

Activities of the Biological Macromolecules Scientific Interest Group of the American Crystallographic Association

June 1, 2011

The planning for BioMac SIG activities, for the New Orleans meeting, began in earnest at the 2010 Chicago meeting. Prior to that meeting, ideas for topics were solicited from the community. These ideas were fleshed out during the BioMac SIG general meeting that was held during the conference.

2011 Sessions

Based on discussions at the general meeting BioMac SIG decided to sponsor or co-sponsor ten sessions: (1) Uses of Databases in Structural Biology chaired by Wladek Minor, (2) Structural Enzymology I: Spectroscopy chaired by Allen Orville, (3) PSI – Tools Developed for the Home lab chaired by Ward Smith, (4) Microcrystals and Back to Merging Datasets chaired by Dominika Borek and Alex Soares, (5) Structural Enzymology II: Mechanistic chaired by Zackary Woods, (6) Structural Enzymology III: Biological (bacterial pathogen enzymes) chaired by Michael Murphy, (7) Membrane Protein Crystallization chaired by Michael Weiner, (8) Macromolecular Assemblies chaired by Chris Hill, (9) Data Processing with the Pros (co-sponsored with the Young Scientist SIG) chaired by Ed Collins and Andy Torelli and Phasing and Refinement for Dummies, no book required (co-sponsored with the Young Scientist SIG) chaired by Ed Collins and Andy Torelli.

Sessions 9 and 10 represent new “mini-workshops” that will be held on Thursday during the 2011 ACA meeting. It is hoped that these in-meeting skill focused workshops will be attractive the students and young scientists attending. The organizers have also solicited funds to provide a box lunch for the “mini-workshop” attendees. All BioMac-related session chairs have all done a superb job in organizing this year’s sessions and in recruiting excellent speakers. Thus far, all the BioMac SIG sessions have been very well attended and the BioMac SIG chair (John Rose) would like to thank all the session chairs and speakers that contributed so much to the success of the 2011 New Orleans program.

2011 Etter Student Award

Rebekah Nash (University of North Carolina) was selected as the BioMac SIG Etter Student speaker for her work on the structure and mechanism of conjugative plasmid pCU1 relaxase and presented her talk in the Structural Enzymology III – Biology session.

2011 Workshops

A one-day workshop on the PHENIX structure determination package organized by Paul Adams attracted over 50 participants from the BioMac community. Morning workshop sessions focused on the crystallographic theory underlying PHENIX phasing, model building and refinement, while the afternoon workshop session focused on the training tutorials and question/answer sessions. Based on comments received, the workshop was a great success. BioMac would like to thank Paul Adams and Tom Terwilliger and for putting on this excellent and informative workshop.

2011 BioMac SIG General Meeting

The 2011 BioMac SIG general meeting began at 5:30 and attracted 35 interested members. The meeting focused on three major topics, our desire for a new ACA Summer Course in Macromolecular Crystallography (a request from Council), planning for the 2012 meeting and the election of new officers.

The meeting began with a lengthy discussion about whether another macromolecular crystallography course is needed. The discussion first focused on demand for such a workshop and whether the demand could be met by the Cold Spring Harbor and RapidData courses. Unfortunately both the Cold Spring Harbor and RapidData courses are over subscribed. There was continued discussion about how to attract the students that really need the course and what is the best format for marketing the course? There was agreement that the target audience

should include the biologists who dabble in crystallography but who really does not know the underlying theory. The question then is how do we attract this audience? There was also some discussion on how to attract the young scientist to the school via social networking or YouTube videos.

Andy Howard who ran the ACA Summer Course from 2001 to 2008 remarked that his course attracted between 11 and 18 students per year and had an operating budget of about \$15,000. He also noted that the course could be easily expanded to 30 students with a 40% budget increase. Andy readily acknowledged that the course, in his hands, suffered from the lack of good organization. He further went on to say that he would be interested in renewing the course and that he has recruited Jim Kaduk who will fill focus on the organizational aspects of the school.

Based on the discussion that followed it was generally felt that there is a serious need for proper training of the “biologist crystallographer”. A poll of the members present showed that there was unanimous support for the need of a new Summer Course in Macromolecular Crystallography.

2012 Meeting Planning

Planning for the 2012 ACA meeting is well underway and being ably led by Eric Ortlund and Zackary Woods. Even though we had a small group at the BioMac SIG planning meeting, they were vocal as to their wants and concerns. The outcome of this meeting was a list of 10 session topics that we would like to sponsor or co-sponsor for the Boston meeting: (1) Structural Enzymology I – Mechanistic chaired by Karen Allen, (2) Structural Enzymology II - Biology* chaired by Zackary Wood and Cynthia Stauffacher, (3) Structural Genomics tools for the home lab chaired by Ward Smith, (4) From Constructs to Crystals** (co-sponsored with YSSIG) chaired by George Lontus and Eric Ortlund, (5) Data collection with the Pros (co-sponsored with YSSIG) chaired by Ed Collins and Andrew Torelli, (6) Membrane Proteins from Start to Finish (co-sponsored with the SyncSIG) chaired by Cherezov (7) Radiation Damage* (co-sponsored with the SyncSIG) chaired by Steve Ginell, (8) Complementary Methods (co-sponsored with the SyncSIG and the Canadian Division) chaired by Michel Fodje, (9) Exciting structures (co-sponsored with the YSSIG) chaired by Eric Armstrong and Andrew Torelli and (10) Applications of Extended Wavelength Crystallography** (co-sponsored with the SyncSIG) chaired by B.C. Wang and Bob Fischetti).

Since the Boston meeting will be only four days we have paired sessions (denoted by single and double stars) to run concurrently at the Boston meeting since the audience for these sessions should not, in most cases, overlap. These session pairs are: Structural Enzymology II - Biology* paired with Radiation Damage* and From Constructs to Crystals** paired with Applications of Extended Wavelength Crystallography**. In addition, there is continued concern by the BioMac attendees that the average age of the meeting participants seems too old. Thus, we have co-sponsored a number of technique focused-sessions with the YSSIG in order to attract younger scientists to the ACA meeting and the BioMac SIG.

2012 Elections

Eric Ortlund and Zackary Woods will assemble a list of candidates for the BioMac Chair position and forward them to the ACA Council.