

## Report on the Life Sciences Council R&D Workshop

The first APS Life Sciences Council R&D Workshop was held on May 2, 2012 at the Argonne Guest House. The purpose of the meeting was to bring together senior management and staff from the life sciences community to discuss future plans and search for overlapping areas where it might be possible to coordinate efforts for the greater good of the community. The meeting was closed to provide an environment for open presentation and discussion of ideas. There were over 60 attendees from the community, including most CAT directors and APS management (Assoc. Lab. Director and APS Director Brian Stephenson, Deputy Assoc. Lab. Director for the APS Denny Mills and X-Ray Science Division Director Linda Young), and participants from all structural biology CATs and the APS X-ray microscopy group. It was not possible to accommodate everyone who wanted to attend.

There were 19 talks, including at least one talk from each group that wanted to talk. It was not possible to accommodate all requests for talks. A wide variety of topics were presented and ample time was available for discussion as can be seen from the attached agenda.

There was a lengthy discussion in the final session about the impact of the rapidly increasing number of remote users. The biggest concern was the impact on training users how to efficiently use the beamlines, analyze data and solve structures as fewer and fewer labs have home sources. There was general consensus that the meeting was very successful, and there were calls for smaller more focused meetings and making the R&D meeting an annual event.

The meeting was organized by Bob Fischetti (GM/CA CAT), Keith Moffat (BioCARS), Keith Brister (LS CAT) and Tom Irving (BioCAT) with administrative assistance by Sheila Trznadel (GM/CA CAT). Funding for the meeting was provided by the APS, BioCARS, IMCA CAT, Bio CAT, LS CAT, GM/CA CAT, and NE CAT.

By all standards the meeting was highly successful.



Group photo of the attendees of the 1<sup>st</sup> Life Sciences Council R&D Workshop

## Life Science Council R&D Workshop May 2, 2012

Start	Duration	End		
8:30 AM	0:30	9:00 AM	Coffee and Breakfast Pastries	
9:00 AM		9:25 AM	<b>Moderator</b>	<b>Bob Fischetti</b>
9:00 AM	0:15	9:15 AM	Welcome and Remarks on Development of APS Strategy for Biosciences	Brian Stephenson
9:15 AM	0:10	9:25 AM	R&D in the Life Sciences	Keith Moffat
9:25 AM		10:35 AM	<b>Moderator</b>	<b>Bi-Cheng Wang</b>
9:25 AM	0:15	9:40 AM	Using an MX beamline and microfluidic platform for small-angle diffraction studies of matrices for protein crystallization	Elena Kondrashkina
9:40 AM	0:15	9:55 AM	Microdiffraction and microSAXS developments at BioCAT	Tom Irving
9:55 AM	0:15	10:10 AM	The future of automated data analysis at NE-CAT	Frank Murphy
10:10 AM	0:15	10:25 AM	Behind the beamstop crystallography	Raj Rajashankar
10:25 AM	0:10	10:35 AM	Discussion	
10:35 AM	0:30	11:05 AM	Coffee Break	
11:05 AM		12:30 PM	<b>Moderator</b>	<b>Andrzej Joachimiak</b>
11:05 AM	0:15	11:20 AM	Monochromatic and polychromatic time-resolved crystallography	Vukica Srajer
11:20 AM	0:15	11:35 AM	Deconvolution of structural heterogeneity in real space	Zhong Ren
11:35 AM	0:15	11:50 AM	From macro to micro: Changes that might help perform a better experiment	Randy Alkire
11:50 AM	0:15	12:05 PM	Visualizing crystals with SONICC on the beamline	Michael Becker
12:05 PM	0:15	12:20 PM	Cartesian sample automounters	Oleg Makarov
12:20 PM	0:10	12:30 PM	Discussion	
12:30 PM	1:00	1:30 PM	Lunch (self pay buffet)	
1:30 PM		3:00 PM	<b>Moderator</b>	<b>Janet Smith</b>
1:30 PM	0:15	1:45 PM	Radiation damage	Andrzej Joachimiak
1:45 PM	0:15	2:00 PM	Microprobe research with an emphasis on cryo samples and the bionanoprobe	Stefan Vogt
2:00 PM	0:15	2:15 PM	Forward looking possibilities for beamlines having optimized extended wavelength capabilities	Bi-Cheng Wang
2:15 PM	0:15	2:30 PM	Real-time high-speed data transfer	Lisa Keefe
2:30 PM	0:15	2:45 PM	Development of a secondary microfocussing system and plans for the Pilatus 6MF at NE-CAT	Malcolm Capel
2:45 PM	0:15	3:00 PM	Discussion	
3:00 PM	0:30	3:30 PM	Coffee break and snacks	
3:30 PM		4:30 PM	<b>Moderator</b>	<b>Tom Irving</b>
3:30 PM	0:15	3:45 PM	Design of SBC's microfocussing beamline on a canted undulator and alternative plans to implement microfocussing	Gerd Rosenbaum
3:45 PM	0:15	4:00 PM	The GM/CA microfocussing beamline: optical performance, beam stabilization, goniometry and radiation damage	Bob Fischetti
4:00 PM	0:15	4:15 PM	LS-CAT remote access and user control	Keith Brister
4:15 PM	0:15	4:30 PM	Life Sciences Council Business	Bob Fischetti
4:30 PM	0:30	5:00 PM	<b>Discussion Moderators</b>	<b>Moffat and Fischetti</b>
5:00 PM	1:00	6:00 PM	Reception (hors d'œuvres and cash bar)	

**Life Sciences Council R&D Workshop**  
**Participants list**  
**May 2, 2012**

<b>Name</b>	<b>email address</b>	<b>Group</b>
Brian Stephenson	<a href="mailto:aps-director@aps.anl.gov">aps-director@aps.anl.gov</a>	APS PSC
Denny Mills	<a href="mailto:dmm@aps.anl.gov">dmm@aps.anl.gov</a>	APS PSC
Linda Young	<a href="mailto:young@anl.gov">young@anl.gov</a>	APS XSD
Susan Strasser	<a href="mailto:strasser@aps.anl.gov">strasser@aps.anl.gov</a>	APS XSD
Irina Kosheleva	<a href="mailto:ikoshelev@cars.uchicago.edu">ikoshelev@cars.uchicago.edu</a>	BIOCARS
Keith Moffat	<a href="mailto:moffat@cars.uchicago.edu">moffat@cars.uchicago.edu</a>	BIOCARS
Robert Henning	<a href="mailto:henning@cars.uchicago.edu">henning@cars.uchicago.edu</a>	BIOCARS
Vukica Srajer	<a href="mailto:v-srajer@uchicago.edu">v-srajer@uchicago.edu</a>	BIOCARS
Zhong Ren	<a href="mailto:renz@uchicago.edu">renz@uchicago.edu</a>	BIOCARS
Raul Barrea	<a href="mailto:barrea@bio.aps.anl.gov">barrea@bio.aps.anl.gov</a>	BIOCAT
Tom Irving	<a href="mailto:irving@iit.edu">irving@iit.edu</a>	BIOCAT
Denis Keane	<a href="mailto:dtkeane@northwestern.edu">dtkeane@northwestern.edu</a>	DND
Steven Weigand	<a href="mailto:weigansj@northwestern.edu">weigansj@northwestern.edu</a>	DND
Bob Fischetti	<a href="mailto:rfischetti@anl.gov">rfischetti@anl.gov</a>	GMCA
Craig Ogata	<a href="mailto:ogata@anl.gov">ogata@anl.gov</a>	GMCA
Derek Yoder	<a href="mailto:dyoder@anl.gov">dyoder@anl.gov</a>	GMCA
Janet Smith	<a href="mailto:janetsmith@umich.edu">janetsmith@umich.edu</a>	GMCA
Mark Hilgart	<a href="mailto:mhilgart@anl.gov">mhilgart@anl.gov</a>	GMCA
Michael Becker	<a href="mailto:mbecker@anl.gov">mbecker@anl.gov</a>	GMCA
Nagarajan Venugopalan	<a href="mailto:vnagas@anl.gov">vnagas@anl.gov</a>	GMCA
Oleg Makarov	<a href="mailto:makarov@anl.gov">makarov@anl.gov</a>	GMCA
Ruslan Sanishvili (Nukri)	<a href="mailto:rsanishvili@anl.gov">rsanishvili@anl.gov</a>	GMCA
Sergey Stepanov	<a href="mailto:sstepanov@anl.gov">sstepanov@anl.gov</a>	GMCA
Shenglan Xu	<a href="mailto:sxu@anl.gov">sxu@anl.gov</a>	GMCA
Sudhir Babu Pothineni	<a href="mailto:spothineni@anl.gov">spothineni@anl.gov</a>	GMCA
Anne Mulichak	<a href="mailto:mulichak@anl.gov">mulichak@anl.gov</a>	IMCA
Lisa Keefe	<a href="mailto:keefe@anl.gov">keefe@anl.gov</a>	IMCA
Kevin Battaile	<a href="mailto:battaile@anl.gov">battaile@anl.gov</a>	IMCA
Lewis Muir	<a href="mailto:jlmuir@anl.gov">jlmuir@anl.gov</a>	IMCA
Joe Digilio	<a href="mailto:jgd@anl.gov">jgd@anl.gov</a>	IMCA
John Koss	<a href="mailto:kossjw@lilly.com">kossjw@lilly.com</a>	LILLY
Stephen Wasserman	<a href="mailto:swasserman@lilly.com">swasserman@lilly.com</a>	LILLY
Elena Kondrashkina	<a href="mailto:e-kondrashkina@northwestern.edu">e-kondrashkina@northwestern.edu</a>	LS
Joe Brunzelle	<a href="mailto:j-brunzelle@northwestern.edu">j-brunzelle@northwestern.edu</a>	LS
Keith Brister	<a href="mailto:k-brister@northwestern.edu">k-brister@northwestern.edu</a>	LS
Wayne Anderson	<a href="mailto:wf-anderson@northwestern.edu">wf-anderson@northwestern.edu</a>	LS
David Neau	<a href="mailto:dneau@anl.gov">dneau@anl.gov</a>	NE
Frank Murphy	<a href="mailto:fmurphy@anl.gov">fmurphy@anl.gov</a>	NE

Igor Kourinov	<a href="mailto:igor@anl.gov">igor@anl.gov</a>	NE
Kay Perry	<a href="mailto:kperry@anl.gov">kperry@anl.gov</a>	NE
Raj Rajashankar	<a href="mailto:rajashankar@anl.gov">rajashankar@anl.gov</a>	NE
Surajit Banerjee	<a href="mailto:sbanerjee@anl.gov">sbanerjee@anl.gov</a>	NE
Andrzej Joachimiak	<a href="mailto:andrzejj@anl.gov">andrzejj@anl.gov</a>	SBC
Changsoo Chang	<a href="mailto:cchang@anl.gov">cchang@anl.gov</a>	SBC
Frank Rotella	<a href="mailto:frrotella@anl.gov">frrotella@anl.gov</a>	SBC
Gerd Rosenbaum	<a href="mailto:rosenbaum@anl.gov">rosenbaum@anl.gov</a>	SBC
Jack Lazarz	<a href="mailto:jlazarz@anl.gov">jlazarz@anl.gov</a>	SBC
Marianne Cuff	<a href="mailto:mcuff@anl.gov">mcuff@anl.gov</a>	SBC
Norma Duke	<a href="mailto:duke@anl.gov">duke@anl.gov</a>	SBC
Randy Alkire	<a href="mailto:alkire@anl.gov">alkire@anl.gov</a>	SBC
Stephan Ginell	<a href="mailto:ginell@anl.gov">ginell@anl.gov</a>	SBC
Yao Fan	<a href="mailto:yfan@anl.gov">yfan@anl.gov</a>	SBC
Bi-Cheng Wang	<a href="mailto:wang@bc11.bmb.uga.edu">wang@bc11.bmb.uga.edu</a>	SER
John Chrzas	<a href="mailto:chrzas@anl.gov">chrzas@anl.gov</a>	SER
Palani Kandavelu	<a href="mailto:palani@anl.gov">palani@anl.gov</a>	SER
Unmesh Chinte	<a href="mailto:uchinte@anl.gov">uchinte@anl.gov</a>	SER
Zheng-Qing Fu	<a href="mailto:fuzq@uga.edu">fuzq@uga.edu</a>	SER
Zhongmin Jin	<a href="mailto:zmjin@anl.gov">zmjin@anl.gov</a>	SER
Chris Jacobsen	<a href="mailto:cjacobsen@aps.anl.gov">cjacobsen@aps.anl.gov</a>	XSD
Lydia Finney	<a href="mailto:lfinney@anl.gov">lfinney@anl.gov</a>	XSD
Stefan Vogt	<a href="mailto:vogt@aps.anl.gov">vogt@aps.anl.gov</a>	XSD