The scientific sessions at ACA Meetings are sponsored and organized by the 12 Special Interest Groups (SIGs) within the association. The SIGs are:
Biological Macromolecules, Fiber Diffraction, General Interest, Industrial, Materials Science, Neutron Scattering, Powder Diffraction, Service Crystallography, Small Angle Scattering, Small Molecules, Synchrotron Radiation, and Young Scientist. Some sessions are jointly sponsored and organized; others are singularly organized.

BIOLOGICAL MACROMOLECULES SESSIONS

01.01 New Structures
Time: Sunday Morning
Organizers: David Giedroc and Mark Wilson
Description: Recent structures from both the protein and nucleic acid structural communities that are of general interest will be featured, some of which will be discussed prior to publication. In addition to invited talks, some presentations will be chosen from the submitted abstracts. As in previous years, the talks will span a broad range of biological topics and will integrate the discussion of crystallographic methodology with the broader context of biological function

01.02 Engage Your Brain
Time: Monday Morning
Organizers: Z. Dauter and "Raj" K. Rajashankar
Description: This session will cover talks addressing cases in macromolecular crystallography that are not amenable for automatic procedures, but require human thinking and special interpretation. It is intended not for presenting novel results, but to familiarize the audience with methods of dealing with non-routine cases.
Speakers:
Zbigniew Dauter, Argonne National Lab (Unusual features in integration and interpretation of diffraction patterns)
Alex Wlodawer, National Cancer Inst. (Validation and reality checks of final structural models)
Charlie Carter, Univ. of North Carolina, Chapel Hill (Application of maximum likelihood techniques in contemporary crystallography)
Champion Deivanayagam, Univ. of Alabama, Birmingham (Complicated cases of pseudo-symmetric structures)
Gerard Bricogne, Global Phasing, Ltd., Cambridge, UK (Incorporation of radiation damage effects in phasing procedures)
Kanagalaghatta Rajashankar, Argonne National Lab (Unusual non-merohedral twinning)

01.03 Difficult Structures
Time: Tuesday Morning
Organizers: Tom Smith and Dinesh Yernool
Description: This session will focus on the structure determination and details of crystal structures that presented challenges during their determination; from sample preparation to crystallization, data collection, and phasing. The types of biological systems to be discussed will be necessarily broad and is likely to include membrane proteins, protein-ligand complexes and large macromolecular assemblies.

01.04 Structural Enzymology
Time: Tuesday Afternoon
Organizers: Allen Orville and Carrie Wilmot
Description: This session will feature talks that describe crystal structures of reactive intermediates, and/or which use techniques that provide strong correlation(s) to the proposed reaction mechanism. The speakers will describe methods and structures of macromolecular catalysts that are poised, trapped or stalled along the reaction coordinate, rather than ground-state structures of resting systems that are more typical of macromolecular crystal structures. These studies tend to provide a more detailed, insightful, and complete picture of the particular reaction mechanism.

01.05 Computational Crystallography - Nuts and Bolts
Time: Wednesday Morning
Organizers: Ed Collins and Peter Horanyi
Description: This session will focus on methodology for data collection, phasing, model building and validation. The session is aimed to inform the audience of the most current macromolecular crystallographic methods with a focus on the basics of these processes.
Speakers:
George Sheldrick, Univ. of Gottingen, Germany
Jane Richardson, Duke Univ.

01.06 Systematic Molecular Anatomy, Structural Phylogeny, and Evolution
Time: Wednesday Afternoon
Organizers: Charlie Carter and Bill Duax
Description: As protein and RNA databases grow, so does the power to classify and model superfamilies and derive models for their evolution. This qualitative change brings new scrutiny to bear on the central dogma of molecular biology. This session will coordinate work arising from structural and bioinformatics studies of molecular families, genetic coding, and how these are related.

01.07 How Structures are Used by Others
Time: Thursday Morning
Organizers: Eric Bennett and Roland Dunbrack
Description: It is important for crystallographers to understand how researchers in other specializations use X-ray data and analyses as a foundation for further studies. Macromolecular structures determined by X-ray crystallography have applications in numerous areas, including structural bioinformatics, development and benchmarking of protein structure prediction methods, modeling motion in molecular machines or chemical reaction coordinates, evolutionary studies, and pharmaceutical and protein design. This session focuses on these types of studies, with the goal of giving crystallographers a better understanding of how their results are used by other researchers.

01.08 Practical Approaches to Improving the Formation and Diffraction-Quality of Protein Crystals
Time: Thursday Afternoon
Organizers: Joseph Luft and George DeTitta
Description: Practical approaches to improve the formation and diffraction-quality of protein crystals. Topic: This session will focus on approaches to take with a protein that: does not crystallize; produces poorly formed crystalline material; or produces crystals that simply won't diffract X-rays to sufficient resolution. Practical laboratory methods that have proven successful will be presented. The planned topics include: formulation of proteins for crystallization; protocols to increase the number of crystallization hits during screening; techniques to improve the quality of crystals during optimization; and methods to treat crystals to improve the quality of X-ray diffraction.

FIBER DIFFRACTION SESSIONS

02.01 Fiber Diffraction and Friends (compl. Neut/X-ray + EM, SAS, etc)
Time: Tuesday Afternoon
Organizers: Joseph Orgel and Gerald Stubbs
Description: Fiber diffraction is an excellent source of information about filamentous assemblies that do not crystallize, both biological and non-biological, but because the molecules in fiber diffraction specimens are randomly oriented about the fiber axis, the measured diffraction data are cylindrically averaged. The information content of fiber diffraction patterns is therefore significantly less than that of crystal diffraction patterns. This may not be a problem in cases where the asymmetric unit is small, and in a few favourable cases methods such as multi-dimensional isomorphous replacement have been used to overcome the loss of information. But in many other cases, alternative sources of information are needed, either to put constraints on models built to fit the fiber diffraction data, or to provide initial models that can be refined against the fiber diffraction data. Complementary techniques include but are not limited to crystallography of components of the filamentous assembly, electron microscopy, small angle scattering,

and neutron fiber diffraction.
Speakers:
Gerald Stubbs (Vanderbilt Univ.)
Joseph Orgel (Illinois Inst. of Technology and BioCAT)
Tom Irving (BioCAT and Illinois Inst. of Technology)
Trevor Forsyth (ILL, Grenoble, France)

GENERAL INTEREST SESSIONS

03.01 General I and II
Time: Wednesday Morning and Thursday Afternoon
Organizers: Peter Mueller and Allen Oliver
Description: The General Interest Group is sponsoring two half day sessions for presentations that are more appropriate to the wider crystallographic community and are not covered by one of the other sessions. Topics for presentations could include new mathematical or computational methods, instrument and handling techniques applicable to all sectors of crystallography, as well as techniques and methods of informing and teaching crystallography. If you feel your talk cannot or should not be pigeon-holed into a small molecule or a macromolecular session, this is the symposium for you. Only contributed abstracts will be considered. Please contact the co-chairs: Peter Mueller (pmueller@mit.edu) or Allen Oliver (aoliver@chemistry.ucsc.edu) if you have further questions.

INDUSTRIAL SESSIONS

04.01 Challenges in Industrial Crystallography
Time: Monday Morning
Organizers: Jeff Bell and Tim Rydel
Description: The scope of the work performed by crystallographers in industry is quite broad, providing impact in areas such as drug design, material science, quality control, polymer science, product development, and protein engineering. The aim of this half-day session is to showcase the diverse challenges encountered by crystallographers in industry, and how these challenges were addressed. Presenters are encouraged to highlight not only the project, but also the challenge faced, and how it was overcome (or not). The challenges can pertain to a particular aspect of the science (e.g., construct design, crystallization, data collection, phasing), to providing results in a more time-efficient or cost-effective manner, or to the overall difficulty of the problem being addressed. Presenters will be sought to reflect the diversity of crystallography performed in industry, and will be drawn from submitted abstracts and by invitation.
Speakers:
Prof. Robert Dinnebier, Max Planck Institute - Stuttgart, Germany

NEUTRON SCATTERING SESSIONS

06.01 Structure and Dynamics of Hydrogen Bonded Systems
Time: Sunday Morning
Organizers: Tom Koetzle and Bruce Hudson
Description: This session will focus on the impact of diffraction on the critical problem of hydrogen bonding. Topics covered include: neutron crystallography in our developing knowledge of hydrogen bonding; evolution of hydrogen-bonded structures with temperature and pressure; spectroscopic and theoretical studies of hydrogen-bonded materials; and unconventional forms of hydrogen bonding. Talks will be both invited and drawn from the contributed abstracts.

SMALL ANGLE SCATTERING SESSIONS

09.01 Understanding the Nano-scale using Small-Angle Scattering
Time: Sunday Morning
Organizers: Ken Littrell and Greg Beaucage

Description: Nanometer size-scales represent the frontier between a thermodynamic description of matter at small scales and macroscopic laws at large scales. Small-angle scattering is uniquely capable of providing insight into this transition regime. This session will focus on the use of small-angle scattering (SAS) to understand fundamental issues associated with the nano-scale such as nucleation, growth kinetics, aggregation, micro-phase separation, transport, gas absorption and pore filling. Fundamental understanding of size-dependent electronic, optical, catalytic and magnetic effects will also be of interest. The session will explore the interplay between nanostructure and thermodynamics or kinetics as studied by small-angle scattering and reflectivity.
Speakers:
Michael E. Mackay, Michigan State Univ.
Francois Boue, Saclay France

09.02 Macromolecular Dynamics
Time: Sunday Afternoon
Organizers: Alec Sandy and Joseph Curtis
Description: This session will focus on the application of complementary experimental probes and simulations to the investigation of the dynamical properties of macromolecules. Talks will include dynamics studied via neutron scattering, neutron spin echo, molecular dynamics and x-ray photon correlation spectroscopy.
Speakers:
D. Bossev, IndianaUniv.
B. Leheny, Johns Hopkins Univ.
H. Nanda, National Inst. of Standards and Technology
K. Wood, Institut Laue Langevin
M. Rheinstadter, Univ. of Missouri
J. Smith, Oak Ridge National Lab

SMALL MOLECULES SESSIONS

10.01 Cool Structures
Time: Thursday Morning
Organizers: Allen Oliver
Description: The "Cool Structures" symposium, sponsored by the Small Molecule SIG, is taking contributed submissions for presentation in this oral session. A "Cool Structure" covers the gamut from - but not limited to - high Z' structures, interesting packing and bonding motifs, alternative and useful crystallization techniques to unusual or interesting structural features. In fact, anything that you may consider to be cool, neat or otherwise interesting crystallographically can be a "Cool Structure". If you would like further information please contact the session chair, Allen Oliver (aoliver@chemistry.ucsc.edu).

JOINT SIG SESSIONS

13.01 Incommensurate & Modulated Structures
Time: Sunday Morning
Organizers: Lee Daniels
Description: This session will include introductory and explanatory material to provide a background to the concepts and techniques of modulated structures. Submitting authors are encouraged to include tutorial material in addition to more advanced research results.
Sponsoring SIG(s): Materials, Small Molecules

13.02 Solid State Transformations and Reactions
Time: Sunday Afternoon
Organizers: Marilyn Olmstead and Graciela Diaz de Delgado
Description: This half-day session will attempt to give an overview of different approaches used in the study of solid state transformations, employing not only diffraction methods but also complementary techniques such as NMR and microscopy. Particular emphasis will be placed on instances where X-ray

crystallographic structural information accompanies the description of the transformation. A wide range of materials (organic, inorganic, etc.) and processes (reactions, phase transitions, rearrangements, etc.) are expected to be covered. Presentations will be chosen by invitation and from submitted abstracts.
Speakers:
Larry Falvello, Univ. of Zaaragoza
Ilia Guzei, Univ. of Wisconsin, Madison
Alexander Briceño, Inst. Venezolano de Investigaciones Cientificas, Caracas, Venezuela
Sponsoring SIG(s): Materials, Powder, Service Cr, Small Molecules

13.03 Structural Biology in Neurological Disorders
Time: Sunday Afternoon
Organizers: Ruslan Sanishvili and Gergely Toth
Description: For the first time, structural biology in neurological disorders will have a dedicated session at the ACA meeting. Neurological disorders rank second only to cardiovascular disorders among all diseases, if disease morbidity and mortality are combined, and is the first when suicide and substance abuse are included. The World Health Organization [WHO, 2001] estimated that over 450 million people around the world are affected by neurological disorders. A part of structural biology research in this area has been focused on elucidating the fundamentals of protein missfolding and protein fibrilization/aggregation and their connection to the cause of ailment such as Alzeimer's and Parkinson's diseases. Another part of structural biology research has been lagging behind, which is understandable, if one considers that many of the "players" or "villains" in these disorders are membrane proteins and intrinsically disordered proteins. To complicate matters, in many cases it is the interaction between several gene products or regulatory processes that often break down leading to disorders. As a result, structural biology of neurological disorders has been an extremely challenging field. Increased funding and development of advanced techniques in all steps of structural research allowed some of the challenges to be overcome and today we are witnessing impressive growth in the field. Particularly, advances in electron microscopy, multidimensional nuclear magnetic resonance and X-ray crystallography have enabled much of the progress. The session will present results of structural studies from wide range of neurological disorders – those which have been studied for number of years and those with more recent breakthroughs; those with large populations of affected persons and those with relatively few, or "orphan diseases
Speakers:
Gregory Petsko, Brandeis Univ.
Ray Stevens, The Scripps Research Institute
Eric Gouaux, HHMI, Vollum Institute of Oregon Health & Science Univ.
Gergely Toth, Elan Pharmaceuticals
Sponsoring SIG(s): BioMac, Industrial

13.04 Diffraction Studies of Correlated Electron Systems
Time: Monday Morning
Organizers: A. Zheludev
Description: Complex phenomena in strongly correlated electron systems are often driven by interactions or competition between several degrees of freedom, such as lattice distortions, magnetic, orbital or charge order. The corresponding order parameters are directly probed in neutron and X-ray diffraction experiments. This session will feature talks that describe crystallographic studies that led to breakthroughs in the understanding the quantum physics in several specific correlated-electron systems, such as CMR materials, multiferroics and orbital-ordered perovskites.
Speakers:
A. Christianson, Oak Ridge National Lab: Charge and Magnetic Order in Ferroelectric LuFe2O4
M. Kenzelmann, now ETH, will be at U.Minnesotta: Multiferroic Materials, RbMn(MoO4)2
I. Zaliznyak, Brookhaven National Lab, Orbital, Charge and Spin order in Cobaltates
P. Gehring, NIST, Relaxor Ferroelectrics
J. Fernandez-Baka, Oak Ridge National Lab, CMR Manganites
Sponsoring SIG(s): Materials, Neutron

13.05 Modern Teaching Tools for 21st Century Science

Time: Monday Afternoon
Organizers: Thomas Proffen and Bernhard Rupp
Description: In many present curricula, crystallography is - if at all - only briefly treated as an analytical technique, and as a consequence, crystallographic education has not kept up with modern developments in this exciting field. Modern teaching tools ranging from interactive computer tutorials to multi-media support and web casting are now becoming available and are adapted in crystallographic education. This session aims at giving an overview of recent developments in the areas of macromolecular as well as small molecule crystallography and beyond.
Speakers:
Brian Toby, Argonne National Lab
Bernhard Rupp, QED Life Science Discoveries
Reinhard Neder, Univ. Wuerzburg, Germany
Katherine Kantardjieff, Univ. of California, Fullerton
Sponsoring SIG, Committee: Powder, Continuing Education

13.06 Molecular Magnets
Time: Monday Afternoon
Organizers: Jamie Manson
Description: Molecule-based or molecular magnets are among the most widely studied materials in condensed matter sciences. Their popularity stems from the rich variety of structure types and resulting magnetic behaviors that range from classical magnetism (*e.g.*, antiferro- ferro- and metamagnetism) to single-molecule magnets. Through design and synthesis efforts, chemists have demonstrated an ability to systematically alter geometrical parameters while monitoring the magnetic response of such modifications. Development of the field has and will continue to rely heavily on X-ray and neutron crystallography in order to assess magneto-structural relationships in new systems. While structure will be the focus of this session, other topics related to molecular magnetism are also of interest.
Speakers:
Joel S. Miller, Univ. of Utah
Roger Willett, Washington State Univ.
Sponsoring SIG(s): Materials, Neutron

13.07 Professional Directions
Time: Monday Afternoon
Organizers: Tara Davis
Description: This session, organized by the Young Scientists SIG, will provide an opportunity for young scientists to interact with representatives of academia, industry, and government organizations in an informal setting. A panel discussion will be convened to discuss current opportunities for young scientists in both traditional and non-traditional scientific professions. The goal of the session is to provide young scientists both with a current snapshot of a "day in the life" of a professional scientist, and also an opportunity to provide practical information for graduation students and post-doctoral candidates undecided as to their career path.
Sponsoring SIG(s): Service, Young Scientist

13.08 Catalysis Studies using SAXS and High Energy Scattering with PDF
Time: Tuesday Morning
Organizers: Randall Winans and Peter Chupas
Description: Catalysis is an essential technology for economic prosperity, energy security and environmental preservation in the 21st Century. Small angle X-ray scattering and GISAXS has been used to characterize catalysts, following synthesis of catalysts and for in situ studies of catalytic function.
With the increased availability of large fluxes of high energy X-rays (>60 keV, $\lambda < 0.2$ Å) at third generation synchrotrons such as the Advanced Photon Source at Argonne, the Pair Distribution Function (PDF) method has re-emerged as a powerful technique for structural characterization in catalysis. The objective of this symposium is to demonstrate the impact that these two complementary approaches are having on the elucidation of problems in catalysis.
Speakers:
Takeshi Egami Oak Ridge National Lab

Karina Chapman, Argonne National Lab
Clare Grey, Stoney Brook Univ.
Alvise Benedetti, Univ.of Venezia, Italy
Bert Weckhuysen, Utrecht Univ., Netherlands
Christine Revenant, CEA, Grenoble France
Sungsik Lee, Argonne National Lab
David Tiede, Argonne National Lab
Sponsoring SIG(s): Materials, SAS

13.09 Emerging Opportunities for X-ray and Neutron Scattering: New Sources and New Techniques I and II
Time: Tuesday Morning and Afternoon
Organizers: Bob Sweet and Ken Herwig
Description: The x-ray and neutron scattering communities are seeing a world-wide commitment to the construction of new sources and instrumentation, and to accomplishing major upgrades and improvements to existing sources. Remarkable gains in capabilities are opening the investigation of new scientific frontiers. This session will focus on these emerging sources and technologies, highlighting the new opportunities for ground-breaking science.
Sponsoring SIG(s): Neutron, Synchrotron

13.10 Supramolecular Chemistry: Organic Crystals From Assembly to Function I, II, and III
Time: Tuesday Morning, Afternoon, and Wednesday Afternoon
Organizers: Jennifer Swift
Description: This session will consider various aspects of organic crystalline materials from the earliest stages of assembly through the manifestation and testing of their useful properties. Topics covered include nucleation and growth phenomena, engineering of single and multi-component crystals, polymorphism, and structure-property correlations.
Speakers:
Jerome Delhomelle, Univ. of South Carolina
Lara Estroff, Cornell Univ.
Bart Kahr Univ. of Washington
Matthew Peterson, Transform Pharmaceuticals
Nair Rodriguez, Michigan State Univ.
Michael Ward, New York Univ.
Lian Yu, Univ. of Wisconsin
Sponsoring SIG(s): Materials, Small Molecules

13.11 Biological Applications of SAXS and SANS
Time: Wednesday Morning
Organizers: William Heller and Greg Hura
Description: While the impact of protein crystallography in the biological sciences has been profound, the complex macromolecular machines of living cells have proven to be challenging crystallization targets. Small-angle scattering of X-rays (SAXS) and neutrons (SANS) are complementary structural methods that are excellently suited for studying complex, disordered and dynamic systems including macromolecular complexes and biological membranes. Advances in data analysis and modeling have opened avenues for gaining detailed structural and functional insight from small-angle scattering experiments for systems that have proven challenging to study by other methods. This session will focus on the application of small-angle scattering techniques in the biological sciences ranging from complex macromolecular assemblies to biological membranes.
Sponsoring SIG(s): SAS, Synchrotron

13.12 Powder Challenges: Structures Under Nonambient Conditions
Time: Wednesday Afternoon
Organizers: Chris Tulk
Description: This session will focus on the studies of material structure and structural processes under conditions that are considered to be far from ambient. Material structure include ordering on all length

scales from highly disordered, short range structures, to highly ordered crystalline samples that are subject to environments that are considered extreme. The session will focus on the science of materials subjected to applied pressure ranging from several kilobars to structural transformations at several megabars, to non-ambient temperature from the milikelvin to several thousand kelvin, to applied fields (H, E, etc.) or to chemical extremes including systems that are embedded within reacting chemical environments. In many cases the challenges that are associated with extreme conditions coincide with challenges of studying very small samples that press the limits of current diffraction techniques and analysis. As such, we also welcome papers relating to the data analysis of very small samples from x-ray studies of micron sized samples to neutron studies of several 100's micron sized samples.
Sponsoring SIG(s): Powder, Synchrotron

13.13 Materials for Energy Applications
Time: Thursday Morning
Organizers: Jason Hodges, Craig Brown
Description: The discovery of efficient materials for all aspects of energy storage, conversion and utilization is a critical challenge of the 21st century. This session will focus on the crystallography and structure property relationships that can be harnessed to yield better performing energy application materials
Speakers:
Craig Brown, National Inst. of Standards and Technology
Hui Wu, University of Maryland and National Inst. of Standards and Technology
Gerbrand Cedar, Massachusetts Inst. of Technology

Sponsoring SIG(s): Materials, Neutron, Powder

13.14 Microcrystals
Time: Thursday Morning
Organizers: Richard Gillilan, Ruslan Sanishvili
Description: Frontiers of structural biology are continuously expanding. Membrane proteins, hetero-molecular assemblies, multi-domain proteins, and many other important biological systems only produce microcrystals. Increasingly, synchrotron beamlines are evolving to meet the challenges of obtaining good diffraction data from samples of ever decreasing size. While x-ray optics, background scattering reduction, beam stability, and mechanical design innovations continue to improve, this session will focus on supporting technologies, data collection strategies, and important biophysical questions surrounding the occurrence of microcrystals. What causes crystals to be small? Within larger crystals, how much does diffraction quality vary from spot to spot and how can x-ray microbeam be effectively used to collect the best data? How can we avoid or mitigate radiation damage as a consequence of higher flux densities used with smaller diffracting volumes? The session will also touch upon recent advances in microcrystal recognition, manipulation, and harvesting, especially within the context of high-throughput screening
Sponsoring SIG(s): BioMac, Synchrotron

13.15 Diffuse Scattering Studies of Local Structure in the Solid State
Time: Thursday Afternoon
Organizers: Branton Campbell and Thomas Proffen
Description: Many of the most useful properties and functions of crystalline systems originate in local deviations from the ideal or "average" crystal structure. Diffuse scattering measurements simultaneously probe both the average structure and the local structural correlations that exist on short and intermediate-range length scales. The aggressive development of new x-ray and neutron scattering instrumentation has now made diffuse-scattering features more accessible than ever before. The session will showcase the use of single-crystal and powder (PDF) diffuse scattering measurements to explore structure-property relationships in the complex oxides and other solid-state materials.
Speakers:
Despina Louca, Univ. of Virginia
Hyunjeong Kim, Michigan State Univ.
Xuerong Liu, Univ. California, San Diego
Barabash, Rozaliya, Oak Ridge National Lab

Jose Rodriguez, NIST
Sponsoring SIG(s): Materials, Powder

13.16 Time Resolved Scattering
Time: Thursday Afternoon
Organizers: P. Thiyagarajan and Vukica Srajer
Description: The key for understanding of how macromolecules function is not only to elucidate their equilibrium structures but also to understand the dynamics of structural changes and to obtain the structures of intermediate states. The focus of this session is to present the latest developments in the study of dynamics and reaction pathways in macromolecules by time-resolved crystallography and small angle scattering. Topics covered will include time-resolved protein crystallography of enzyme mechanism, photoreaction cycles, self assembly of supramolecular systems, RNA and protein folding, and membrane phase transitions.
Sponsoring SIG(s): BioMac, SAS

AWARD AND SPECIAL SESSIONS

AW.01 Etter Early Career Award
Time: Wednesday Morning
Organizers: Anna Gardberg
Description: A half-day symposium will recognize Radu Custelcean, who has been selected to receive the 2008 Margaret Etter Early Career Award. Dr. Custelcean's work at Oak Ridge National Laboratory involves molecular and crystal host design for chemical separations.
The Etter Early Career Award recognizes outstanding achievement and exceptional potential in crystallographic research demonstrated by a scientist at an early stage of their independent career. The Etter Early Career Award honors the memory of Margaret C. Etter (1943-1992), a major contributor to the field of organic solid-state chemistry.
The session will highlight the work of younger crystallographers. Contributions from students and post-docs in all areas of crystallography are invited.
Sponsoring SIG(s), Committee: General, Young Scientist, Continuing Education

AW.02 Patterson Award, honoring BC WANG: Advances in Macromolecular Phasing and Their Impact to Structural Biology
Time: Wednesday Afternoon
Organizers: John Rose and Gary Newton
Description: The general theme of the symposium will be advances in *de novo* macromolecular phasing over the past quarter century. Topics covered will include SIR, MAD and SAD phasing, as well as applications of Wang's initial ISIR/ISAS programs a variety of structures including recent sulfur SAD structures determined in the home lab and at the synchrotron.
Sponsoring SIG(s): Biomac

SP.01 Undergraduate Showcase
Time: Sunday Afternoon
Organizers: Katherine Kantardjieff
Description: Papers are invited for either oral presentations or posters to be given by undergraduates on their crystallography research. The studies can be from any area of crystallography, but the majority of the work being presented must have been completed by the student. In addition presentations by mentors describing the incorporation of crystallography into undergraduate curricula and research are welcome.
All undergraduate participants will receive a certificate from the American Institute of Physics and a commemorative pin.
The ³Undergraduate Research Poster Prize² and ³Undergraduate Research Presentation Prize², sponsored by the American Institute of Physics through the Society of Physics Students, will be presented to undergraduate students at the ACA banquet. The winners will each receive $200 and a banquet ticket. Posters and oral presentations will be judged by committee, during the time the student is presenting his/her research. Presentations and posters will be judged on organization and clarity, presentation, and report of the research.

To be eligible for these awards, the poster or oral presentation must describe research with a significant crystallographic component, students must demonstrate a command of the science, and students must have completed the majority of the work being presented. Please indicate your wish to be considered for either of these awards with your abstract submission.
Sponsoring Committee: Continuing Education

TRANSACTIONS SYMPOSIUM
TR.01 Complementary Methods for Structure/Function Studies of Biomolecules
Time: Monday Morning and Afternoon
Organizers: Carrie Wilmot and Susan Krueger
Description: The Transactions Symposium will focus on complementary methods to crystallographic techniques for structure/function studies of biological macromolecules. Some talks will focus on collaborative research combining crystallography and other techniques, such as small-angle scattering, NMR, neutron spectroscopy and molecular modeling. Methodology-focused talks for various complementary techniques, such as single crystal spectroscopy, will also be included. The goal of the Symposium is to demonstrate how exciting it can be to become involved in interdisciplinary research, and to illustrate how the most important questions in biology today are best tackled using a broad toolbox of techniques.
Sponsoring SIG(s): BioMac, SAS, Synchrotron, Neutron, Powder