

Biophysical Society NEWSLETTER

November 2011

56th Annual Meeting

February 25–29, 2012
San Diego, California

Deadlines

December 5, 2011

Student Housing

January 8, 2012

Early Registration

Late Abstracts

Luncheons Registration

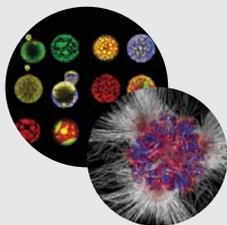
January 27, 2012

Childcare

Pre-Registration

Hotel Reservations

Image Contest Opens
December 1



See page 10 for details.

2013 Annual Meeting Planning Underway

The 2013 Program Committee, chaired by *Jody Puglisi*, Stanford University School of Medicine, has already begun developing the scientific program for the 2013 Biophysical Society Annual Meeting, which will be held in Philadelphia, Pennsylvania, February 2–6, 2013. The 2013 Program Committee members are *Laura Finzi*, Emory University; *Karen Fleming*, Johns Hopkins University; *Sharon Gordon* (not pictured), University of Washington; *Peter Hinterdorfer*, Johannes Kepler University of Linz; *Tanja Kortemme*, University of California, San Francisco; and *William Zagotta*, University of Washington.

In addition to soliciting programming suggestions from Society members via email and an online survey, Membership Committee member *Steve Koch* moderated a Twitter suggestion session. Participants tweeted their suggestions using the #bpstopics hashtag.

Puglisi will present the 2013 program to Council for approval when it meets at the 2012 Annual Meeting in San Diego.



Jody Puglisi, Chair



Laura Finzi



Karen Fleming



Peter Hinterdorfer



Tanja Kortemme



William Zagotta

NIGMS 50th Anniversary

NIGMS will mark its 50th anniversary in 2012. To commemorate this milestone, NIGMS will provide awards for one BPS New & Notable speaker and one SRAA poster presenter at the 2012 Biophysical Society Annual Meeting. The selected speaker will receive complimentary registration, two-days lodging, and travel funds to the BPS Annual Meeting; the poster awardee will receive travel and lodging to attend and present at the NIGMS anniversary symposium in Bethesda, MD, on October 17, 2012. A call for New & Notable suggestions will be sent to members in November.

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Biophysicist in Profile

MARGARET S. CHEUNG

“Figuring out how biology works always amazes me,” says Margaret S. Cheung, Assistant Professor of Physics at the University of Houston (UH)—specifically, theoretical biological physics and theory of protein folding. “It is really exciting that there are technologies now available to probe molecular interactions inside cells,” she says. “However, it is still difficult to quantify information, or even to define meaningful phenomena from complex systems. My research aims at a quantitative description of protein folding, structure, and interaction in a cellular environment. I would like to sort out the needed knowledge for a better understanding of protein biophysics inside cells.”

Cheung’s interest in science dates back to her primary school days. “When I was about 10 years old, my mother subscribed to a monthly science magazine for children and I was fascinated by the beautiful photos and pictures,” she recalls. Her father, a civil engineer, and her mother, a housewife with a degree in education, took Cheung to science centers and museums, and brought home Legos, science kits, and telescopes for her from their numerous trips abroad. In Taipei First Girls’ High School in Taiwan, Cheung entered science fairs and joined a biology outreach program for younger students. “How biology works at a molecular level motivated me to pursue a college degree in chemistry,” she says. She did so at National Taiwan University, and in her senior year was introduced to her new love: biophysics.

“Biophysics is a highly interdisciplinary field and there is a lot to learn.”

—MARGARET S. CHEUNG

The inspiration for Cheung’s current work on the theory and computation of protein folding, structure, and interaction under cell-like conditions harkens back to her days as a PhD student in *José Onuchic’s* lab at the University of California, San Diego. “During those years, we were interested in understanding the interplay between structure-search of the native structure and desolvation in determining the mechanisms for protein folding,” says Onuchic. Cheung created a minimalist model showing that neither factor is dominant but in fact both are equally important and complementary. “Her initial paper on this topic, where she applies this model to the SH3 domain, is already becoming a classic,” says Onuchic. “This is the first paper on a new generation of minimalist models that will be able to incorporate both of these effects.”

In collaboration with an experimental group, Cheung’s lab now uses computer simulation to demonstrate the effects of macromolecular crowding on the structure, function, and folding landscape of phosphoglycerate kinase (PGK). “She has developed a superb biological physics program and, in addition, taken her teaching and outreach very seriously,” says

Gemunu Gunaratne, Associate Chairman of the Physics Department at UH. “She expects a serious level of commitment and strong work ethic from her students and postdocs.” Her students agree. “As a mentor, she sets a high standard for her students, and she dedicates most of her time and effort in helping them achieve their research goals,” says *Qian Wang*, one of Cheung’s graduate students. He cites Cheung’s unique habit of bringing her students along for meals when scientific luminaries visit her lab as an example. “She always does her best to create the opportunity for her students to network as well as learn from these acknowledged professors,” he says.

As one of the few women in her institution’s physics department, Cheung admits sometimes feeling lonely in her chosen profession. “It’s a career path that demands a long period of time and there are not many women in this field to share ideas or life experiences with,” she says. However, like the women in science she admires, she doesn’t let being in the minority lessen her contribution to the field. “Rosalind Franklin, Marie Curie—I admire their strength when challenged unfairly,” she says. Indeed, she has overhauled the thinking of an entire department. “Our Physics faculty was exclusively male until a dozen years or so ago,” says Gunaratne. “As a result there were occasional insensitive comments made publicly. Since receiving many appropriate rebukes, mainly from Margaret, these dinosaurs know to behave themselves now.”

Cheung not only champions for women’s equal place inside a male-dominated field, she extends her influence to mentoring students and teachers alike to get involved in science and to do what they do better. “[It’s rewarding to] motivate young people, particularly young girls, to learn about science and mathematics [and to] develop fun and inexpensive physics demonstrations for science teachers from elementary and middle schools,” she says. Indeed, she recently taught a course on energy and matter to Houston Independent School District elementary school science teachers. Cheung divided the



Margaret Cheung and her husband, Brenden Wyker, visiting Stockholm. The couple spends time traveling together as often as possible.

course into three-hour segments, working in engaging, economical physics projects that the teachers could easily recreate in their own classrooms.

But Cheung doesn’t stop at organizing lectures for science teachers. In 2010, she organized a well-attended session called Biopolymers in Cellular Environment at the Biophysical Society (BPS) 54th Annual Meeting. “A few of us managed to capture this momentum,” she says, and in 2011 officially formed the newest BPS subgroup, Biopolymers in vivo (BIV), which Cheung now chairs. Like other BPS subgroups, BIV hosts a symposium and a dinner for its members. “They provided excellent opportunities for networking and collaborations for people who wanted to learn about this field,” she says of BIV’s 55th Annual Meeting events. And yet, starting the subgroup means more than merely putting together a useful event complete with good science. “I have been a member since 1997, since I was a graduate student,” says Cheung. “Attending the BPS meeting has always been an exciting experience that has moved me to go a step further in my career.”

Cheung’s next career step brims with questions. “[I want to] figure out a general principle of who, how, when, and what protein interacts with other partners in response to environmental cues that arise to communication inside cells,” she says. Cheung is certainly up to the task. “Be patient and try to take the time to figure out why the problems you are working on are indeed interesting,” she advises. “It’s very rewarding to discover new ideas or solutions to longstanding problems.”



Ask Professor Sarah Bellum

Professor Sarah Bellum answers your questions on navigating the often-uncharted waters of early career development. Professor Bellum is communicated by Patricia L. Clark, founder of the Early Careers Committee and a member of Council. Do you have a question for Professor Bellum? Send it to sarahbellum@biophysics.org. Your privacy is assured!

Who is sliding here?

Q: Since I started grad school three years ago, the PhD program in my department has been sliding downhill. Students who are clearly weak (and in my opinion have no business being in grad school) have nevertheless passed their oral exams, and every year it seems like the entrance standards for new students get lower. Some of my classmates agree that they see the same trends. I am worried that by the time I graduate my degree will not carry as much prestige as it should. This is really affecting my motivation: my advisor just had me in for a chat/scold regarding how scarce I have been in lab over the past month. I am really beginning to wonder: Should I finish my PhD here, or transfer to a better school?

A: It sounds like what is sliding downhill here is not your PhD program, but your personal progress through graduate school. You need to spend more time worrying about yourself and your own progress, rather than worrying how your classmates' successes or failures reflect upon you.

My suggestion for you is to first look inwards, and clarify why you want a PhD degree. Be honest with yourself: Do view a PhD as a prestige thing, a validation of how smart you are? That is unfortunate, because a surprisingly small percentage of what makes a graduate student successful has to do with being smart. PhD

degrees are awarded for a significant body of independent study and research. Achieving this requires a mixture of smarts, creativity, technical skills, hard work, self-motivation, time management, teamwork, and excellent communication skills (oral and written). Of these skills, “smarts” is by far the easiest to quantify, in the form of exam and course grades. But grades alone are a lousy predictor of success in graduate school. Every PhD program could produce a long list of non-graduates who entered the program with stellar GRE scores and/or undergraduate transcripts and flamed out before they made it to their thesis defense. Science is, however, full of success stories built on hard work, perseverance, and self-knowledge. Even *Louis Pasteur* confided: “My strength lies solely in my tenacity.” Hence while those “weak” students in your PhD program might not be as smart as you, it sounds like they have successfully demonstrated to their committee that they have the broader skill set required to succeed in graduate school.

...a surprisingly small percentage of what makes a graduate student successful has to do with being smart.

Under the best of circumstances, succeeding in graduate school is hard. The hours are very long, the pay is very low, a lot of the day-to-day tasks are very repetitive, and most experiments fail. It is very hard to have Pasteur-like tenacity under these conditions unless you really want something that you can get only if you have a PhD degree—often, this is a career in research and/or teaching, but other motivations are certainly possible. If you do indeed want something that requires having a PhD, the next step is to critically evaluate your skills. Are you determined? Can you work hard? Are you known for seeing projects through to completion, even through a stage that is boring to you? Are you open to new ideas, and willing to put in the time and

effort required to learn new things? Are you motivated to do things on your own, or do you need a rigid structure (and constant reminders) in order to be productive? Notice that these considerations are entirely independent from how smart you are, what your GRE scores were, or how much you loved your undergraduate research project.

You sound like a smart student with high grades who has now hit the wall of graduate school. You have finished your structured course work and oral exams, and started that long slow trudge through your research project. As a third-year student, you are probably still at the stage where your experiments fail much more often than they succeed, and your mastery of the literature and techniques relevant to your project is far from complete. An honest look forward at what the next few years of graduate school holds for you includes a lot of hard work, and this work will only be accomplished if you learn how to avoid procrastinating and manage your time better.

Be honest with yourself: Can you succeed in that environment? Do you have the tenacity to persevere with your research project? I fear not, given that you are already having troubles staying motivated. Sit down and carefully re-evaluate your career goals. It does not matter that you were the smartest student in your entering class: if you cannot master the other skills required to succeed in graduate school, it is unlikely you will make it through your PhD program. And changing programs is unlikely to improve your chances of success. That can be a very discouraging, scary realization, but the sooner you come to grips with your situation, the sooner you can change your trajectory towards a goal better suited for your skill set.

Success in graduate school is a personal journey. When it works well, graduate school comes with a large dose of self-discovery and skill-building. In contrast, students who fail at graduate school often lack self-awareness. This can lead them to

Success in graduate school is a personal journey. When it works well, graduate school comes with a large dose of self-discovery and skill-building.

blame others (their advisor, thesis committee, classmates) for their failures, rather than looking inwards. Other students gain self-awareness, but ultimately realize that graduate school is not for them. In my eyes, this too is a different form of success, because they have come one very big step closer towards figuring out what will work for them.



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Faculty Recruitment

Mechanobiology Institute, Singapore National University of Singapore

The Mechanobiology Institute, Singapore is a multi-disciplinary institute committed to developing new paradigms for biomedical research by focusing on the quantitative analysis of dynamic functional processes. We are seeking outstanding candidates for tenure-track positions with a background in molecular and cell biology, biophysics, biology-related engineering, or computer sciences and a commitment to collaborative interdisciplinary research. With an open lab environment and extensive central facilities support, successful candidates can address critical mechanical problems for understanding human health and disease processes including cancer, tissue regeneration and pathogenesis. Successful candidates will hold joint appointments through relevant departments at the National University of Singapore or other Singapore Universities.

Please submit your application along with curriculum vitae, full publication list, research plans and names of three external referees to :

Professor Michael Sheetz
Director
The Mechanobiology Institute, Singapore
National University of Singapore
T-Lab , 5 A Engineering Drive 1
Singapore 117411
E-mail : mbi@nus.edu.sg
Website : <http://mbi.nus.edu.sg/>

Public Affairs

Federal Agencies Operating with Temporary Budget

Avoiding a federal government shutdown, Congress passed a continuing resolution to fund the federal government through November 18 at a rate established in the Budget Control Act passed in August. The resolution was necessary since the FY 2012 Fiscal Year began on October 1 and Congress had not yet passed any of the annual spending bills that provide funding for federal agencies by that date.

Congress now has until November 18 to either complete its work on the appropriations bills or to pass another continuing resolution. Over the last decade, Congress has routinely relied on continuing resolutions to fund the government as it has become normal for the Senate and House to fail to finish the appropriations process prior to October 1. The temporary funding bills make it difficult for agencies to function since new programs cannot be started during the temporary funding period, and agency officials are not certain what the final budget will be. Thus, the National Institutes of Health (NIH), National Science Foundation (NSF), and other federal agencies must be very conservative in funding researchers in the event that the next year appropriation is lower than what is expected.

NIH Appoints new Working Group on Diversity

On the heels of a report commissioned by NIH that demonstrated that African American researchers lag behind others in receiving NIH grant funding, NIH Director Francis Collins has created a new working group of the NIH Advisory Committee to the Director (ACD) on the Diversity of Biomedical Research (DBRWG). The panel is co-chaired by Reed

Tuckson, Executive Vice President and Chief of Medical Affairs, UnitedHealth Group; John Ruffin, Director, National Institute on Minority Health and Health Disparities; and Lawrence Tabak, Principal Deputy Director, NIH. The charge states, "The Committee will provide concrete recommendations to the NIH Director on ways to improve the retention of underrepresented minorities, persons with disabilities, and persons from disadvantaged backgrounds...The DBRWG is charged with producing interim recommendations by December 2011 and final recommendations by June 2012."

The full list of members is available at <http://acd.od.nih.gov/dbroster.asp>.

Plaintiffs File Appeal in Stem Cell Case

The plaintiffs in *Sherley v. Sebelius*, the court case challenging NIH's funding of embryonic stem cell research, filed an appeal in September to Judge *Royce Lamberth's* recent summary judgment decision in favor of the US Department of Health and Human Services. The next step is for the DC Circuit to establish a briefing and oral argument schedule. In the meantime, NIH can continue to fund embryonic stem cell research and has actually added three new stem cell lines to the NIH Stem Cell Registry in September, bringing the total number of eligible lines to 135.

In response to the appeal, *Lisa Hughes*, President of the Coalition for the Advancement of Medical Research, of which the Biophysical Society is a member, said in a statement: "In what is clearly yet another attempt to play politics, both plaintiffs in *Sherley v. Sebelius* filed notice today to appeal their case in the US Court of Appeals. This is a huge disservice not only to the scientific community whose research is advancing us toward better treatments and cures, but completely ignorant of the needs of the patient community—the 100 million Americans who suffer from cancer, Parkinson's, Alzheimer's, juvenile diabetes, spinal cord injuries, and so many other

debilitating diseases and disorders for which stem cell research shows great promise.”

White House and NSF Announce new Workplace Flexibility Policies

In September, White House Council on Women and Girls Executive Director *Tina Tchen*, White House Office of Science and Technology Policy Director *John P. Holdren*, and NSF Director *Subra Suresh* announced the “NSF Career-Life Balance Initiative,” a 10-year plan to provide greater work-related flexibility to women and men in research careers. Among the best practices that NSF will expand Foundation-wide are ones that will allow researchers to delay or suspend their grants for up to one year in order to care for a newborn or newly adopted child or fulfill other family obligations.

“Too many young women scientists and engineers get sidetracked or drop their promising careers because they find it too difficult to balance the needs of those careers and the needs of their families,” said Suresh. “This new initiative aims to change that, so that the country can benefit from the full range and diversity of its talent.”

Women today currently earn 41% of PhDs in Science, Technology, Engineering, and Mathematics (STEM) fields, but make up only 28% of tenure-track faculty in those fields.

The new NSF initiative will offer a coherent and consistent set of family-friendly policies and practices to help eliminate some of the barriers to women’s advancement and retention in STEM careers.

NSF is also calling upon universities and research institutes to adopt similar policies for their employees and grantees.

The NSF policies and practices will:

- **Allow postponement of grants for child birth/adoption.** Grant recipients can defer their awards for up to one year to care for their newborn or newly adopted children.
- **Allow grant suspension for parental leave.** Grant recipients who wish to suspend their grants to take parental leave can extend those grants by a comparable duration at no cost.
- **Provide supplements to cover research technicians.** Principal investigators can apply for stipends to pay research technicians or equivalent staff to maintain labs while PIs are on family leave.
- **Publicize the availability of family friendly opportunities.** NSF will issue announcements and revise current program solicitations to expressly promote these opportunities to eligible awardees.
- **Promote family friendliness for panel reviewers.** STEM researchers who review the grant proposals of their peers will have greater opportunities to conduct virtual reviews rather than travel to a central location, increasing flexibility and reducing dependent-care needs.
- **Support research and evaluation.** NSF will continue to encourage the submission of proposals for research that would assess the effectiveness of policies aimed at keeping women in the STEM pipeline.
- **Leverage and Expand Partnerships.** NSF will leverage existing relationships with academic institutions to encourage the extension of the tenure clock and allow for dual hiring opportunities.

56th Annual Meeting

SAN DIEGO, CALIFORNIA | FEBRUARY 25–29, 2012

What early career attendees are saying about the Annual Meeting....

“Presenting your work through posters or platform sessions can lead to significant exchange of new ideas and suggestions from peers.”

—Early Career Member

Meeting Updates

Visit www.biophysics.org/2012meeting for the latest Annual Meeting updates.

Late Abstract Deadline

Miss the October 2 abstract deadline? You can still present your science at the Annual Meeting by submitting a late abstract by January 8.

Early Registration

Don't waste money and time waiting in line to register onsite. Register by January 8 for lower early registration rates. Renew your membership and get even lower registration rates.

Hotel Accommodations

San Diego hotels offer special rates to BPS Annual Meeting attendees. Secure your space in the BPS room block by January 27.

Shared Housing

Want to save some money? Cut your hotel expenses by sharing your room. To sign up for a roommate, visit <http://bit.ly/q8oltY>.

Career Programming

The Biophysical Society Annual Meeting is filled with sessions geared toward helping researchers in early stages of their career advance.

Postdoctoral Breakfast

Supported by the Burroughs Wellcome Fund

Early Career attendees can meet with peers and members of the Early Careers Committee over breakfast to discuss issues pertinent to postdocs.

Career Roundtable Luncheon

This informal forum will focus on topics affecting mid-career scientists, from finding funding and collaborations to selling yourself and getting tenure.

Moving on from Your Postdoc Position: Negotiating the Transition

Newly tenured assistant professors will give advice on how to find a permanent position after postdoctoral training.

How to Get Your Scientific Paper Published

This panel discussion will focus on practical issues involved in publishing a scientific paper, including strategies to avoid common pitfalls and how to respond when a paper is rejected.

Win an iPad

While at the Annual Meeting, don't forget to visit the Exhibit Hall! When you stop by the exhibit booths, exhibitors will distribute entry tickets for exciting raffle prizes, including the grand prize: an Apple iPad! The more exhibitors you visit, the more chances you'll have to win. The grand prize winner will be announced on February 28 in the Exhibit Hall.

Grant Writing Workshop: How (Not) to Write Your NIH Grant Proposal

Veteran NIH officials will discuss what review panels look for when they read and assess proposals, and answer questions about the latest NIH changes and communicating with funding agencies throughout the grant application process.

Getting Started in Start-Ups

Biophysicists with a broad array of experiences in start-up companies will share their perspectives and take questions from the audience.

Postdoc to Faculty Q & A: Transitions Forum and Luncheon

Those finishing their postdoctoral appointment and actively applying for academic faculty positions can openly discuss topics such as how to prepare the CV and negotiate the job offer, while new faculty get advice on balancing research with their departmental obligations. Pre-registration is required; to pre-register, visit www.biophysics.org/2012meeting.

MAC Networking Event

Join members of the Minority Affairs Committee (MAC) for coffee, cookies, and mingling with minority students and scientists.

Transitioning from Academia to Industry

Panelists from the industrial sector will discuss the process of finding an industry job for those with an academic background.

Faculty Positions at PUIs: Finding a Job and Finding Success

Panelists will discuss what it's like being a faculty member at an undergraduate institution, sharing tips with graduate students and post-docs looking for jobs, and giving helpful advice to new faculty at Predominantly Undergraduate Institutions (PUIs).

Job Board

Looking for a new position? Have a position to fill? Post your resume or job opening before the Annual Meeting for the best results. Candidates can post CVs at no charge and apply for job openings. Employers who have job opportunities to advertise can do so—2012 BPS members qualify for a reduced posting fee starting February 1.

“For those thinking about the next steps in their career, either in industry or academia, the meeting offers a plethora of options. Networking sessions and numerous panel discussions on wide-ranging topics from grant writing skills to transitioning to industry offer a wealth of valuable information and advice.”

—Early Career Member



Visit the [Career Programs page on the Annual Meeting website](#) for detailed information on these events and more by using this QR code.

"I found my current job in a small biotechnology company through the Career Center at the Boston '09 meeting!"

—Early Career Member

BPS thanks the following 2012 Annual Meeting sponsors:

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- Burroughs Wellcome Fund
- Chroma
- Fluxion Biosciences
- Molecular Devices, Inc.
- Nanonics Imaging
- Optical Building Blocks
- Park Systems
- Photometrics
- Semrock, Inc.
- Thorlabs

Career Center

The Career Center hosts an abundance of resources for your use. Career development workshops, personal resume critiques, and an interactive Job Board are available to all attendees from Saturday, February 25, through Wednesday, February 29. Resume critiques and workshops will be led by career consultants *Monica J. Weil* and *Joseph Tringali*.

Career Center Workshops

- New!** Ageism in the Workplace: Myths and Realities for Older Workers
- New!** The Cultural Challenge: How to Navigate the Nuances
- New!** Beyond the Bench: Preparing for Your Career Transition in the Life Sciences
- New!** Selling Yourself to the Life Sciences Industry
- New!** Job Search Economics: Considerations Well Beyond Salary

Networking for Those Who Hate to Network
Wherever You Go, There You Are: Self-Reflection as a Career Tool

BPS Travel Discounts

- American Airlines**
5% discount—Promotion Code: 6922AT
- Amtrak**
10% discount—Promotion Code: X96G-929
- Super Shuttle**
10% discount—Promotion Code: RU5DF
- AVIS**
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Visit www.biophysics.org/2012meeting/AccommodationsTravel for more information about these discounts.

Second Annual *The Art of Science* Image Contest

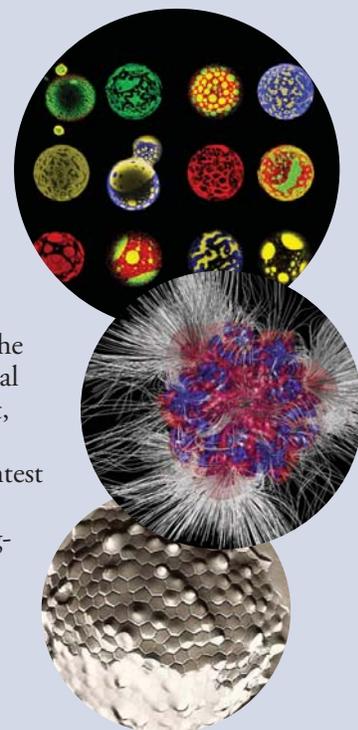
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All 2012 Society members attending the 2012 Annual Meeting are invited to submit entries to the 2nd Annual Biophysical Society image contest, *The Art of Science*. Aptly named, the contest showcases the artistic side of scientific imaging. Images submitted for competition may be obtained using any imaging technique, and must have a connection to biophysical research. Judging will be based on scientific significance, originality, and artistic and/or visual impact of the images.

Finalists' images will be displayed at the Annual Meeting in the Exhibit Hall for viewing, and attendees will vote on their favorite images. Prizes will be given for 1st, 2nd, and 3rd place and winners will be announced in the Exhibit Hall on Wednesday, February 29 at noon.

Prizes are sponsored by Asylum Research. Visit www.biophysics.org/2012meeting for details.

The image submission site opens December 1 and is limited to the first 100 entries. The *Art of Science* Image Contest looks forward to your entry!



Subgroups

Membrane Biophysics

Greetings, MBS members. Our Annual Membrane Biophysics Subgroup Symposium will be held on February 25, 2012. The theme for the 2012 Symposium, organized by the Subgroup Chair, *Paul Slesinger*, The Salk Institute, will be *Dancing with New Structures: Insights into Transport Function*. Scheduled speakers include *Jeff Abramson*, UCLA; *Wayne Hendrickson*, HHMI/Columbia University; *Pierre-Jean Corringer*, Institut Pasteur; *Christine Ziegler*, Max Plank Institute of Biophysics; *Bill Catterall*, University of Washington; *Youxing Jiang*, HHMI/University of Texas Southwestern; and Slesinger himself. The detailed program is listed on the Subgroup website, <http://www.biophysics.org/MemberShipSubgroups/Subgroups/MembraneBiophysics/tabid/513/Default.aspx>.

The symposium will be followed by the annual Kenneth S. Cole Award Dinner, which will be held at the San Diego Wine and Culinary Center (additional details forthcoming). Be sure to attend the symposium and dinner to hear the latest about transporter and channel structure and function and socialize with fellow biophysicists!

Jackson Named 2012 Kenneth S. Cole Awardee

There were a number of outstanding nominations for the annual Cole Award, presented to a scientist who has made significant contributions to our understanding of membrane biophysics. After careful consideration, *Meyer B. Jackson*, Cole Professor of Physiology at the University of Wisconsin (yes, that Cole!), has been selected the 2012 Kenneth S. Cole Award winner. Jackson is recognized for his seminal work on ligand-gated receptors and on the biophysical analysis of synaptic transmission, most recently focusing on synaptic vesicle fusion. Jackson will receive his award at the subgroup dinner following the annual symposium.

Subgroup Email List

The Membrane Biophysics subgroup has an email distribution list. Members may contact *Mike White* (mwhite@drexelmed.edu) for information about sending out email announcements of conferences or meetings.

—*Mike White*, Secretary/Treasurer

IDP

Call for Submissions for IDP Postdoctoral Research Awards

Two awardees will each receive a \$500 honorarium and present a short talk at the IDP Subgroup Symposium on Saturday, February 25, 2012, in San Diego. To apply, submit an abstract for a poster to be presented at the Biophysical Society Annual Meeting. Select “Intrinsically Disordered Proteins” as a topic area (this can be submitted as a “Late Abstract”).

Send the abstract, along with its BPS abstract control number, via email directly to the IDP Subgroup at IDPsubgroup@gmail.com by December 15, 2011.

Instruct your advisor to email the Subgroup at IDPsubgroup@gmail.com by December 15, 2011, confirming the postdoctoral status of the applicant. Only those who are postdoctoral scholars/fellows at the time of abstract submission are eligible for an award.

The selection committee will choose the top two abstracts from those submitted on the basis of scientific quality and diversity with respect to the topics to be discussed by the other invited speakers. Please address all inquiries to IDPsubgroup@gmail.com.

IDP Pedagogy, Part III

This article is the third in a series of articles illustrating how IDPs are taught across the discipline. Look for subsequent installments, as well as a continuation of this article, in future Newsletters.

In the first installment of this interview, which appeared in the October 2011 issue of the BPS

Newsletter *Richard Kriwacki*, St. Jude Children's Research Hospital, explained how he introduces IDP structure-function relationships through emphasizing their significant biological roles. In this final installment of the interview, *Ryan Hoffman*, IDP Subgroup Postdoctoral Representative, probes the theoretical motivations for Kriwacki's approaches.

Do you present IDPs as part of a continuum of order, or as discrete states?

I've been a proponent of the continuum perspective since I first started talking about IDPs. I've always acknowledged that proteins can exist in many states of order and disorder. I would use my early work on p21 as an example of a protein that is pretty far to one [disordered] end, but not all-the-way to one end, as these kinase inhibitors exhibit partially populated structure in isolation. I've always used enzymes as examples toward the [ordered] end of the continuum, but not all the way at the other end, as dynamic fluctuations are critical for catalysis.

And the point I always make is [that] we've had relatively little awareness of the disordered end of the continuum. And I often will say to an audience, 'It's hard to study disorder. You need to use techniques that are different from what's considered mainstream structural biology techniques. It's hard work to establish relationships between disorder and function.' Five or ten years ago there wasn't a lot known about these relationships. We had to invent the approaches and even the paradigms. It's taken a while to understand the disordered end of the dynamic continuum but significant progress is being made, and I hold hope for the textbooks someday having in the early introductory chapters information about how biomolecules work, how they perform their functions, and some illustration of this continuum. This could serve to organize later sections. I guess that may occur in the future.

When I think about protein-mediated mechanisms or any kind of biological mechanism at all, there's always some amount of dynamics in the picture...

It's almost implicit.

...thinking of things as static functional units doesn't come from an understanding of mechanics or macroscopic machines, so why is the involvement of conformational fluctuation in protein mechanisms seen as exotic?

There's this historical bias in the structural biology field from crystallography that sort of set the stage for the existence of this obstacle. This is not a criticism; crystallography emerged in the '60s and has been a primary tool, and continues to be a dominant tool in understanding what proteins look like. I think the early days of structural biology were dominated by that approach where you have elegant three-dimensional pictures of proteins from crystallography, often times coupled with very deep probing of structure function relationships through mutagenesis and functional assays. The textbooks are just full of information from that perspective and students get introduced to this when they first get introduced to biochemistry, which is currently in high school. So this sets up the perspective that this is how you view proteins. And DNA is represented as being static as well, and of course there are all sorts of dynamics required for the processes that DNA participates in.

And it's hard to represent dynamics.

You need movies. Or you need lots of static frames stitched together with good annotations to imply motions. Representing dynamics is hard, but in the last ten years there's certainly been good scientific progress in understanding how dynamics are critical for biological processes, ranging from enzyme catalysis to dyneins that transport cargo, everything in-between, the nuclear pore complex, signaling mechanisms. So I think more and more students are being introduced to the importance of dynamics.

—*Jianhan Chen*, IDP Secretary/Treasurer



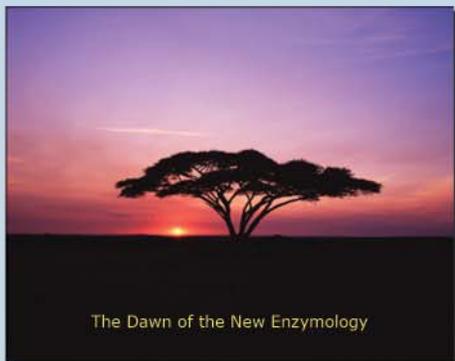
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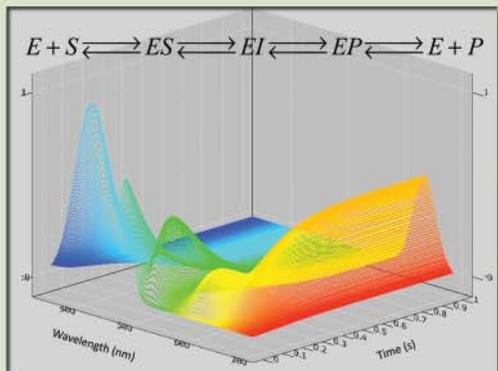
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Members in the News



Sarah Keller of the University of Washington and Society member since 1992 was elected as a member to the Washington State Academy of Sciences.



Thomas Steitz of Yale University and Society member since 2002 was elected a foreign member of the Fellowship of the Royal Society.



J. Andrew McCammon of the University of California, San Diego, and Society member since 1979 was elected to the National Academy of Sciences.



Taekjip Ha of the University of Illinois at Urbana Champaign and Society member since 1999 received the 2011 Ho-Am Prize in Science from the Ho-Am Foundation of Korea.



Cornelia Bargmann of Rockefeller University and Society member since 2006 was a co-recipient of the 11th Perl/UNC Neuroscience Prize.

Xiaowei Zhuang (not pictured) of Harvard University and Society member since 1999 received the 2011 Raymond and Beverly Sackler International Prize in Biophysics from Tel Aviv University.



Axel Brunger of Stanford University and Society member since 2001 received the ASBMB's inaugural DeLano Award for Computational Biosciences.

Shu Chien (not pictured) of the University of California, San Diego, and Society member since 1980 received the National Medal of Science.

Grants and Opportunities

Name: The Kavli Prize 2012

Objective: The Kavli Prize is awarded by The Norwegian Academy of Science and Letters for outstanding scientific achievements in Astrophysics, Nanoscience and Neuroscience.

Nomination Deadline: December 1, 2011

Website: <http://www.kavliprize.no/>

Name: NIH Director's Transformative Research Awards

Objective: To support individual scientists or groups of scientists proposing groundbreaking, exceptionally innovative, original, and/or unconventional research with the potential to create new scientific paradigms.

Letter of Intent Deadline: December 12, 2011

Application Deadline: January 12, 2012

Website: <http://grants.nih.gov/grants/guide/rfa-files/RFA-RM-11-006.html>

Student Spotlight



TIM JACOBS, KUHLMAN LAB

GREGG RICE, WEEKS LAB

MATT SMOLA, WEEKS LAB

Tim Jacobs (left), Gregg Rice (middle), and Matt Smola (right), all of the University of North Carolina at Chapel Hill (UNC-CH), served as Teaching Assistants for the 2011 Biophysical Society Summer Course in Biophysics hosted on the campus. All are graduate students in UNC-CH's Program in Molecular & Cellular Biophysics.

Did you enjoy your TA experience? Why or why not?

Tim: I thoroughly enjoyed my TA experience, in large part because the students were so great. There were always lots of challenging questions which helped me learn a lot more than I expected.

Gregg: Absolutely. It was even better than I could have hoped for. The students were a joy to work with. Getting to see all the work that they did with the help of the sponsoring labs was an incredible experience. I never thought I'd learn so much from them!

Matt: I really did enjoy the experience. Tag-teaming with Tim and Gregg meant that instead of one person bearing all the responsibility for teaching, we could split it up and allow ourselves to dig deeper into the material with the students. It also meant that we could spend more time getting to know the students. It was really fun learning with and about everyone in the course.

If you could give one piece of advice to someone just starting their undergraduate science career, what would it be?

Tim: Try as many things as you can to figure out what you like. You'll have plenty of time later in life to become an expert, it'll be a lot less painful if you love what you do every day.

Gregg: Follow your dreams, but make sure they're yours. A lot of people I know, myself included, have all sorts of expectations placed on them from their parents, friends, and even themselves. Keeping an open mind along the way and following your passion will get you far.

Matt: Get involved early, memorize your unit conversions, those things are important, but above all: there will be a handful of very stressful times in your scientific career; lighten the mood by keeping a repertoire of science jokes in your back pocket. Then you can have a good laugh, even if no one else does.

Barry Lentz, Summer Course Program

Director, says:

Matt Smola, Gregg Rice, and Tim Jacobs volunteered to teach in the Summer Course because of their interest in teaching. All of the Summer Course teaching assistants are Biophysics Trainees who have given a great deal of themselves to challenge our students and help them grow as people and biophysicists, but these three young men were really special. Gregg is from Illinois and earned a BS in chemistry from Loyola University in Chicago. Matt is from Ohio and was a BS biochemistry major at Miami University in Oxford Ohio. Tim hails from upstate New York and came to UNC with a BS in bioinformatics from SUNY Buffalo. All three were eagle scouts, and this showed as they stepped up to introduce their own ideas into the Course and make fundamental changes in the way it functions, I believe much to its improvement. Their students praised them for their dedication and patience, and all of us associated with the Summer Course appreciated very much their efforts on behalf of the students.

To view this interview in its entirety, visit www.wordpress.com/biophysicalsociety.



Suggest a Student to Spotlight

Pls, do you have a spotlight-worthy student in your lab? Send his/her name to society@biophysics.org.



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UPCOMING EVENTS

January

January 30–31, 2012

4th Immunotherapeutics and Immunomonitoring Conference
San Diego, California
<http://tinyurl.com/6jwoud>

January 30–31, 2012

10th Cytokines & Inflammation Conference
San Diego, California
<http://tinyurl.com/6ycwpj8>

February

February 4–5, 2012

Isotopes in Biological & Chemical Sciences
Galveston, Texas
http://grc.org/programs.aspx?year=2012&program=grs_iso

February 25–29, 2012

Biophysical Society 56th Annual Meeting
San Diego, California
www.biophysics.org/2012meeting

March

March 4–9, 2012

Mechanical Systems in the Quantum Regime
Galveston, Texas
<http://grc.org/programs.aspx?year=2012&program=mechquant>

March 19–23, 2012

Addressing the Challenges of Drug Discovery: Novel Targets, New Chemical Space and Emerging Approaches
Tahoe City, California
www.keystonesymposia.org/Meetings/ViewMeetings.cfm?MeetingID=1150

April

April 17–20, 2012

2nd European Energy Conference
Maastricht, The Netherlands
<http://energy-conference.eu/>

April 24–28, 2011

Enzyme and Biocatalysis: Design Robust Enzymes in a New Era
Xi'an, China
<http://www.bitlifesciences.com/seb2012/welcomemessage.asp>