Newsletter
Biophysical Society APRIL 2016

DEADLINES

Meetings

Liposomes, Exosomes, and Virosomes
September 11-16
Ascona, Switzerland

April 25
Late Abstract Submission

Engineering Approaches to Biomolecular Motors: From in vitro to in vivo
June 14-17
Vancouver, Canada

April 10
Late Abstract Submission

Mechanobiology of Disease
September 27-30
Singapore

June 6
Abstract Submission

July 5
Early Registration

Biophysics in Los Angeles

Communities, scientific discoveries, and learning were the focus of the 2016 Annual Meeting. Researchers from over 50 countries descended on sunny California for five days of exciting science, which began with 14 highly attended subgroup programs on Saturday, followed by the regular Sunday–Wednesday program that included 23 symposia, 4 workshops, 64 platform sessions, and daily career-focused and science policy sessions.

For Meeting Highlights, See Page 8

The Kazuhiko Kinosita Award in Single Molecule Biophysics

The Society is pleased to announce a newly established annual award. The Kazuhiko Kinosita Award in Single Molecule Biophysics recognizes outstanding researchers for their exceptional contributions in advancing the field of single molecule biophysics. This award honors the life and work of Professor *Kazuhiko Kinosita, Jr.*, who helped to establish the field, and who performed many elegant experiments, including proving conclusively the rotation of individual molecules of the F1 ATPase (ATP synthase). The award is intended to encourage investigators, to promote further developments in single molecule biophysics, to advance the type of cross-disciplinary research that is characteristic of this field, and to elevate an appreciation of single molecule studies among scientists in general.

The Award is funded through an endowment created with contributions from friends, family, and colleagues of Professor Kinosita, through an effort led by Society members *Steven M. Block*, Stanford University; *Yale E. Goldman*, University of Pennsylvania; *Shin'ichi Ishiwata*, Waseda University, Tokyo, Japan; *James A. Spudich*, Stanford University; and *Toshio Yanagida*, Osaka University, Osaka, Japan.

Nominations are now being accepted for the inaugural award, which will be presented at the 2017 Biophysical Society Annual Meeting in New Orleans.

For information and to submit a nomination, visit www.biophysics.org/awards.

CONTENTS

Biophysical Society

The *Biophysical Society Newsletter* (ISSN 0006-3495) is published twelve times per year, January-December, by the Biophysical Society, 11400 Rockville Pike, Suite 800, Rockville, Maryland 20852. Distributed to USA members and other countries at no cost. Canadian GST No. 898477062. Postmaster: Send address changes to Biophysical Society, 11400 Rockville Pike, Suite 800, Rockville, MD 20852.

President's Message

Suzanne Scarlata, 2016 Biophysical Society President

Things are looking up at the NIH in 2016… the budget received a $2 billion boost, sequestration is on hold … and yet, funding levels are still abysmally low at most Institutes and Centers. Based on the budget deal struck by Congress in 2016, it is likely that NIH funding will be flat in 2017. Budget caps set by Congress will continue to stifle growth in the NIH budget through 2021 unless Congress strikes a new long-term deal. In this reality, study section members are asked to rank outstanding proposals by finding the slightest flaw in a specific aim, investigators at soft money institutions are taking pay cuts and finding alternate careers, and young investigators at mid-level institutions are nervously submitting proposal after proposal. There is no doubt that change is needed. NIH leaders are aware of these problems and are experimenting with different solutions.

The Biophysical Society fully participates in advocating for increased funding at NIH and other federal agencies, both by itself and in conjunction with coalitions, but the Society Council and Public Affairs Committee also continue to discuss possible solutions to address the systemic problems in how funding is distributed.

Missing from this discussion is the wealth of ideas that all our members have. I want to hear from you and invite you to participate in thinking about and developing solutions that deal with our reality. We welcome any thoughts, suggestions and feedback on any of the ideas listed here.

To kick off the dialogue, below are a few ideas that we hope will stimulate discussion and, ultimately, result in changes that benefit the extramural NIH community.

One response from the National Institue of General Medical Sciences (NIGMS) to the current funding dilemma has been development of the Maximizing Investigators' Research Award (MIRA) program. The intent of MIRA, under which NIGMS is currently in the process of making its first awards, is to move funding into a more investigator-orientated mechanism rather than a specific project. Still in the experimental phase, this program supports young investigators or investigators with more than one RO1 for a fixed amount not to exceed $750K in direct costs per year for five years. NIGMS is currently working to expand the program to all PI's that are up for renewal. While this program is well-intentioned, it is difficult to assess its success at such an early stage. We have asked NIGMS to provide the community with results of its evaluation of the program and they are releasing the data, which is commendable. It would be nice to also hear from you, the community, about your experiences. Have you applied? Should it be expanded to other Institutes?

Another way NIGMS is dealing with tight funding is to limit the number of R01s awarded to a single investigator that has substantial unrestricted research support. At the 2015 BPS Annual Meeting, Jon Lorsch, the Director of NIGMS, showed compelling data that related the productivity of a lab to the number of RO1s. These data show that above 1.5 RO1s, the productivity per grant diminishes. Personally, it does not upset me to see the 25% cut from my RO1 supporting a scientist with little funding. However, I am annoyed if the cut

goes to fund another investigator's fifth RO1. The idea that all investigators should be funded at a 1.5 RO1 level can be attractive, but may not be feasible. Careful consideration should go into determining how such limits should be implemented.

Several factors contribute to the size of budgets associated with NIH grant proposals and to the overall monetary pressures on funding agencies. Below I outline some of these factors and offer my own suggestions for ameliorating their impact.

- First, many biophysicists must spend a significant amount of their funding on service contracts for instrumentation that can, in principle, be shared by several labs. Sharing not only saves upfront costs, but also the costs of maintenance. Some universities see instrumentation acquisition as a positive factor that allows for synergy among their faculty's research programs, whereas others adopt a more 'you're on your own' model. University promotion of shared instrumentation and development of improved cost sharing mechanisms could help defray the expense of service contracts. How do we change the culture so individuals and institutions understand the benefit of sharing?

- Second, many institutions continue to work on a model in which PIs must cover their own salaries through research grants while still teaching and doing service work – in other words, let the investigators pay their own way while providing free training to students. This model is unsustainable. Institutions need to pay their employees regardless of funding level and not expect their faculty to bring in grants in order to feed their families. Is there a way the Society can help advocate for this change?

- Third, the NIH could consider making budgets commensurate with the scientific level of the PI. Mid-level scientists often have highly trained personnel who have worked for them for many years and have achieved higher pay levels as compared to those who work for younger scientists. Funding levels should account for the number and training of key personnel.

- Fourth, the NIH should consider creating a sunset program with reduced funding for scientists close to retirement whose labs are contracting.

- Fifth, the expectation that every doctoral student will become a PI is unrealistic. Moreover, PhD scientists who wish to remain in science in senior research positions should be eligible for long-term support. This would require changing the modular budget system to a system with dollar limits that depend on the level of the scientist and the number of years that a staff person has been in service. We would like to hear from our membership to determine the number of people that would find this attractive.

- Sixth, the NIH should limit graduate student support for summer salaries and have institutions pay students through teaching assistant and research assistant positions. This mechanism would have the effect of reducing the number of purely technically trained students that are less inclined for PI positions and ultimately reduce the number of junior investigators applying for RO1 funding. This reduction could be offset by creating a special funding mechanism for highly motivated graduate students who would work in laboratories of their own choosing.

Finally, there is no question that the NIH and other national funding agencies need sustained and consistent funding. One way to do this would be to link the NIH budget to the Gross Domestic Product and remove it from the annual appropriations process. While this sounds promising, it will be politically very difficult to make a reality, but still worth discussing.

These are just some suggestions that will hopefully start a dialog with our membership. While I have focused on NIH here, I am interested in hearing your thoughts on funding processes at all the US federal agencies. Please send comments to president@biophysics.org.

Biophysicist in Profile

DIMITRIOS MORIKIS

Dimitrios Morikis, professor of bioengineering at the Bourns College of Engineering of the University of California, Riverside (UCR), was born in Athens, Greece. His parents, a hotel manager and homemaker, "believed that a good education with a solid emphasis on science and humanities was the foundation for a fulfilling life for their children," Morikis says. As a child, he was fascinated by mathematics, and his favorite subject was geometry—though his dream was to become a soccer player. "I loved playing soccer and I was good in scoring goals," he says. "However, at the age of 12, I was injured twice playing soccer, and my parents discouraged me from pursuing my soccer ambitions—actually, banned me from going out in the street to play soccer. So, I stayed home and was spending my time studying, doing my coursework assignments, and continuously reviewing past class material." After finishing high school, he was admitted to the Aristotle University of Thessaloniki to study physics.

Morikis developed an interest in optics in his undergraduate years, and during a summer internship in Poland he was introduced to nuclear magnetic resonance (NMR) and became interested in magnetic properties of materials. "Upon graduation, I received a Fulbright fellowship to perform graduate studies in the United States," he says, "and I became a graduate student in physics at Northeastern University in Boston." After completing his master's of science degree, he chose to work in biophysics using resonance Raman scattering to study the structure and dynamics of the heme pocket of myoglobin in various states. "A new professor, the biophysicist *Paul Champion*, had arrived and there was a lot of discussion about starting a new direction in biophysics within the department of physics," Morikis says. "I was fascinated on the prospect of using physical principles and methods to understand basic biological processes." For his PhD thesis, Morikis performed studies on the electronic structure of the heme moiety of myoglobin, including comparisons in crystal and solution states, and the pH, ionic strength, temperature, and mutagenesis dependence of heme pocket conformational transitions.

He earned his PhD in 1990, and became a postdoctoral fellow in *Peter Wright's* group at Scripps Research Institute in La Jolla. "At Scripps I worked on structural and hydrogen exchange studies of a legume hemoglobin using NMR, so I retained my interest in heme proteins, but changed the type of spectroscopy and objective to the study of molecular structure," he explains. "I also developed interest in peptides, and I studied the structure of a stand-alone alpha helix and the hydration of a peptide fragment."

Morikis with his family when he was named an AAAS Fellow in 2007.

Later on, Morikis held an NIH National Research Service Award – Senior Postdoctoral Fellowship in *Andy McCammon's* group at the University of California, San Diego (UCSD). He worked on electrostatic calculations, coupled to computational mutagenesis, to delineate the proton transfer mechanisms during the catalytic function of an enzyme that participates in the biosynthetic pathway of purines.

Morikis held research positions at the Sanford Burnham Institute in La Jolla and UCSD between his postdoctoral fellowships. He then accepted an independent research faculty appointment at UCR. He became a founding faculty member of the Department of Bioengineering in 2006, and is also part of the faculty of the graduate program in biomedical sciences of the School of Medicine and of the Institute for Integrative Genome Biology. Currently, Morikis does research in biophysics and bioengineering using computational and experimental approaches. "Throughout the years, there was a natural evolution from biophysics to bioengineering via structural biology and computational chemistry," he explains, "which is consistent with the evolution of my research interests and training." Within the umbrella of biophysics and bioengineering, his lab has three major research directions: immunophysics and immunoengineering, drug and biomarker discovery, and

structural and translational bioinformatics. "I coined the term immunophysics about 15 years ago to describe the biophysics of the immune system," Morikis says. "Immunophysics is the study of the physical basis of immune system function and regulation. We are trying to answer the questions 'what are the molecular and cellular origins of immune system function, regulation, and inhibition? How does the immune system distinguish self from nonself? How does failure to discriminate self from nonself result in autoimmune and inflammatory diseases? What are the mechanisms that bacteria and viruses have evolved in order to evade immune system action?' Immunoengineering is the design of immune system regulators with tailored physicochemical properties and desired biological functions. The ultimate goal of immunoengineering is to design proteins, peptides, and small molecules that can modulate immune system function to fight infections and regulate autoimmune and chronic inflammatory diseases."

Morikis's decision to focus on immune system function came after a personal struggle with illness. "In 1994, I got sick with a life-threatening disease of the bone marrow. Thanks to modern medicine and after a strenuous process, I recovered and managed to get back to research," he says. "It was in 1995 when I decided to dedicate the rest of my research life in studying the molecular basis of immune system function and trying to develop means to fight immune-mediated diseases."

Champion has come to admire Morikis, in part because of his grace in persevering through this challenge. "Dimitri has overcome some tremendous difficulties related to his health and he has done a really amazing job of carving out a distinguished career in biophysics and bioengineering," Champion says. "[He has taught me] how hard work, resolve, and dedication to one's chosen intellectual pursuit can help a person to overcome significant obstacles and lead them to success."

Morikis's students appreciate his approach to mentoring. *Ron Gorham*, who worked in Morikis's lab for six years as a student and postdoc, says, "Nearly all of our one-on-one research meetings were at one of the nearby coffee shops. Sometimes we would spend hours just talking. It usually started off with discussion of data, but always turned into a higher-level intellectual discussion of research ideas, plans, and even career wisdom and advice. These meetings are perhaps my fondest memory of my time working with Dimitri." *Aliana López de Victoria*, another of his students, adds, "He was my PhD advisor, with an open door policy, willing to listen, help with analyzing results, and plan experiments. He was also a mentor, helping me figure out what I wanted to do next. Now that I'm not his student, Dr. Morikis is a friend, and the person I still call for advice."


Morikis with his lab students in downtown Riverside, 2015

Morikis's group also participates in outreach activities at local middle and high schools. His graduate students volunteer with the Inland Empire Regional Science Olympiad, where they supervise a Protein Modeling workshop, and organize demonstrations at science fair expos.

Outside of the lab, Morikis enjoys spending quality time with his wife of 30 years, *Gloria González-Rivera*, professor of economics at UCR, and their son, *Vasilios Aris Morikis*, a third-year graduate student in biomedical engineering at University of California, Davis. He also enjoys cooking Greek cuisine.

Morikis advises young biophysicists, "Enjoy the experience of integrating physics and biology, emphasize blending experiment and computation, and establish strong foundations in quantification and theory. Try to reach out to researchers in the fields of biotechnology and medicine. There will always be challenges ahead of you at the personal or professional level, but try to optimize each situation with a forward-looking attitude."

Profilee-at-a-Glance

Institution
University of California Riverside

Area of Research
Immunophysics, immunoengineering, drug and biomarker discovery, bioinformatics

Public Affairs

President Presents Vision in Budget

President Obama sent his final budget request to Congress on February 9. The budget includes funding increases for research and science education, including new initiatives to find cures for cancer, increase investment in clean energy research and development, and expand the nation's investment in computer science. However, the funding the White House would need for these programs is greater than the amount Congress allotted in its budget deal last fall. To get around this, the White House has categorized some of its requests as coming from mandatory funding, rather than discretionary, which in fact it is not. Congress immediately rejected the distinction. With that said, the overall budget does provide insight into the President's commitment to science and research if the budget decisions were solely up to him.

The chart below outlines the President's budget request in comparison to FY 2016.

President's Budget Requests for FY 2017

Agency	FY 2016 Enacted Level	FY 2017 President's Request	Percent Change
National Institutes of Health	$32,100	$33,136	2.5%
National Science Foundation	$7,460	$7,960	6.7%
Department of Energy Office of Science	$5,350	$5,672	6.1%
NASA Science	$5,589	$5.303	-5.1%
NIST Science and Tech Labs	$690	$731	5.9%
Department of Defence Basic Research	$2,320	$2,115	-9%
Veteran's Affairs Medical and Prothetic Research	$631	$663	5.2%

House Approves NSF National Interest Bill

On February 10, the United States House of Representatives passed legislation that would require the National Science Foundation (NSF) to affirm that each research grant it approves is in the national interest and, therefore, worthy of taxpayer support.

The Scientific Research in the National Interest Act (H.R. 3293), written by House Science Committee Chairman Lamar Smith (R-TX), was approved on a mostly party line vote of 236 (R) to 178 (D). The original language of the bill was the same as a provision in the America COMPETES Reauthorization Act, which the House approved last May. The Society opposed the language at that time and communicated that to Congress.

If the bill were to become law, it would require NSF to affirm in writing that each of its grant awards is worthy of federal funding and in the national interest. An award would be deemed in the national interest if it met one of seven criteria, including increasing US economic competitiveness, advancing health, increasing scientific literacy, or promoting the progress of science in the United States.

The likelihood of the bill becoming law in the next year is slim. The Senate does not currently have plans to consider the bill, and the White House issued a statement saying that the President's senior advisors would recommend that he veto the bill if it were to come to his desk for his signature.

The Society will continue to track this issue and ask members to take action when and if necessary.

Biophysical Journal

Know the Editors

Nancy Forde

Nancy Forde
Simon Fraser University

Editor, Proteins

Q: What are you currently working on?

The principal focus of my lab's research is understanding how the structure and mechanics of collagen's triple helix are impacted by its sequence and chemical environment.

Collagen is the predominant structural protein in vertebrates, where it affords connective tissues their ability to withstand stress and provides mechanical properties to the extracellular matrix influencing cellular development. In the past few years, the relationship between the chemical composition and mechanical response of this extracellular protein has sparked a flurry of debate in the literature about how collagen's triple helical structure responds to applied force and whether this response is altered within the context of a fibrillar superstructure.

To gain insight into this issue, we have developed a recombinant expression system for human collagen, which provides correctly post-translationally modified and folded protein. We are applying techniques such as atomic force microscopy imaging and optical tweezers to understand the inherent flexibility of collagen triple helices in different chemical environments, and how they respond to force. We are particularly excited by the promise of centrifuge force microscopy (CFM) to study force-dependent changes in collagen's structure, and have developed a compact, low-cost wireless CFM to enable these studies in our lab.

The second area of my research program uses a modular engineering approach to design and characterize novel protein-based molecular motors. This work, done with great collaborators, is providing insight into fundamental physical mechanisms responsible for achieving directed motion at the nanoscale. I am co-organizing an upcoming Biophysical Society Thematic Meeting on Engineering of Biomolecular Motors in Vancouver in June, which I encourage interested Society members to attend.

Q: At a cocktail party of non-scientists, how would you explain what you do?

I build instruments using lasers and other cool tools of physics to try to figure out what holds our tissues together and how to keep their "youthful" properties as we age. I also enjoy engaging with biology students and helping them see how physics can contribute to the understanding of biological systems, and that it is not a subject they should fear!

Q: What have you read lately that you found really interesting or stimulating? (a paper, a book, science or not science)

I recently read *The Immortal Life of Henrietta Lacks* by Rebecca Skloot. I thought the author did an outstanding job of weaving together stories of Henrietta's family, of race relations in the United States, and of scientific breakthroughs. The book showed how far science and ethics have advanced in recent decades, and raised a lot of questions that have no easy answers about how science should proceed when dealing with human samples.

Biophysical Society 60TH ANNUAL MEETING

LOS ANGELES, CALIFORNIA • FEBRUARY 27 – MARCH 2, 2016

Symposia & Workshops

Meeting attendees spent their days immersed in scientific sessions, which included 23 symposia, 64 platform sessions, and 4 workshops highlighting the latest research topics and biophysical techniques.

National Lecture

The 2016 National Lecture, *Molecular Movies: Feature-Length Simulations of Protein Dynamics*, was presented by **David E. Shaw**, D.E. Shaw Research, on Monday, February 29. To view the National Lecture online, go to www.biophysics.org/2016meeting.

Samsung Tablet and Fitbit Winners

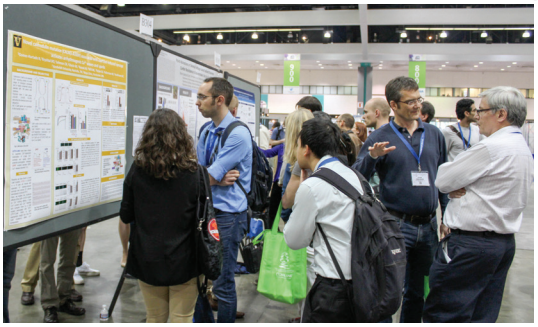
Wayne Christenson, Arizona State University, won the exhibitor Samsung Galaxy Tablet raffle.

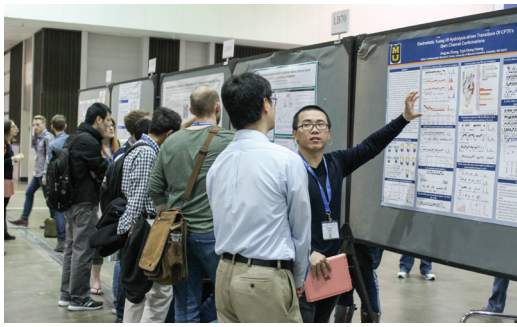
Alessio Andreoni, Arizona State University, won the Fitbit during the Wednesday Poster Session.

Career Programs

The BPS Meeting included over 25 career- and education-related sessions for attendees at all career levels.

COMMUNITIES, SCIENTIFIC DISCOVERIES, AND LEARNING

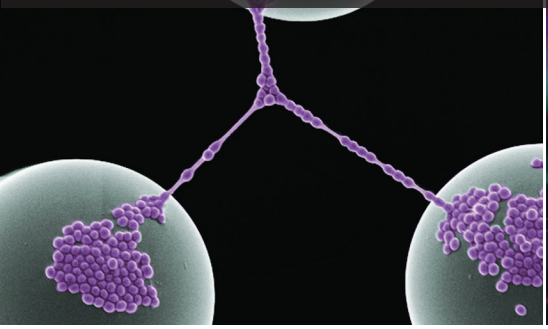




Poster Presentations

Over 650 posters were presented in the Exhibit Hall each afternoon, presenting research that spans the interdisciplinary field of biophysics. Over 500 attendees presented their research in the daily platform sessions.

1st Place
Bacterial Networking
Zeinab Jaheb



2nd Place
Light Trails of Receptor Tyrosine Kinase EphA2
Thomas Newport

3rd Place
Collective Effects in Active Fluids
Andreas Bausch

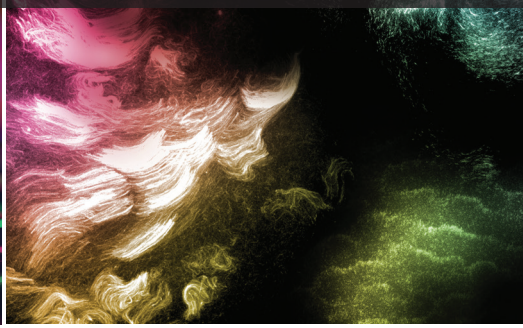


Image Contest

The Biophysical Society Art of Science Contest received over 35 submissions. The 10 finalist entries were displayed at the Annual Meeting, where attendees voted on their top two images. The prizes were sponsored by Chroma Technology. Congratulations to the 1st, 2nd, and 3rd place winners. Visit the website for the description of the images, www.biophysics.org.

Exhibits

Attendees had the opportunity to visit exhibitors and view product demonstrations, see the latest lab equipment, scientific publications, and explore new technologies in the Exhibit Hall.

2016 SRAA Poster Competition Winners

The 14 winners of the annual Student Research Achievement Awards were recognized at the 60th Annual Meeting Awards Ceremony on February 29. These students were selected by judges from the Society's subgroups for their outstanding presentations during the poster competition. Eighty-two students participated in the competition. The winners are:

Bioenergetics
Paween Mahinthichaichan, University of Illinois at Urbana-Champaign
Characterizations of Substrate Delivery Pathways in the Nitric Oxide Reductase.

Biological Fluorescence
Rayna Addabbo, University of Wisconsin-Madison
Kinetic Compensation Between Ester-Bond Cleavage, Folding and Release from the Ribosome in Protein Biogenesis.

Biopolymers in vivo
Michiel Niesen, California Institute of Technology
Coarse-Grained Modeling of Membrane Protein Integration Via the Sec Translocon.

Exocytosis & Endocytosis
Jason Paxman, Brigham Young University
Alcohol Significantly Alters Fusigenicity of Vesicles in a Model Membrane System.

Intrinsically Disordered Proteins
Gül Zerze, Lehigh University
Dynamics of Contact Formation in Disordered Polypeptides.

Mechanobiology
Ishutesh Jain, Indian Institute of Technology Bombay, India
Dynamic Instability Emerges from Micromechanics and Chemical Kinetics of Microtubule Protofilaments.

Membrane Biophysics
Worawan Limpitikul, Johns Hopkins University School of Medicine
Functional Rescue of Calmodulinopathy Ipsc-Derived Cardiomyocytes – A Foray into Personalized Medicine.

Membrane Structure & Assembly
Caitlin Cornell, University of Washington
General Anesthetics Raise the Miscibility Transition Temperature of Model Membranes.

Sarah Kim, Johns Hopkins University
Design of Ph-Triggered, Macromolecular Pore Forming Peptides for Endosomal Escape.

Molecular Biophysics
Federico Comitani, King's College London, United Kingdom
Exploring the Binding of Gaba to the Insect Rdl Receptor with Metadynamics.

Motility
Martina Audagnotto, École Polytechnique Fédérale de Lausanne, Switzerland
New Insight into the Catalytic and Inhibition Mechanism of the Human Acyl Protein Thioesterase.

Nanoscale Biophysics
Bogdan Iaparov, Ural Federal University, Russia
Electron-Conformational Transformations Govern the Temperature Dependence of the Ryr2 Gating.

Yan Yan, Emory University
Hu Protein and Dna Supercoiling Dramatically Enhance Lac-Repressor-mediated Dna Looping.

Permeation & Transport
Cholpon Tilegenova, Texas Tech University Health Sciences Center
Elucidation of Molecular Mechanism Underlying Kcsa's Hysteretic Gating Behavior.

Biophysics 101: FRET

During the 60th Annual Biophysical Society meeting, the Education Committee once again sponsored Biophysics 101, a session focusing on educating participants about new or noteworthy biophysical techniques. *Steve Vogel*, of the National Institutes of Health, and *Kalina Hristova*, of John's Hopkins University, gave a presentation on Forster Resonance Energy Transfer (FRET), highlighting the power and limitations of this technique. FRET is widely used to study protein structure and protein in vitro and in vivo, in molecular ensembles and in single molecules. The utility of FRET comes from its ability to resolve distances that are smaller than the diffraction limit of light, in the 20 to 100 Angstrom range. A recording of the session is available to Society members.

Visit the Members Only page at www.biophysics.org

Biophysical Society **Webinars**

FREE TO ALL SOCIETY MEMBERS

Negotiation Strategy and Tactics
June 2016

Avoiding and Recovering from Common Postdoc Mistakes
September 2016

Optimizing Your Time at a Conference
January 2017

biophysics.org/**Webinars**

Molly Cule
Advice

Molly Cule

Do I need a K99 grant to get a teaching position?

Simple answer to this question is NO; you do not need a K99 to get a teaching position. However, it varies depending on the requirements of hiring departments at each institution. The K99 award is created with a primary objective of assisting young investigators who are within five years of postdoctoral training at the time of initial application and transitioning to a stable independent research position. The K99 award has an initial mentored phase that provides support for up to two years. Following that, up to three years of support is provided upon request to conduct research as an independent scientist. It is important to note that K99 awards reserve 75% of the scientist's time for research, meaning that the awardee has limited time for teaching and other activities. Institutions that require substantial teaching may not consider a K99 award an asset for their candidates, therefore having a K99 award may be a limiting factor for consideration for certain teaching positions.

For a teaching position at an institution of higher education, the typical requirement is experience in teaching and excellent presentation and communication skills. Most teaching positions call for strong evidence of successful undergraduate teaching with experience in teaching a variety of science courses. In addition, most require experience in teaching diverse student populations; assisting in the development of program curriculum; assessing student learning outcomes; providing academic and career advice to students; and being collegial. However, there are always exceptions. Some teaching-heavy programs and colleges that primarily cater to undergraduate education will, in fact, encourage extramurally funded research programs. Candidates with K99 awards will be most preferred at such colleges. If you are able to obtain a K99 award and are interested in teaching, you are better off moving to departments and colleges where you can find a good balance between teaching and research.

Grants and Opportunities

2016 National Medal of Science

Objective: To be given to individuals "deserving of special recognition by reason of their outstanding contributions to knowledge in the physical, biological, mathematical, or engineering sciences.

Deadline: April 15, 2016

Website: http://www.nsf.gov/od/nms/medal.jsp

Sir Henry Wellcome Postdoctoral Fellowships

Objective: To provide a unique opportunity for the most promising newly qualified postdoctoral researchers to make an early start in developing their independent research careers, working in the best research environments in the UK and overseas.

Who May Apply: Individuals must be in the final years of their PhD studies or have no more than two years of postdoctoral research experience prior to the deadline.

Deadline: May 15, 2015

Website: http://www.wellcome.ac.uk/Funding/Biomedical-science/Funding-schemes/Fellowships/Basic-biomedical-fellowships/WTX033549.htm

Spring Course

May 7-17, 2016

International School of Biological Magnetic Resonance: 14th Course

Future of Molecular Biophysics

Erice, Sicily, Italy
Website: http://smrl.stanford.edu/erice2016
Manolia@stanford.edu

Student Center

R. Lea Sanford

R. Lea Sanford
Department of Physiology and Biophysics

Weill Cornell Medical College

Q: What made you decide to study biophysics?

During my senior year in college I had a soft matter physics course, in which we studied the physics of cell membranes. This was my first exposure to the field of biophysics. I've always been keenly interested in understanding how nature functioned so I immediately loved the idea of being able to apply the laws of physics to help demystify biology! Ever since coming to the Andersen lab at Weill Cornell Medicine I've continued to be fascinated by all of the new questions biophysics allows me to ask and the approaches it provides to solve them.

Student Center is a new feature in the Newsletter, where student members can share their experiences on how they decided to enter the field of biophysics. Send a photo and your answer to CCurry@biophysics.org.

Subgroups

Biopolymers in Vivo

Keeping up with the Crowd

LA was great! We had a superb symposium and business meeting. Let's start with the election. *Patricia Clark*, Notre Dame, is our 2017 chair elect. *Margaret Cheung*, University of Houston, and *Tanja Mittag,* St. Jude's, will organize the next symposium, as program co-chairs. *Zoya Ignatova,* University of Hamburg, is our new member-at-large, and *Rayna Addabbo*, University of Wisconsin- Madison, is our new graduate student representative. Our former student representative, *Anna Simon*, graduated and is now Dr. Simon. Way to go Anna, and thank you for your service! We also thank *Martin Gruebele* for his service as chair. His shoes will be tough to fill.

The afternoon symposium was a great success. The talks were uniformly excellent, as shown by the filled seats and large number of questions. Nevertheless, program co-chairs *Christian Kaiser* and *Ed O'Brien* did a great job keeping the train on the track.

After the applause died down, 30 of us walked, en masse, to the symposium banquet at B.S. Taqueria, where we were served a delicious multi-course meal. The good times just kept rolling because an anonymous donor picked up the beverage tab. Live long and prosper, anonymous donor!

Finally, we want to put in several plugs. First, please join the subgroup or renew your membership when you pay your annual Society dues. Students can join the subgroup for free, and it's only $20 for others. Second, if you let your subgroup membership lapse, we still love you, but please re-enter the fold. Finally, we strongly recommend you sign up for the dinner at the same time you renew your subgroup membership so you don't miss out when the good times roll next year in New Orleans.

—*Rayna Addabbo*, Graduate Student Representative, and *Gary J. Pielak*, Chair

By the Numbers

Employment of biophysicists and biochemists is projected to grow eight percent from 2014 to 2024. Source: U.S. Bureau of Labor Statistics | Office of Occupational Statistics and Employment Projections

2016 BPS Networking Events

April

Meharry Medical College
Nashville, TN

May

University of Kentucky
Lexington, KY

Purdue University
West Lafayette, IN

For dates and additional information, visit www.biophysics.org/**networking**

Do you have an idea for a networking event and want to host one in your area?

BPS will be accepting networking event proposals until April 15 for 2016 and 2017.

For information about networking events and proposal requirements, visit the website above.

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UPCOMING EVENTS

June

June 5–9

Autophagy: Molecular and Physiological Mechanisms
Whistler, Canada
http://www.keystonesymposia.org/index.cfm?e=Web.Meeting.Summary&meetingid=1381&subTab=summary

June 13–15

5th World Congress on Materials Science & Engineering
Alicante, Spain
http://materialsscience.conferenceseries.com/europe/

July

July 8–12
ISMB 2016
(ISCB Flagship Conference)
Orlando, Florida
http://www.iscb.org/ismb2016

July 24–29

Plasmas with Complex Interactions - Exploiting the Non-Equilibrium
Andover, New Hampshire
https://www.grc.org/programs.aspx?id=12574

August

August 7–10

5th International Symposium on Diffraction Structural Biology
Knoxville, TN
https://conference.sns.gov/event/2/

August 8–12

NIMBioS Tutorial: Evolutionary Quantitative Genetics 2016
Knoxville, TN
http://www.nimbios.org/tutorials/TT_eqg2016

September

September 10–13

The 7th EMBO Meeting
Mannheim, Germany
http://www.the-embo-meeting.org/

Please visit www.biophysics.org for a complete list of upcoming events.