Biophysical Society

# NEWSLETTER

April 2009

## Newly-Elected Board Members

*Catherine Royer*

*Susan P. Gilbert*

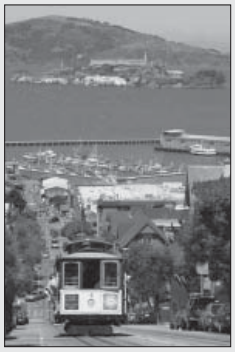
*Catherine Royer,* Centre de Biochimie Structurale, and *Susan P. Gilbert*, Rensselaer Polytechnic Institute, were elected to the Executive Board, replaing outgoing members *Jennifer Lippincott-Schwartz*, NICHD, NIH, and *Paul Axelsen,* University of Pennsylvania. Royer and Gilbert will each serve two-year terms. The other members of the Board include *Henry Lester*, California Institute of Technology; *Harel Weinstein*, Weill Medical College of Cornell University; *Peter Moore*, Yale University; *Mordecai Blaustein*, University of Maryland School of Medicine; *Dorothy Beckett*, University of Maryland; *Lynne Regan,* Yale University; and *David Dawson*, Oregon Health Science University.

## 2010 Nominating Committee

*Rajini Rao*

*Rajini Rao,* Johns Hopkins University School of Medicine, was elected to chair the 2010 Nominating Committee. Also elected to the Committee were *Nathan Baker*, Washington University; *Olaf Andersen*, Weill Medical College of Cornell University; and *Laura Finzi,* Emory University. *Harel Weinstein*, Past President, and *Paul Axelsen*, Past Chair, will serve on the Committee ex officio. The Nominating Committee serves for one year and is charged with developing a slate of candidates for Council and President-Elect, as well as Secretary and Treasurer when those offices come due.

### Save the Date!



54th Annual Meeting

February 20–24, 2010
San Francisco, California

### Contents

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# Executive Board and Council Meeting Updates

The Biophysical Society Executive Board and Council met during the Society's Annual Meeting in Boston. Below is a summary of the major issues addressed during those meetings.

## Education

The Council agreed that more outreach needs to be done at the undergraduate level to better prepare students for a career in biophysics. The Education Committee is discussing several initiatives, but Council approved adding an undergraduate student membership rate. Undergraduate students will be eligible for the undergraduate student rate for a period of up to four years.

To address the needs of Society members who teach biophysics and to provide a forum for discussion of educational issues, the Annual Meeting abstract categories will now include biophysics education as a choice. Education-related poster and platform sessions will be organized based on the number of submissions.

## International Issues

In an effort to address the needs of international members, increase the Society's visibility in countries outside the US, and foster biophysics research across geographical boundaries, the Society will begin holding small, thematic meetings outside the US. The first is being planned in China, a second in Singapore.

## Annual Meeting

To address the concern that the Wednesday poster sessions have a low attendance, Council agreed to change the Wednesday schedule so that the poster sessions are held in the late morning, after the first morning symposia and platform session.

To ensure that no injuries occur while the exhibits tear down on Tuesday evening in the exhibit hall, Council agreed to close viewing of posters at 7:00PM on Tuesday evening.

Given the meteoric rise of late abstracts submissions (over 300 this year), and the cost of processing them at the last minute, Council agreed to increase the late abstract submission charge and to post the full abstracts only online.

# Committees

## Early Careers Events in Boston

The Early Careers Committee organized even more activities at the Annual Meeting in Boston than in previous years. Right at the start, the Meet and Greet table at the opening reception was a point for new attendees to meet new friends—and old ones, as a student from Australia just ran into a former classmate who is now studying in Cambridge, England!

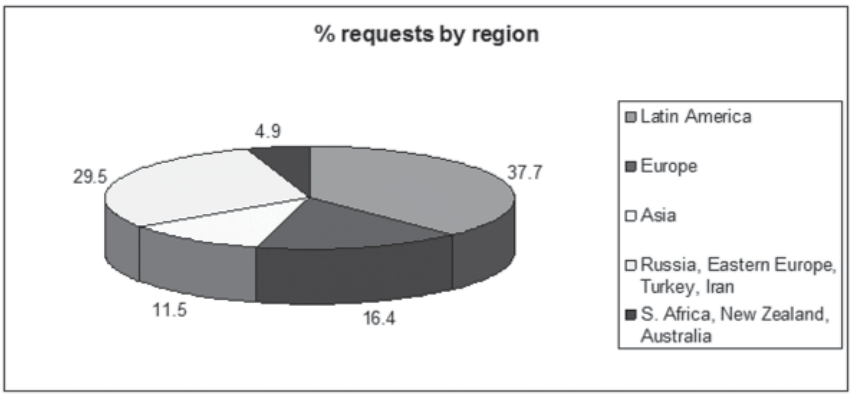
The breakfasts for both graduate students and postdocs provided an opportunity to discuss current issues faced by early career members, to find out more about the Early Careers Committee, and as rightly pointed out by a graduate student, to just meet other students and postdocs in similar situations.

This year the Committee organized two transition panels: from postdoc to an independent position, focusing on the differences between academia and industry, and on the transition from graduate student to postdoc. Both were very well attended—around 150 people each, with non-stop questions for the panelists. Watch this space in the newsletter for more detailed reports of what was discussed, and useful tips if you're facing one of those transitions yourself.

After the sad passing of Ed Bocko last year, who used to present the workshops and one-on-one sessions in the Career Center, Monica Weil presented a series of workshops during the meeting in Boston and individually advised people on their CVs and job search. The Career Center was located near the posters and exhibitors, which provided excellent traffic. Weil's workshops and one-on-one sessions were a great success, and we hope to have her back next year.

## International Travel Grants Program

The International Relations Committee received a total of 61 applications for travel grants to attend the Annual meeting in Boston. Requests came from 29 countries, and 23 grants (21 at $900 and two at $500) were awarded from 13 countries for a 37% success rate. Seventeen of the awards were made to students, four of whom were undergraduates, and four went to senior scientists. Interestingly there were only seven requests from Asia (11.5%), four of whom were from India and one from China, and Asian scientists received 13% of awards. Thirty-eight percent of the requests were from Latin America, and this region represented 39% of awards. Sixteen percent of the requests and 13% of awards were from Europe. Scientists from Russia and Eastern Europe comprised 23% of the requests and received 22% of awards. Although we did not officially try to balance the geographic distribution of the awards, in the end they were proportional to the regional demand.

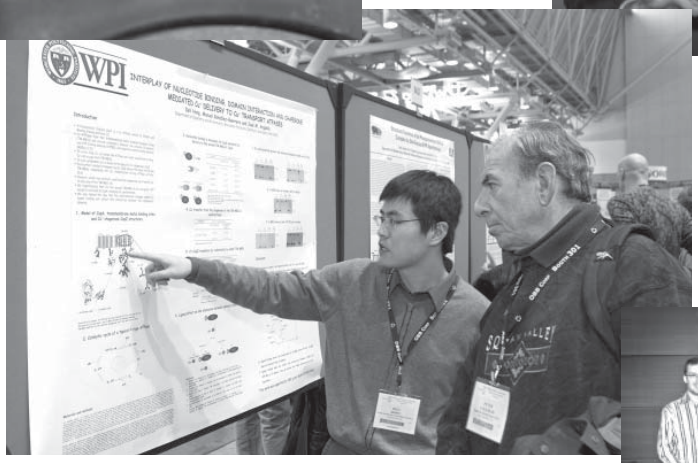


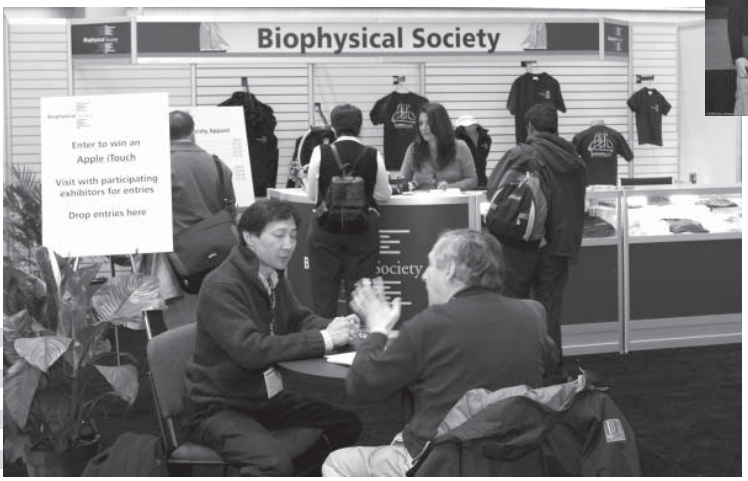

All awardees received a complimentary one-year membership to the Society. Awardees are extremely grateful for this initiative as it enhances their sense of belonging to the biophysics community and, most importantly, to have access to the *Biophysical Journal*.

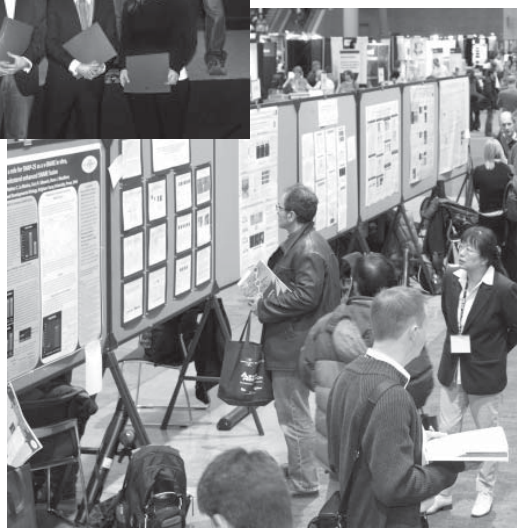
A lunch of international travel grant awardees was held with the Committee. The luncheon is always a success and as usual a very rewarding experience. Like in all prior years, in 2009, before the Awardees received their award checks at this luncheon, they had the opportunity to introduce themselves and their work, to interact with each other, and to meet members of the International Relations Committee. This activity enhances our interaction with young biophysicists and their recruitment to the Biophysical Society.

# 53rd Annual Meeting

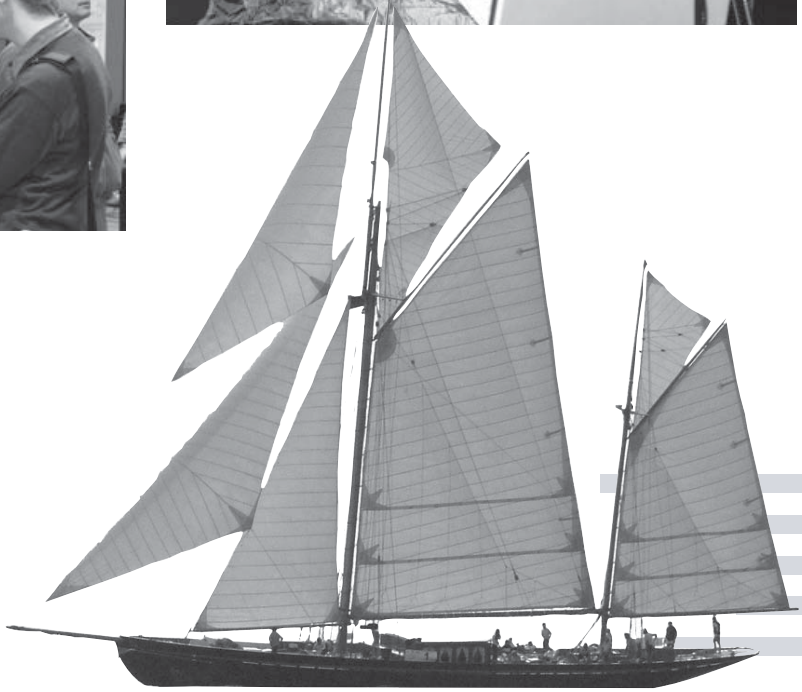
## Boston, Massachusetts


On-site Registration



# Biophysicist in Profile

## Frances Separovic

Frances Separovic followed an atypical path to become a biophysical chemist and professor in the chemistry department at the University of Melbourne. "I did not choose a career in science; I stumbled onto it," she admits.

After one term at the University of Sydney, Separovic left school to work as a junior technical assistant in a microbiology lab at CSIRO Food Research, a government research organization. Following the birth of her son, Kane, she decided to advance herself to better provide for him. After getting a biological technician's certificate in night school, and finding that she enjoyed physics and math, she pursued a math-physics double major at Macquarie University. Her degree program, which she pursued part-time, complemented her work at CSIRO, particularly when she switched to a physics lab.

Separovic with her young son, Kane.

Separovic opted to pursue a PhD part-time, "so I could continue to have fun and do even more research," she says. By the time she finished her PhD, her son had graduated from high school. She took leave from CSIRO to do a post-doc in the United States, with *Klaus Gawrisch* at National Institutes of Health, who inspired her to a change in career. She returned to Australia and joined the University of Melbourne as an associate professor of chemistry after having worked at CSIRO for 23 years.

Separovic may have stumbled onto science, but she had always had the inquisitive, analytical mind of a scientist. Her family immigrated to Australia from Croatia when she was a young child. After mastering English, she set out to figure out "how Australians worked," reading every book in her small school library. This began a lifetime dedicated to discovering how things work, a driving force behind her scientific pursuits. Separovic notes that science not only provided a means to earn a living and help raise her son, but "it also became a hobby which I enjoy very much."

Separovic specializes in nuclear magnetic resonance (NMR) spectroscopy and membrane biophysics. She developed solid-state NMR to determine the structure and dynamics of membrane components in situ. Her lab focuses on how antimicrobial and amyloid peptides get into phospholipid membranes, with the hope of finding applications for antibiotics and Alzheimer's disease.

Separovic appreciates starting in a small lab where she learned things in depth, participated in the entire process, and helped analyze the problem and brainstorm solutions. She regrets that the current trend toward large labs and big-number measures of success will limit small-lab opportunities for students and may sometimes risk the integrity of scientific process and outcome. "Big science that measures success in terms of metrics—research income, number of papers, citations, impact factors—sometimes confuses good science with measures of success, "she contends. Though she turns out impressive numbers in terms of grants received, papers published, and conferences organized, Separovic prefers to be known for scientific integrity and the achievement of good science—not for those numbers.

With the addition of roles such as Associate Dean (and for a time, Acting Head of School), Separovic spends more time on administrative matters. She regrets the loss of lab time but sees

her role as "helping others do good scientific work, which is also rewarding," she says.

This and Separovic's scientific integrity generate a broad ripple effect quickly acknowledged by her students and collaborators. A former postdoc in Separovic's lab, *Maurits de Planque*—now Life Sciences Interface Lecturer at the University of Southhampton in the UK—says that what he appreciated most was Separovic's mentorship. She made de Planque feel at home in Melbourne and in the lab, gave him career advice and encouraged him. "I try to motivate my students in the same way … by striving to be an excellent supervisor and inspiring mentor."

Former PhD student *Crystal Tong-Lay Lau*—postdoc research fellow at Keck School of Medicine at the University of Southern California—echoes the desire to pass on what she gained from Separovic, who explained NMR theory "in the most simplified way, allowing a beginner to understand something complicated almost effortlessly." Separovic promoted manuscript writing skills and attendance at local and international science meetings. (Separovic credits such networking with making her aware of the opportunity for her current position.) "Being in her group was like being in one big family—where even after graduation, the link and support from the group continues," Lau notes.

Collaborator *Mibel Aguilar*, Professor of Biochemistry and Molecular Biology at Monash University, highlights two outstanding research and academic assets of Separovic. "She reads and processes documents and ideas at an alarming rate," benefitting collaborators' publication output and her department's research status and the "escalation in the quality and quantity of its administrative dealings" says Aguilar. "She also tirelessly promotes women in science…..often surprising conference organizing committees with the depth and breadth of both Australian and international female scientists."

"Frances knows how to push a person's limits" to maximize their potential, asserts *Isabelle Marcotte*, Assistant Professor in the Department of Chemistry at the Université du Québec à Montréal. Separovic pressed the shy student to present her PhD work on several occasions, helping Marcotte gain more confidence. Marcotte also gained a friend and collaborator in Separovic, "one of the most brilliant persons I know and a pioneer in the field of biological solid-state NMR."

Separovic's students and colleagues are quick to remark about her great sense of humor, "unstoppable" energy, patience and kindness.

Separovic enjoying travel in Istanbul.

They say she's not only inspiring but also fun to be around. Separovic enjoys her time with her family, especially her son and her nieces and nephews. She relaxes with Scrabble or Sudoku, travel, cinema, sharing a glass of wine with friends – or (according to Marcotte) has been known to listen to heavy metal or rock music, while driving her sports car. That may not be considered to be typical for a scientist—but Frances Separovic does not aspire to be typical.

# Public Affairs

## Science Funding in American Recovery and Reinvestment Act

Since the signing of the American Recovery and Reinvestment Act in February, there has been a flurry of RFPS released by the federal funding agencies. Each agency has set up a recovery website to provide up-to-date information on implementation of ARRA. All the agencies' websites can be accessed from www.recovery.gov.

### National Institutes of Health

The National Institutes of Health (NIH) plan to spend as much of their $8.2 billion allocation for research in FY 2009 as possible in order to stimulate the economy and create or retain jobs. The agency is asking that grantees plan to spend the money within two years of receiving the funds for the same reasons. Thus, the agency has been very quick in releasing Requests for Proposals (RFPS).

In making research awards, the NIH will fund projects that will stimulate the economy, but also that have the potential for making scientific progress in two years. To do this, they will select recently peer-reviewed highly meritorious research grant applications (R01s and others), that can be accomplished in two years or less, fund new research applications, accelerate ongoing scientific research through targeted supplements to current grants, and support a new program, the NIH Challenge Grant Program. The Challenge Grant Program is a trans-NIH program that focuses on specific knowledge gaps, scientific opportunities, new technologies, data generation, or research methods that would benefit from an influx of funds to quickly advance the area in significant ways. Within each broad Challenge Area the NIH Institutes, Centers, and Offices have specified particular Challenge topics that address their missions. There is extensive information about the Challenge Grants available on the NIH's recovery website, grants.nih.gov/recovery. This site allows users to see all the funding opportunities related to ARRA, NIH-wide announcements, and Institute-specific opportunities and guidance.

The ARRA also provides $1 billion to the National Center for Research Resources (NCRR) to support extramural construction, repairs, and alterations in support of all NIH funded research institutions and $300 million for shared instrumentation and other capital equipment to support all NIH activities.

### National Science Foundation

The National Science Foundation received $3 billion from the ARRA to supplement the agency's FY09 budget. In a statement released on March 18, the NSF director, Arden Bement, indicated that since the NSF currently has many highly rated proposals that it has not been able to fund, the agency is planning to use the majority of the $2 billion available in Research and Related Activities for proposals that are already in house and will be reviewed and/or awarded prior to September 30, 2009. Funding of new Principal Investigators and high-risk, high-return research will be top priorities in grants issued with Recovery Funds. Unlike at NIH, grants issued with Recovery Act funds will be standard grants with durations of up to five years. In addition, NSF will also consider high quality proposals declined on or after October 1, 2008, because of lack of available funding when the original decision was made. The program officer will contact the institution when a reversal is being considered by NSF.

The NSF also expects to quickly award funds as specified in the Recovery Act for the

Math and Science Partnership program, the Robert Noyce Teacher Scholarship Program, the Major Research Equipment and Facilities Construction Account, the Academic Research Infrastructure (ARI) program, and the Science Masters program. Solicitations for the latter two programs will be posted this spring, as will a solicitation for the Major Research Instrumentation Program (MRI) in order to make a sufficient number of awards to utilize the $300 million provided in the legislation.

According to the statement, the NSF anticipates that no other solicitations will be posted that are solely in response to the Recovery Act.

The NSF Recovery website is http://www.nsf.gov/recovery.

## Department of Energy Office of Science

The Department of Energy (DOE) Office of Science had not released their plans for spending ARRA funds as of mid-March; however, the agency did provide background information and the rationalization for funding specific areas of science. Under the heading, "Reinvigorate the Economy with Science and Technology," Secretary Chu provides descriptions of the impact "science and basic research in the energy technologies" will have for the nation's future and the role Advanced Research Project Agency-Energy's (ARPA-E) will play in the energy debate. As required by the law, DOE will update their site, http://www.energy.gov/recovery/, on actions taken with stimulus funds.

## President Removes Barriers to Stem Cell Research and Raises Science Profile

On March 9, 2009, President Barack Obama issued an executive order entitled *Removing Barriers to Responsible Scientific Research Involving Human Stem Cells*. The March 9, 2009, Executive Order lifts the ban on federal funding for promising embryonic stem cell research. The HHS Secretary, through the NIH Director, is required to review existing NIH and other widely-recognized guidelines on human stem cell research and issue new NIH guidance within 120 days of the date of the Executive Order.

In his speech announcing the change, President Obama also announced that he was signing a "Presidential Memorandum directing the head of the White House Office of Science and Technology Policy to develop a strategy for restoring scientific integrity to government decision making. To ensure that in this new Administration, we base our public policies on the soundest science; that we appoint scientific advisors based on their credentials and experience, not their politics or ideology; and that we are open and honest with the American people about the science behind our decisions. That is how we will harness the power of science to achieve our goals—to preserve our environment and protect our national security; to create the jobs of the future, and live longer, healthier lives."

## BPS Signs Statement Supporting Science in Texas

The Biophysical Society joined the National Center for Science Education and several other scientific societies in endorsing a statement to the Texas State Board of Education in support of science education and accurate standards. The statement was presented at the State Board's meeting March 25-27, and was prepared in response to a series of proposed amendments. Those amendments singled out topics touching on evolution (including the age and evolution of Earth and the universe as a whole) from other scientific topics included in the Texas standards. The amendments uni-

formly weaken the presentation of these subjects, incorrectly communicating to students that evolution and cosmology are more tentative than the scientific community considers them. Many of the amendments would open the door to the inclusion of creationist ideas.

The statement signed by the Biophysical Society called on the Texas State Board of Education to support accurate science education for all students by adopting the science standards (Texas Essential Knowledge and Skills or TEKS) as recommended to the Board by the scientists and educators on the Board's writing committees.

The Texas standards are important both in Texas and nationally, since the state is very large and its standards affect textbook and science content throughout the country. Despite strong involvement and input from scientists and educators, politics won out in Texas and the state Board of Education approved the controversial amendments

## FY 2009 Budget Finalized

President Obama signed the $410 billion FY 2009 Omnibus Appropriations Act (H.R. 1105) into law on March 11, over five months after the start of the FY 09 Fiscal Year. The NIH, NSF, and DOE Office of Science fiscal year 2009 federal funding is:

- National Institutes of Health-$30 billion, $932 million increase from last year.
- National Science Foundation-$6.5 billion, $705 million increase from last year; and
- Department of Energy, Office of Science-$4.8 billion, a $363 million increase over last year.

To read the full-text of the legislation and Explanatory Statement, go to: http://www.rules.house.gov/111/LegText/111_omni2009.htm.

# Subgroups

## Bioenergetics

The annual Bioenergetics subgroup symposia were held on February 28 in Boston. Both the morning and afternoon sessions had 100-150 attendees. The morning session was Co-chaired by *Shelagh Ferguson-Miller*, Michigan State University, and *William Cramer*, Purdue University, and was entitled *The Role of Lipid in Bioenergetic Function*. First, *Shelagh Ferguson-Miller* provided evidence that the fatty acid side chains of phospholipids in the crystal structure of *Rhodobacter sphaeroides* cytochrome c oxidase were conserved in other cytochrome oxidases, including the more complex beef mitochondrial form. Furthermore, she showed that a detergent, deoxycholate, restores electron transfer activity to a K-proton channel mutant in subunit I of the enzyme, suggesting that conformation rearrangements could be important in oxidase functioning. Further evidence for conformation changes occurring in the enzyme were shown in the active site of the enzyme upon reduction of the binuclear (oxygen binding site) center. *William Cramer* then presented his latest remarkable crystal structure on the cytochrome $b_6f$ complex from cyanobacteria, showing that the protein was a dimer with a central cavity and that it contained chlorophyll a, phospholipids, and a carotene. He presented a mechanism by which the plastoquinone free radical produced on one monomer migrates across the dimer to the FeS center on the opposite monomer. He also showed that the phytyl side chain of chlorophyll a was wrapped around an alpha helix in the enzyme complex. *Thomas Seyfried*, Boston University, then spoke about lipidomics in brain tumor mitochondria. He showed that phenotypically the brain tumor mitochondria were damaged without changes in mitochondrial DNA. He presented data which showed that fatty acid side chains of cardiolipin were remodeled in tumor genesis. The cardiolipin content in tumor mitochondria was decreased in association with decreases in electron transfer activity in the mitochondria. He suggested that the glycolytic activity exhibited by tumor cells may trigger apoptotic signals. *Valerian Kagan*, University of Pittsburgh, then spoke about the mechanism of cardiolipin fatty acid side chain oxidation by in mitochondria. He proposed that cytochrome c acts as a peroxidase initiating cardiolipin oxidation and inducing apoptosis. *Richard Epand*, McMaster University, then spoke about nucleoside diphosphate kinase and creatine kinase acting as bridging molecules between the outer and inner mitochondrial membrane. Both enzymes have oligomeric structures *in vivo* and have highly conserved positive charges that can interact with the membrane. He showed that oligomeric creatine kinase can cross link liposomes and the oligomeric creatine kinase can transfer lipids between membranes.

The afternoon symposium was co-chaired by *Tatiana Rostovtseva*, National Institutes of Health, and *John Lemasters*, Medical University of South Carolina, and was entitled *Integration of Ion Transport and Metabolism in Mitochondria*. Lemasters showed that ethanol closes VDAC and uncouples respiration in mitochondria isolated from rat hepatocytes. He provided evidence that ethanol depolarizes mitochondria but not through permeabilzation of the membrane through the permeability transition pore, and that cyclosporine A does not block the permeabilization. He concluded that after an immediate dose of ethanol, triglycerides increase dramatically in the first 6-12 hours and that the effect is reversible after 24 hours. *Christopher Baines*, University of Missouri-Columbia, discussed the mitochondrial permeability pore and his attempts to identify it unambiguously using molecular genetics and yeast two hybrid systems. He showed that two proteins are related to pore formation

and function, mirofilin and C1QBP, and that microfilin has the ability to oligomerize and distort mitochondrial structure. He concluded that more work is required to identify the pore protein itself. *Gyorgy Hajnoczky*, Thomas Jefferson University, then gave a comprehensive presentation showing the phosphorylation of the BAD protein may initiate a switch in the mitochondrial apoptosis pathway. He showed that BAD had direct interaction with many proteins, including protein kinase C, protein phosphatase 2a, BCL-XL and VDAC. He suggested that the BCL-XL balance with BAK/BAX affects initiation of apoptotic events in mitochondria. *Jan Hoek*, Thomas Jefferson University, discussed the role of hexokinase II in mitochondrial apoptosis and showed that overexpression of hexokinase II in tumor cells induces interaction with VDAC. He also provided evidence that an AKT target, GSK-3, phosphorylates VDAC and this event is involved with VDAC opening/closing and displacement of hexokinase II binding to VDAC. He suggested that hexokinase II bound to VDAC is required for oligomers of VDAC to form and upon hexokinase II displacement and phosphorylation of VDAC, BCL-XL can bind to monomeric VDAC allowing BAX to initiate apoptosis. *Tatiana Rostovtseva*, National Institutes of Health, discussed new evidence that tubulin binds to VDAC closing it to limit membrane permeability. She provided strong evidence that tubulin binds to VDAC with high affinity and that tubulin binds tighter to the phosphorylated form of VDAC than the non-phosphorylated form, emphasizing the role of tubulin in inducing apoptosis.

Other highlights of the day included the presentation of the Young Bioenergeticist Award to *Soumya Sinha Roy*, Thomas Jefferson University, and *Raul Covian*, Dartmouth Medical School. Both awardees gave excellent 15-minute presentations of their work. A business meeting was held after the symposia and discussion about next year symposia topics was held. Finally, the annual subgroup dinner was again well attended with a good time had by all. *Marco Colombini* was honored for his service to the subgroup.

—*Lawrence Prochaska*, Subgroup Chair

# Intrinsically Disordered Proteins

## News from Bean Town

Members of the IDP subgroup convened in Boston on February 28, 2009, for the third annual subgroup business meeting and symposium. At the business meeting, new officers were elected to open positions. *David Eliezer,* Weill Medical College of Cornell University, was elected to the position of chair-elect. He will take over as chair from *Rohit Pappu* in 2010. *Gary Daughdrill*, University of South Florida, was elected to the position of secretary/treasurer-elect. He will take over as secretary/treasurer from *Trevor Creamer* in 2010. *Huan-Xiang Zhou,* Florida State University, and *Elisar Barbar,* Oregon State University, were elected to chair the 4th annual subgroup symposium, which will be held in San Francisco on February 20, 2010, prior to the start of the 54th Annual Biophysical Society meeting. Finally, *Marc Ruff,* IGBMC in Strasbourg, France, was elected to serve on the subgroup council for a three-year term. He replaces *Vinod Subramaniam,* the University of Twente.

The business meeting also featured stimulating discussions regarding the momentum of the subgroup and ways to better integrate the activities of the subgroup with the activities of the Biophysical Society. There was broad consensus regarding the need for the IDP field to enter a more quantitative era and to strive to answer crucial mechanistic questions regarding the role of IDPs in biological function. Consid-

erable discussion also centered on the question of how we define disorder and if the phrase "intrinsic disorder" is useful as a descriptor for all classes of disorder. Finally, *Keith Dunker* asked to be contacted if there was interest in systematizing DISPROT and developing a controlled vocabulary (anontology) for describing and classifying IDPs.

The afternoon session featured the 3rd annual subgroup symposium, the showpiece event of the subgroup. This year's symposium was chaired by *Yuan Chen*, the City of Hope, and *Peter Tompa,* Hungarian Academy of Sciences. The symposium was split into two sessions. *Richard Morimoto,* Northwestern University, highlighted the role of disorder in protein aggregation, specifically polyglutamine aggregation in vivo, and showed results from investigations that probe how the quality control machinery responds to the chronic stress of protein aggregation. *Vincent Hilser,* UTMB in Galveston, proposed a model to explain how disorder, by way of spontaneous fluctuations, is useful in allosteric communication. Using a statistical thermodynamics approach, Hilser provided a rational explanation for why disorder is common in transcription factors. *Yuan Chen* presented results on her studies, using a combination of approaches including NMR spectroscopy, of the molecular mechanisms of ubiquination enzymes and their homologous pathways.

This year's symposium featured talks by postdoctoral fellows. Speakers were chosen from poster abstracts and each received a $1,000 honorarium sponsored by Molecular Kinetics, Inc. *Tanja Mittag*, Forman-Kay lab in Toronto, was the award recipient who spoke during the first session. In her presentation, a new mechanism for maintaining disorder in protein complexes was described. This mechanism provides an explanation for how a modular array of weak binding sites associates with a protein partner. The first session concluded with a talk by *Jose Onuchic*, UCSD. He showed how disorder-order transitions that were uncovered in characterizing the energy landscape using a simple Go model could explain the functions of nanoscale machines like kinesin. He showed how energy landscape theory could be used to develop a model to distinguish between the workings of molecular as opposed to macroscopic machines.

Session two began with a short talk by *Peter Tompa*. He proposed a new paradigm for thinking about the role of disorder in protein function. *Lewis Kay,* University of Toronto, then gave the audience a guided tour through some new NMR to probe low-likelihood events and conformational fluctuations in proteins. *Rajaraman Krishnan,* MIT Whitehead Institute, surveyed recent results from the Lindquist lab. They have recently determined that intrinsic disorder in sequences containing asparagine and glutamine is distinct from the disorder associated with denatured proteins. *Vinod Subramaniam*, University of Twente, showed data based on real-time AFM movies that focused on the nanoscale dynamics of aggregation of α-synuclein. *Sohini Chakrabortee*, University of Cambridge, was the second postdoctoral awardee. Her presentation focused on the role of Lea proteins as agents that inhibit the aggregation of polyglutamine-rich proteins. The symposium concluded with a tour-de-force lecture by *Yosef Shaul*, the Weizmann Institute, on the important question of how IDPs are protected from and processed by degradation mechanisms in vivo. The evening concluded with a warm dinner at a local Tapas bar and restaurant. We were gratified by the turnout and the responses we received from the attendees of the subgroup's symposium. This event is the flagship event for the subgroup and generates much of the excitement within the Society regarding IDPs. We are grateful to *Yuan Chen* and *Peter Tompa* for putting together an excellent program. They have set the bar high and next year's organizers have much to live up to.

Finally, we would like to thank Molecular Kinetics, Inc., for their generous support of the postdoctoral research awards.

—*Rohit Pappu*, Chair
(IDPsubgroup@gmail.com)

## Membrane Biophysics

The Membrane Biophysics Subgroup held its 2009 Symposium on February 28. The topic of the symposium was *Ion Channels with Borderline Personalities* with presentations by *Tom DeCoursey*, *Fred Lamb*, *Joseph Mindell*, *Uhtaek Oh*, *Annmarie Surprenant*, and symposium organizer *Criss Hartzell*.

The Subgroup also held its business meeting, during which *Carol Beck*, Secretary-Treasurer, gave a brief description of the subgroup's financial status and explained the rationale behind the recent subgroup dues increase. There were four individuals nominated for the position of Chair-Elect. Each described a potential symposium idea. *Stephen Tucker* was elected Chair-Elect, and will lead the Symposium at the 2010 meeting. *Mike White* has agreed to serve as the new Secretary-Treasurer for the Subgroup. The 2010 Symposium will be organized by incoming Subgroup Chair, *Dan Minor*. The Subgroup would like to thank the speakers for their presentations; Discovery Biomed for their sponsorship of the refreshments during the break; *Criss Hartzell* for his service as 2009 Chair; *Carol Beck* for her service as Secretary-Treasurer; and *John Bell, Ahmed Keikal*, *Joe Mindell*, and *Dejian Ren* for representing the subgroup by judging the Student Research Achievement Award posters. Special thanks also to members who donated their prepaid dinners to a student or postdoc.

Following the Symposium, the Subgroup held its annual Cole Award dinner at the Seaport Hotel. At the dinner, *Karl Magleby,* the University of Miami Miller School of Medicine, was presented with the 2009 K.S. Cole Award for his contributions to the field of membrane biophysics. Over 100 people attended the dinner, including many of Magleby's colleagues, collaborators, friends, and former lab members. *Anita Zimmerman* introduced the honoree. The Cole Award medal and the award check were presented by subgroup chair *Criss Hartzell*. Following the award presentation, Magleby gave an after-dinner talk, summarizing several areas of his research in the context of "the making of a biophysicist."

—*H. Criss Hartzell* and *Carol L. Beck,* Outgoing Subgroup Chair and Secretary-Treasurer

## And the Apple iTouch Winner is….

Society member *Dow Hurst*, University of North Carolina, Greensboro, was the lucky winner of the Apple *iTouch*, which was the prize in the Society's Exhibit Hall Raffle at the Annual Meeting in Boston. Hurst won chances to win the iTouch by visiting with exhibitors who had entry tickets for the drawing. The more exhibitors he visited, the more chances he got to enter.

Dow is delighted with the iTouch which is engraved with the Biophysical Society name on the back. "Everyone in our research group is quite jealous now," says Dow of the iTouch engraved with the Society's name. "I immediately synced up my iTunes folder and downloaded a movie for my flight home from Boston," he explained. Way to go and congratulations!

A raffle will be held at next year's Annual Meeting in San Francisco. Look for details in future newsletters.

## Members in the News

*Victor J. Hruby* of the University of Arizona and Society member since 1982 received the Arthur C. Cope Scholar Award from American Chemical Society, sponsored by the Arthur C. Cope Fund.

*Graham R. Fleming* of the University of California, Berkeley, and Society member since 1996 received the Joel Henry Hildebrand Award in the Theoretical and Experimental Chemistry of Liquids, sponsored by ExxonMobil Research and Engineering Company, and presented by the American Chemical Society.

*William Eaton* (not pictured) of the National Institutes of Health and Society member since 1979 received the 2009 Hans Neurath Award given by the Protein Society and sponsored by the Hans Neurath Foundation.

*Jacob N. Israelachvili* (not pictured) of the University of California, Santa Barbara, and Society member since 1998 received the American Chemical Society Award in Colloid and Surface Chemistry.

## Grants and Opportunities

**Name:** Undergraduate Research (UR) Grants
**Objective:** The Undergraduate Research Program supports the research programs of established scientists and engineers at non-doctoral research departments.
**Who May Apply:** Faculty from non-doctoral departments
**Deadline:** July 6 - 31, 2009
**Web Link:** http://portal.acs.org

**Name:** Undergraduate New Investigator Grants (UNI)
**Objective:** The Undergraduate New Investigator Grants Program is intended to initiate the research program of new scientists and engineers who are faculty members at undergraduate research institutions.
**Who May Apply:** Faculty from non-doctoral departments within the first 3 years of their first academic appointment
**Deadline:** July 6 - 31, 2009
**Web Link:** http://portal.acs.org

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# Upcoming Events

June 27–28, 2009
*3Dsig: Structural Bioinformatics and Computational Biophysics*
Stockholm, Sweden
http://www.ebi.ac.uk/~rafi/3DSig09/

July 11–15, 2009
*EBSA 2009 Meeting*
Genoa, Italy
http://www.ebsa2009.org

September 6–13, 2009
*EMBO Conference —The Physics of Cells*
Dubrovnik, Croatia
http://cwp.embo.org/cfs09-04/

September 13–18, 2009
*World Congress on Medical Physics and Biomedical Engineering*
Munich (München), Germany
http://www.vde.com

September 19–October 1, 2009
*10th International Summer School on Biophysics - Supramolecular Structure and Function*
Rovinj, Red Island, Croatia
http://www.irb.hr/biophysics

October 5–9, 2009
*11th ICATPP Conference on Astroparticle, Particle, Space Physics, Detectors And Medical Physics Applications*
Villa Olmo, Como, Italy
http://villaolmo.mib.infn.it/Conference2009.html

**Please visit http://www.biophysics.org/ for a complete list of upcoming events.**