the APS - George Srajer
- Upgrade Strategy - Rod Gerig
- 2007 ANL User Meeting Update - Tim Graber



Go Bears!

Continuing Resolution

- The current Continuing Resolution (CR) ends February 15, 2007
- At this point in time, it is not clear what will happen in Congress

New York Times, Monday, January 29, 2007

- First it was the 100-hour blitz. Now those House Democrats plan to do a whole year's worth of work in one day. Well, that might be a slight exaggeration. What they are really going to do is last year's work in one day by passing a stop-gap bill to finance practically the entire federal government through Sept. 30.
- The problem dates back to last fall, when Republicans were intent on avoiding difficult votes for their House and Senate candidates before the election. *As a result, the old majority pushed through only 2 of the 11 annual appropriations bills, leaving it up to the new majority to finish the job.*
- Rather than spend the first months of their new reign trying to sort through such difficult legislation, the *Democrats have essentially decided to impose current spending levels on most agencies through the end of the fiscal year. They are already at work on the 2008 spending bills.*
- The decision to punt is causing problems across the board since the present level of funding is not sufficient for many of the federal agencies. And money for some specific programs could well run out. *The Democrats are trying to allow some adjustments*, particularly for veterans programs.
- But once they begin to give one agency more money, the pressure is on from others. And to the great unhappiness of many lawmakers, the spending bill - officially known as a continuing resolution - will not contain money for the pet projects members of Congress were able to include in the spending bills that never made it across the finish line.

Continuing Resolution - Update

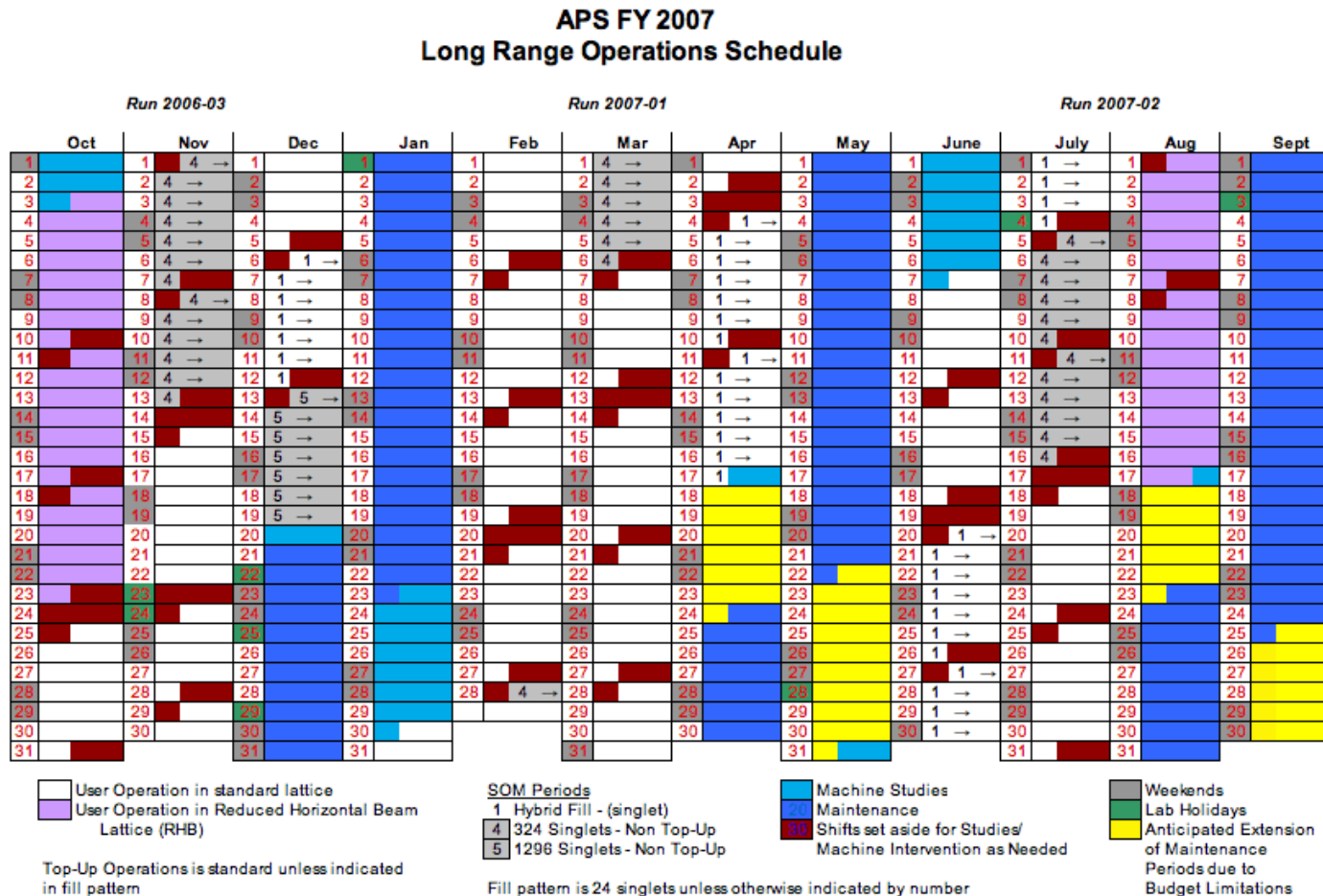
ScienceNOW Daily News, Tuesday, January 30, 2007

- Tomorrow, the U.S. House of Representatives is expected to pass a belated 2007 spending bill that treats research much more favorably than science advocates had dared hoped--and avoids budget cuts that many had feared.
- While freezing spending across most of the federal government, the legislation gives a shot in the arm to research at the National Science Foundation (NSF), the Department of Energy (DOE), and the National Institute of Standards and Technology (NIST).
- Professional and academic organizations joined other science advocates in pushing for research spending to be considered a national priority. They urged legislators to support a 2007 budget proposal by President George W. Bush, called the American Competitiveness Initiative (ACI) (ScienceNOW, 26 September 2006).
- Yesterday, their efforts were rewarded. House Joint Resolution 20, which will be taken up tomorrow by the full House, gives NSF a \$334 million increase in its \$4.3 billion research account, the full 7.7% boost requested under ACI. DOE's \$3.6 billion Office of Science would increase by only \$200 million rather than the \$505 million requested. But the legislation wipes out some \$130 million in congressional earmarks in 2006 and gives office head Raymond Orbach the right to add that amount to DOE research programs.

I'm Cautiously Optimistic.....

Schedule Changes for 2007-1 and 2007-2 due to CR

- Reduced Operations Due to the Budget Shortfall from the CR



Lobbying by the Synchrotron/Neutron User's Groups (SNUG)

- SNUG Representatives met with Congressional Staffers in DC January 2007.

Effects of Continuing Resolution on Synchrotron and Neutron Sources

- **SNS opening delayed: 1 year**
- **Reduced Operating Hours: 15-25%**
 - No operations at 2-3 facilities for one year
- **Decreased number of users: 15-25%**
 - Affects 2,000 – 3,000 scientists across the nation
 - Loss of many projects essential to National Competitiveness
- **Staff hiring freezes/layoffs**
 - As many as 850-1000 from BES Programs
 - Harms morale, loss of staff to foreign facilities
- **Halted Construction of new facilities** (e.g. LCLS)
 - Significantly increases cost to resume operation
 - Facilities less competitive with foreign sources
- **University research decline: 10%**

Lobbying by the Synchrotron/Neutron User's Groups (SNUG)

Message to Young Scientists:

“Look outside the US if you
want to succeed!”

Lobbying by the Synchrotron/Neutron User's Groups (SNUG)

\$4.1 Billion Office of Science Funding Needed to “Right the Ship”

- The U.S. needs to optimize knowledge-based resources, particularly in science and technology
- Scientific progress and competitive position of the U.S. depends on how wisely we invest in research capability
- User research has broad applications of national interest, including: energy efficiency and supply, toxic waste cleanup, bioterrorism and disease detection, electronics, telecommunications and manufacturing
- After several decades of constrained spending, especially the constrained FY 2006 budget, **we request flexibility in the DOE budget to adequately fund these facilities in FY 2007.**
- **Continued increases in FY 2008 and beyond** are essential to reinvigorate the U.S. science base, including efficient maintenance and use of the large U.S. investment in synchrotron facilities and neutron facilities

APS Colloquium

February 8 at 3:00

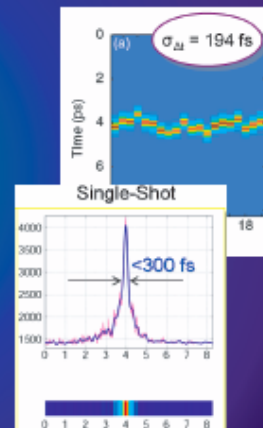
In the APS Auditorium

Jerome Hastings

“The Whys and Hows of Ultrafast X-ray Science”

Jerome Hastings received his Ph.D. in Applied Physics from Cornell University in 1975. After a year and a half at Oak Ridge National Laboratory, he spent a year at the Stanford Synchrotron Radiation Laboratory in 1976. For the next 25 years he worked at Brookhaven National Laboratory, coming to the Stanford Linear Accelerator Center in 2001 as an assistant director. His research interests are in x-ray physics, ultrafast x-ray optics, and synchrotron radiation instrumentation. He serves in a number of scientific advisory panels to existing and future light sources. He is also a fellow of the American Physical Society.

The invention of ultrafast optical lasers with pulse durations comparable to vibrational periods in solids and motions of molecules undergoing structural changes has provided a look at the dynamics that govern important processes in nature. X-rays, on the other hand, with wavelengths comparable to the distances between atoms, have been the key tool for the study of the average structure of liquids and solids at atomic resolution. With recent developments in ultrafast x-ray sources, the combination of appropriate temporal resolution and spatial resolution is opening new scientific opportunities for direct observation of atomic-scale dynamics. The Sub-Picosecond Pulse Source at SLAC is just such a source. The science and technology of ultrafast x-ray studies will be discussed in this context, as will the extension of these studies to opportunities afforded by the Linear Coherent Light Source x-ray free-electron laser.



NOTE DAY CHANGE: Thursday, February 8, 2007
3:00 p.m.

Bldg. 402, APS Auditorium • Argonne National Laboratory

APS COLLOQUIUM

Miscellaneous

■ APS Scientific Advisory Committee

- The APS Scientific Advisory Committee (SAC) met for 2 1/2 days last week
- Provided useful comments on our beamline development plans and on our plans for an APS upgrade, i.e. the ERL

■ Cross-cut Review of Macromolecular Crystallography at the APS very useful along with frank discussions with SAC, APS managements, and CAT reps on the future of macromolecular crystallography and how we can improve and/or increase GU access to the facility.

- Sine Larsen (ESRF), Doug Ohlendorf (U. of Minn.), Howard Einspahr (Research Fellow, Bristol Meyers Squibb, retired, Wei Yang (NIH), John Helliwell (U. of Manchester)
 - *The committee was impressed by the outstanding quality of science being done at the variety of PX beamlines. By the two key measures of (i) publications in the top tier papers (Science, Nature, and the top 20 ISI rated Journals) and (ii) PDB deposited structures, APS produces the most.*
 - *Mail-in data collection is being offered to CAT members for several beamlines. Only 2 beamlines offer the service to GUs. The CATs should be strongly encouraged to make this mode of data collection available to the GU community.*
 - *For the PX CATs we recommend that the PX CAT directors regularly meet to discuss common accomplishments and problems.*

Miscellaneous (cont.)

■ IG Audit of APS User Programs

- The audit report has now been released (you can find it on the DOE IG's web page if you really want to read it).
- Auditors had several findings (problems) that we were in the process of mitigating when the audit started and we said we basically agree with those findings.
- We (APS and the DOE Argonne Site Office) are still in disagreement with the IG auditors on how to calculate rates for proprietary research.
- This disagreement will go to the DOE's Chief Financial Officer (CFO) for resolution.
- Several new/updated procedures related to proprietary work have been e-mailed to our proprietary users and will be posted on the web.

IG Audit of Proprietary Usage at the APS

■ FY06 rates:
$$\text{cost/hour/beamline} = \frac{\text{APS Full Operations Budget}}{(70 \text{ beam ports})(6000 \text{ hrs/yr})}$$

■ FY07 rates:
$$\text{cost/hour/beamline} = \frac{\text{APS Operations Budget}}{(68 \text{ beam ports})(5000 \text{ hrs/yr})}$$

■ FY08 rates:
$$\text{cost/hour/beamline} = \frac{\text{APS Operations Budget}}{(62 \text{ beam ports}^*)(5000 \text{ hrs/yr})}$$

* projected number of operational beamlines at the end of FY2008 based on current construction projects