

## Charge to the Instrument Group Organizers

The role of the Instrument Group Organizers is to gather and organize information regarding instrumentation that are particularly relevant to the success of the two overarching scientific themes that emerged from the October APS Renewal Workshop: *Mastering Hierarchical Structures Through X-ray Imaging* and *Real Materials in Real Conditions in Real Time* and also to the success of the ten science cases (<http://www.aps.anl.gov/Renewal/Reports/>) presented at the Workshop.

Instrument Group Organizers should read over the submitted beamline proposals and letters of intent (LOIs), and select those that are relevant to their assigned techniques, instruments and facilities. That information should be synthesized into a coherent picture that describes the instruments and techniques that should be built and developed at the APS in order to accomplish what was proposed in the science cases with a particular emphasis on the two overarching themes of the White Paper (Putting the requested new or upgraded beamlines in a priority order will likely initiate discussion - exactly what we want). In some cases you may find that you need to add to the existing list of proposals in order to accomplish the science. Please include non-beamline items as well, such as specialized IDs, data analysis requirements, lab space/support, off-line equipment, etc. that will be needed. And finally, but equally important, please identify any strategic partnerships that will have to be formed (with universities, other Divisions within ANL, industry, CATs, etc.) in order to successfully develop the instruments/beamlines in your assigned group. Instrument Group Organizers will present their findings at an open forum on renewal instrumentation that will be held the first week of January 2009. Organizers should then summarize their findings and the discussions of the forum in a short report (up to five pages) and provide that to the Renewal Committee by January 13, 2009. The results of your efforts will be used for presentations to the APS Scientific Advisory Committee for further discussion the following week.

Both the oral presentation in early January and the final document should have three main sections; an Introduction, list of Specific Requests, and a Summary. A example of the content of the three sections is listed on the next page. If there are questions, please feel free to contact George Srajer or Denny Mills.

## **Example: Imaging Instruments:**

### Introduction:

The introduction should include a brief statement of where the instruments at the APS are today relative to state-of-the-art facilities and what we have to do to make the APS the premier facility in 5-7 years. Please emphasize the reasons why these instruments should be built at the APS and not at some other facility (this could include unique capabilities of the machine, local expertise, etc.) and emphasize those aspects that will use the APS to greatest effect, rather than adding capabilities which could be (or already have been) developed at other facilities. If strategic partnering will be required to achieve a leadership position, explain what we need and who APS might partner with to do so.

### Specific Requests:

#### A. Beamlines :

1. One scanning microscope on an ID line with sub 100 nm spot size (LOI XXX,) optimized for life science
2. Two topographic stations (one ID and one BM) (proposals # Z1 and Z2)
3. One 200m beamline for ??? (proposal # YYY)
4. a second scanning microscope on ID lines with sub 30 nm spot size optimized for the physical sciences
5. etc....

#### B. Additional Support:

1. Additional labs for .....
2. Data storage
3. Clusters for real-time analysis
4. etc.....

#### C. Partnerships

1. XRadia????
2. Bio Division at ANL????

### Summary:

A summary of how the above Requests support the two major scientific themes: *Mastering Hierarchical Structures Through X-ray Imaging and Real Materials in Real Conditions in Real Time*. Any other comments, concerns, issues, etc. should be mentioned in this section.