



BIOLOGICAL CHEMISTRY DIVISION AMERICAN CHEMICAL SOCIETY

NEWSLETTER

<http://www.biochemdivision.org/>

Secretary: J. P. Richard

February 2007

Message from the Chair Carol Fierke

As incoming chair, I would first like to take this opportunity to thank the outgoing officers of the Division for their service over the last several years. In particular, we owe a deep debt of gratitude to Richard Armstrong who served the last four years as Chair-Elect then Chair of the Division as well as continuing to serve our community as Editor-in-Chief of the journal *Biochemistry*. Richard is an outstanding scientist who has been an outspoken advocate for the growth and well-being of the Division and has been willing to address important and difficult issues facing the members of our division, including open access to journals and federal funding shortfalls. During his tenure as Chair, the Division flourished with increases in membership, finances and programmatic activities. This is an upward slope that we hope to continue, embracing new members and colleagues working in emerging interdisciplinary areas, such as Chemical Biology and Metabolomics.

I would also like to recognize the enormous efforts of the officers who do the bulk of the Division's work: John Richard (secretary), Peter Tipton (former treasurer) and Eugene Mueller (current treasurer). John Richard has done an outstanding job as Secretary over the last 4 years. He has organized the Division business, including elections and award nominations, so that it runs smoothly and efficiently and he has spearheaded the effort to update the Division website, incorporating an employment clearinghouse (see story on p. 2). I am enormously grateful that John has agreed to serve a second term as Secretary. His exceptional organizational and communication skills are much appreciated by everyone in the Division. Peter Tipton and Eugene Mueller have kept careful track of the Division's resources and provided expert advice on the best use of these funds. All of the Division membership should be

thankful for the dedication of these and other Division officers.

I thank Karen Allen, Tadgh Begley and Richard Stivers for their hard work in organizing wonderful scientific Programs for the Biological Chemistry Division at the 2006, 2007 and 2008, respectively, fall ACS meetings. Please join us for the exciting meeting in Boston on Aug. 19 – 23 and submit poster abstracts and travel award applications (see details inside). The travel awards and support of Regional meetings provide younger scientists with opportunities to present their work and encourage them to join the Division.

The award winners for 2007 (**Repligen Award, Micheal Marletta; Pfizer Award, James Neil Kelleher; and Lilly Award, Anna Mapp**) are an outstanding group of scientists who have organized impressive awards symposia. I encourage you all to nominate candidates for the 2008 awards (see pp. 4-5).

On a sad note, Professor William P. Jencks died on Jan. 3 after a long illness. Professor Jencks made many contributions to establishing the field of mechanistic enzymology, including authoring many papers that are still highly cited today and mentoring an entire generation of scientists in this field.

I am looking forward to working with the Division officers and members to increase our membership, research breadth, and political clout. In this difficult funding climate we need to continue making a clear-cut case to the funding agencies and Congress of the need to fund science education and basic biomedical research.

Updated Website for the Division of Biological Chemistry

The Division has launched an updated Website at:

<http://www.biochemdivision.org>

One feature of this site are bulletin boards to match the research interests of investigators working on important problems in Biological Chemistry with the talents of young Ph.Ds who are ultimately interested in an academic or industrial career. Principal investigators and private organizations are encouraged to post job openings at this site. Scientists looking for a postdoctoral position or other employment are encouraged to post their qualifications. These postings are free-of-charge and can be easily completed over the Internet.

The success of this service requires that our members use it profitably. Suggestions for changes to improve this service should be sent to the Division's Secretary at:

biochdiv@chem.buffalo.edu.

Report from the Enzyme Mechanisms Conference

The 20th Enzyme Mechanisms Conference held January 3-6, 2007 at the Don CeSar Beach Resort in St Pete Beach, Florida. The meeting attracted 227 participants from the US, Canada, and Europe. These included a large contingent of graduate students and post-doctoral research associates. In addition, there were 122 posters in two afternoon poster sessions.

There were six general sessions covering various topics including the evolution of enzymes, drug targets, metalloenzymes, biosynthetic pathways, computational enzymology, enzyme dynamics, and radicals. The lectures prompted many questions, sparked considerable discussion and some lively debate. Overall, the science was superb, the weather was spectacular, and the food and location were magnificent.

Tom Bruice, Bill Jencks, and the late Myron Bender founded the Enzyme Mechanisms Conference in 1969. It was announced at the meeting that Bill Jencks passed away on January 3rd, 2007. Many of the speakers dedicated their talks to his memory and his influence was clearly seen in their work.

Meetings of the Division of Biological Chemistry at National Meetings of the American Chemical Society.

233rd National Meeting, March 25 - 29, 2007 – Chicago, IL.

The Division of Biological Chemistry organizes formal programs for the fall National Meeting only. However, many members of our Division are also active in The Divisions of Carbohydrate Chemistry, Medicinal Chemistry, Computational Chemistry and Organic Chemistry, and they will find much to interest them in the programs presented by these divisions at the spring meeting.

234th National Meeting, August 19 - 23, 2007 - Boston MA

The program for the Division of Biological Chemistry is being organized by the program chair Tadhg Begley, Department of Chemistry, Cornell University (tpb2@cornell.edu). The Program will be composed of invited talks and contributed poster presentations. The call for papers appeared in the January 22 issue of C&E News. Instructions for the submission of abstracts are given on page 7 of this Newsletter.

The Division's program will feature the following symposia to highlight the work of our members:

Award Symposia

Repligen Award honoring Michael Marletta:
Reactions and Pathways: Catalysis, Mechanism and Regulation.

Pfizer Award honoring James Neil Kelleher:
Efficient Decoding of Natural Product Bioassembly: Mass Spectrometry and More.

Lilly Award honoring Anna Mapp:
Control of Biomolecular Assembly and Function.

Other Symposia

DNA Enzymology (organized by Greg Verdine).

Chemical Approaches to Protein Function (organized by Ben Cravatt).

Antibiotics: Biosynthesis and Resistance (organized by Suzanne Walker).

Natural Products: Mechanisms of Action
(organized by Jun Liu).

Molecular Imaging (organized by Jin Zhang).

Symposium to Honor Perry Frey (organized by Claire CaJacob).

Poster Presentations. Posters will be presented at several sessions during the week of the ACS meeting. The division encourages submission of abstracts for posters. Contributions on topics related to the themes of the organized symposia are particularly encouraged. Instructions for the submission of poster abstracts are given on page 7 of this Newsletter.

Travel Awards. The Division offers travel awards for graduate students and postdoctoral fellows to attend the 232nd ACS National Meeting from September 10 –14, 2006. The level of support is \$600 along with a complimentary registration. Detailed information about these awards is given on page 7 of this Newsletter.

FUTURE NATIONAL MEETINGS

236th National Meeting, August 17-21, 2008 - Philadelphia PA. James Stivers at the Department of Pharmacology and Molecular Sciences, Johns Hopkins School of Medicine will serve as the Chair of the Program Committee for this meeting (jstivers@jhmi.edu).

238th National Meeting, August 16-20, 2009 - Washington DC. Suzanne Walker, Department of Microbiology and Molecular Genetics, Harvard University will serve as the Chair of the Program Committee for this meeting (suzanne_walker@hms.harvard.edu).

Regional ACS Meetings.

Regional meetings of the American Chemical Society provide young chemists, particularly graduate students and postdoctoral fellows, the opportunity to make professional contacts and hone their presentation skills in a relatively low-key atmosphere. The Division of Biological Chemistry encourages its members to participate in the following regional meetings.

39th Middle Atlantic Regional Meeting
[\[http://www.marmacs.org/marm07\]](http://www.marmacs.org/marm07)
May 16 - 18, 2007. Collegeville, PA

39th Central Regional Meeting
[\[http://www.cermacs2007.org/\]](http://www.cermacs2007.org/)
May 21 – 23, 2007. Covington, KY.

62nd Northwest Regional Meeting
[\[http://northwestchemistry.org/Norm_2007/index.htm\]](http://northwestchemistry.org/Norm_2007/index.htm), June 17 - 20, 2007, Boise, ID

Rocky Mountain Regional Meeting
<http://www.uwyo.edu/rmr2007acs-aiche/>
August 30 - September 1, 2007, Denver, CO

41st Western Regional Meeting
[\[http://www.wrmacs.org/\]](http://www.wrmacs.org/)
October 10 - 13, 2007, San Diego, CA

59th Southeast Regional Meeting
[\[http://www.sermacs2007.org/\]](http://www.sermacs2007.org/)
October 24 - 27, 2007, Greenville, SC

62nd Southwestern Regional Meeting
<http://www.depts.ttu.edu/chemistry/SWRM07/>
November 4 - 7, 2007, Lubbock, TX

43rd Midwest Regional Meeting
November 7 – 10, 2007, Kansas City, MO

Support for Meetings

The Division of Biological Chemistry provides grants to its members of up to \$1500 to support the expenses of a one-day symposium at any ACS Regional meeting and of up to \$2000 to support larger conferences. Members interested in organizing a symposium or conference in 2007 should provide an outline for the proposed program to:

James T. Stivers
Department of Pharmacology and
Molecular Sciences
Johns Hopkins School of Medicine
725 North Wolfe Street, WBSB 314
Baltimore, MD 21205
jstivers@jhmi.edu

These proposals will be reviewed twice a year at the Division's Officer meetings, which are generally held during the Spring and Fall ACS meetings.

The division provided support for the following symposia and meetings held in 2006.

Gordon Research Conference on Isotopes in Chemistry and Biology. January 2006, Ventura, CA.

Frontiers in Metallobiochemistry. June 2006, State College PA.

Symposium on "Rational Protein Design" at the ACS Mid-Atlantic Regional Meeting, June 2006, Hershey PA.

Symposium on "Protein and Peptide Modification in Biomarker Development" at the ACS Mid-Atlantic Regional Meeting, June 2006, Hershey PA.

Symposium on "Bioorganic Chemistry and Biosensors" at the 61st ACS Regional Meeting, June 2006, Reno NV.

Gordon Research Conference on Enzymes, Coenzymes and Metabolic Pathways. July 2006, Biddeford ME.

Gordon Research Conference on Bioorganic Chemistry. July 2006, Oxford, UK.

26th Midwest Enzyme Chemistry Conference. October 2006, Evanston IL.

Symposium on "Frontiers in Chemical Biology" at the ACS Northeast Regional Meeting, October 2006, Binghamton, NY.

Symposium on "Chemistry of Nucleic Acids" at the ACS Southeast Regional Meeting, November 2006, Atlanta GA.

Rustbelt RNA Meeting. October 2006, Mount Sterling, Ohio.

CALL FOR NOMINATIONS

Division of Biological Chemistry
Awards for 2008

Nominations are requested for the year 2008 Eli Lilly Award in Biological Chemistry, the Pfizer Award in Enzyme Chemistry, and the Repligen Corporation Award in Chemistry of Biological Processes.

Eli Lilly Award in Biological Chemistry:

Nominees shall have accomplished outstanding research in biological chemistry of unusual merit and independence of thought and originality. The nominee shall not have passed the 38th birthday by April 30, 2008, and shall be actively engaged in the line of research for which the award is made. This prize cannot be made to a person who received another award sponsored by Eli Lilly and Company for the same technical accomplishment.

Recent recipients: James Rothman (1986), Jacqueline Barton (1987), Peter Walter (1988), Michael Cox (1989), George McLendon (1990), Peter Schultz (1991), William DeGrado (1992), Stuart Schreiber (1993), Peter Kim (1994), Jeremy Berg (1995), Gregory Verdine (1996), Alanna Schepartz (1997), John Kuriyan (1998), Chaitan Khosla (1999), Xiaodong Wang (2000), Jennifer Doudna (2001), Kevan Shokat (2002), Andreas Matouschek (2003), Benjamin Cravatt (2004), Dewey G. McCafferty (2005), Linda Hsieh-Wilson (2006) and Anna K. Mapp (2007).

Pfizer Award in Enzyme Chemistry:

Nominees shall have accomplished outstanding work in enzyme chemistry where the presence of enzyme action is unequivocally demonstrated. The nominee shall be engaged in noncommercial work and shall not have passed the 40th birthday by April 30, 2008. This prize cannot be made to a person who received another award sponsored by Pfizer, Inc. for the same technical accomplishment.

Recent recipients: JoAnne Stubbe (1986), Gregory Petsko (1987), John Kozarich (1988), Kenneth Johnson (1989), James Wells (1990), Ronald Vale (1991), Carl Pabo (1992), Michael Gelb (1993), Donald Hilvert (1994), Gerald Joyce (1995), Andrew Karplus (1996), Daniel Herschlag (1997), Ronald Raines (1998), David Christianson (1999), Eric Kool (2000), Ruma Banerjee (2001), Karin Musier-Forsyth (2002), Dorothy Kern (2003), Wilfred van der Donk (2004), Nicole S. Sampson (2005), James Berger (2006) and Neil Kelleher (2007).

Repligen Corporation Award in Chemistry of Biological Processes: Nominees shall have made outstanding contributions to the

understanding of the chemistry of biological processes with particular emphasis on structure, function and mechanism. There are no restrictions on age or membership affiliation for the Repligen Award.

Recipients: Gregorio Weber (1986), Thomas C. Bruice (1987), Robert Abeles (1988), Stephen Benkovic (1989), Harold Scheraga (1990), William Parson (1991), Frank Westheimer (1992), Jeremy Knowles (1993), Judith Klinman (1994), Wallace W. Cleland (1995), William P. Jencks (1996), James A. Spudich (1997), David Eisenberg (1998), Christopher Walsh (1999), Perry Frey (2000), Rowena Matthews (2001), Dale Poulter (2002), John Gerlt (2003), JoAnne Stubbe (2004), David E. Cane (2005), Vern Schramm (2006) and Michael Marletta (2007).

Submission of Nominations: A nominator should send the curriculum vitae of the candidate with a list of publications and a letter explaining the special achievements of the candidate. Additional letters of support for the specific candidate are desirable. Information about the nominating process is also posted at:

<http://biochemdivision.org/>

The Deadline for Receipt of Nomination Materials is June 1, 2007 - All materials should be sent to:

John P. Richard
Department of Chemistry
University at Buffalo, SUNY
Buffalo, NY 14260
jrichard@chem.buffalo.edu

Election Results

New Officers for the Division of Biological Chemistry.

Our Division serves many important functions, the most important of which are related to promoting the work of its members. This requires a significant commitment of time and effort from our officers. The Division offers its thanks to each of its members who generously made themselves available for office in the 2006 elections, and congratulations to the following newly elected officers:

Chair Elect - 2007 - 2008, Chair - 2009 - 2010
John Blanchard

Program Committee, 2007 - 2010, Chair 2009
Suzanne Walker

Executive Committee, 2007 - 2009
Martin Tanner
Wilfred van der Donk

Nominating Committee, 2007 - 2009
Anna K. Mapp

Nominations of Officers. The Nominating Committee (below) encourages nominations of candidates for the offices shown below for 2008. Please send your suggestions to any member of the nominating committee by May 1, 2007.

Philip A. Cole (pcole@jhmi.edu)
Eric D. Brown (ebrown@mcmaster.ca)
Anna Mapp (amapp@umich.edu)

Program Committee Member (4 year term)
Nominating Committee Member (3 year term)
Executive Committee (Two for 3 year terms)
Councilors (Two for 3 year terms)

Program Committee. The Program Chair Tadhg Begley, in consultation with the Program Committee (below), prepares the Divisional program for scientific meetings. The committee requests suggestions for symposia for National and Regional ACS meetings.

Tadhg Begley (Chair) (tpb2@cornell.edu)
James T. Stivers (jstivers@jhmi.edu)
Suzanne Walker
(suzanne_walker@hms.harvard.edu).
Karen Allen (allen@med-xtal.bu.edu)

Report from the 232nd ACS National Meeting, San Francisco, California from September 10 - 14, 2006.

The Chair of the Program Committee, Karen Allen, organized a spectacular line-up of 32 invited talks and 252 poster presentations. Once again, our members established a new record for the number of presentations. There is every

expectation that this total will again be exceeded at the 2007 meeting in Boston. The Division is indebted to Karen and the other members of the Program Committee for their dedication, care and hard work in assembling this program. Selected photos from the meeting can be viewed at <http://www.biochemdivision.org/>.

The invited talks were presented in a series of eight symposia. The power of Structural Biology to reveal the locations of atoms in complex assemblies of proteins and nucleic acids was featured prominently in the session on "Structure and Function of Macromolecular Assemblies" organized by James Berger, the recipient of the 2006 Pfizer Award in Enzyme Chemistry. There were talks in four hot areas of cell biology, including post-translational control of protein stability and function, the coupling of DNA repair to gene expression, DNA replication, and chromosome segregation.

Linda C. Hsieh-Wilson, the recipient of the Lily Award in Biological Chemistry, organized the session on "Chemical Approaches to Neuroscience and Other Complex Systems". This symposium highlighted new experimental approaches that allow chemists, using the tools of Chemical Biologists, to solve important problems in biology. The talks featured chemical approaches to studying brain development, neuroregeneration, pain and chemical addiction.

Vern Schramm, the recipient of the Repligen Award on the Chemistry of Biological Processes, organized the session on "Enzymatic Catalysis and Transition States". This session served to emphasize that fundamental studies by creative chemists are worth supporting, and can impact work in unexpected areas. The talks in this session featured studies of the chemical pathways for enzymatic catalysis, with a special emphasis on rationalizing the enzymatic rate acceleration, and determining transition state structure. The award presentation in particular showed that the knowledge of the transition state provided by these studies can lead to the development of powerful drugs. The mechanics of enzymes was also featured in a session of "Enzyme Mechanisms" organized by Karen N. Allen from the Boston University School of Medicine,

The Division was excited to present two sessions dedicated to the problem of folding of linear strands of amino acids into a functional three-dimensional protein structure. Alzheimers, Lou Gehrigs, and Mad Cow Disease are a few among a growing number of human pathologies known to stem from misfolded or unfolded proteins. Lila M. Gierasch, the recipient of the

Francis P. Garvan - John Olin Medal, organized a session on "Protein Folding and Aggregation: From the Test Tube to the Cell". Alan Fersht, the recipient of the Alfred Bader Award, organized a symposium on "Protein Folding, Unfolding, and Misfolding".

Debra Dunaway-Mariano from the University of New Mexico organized a session on "Chemical Biology" that was supported by the ACS publication of the same name. The Chemistry, Biology and underlying pathologies of the cell were further highlighted in the session headed by Dean Tolan from Boston University on "Uncovering the Metabolome and Metabolic Defects".

In addition to the scheduled talks, over 260 posters were presented by students and postdoctoral fellows. Karen Allen deserves our thanks for organizing this outstanding program. The planning for the program for 2007 meeting in Boston is well advanced thanks to the efforts of the Program Chair, Tadgh Begley.

Travel Awards for 2006

The Division of Biological Chemistry promotes the work of our young talent through the award of Travel Grants. The following is a list of the recipients of Travel Grants to attend the 2006 ACS meeting in Washington along with the names of their advisors and affiliations

Aimee Herdt (T. Andrew Taton), University of Minnesota

Alina Britchi (Anne Baranger), Wesleyan University

Amanda Krzysiak (Richard Gibbs), Purdue University

Angela Fleischhacker (Rowena G. Matthews), University of Michigan

Chinmay Majmudar (Anna K. Mapp), University of Michigan

Denise E. Bailey (David Van Vranken), Cal, Irvine

Henry Nguyen (Karen N. Allen), Boston University Medical Center

Holly E. Carpenter (Vincent P. Conticello), Emory University

Hyang-Yeol Lee (E. Neil G. Marsh), University of Michigan

Jianxin Shi Palmer (W. Taylor), UC San Diego

Jiaoyang Jiang (David Cane), Brown University

Jonathan Lassila (Stephen Mayo), Cal Tech
Krisztina Toth (John Richard), University of Buffalo
Lin Chen (Nicole Sampson), Stony Brook University
Marguerite Desko (Jennifer Kohler), Stanford University
Mark A. Lewis (Eric C. Long), IUPUI
Matthew L. Bentley (Dewey G. McCafferty), University of Pennsylvania
Robert L. Osborne (John H. Dawson), University of South Carolina
Samit Shah (Simon Friedman), University of Missouri
Samuel G. Gattis (Carol A. Fierke), University of Michigan
Sayantana Mitra (Amy Barrios), University of Southern California
Terry Watt (Donald Doyle), Georgia Institute of Technology
Thomas Riera (Lizbeth Hedstrom), Brandeis University
Timothy H. Click (Ralph A. Wheeler), University of Oklahoma
Tsui-Fen Chou (Carston R. Wagner), University of Minnesota
Yuan Luo (Paul R. Thompson), Univ. of South Carolina

234th ACS National Meeting, August 19-23, 2007 - Boston MA

Tadhg Begley (tpb2@cornell.edu) is the Program Chair. The call for papers is in the January 22, 2007 issue of C&E News and on the web at (<http://www.acs.org/>). Abstracts for invited talks and poster presentations should be submitted online (<http://oasys.acs.org/>). This records the abstract in the automated OASYS system that is used to organize this meeting. Abstracts for the Boston meeting can be

submitted starting in February and ending on **April 2, 2007**. Instructions, including procedures for incorporating graphics or equations in the abstract, can be accessed at this website.

THE DEADLINE FOR SUBMISSION OF YOUR ABSTRACT TO THE ACS WEBSITE IS APRIL 2, 2007!

Travel Awards to Attend the ACS 230th National Meeting

The Division will offer travel awards on a competitive basis for graduate students and postdoctoral fellows to attend the meeting and present a poster on their research. The selected travel awardees will be reimbursed up to \$600 for expenses and will receive a complimentary registration to the conference. Receipts must be submitted along with a request for reimbursement after the meeting. No more than two awards will be made to one laboratory.

The deadline for submission of an application for a travel award is April 9, 2007.

To apply for a Travel Award

- (1) Fill in the Travel Award Application on the next page
- (2) Attach a printed copy of your abstract.
- (3) Attach a one page CV.
- (4) Attach a signed letter of recommendation from your faculty advisor.
- (5) Send **ONE COMPLETE PDF FILE** of this material as *single* EMAIL attachment to the Program Chair at:

tpb2@cornell.edu

Be sure to use a subject line of "ACS Travel Awards" for your electronic application.

**Application for a Travel Award for
Graduate Students and Postdoctoral Fellows
(Deadline April 9, 2007).**

Name: _____ Advisor: _____

Department _____ Graduate Student: _____ Postdoctoral Fellow: _____

Institution: _____ Street: _____

City, State, Zip: _____

Tel: _____ E-mail: _____

Is an Abstract attached? _____ Is a CV attached? _____

Is a recommendation letter attached? _____