

Newsletter

Biophysical Society

FEBRUARY 2017

DEADLINES

Summer Course

February 22
Application Deadline

Meetings 2017

61st Annual Meeting
February 11–15
New Orleans, Louisiana

Single-Cell Biophysics:
Measurement, Modulation,
and Modeling
June 17–21
Taipei, Taiwan

March 1
Abstract Submission

March 24
Early Registration

Conformational Ensembles
from Experimental Data
and Computer Simulations
August 25–29
Berlin, Germany

April 3
Abstract Submission

May 1
Early Registration

Emerging Concepts in Ion
Channel Biophysics
October 10–13
Mexico City, Mexico

May 26
Abstract Submission

June 23
Early Registration

2017 New & Notable Symposium Speakers Announced

The 2017 New & Notable Symposium will feature exciting new discoveries that take advantage of diverse biophysical methodologies and address a wide range of biophysical questions. The Symposium will be held on Sunday, February 12, 10:45 AM–12:45 PM, at the Ernest N. Morial Convention Center in New Orleans, Louisiana.

Six speakers, pictured below, were selected from a pool of incredible nominations submitted by Society members.



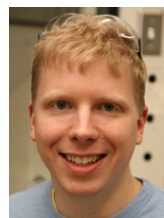
Lucy Brennan
Cornell
University



Jue Chen
Rockefeller
University



Michael Feig
Michigan State
University



Aaron Hoskins
University of
Wisconsin-
Madison



Tanuj Sapra
University of
Zurich,
Switzerland



Bonnie Wallace
University of
London

Catherine A. Royer and *David W. Piston*, Program Co-Chairs of the 61st Annual Meeting Program Committee, will co-chair the Symposium.

Follow Annual Meeting events on Facebook, Twitter, Instagram, and the Biophysical Society Blog throughout the Annual Meeting with scientific session news, press releases, and attendee blog posts.

#BPS17

BPS is again partnering with WebsEdge to bring Biophysical Society TV to the Annual Meeting. Biophysical Society TV features new episodes daily, including Thought Leadership segments and Annual Meeting News. Attendees can view program highlights, behind-the-scenes interviews, and coverage of meeting events from the comfort of local hotel rooms by visiting the BPS Annual Meeting website. Segments will also be posted on the Annual Meeting website.



CONTENTS

Message from the President	2
Biophysicist in Profile	4
Public Affairs	6
Biophysical Journal	8
Molly Cule	10
Student Center	10

Subgroups	12
From the BPS Blog	13
Grants and Opportunities	13
Members in the News	14
Upcoming Events	16

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Message from the President



Suzanne Scarlata

I recently attended the Australian Biophysical Society meeting where I was pleased to see that, like the BPS meeting, women and young scientists were well represented. My spirit was immediately dampened when, between sessions, I read the article, *Rosalind's Ghost* by *Caroline Wagner* in PLoS Biol (DOI:10.1371/journal.pbio.2001003). This article underscores the continuing collection of data showing that women in science publish fewer papers, receive fewer professional awards, and are not as well represented on editorial boards as their male counterparts. In this article, Wagner argues that the continued inequality of women in science might be based on their tendency to collaborate less or collaborate with more local and less prominent lab groups. This argument is reasonable, and Wagner presents solid data to support her argument.



While reading the data and citations included in the article, I have to wonder why it is that with all the hard work by the BPS, the National Institutes of Health, and other agencies, both national and international, to combat gender inequality, we are still so behind? Are there less apparent reasons that underlie these gender differences?

I would conjecture that one reason (and I have only anecdotal stories to back this up) for this disparity in outcomes/output between the genders is that, when women are working in jobs that have historically been held by men, they are scrutinized much more extensively than their male counterparts. In no situation has this point been better exemplified than in the last US election where the female candidate faced an extreme amount of scrutiny for relatively minor points while the severe problems with her male opponent were glossed over. This discrepancy in treatment between the two candidates is one

of the few points agreed on by both sides of the political spectrum. Yet the opposite seems to be true for men that hold positions that have historically been viewed to belong in the women's domain (again, in my limited experience): my male hairdresser is absolutely terrific and sought after by many clients, and my daughter's male 4th grade teacher was well respected.

Is this biased scrutiny intentional? I'm sure that during the election most journalists felt they were being fair, but in retrospect, I think they fell short. Similarly, we as scientists would like to think that we are unbiased as we add citations to our manuscripts, review grants, and choose awards. However, in all these tasks, we need to ask ourselves if we are fairly judging materials from women, junior scientists, and underrepresented groups on the same level as established scientists or our friends and colleagues. Many of us do think about diversity when we select speakers for conferences and nominate scientists for awards, but we should also consider carrying this idea of diversity and inclusion to all aspects of our work. It is often too easy to cite one or two references from our colleagues or an exemplary paper in the area, but when assigning reading articles for classes, discussing concepts, and listing references, we need to be conscious of all the literature rather than just one or two articles from the well-known and established members of the field. When in those situations, think about including excellent but less-recognized work from smaller labs and from all types of PIs.

Last year when I became president of the BPS, the world seemed different than it does now. In this, my final newsletter address to the BPS membership, I'm asking that you become more diligent in making sure you consider diversity when thinking about your citations, your syllabi, your lab, your department's hiring, and your mentoring. Don't sell yourself short; look for the best scientists and students, regardless of gender and geography. Biophysics is most exciting when the best and brightest minds are welcome and included.



Biophysics Week

March 6–10, 2017

Join the Society and scientists around the world, March 6-10, 2017, in celebrating, biophysics. Biophysics Week is an international effort to celebrate the field and share the significant contributions biophysics has made to science with the general public, policy makers, students, and scientists in related fields. Below you will find a calendar of special events organized by the Society during this unique week dedicated to you and the field of biophysics.


Monday, March 6

How to Write a Biophysics Article Worthy of Publication, Part 1

Tuesday, March 7

Capitol Hill Briefing: Nobel Laureate Peter Agre on Aquaporin Water Channels
– From Basic Biophysics to Clinical Medicine

Wednesday, March 8

 Helping Hands: Finding and Maintaining Mentorships within the Biophysical Community Webinar

How to Write a Biophysics Article Worthy of Publication, Part 2

Thursday, March 9

 Next Gen PhD: Where PhDs Land and What the Data Say Webinar

Friday, March 10

 How to Write a Biophysics Article Worthy of Publication, Part 3, and a Q&A Webinar

On the website, you will find additional Biophysics Week events taking place around the world planned by members. Stayed tuned throughout the week for daily online posts of trivia questions, articles highlighting women biophysicists, downloadable lesson plans, and events being hosted by scientists at institutions worldwide.

biophysics.org/biophysicsweek
[#BiophysicsWeek](https://twitter.com/BiophysicsWeek)

Visit biophysics.org/BiophysicsWeek
for more information.

Biophysicist in Profile

LUKAS TAMM



Lukas Tamm

Lukas Tamm grew up in Basel, Switzerland, a city located at the country's border with France and Germany, and with its own place in science history. "Basel is where *Friedrich Miescher* first discovered DNA, which he called nuclein, from leucocytes in the mid-19th century," Tamm shares.

Tamm's father was an organic chemist working on the synthesis of natural products such as antibiotics and glycosides that were used clinically for heart conditions. He co-directed the Institute of Organic Chemistry at the University of Basel and was dean of sciences, and later became president of the University, the oldest in Switzerland founded in 1460. His mother was a nurse who helped transform the home healthcare system in the city of Basel, which previously had been a collection of small church-related organizations but was converted into a larger, citywide foundation.

Tamm had little exposure to science in high school. "Switzerland had tracked high schools, and I was in a track that offered a classical humanistic education: eight years of Latin, five years of ancient Greek, a few modern languages — English and Italian were optional after French — math, and some, but not much, science," he says. "I did not like Latin, but I liked Greek because those authors wrote about exploring the world. I also liked math and was fascinated by the riches of biology." Tamm was also a serious musician, and upon graduating was torn between pursuing a career in music or the sciences. "Although I played at a pretty high level, my cello teacher advised me against going into music because 'it is so competitive if you want to play on the world stage,'" he says. "So, despite my underdeveloped science education, I decided to go into the sciences because I thought I might have a better shot at making a difference in something that combined physics and biology."

He did not know at that time that biophysics as a field existed, but was fascinated by the clarity and laws of physics and by the beauty and diversity of biology. Fortunately, Tamm began his under-

graduate studies at the University of Basel not long after the opening of its Biocenter, modeled after the MRC Laboratory of Molecular Biology in Cambridge, United Kingdom. "The first two years were lots of hard-core physics, chemistry, and math classes, and I had a lot of catching up to do," he says. "But, it was the third-year all-day integrated core courses in modern biochemistry, biophysics, structural biology, genetics, cell and developmental biology, microbiology, and neurobiology, and that pioneer spirit of the early Biocenter that sold me on a career in the biosciences. I was simply fascinated with what could be discovered in these wide-open and still emerging fields. I knew then that this is what I wanted to do for the rest of my life."

Following his undergraduate studies, he completed a master's thesis at Cornell University. He then returned to the Biocenter for his PhD thesis work with *Joachim Seelig*, who had just developed novel solid-state NMR [nuclear magnetic resonance] methods to look at protein-lipid interactions. "There was a huge debate going on about whether or not different boundary lipids existed around integral membrane proteins," he explains, "and we characterized the structure and dynamics of those lipids in contact with cytochrome oxidase and the sarcoplasmic calcium pump."

Tamm conducted his postdoctoral work at Stanford University with *Harden McConnell*. His research centered on the development of supported lipid bilayers as a new model system to study membrane protein and cell-cell interactions. "That's when we also first discovered lipid domains in lipid monolayers at the air-water interface," he says. "McConnell's lab was truly inspiring and McConnell's thinking was always ahead of its time. For example, he told me when I arrived, that I should try to detect single molecules. The ideas that he had about how to do this were not really feasible, and I could not come up with better ones, but this was in 1982, about a decade before anyone actually succeeded in detecting single molecules!"

Tamm is now the director of the Center of Membrane and Cell Physiology and vice-chair of the Department of Molecular Physiology and Biological Physics at the University of Virginia (UVA). His lab studies how viruses such as Ebola and HIV gain entry into cells by membrane fusion. “To this end we study the structures of viral envelope glycoproteins at different stages of fusion by NMR and steps of fusion by single-particle tracking using high-end laser fluorescence microscopy,” he says. “A technically similar project aims at understanding the elementary steps of exocytotic/synaptic vesicle fusion in cells or model membrane systems. We are also pushing NMR technologies to solve structures and dynamic properties of membrane proteins and are currently focusing on proteins from *Pseudomonas aeruginosa* that contribute to the antibiotic resistance of these pathogens.”

The most rewarding aspect of Tamm’s career has been his contributions to training the next generation of biophysicists. “It is just wonderful to see how graduate students grow into their projects and get more enthusiastic about what they do and their careers month by month,” he shares. “Similarly, guiding postdocs to eventually find a position that fits their goals in life is very rewarding. Right now, I am also hiring faculty into our new center at UVA. Providing them with an intellectual, physical, and financially sound environment where they can grow professionally, make great discoveries, and train the next generation of students, is like giving back to the biophysics community what my mentors gave to me at various stages of my career.”

One piece of advice Tamm offers for those in this stage of their careers is: “Try to look at the big picture and try to achieve something that is really important and significant. Once you have set a big

“The personal interactions with so many members of the Society both at UVA and everywhere else energize me every day to come to work, try to make meaningful new biophysical discoveries, and train the next generation of biophysicists.”

—Lukas Tamm

picture goal for yourself, be persistent in pursuing it. Don’t get distracted by temporary setbacks, but also be not afraid to reset your goals when necessary.”

Tamm looks forward to undertaking his new role as Biophysical Society president. “It is wonderful to be part of a vibrant professional community that is represented by the Biophysical Society,” he says. “The personal interactions with so many members of the Society both at UVA and everywhere else energize me every day to come to work, try to make meaningful new biophysical discoveries, and train the next generation of biophysicists.”

In his free time, Tamm enjoys traveling with his family to discover different parts of the world, and enjoys mountain climbing and skiing. “I love skiing and we try to carve out some time for skiing every year. In the winter and spring, ascending high mountains on skis is fantastic, because you get rewarded for the hard work of climbing up by skiing down through beautiful pristine powder snow if you are lucky,” he says.

Profilee-at-a-Glance

Institution

University of Virginia

Area of Research

Structure and function of membrane proteins

Single-Molecule Biophysics A new article collection from BJ

Free access for the month of February at <http://www.cell.com/biophysj>

Public Affairs

Congress Passes American Innovation and Competes Act

Rather unexpectedly, both the House and Senate approved the Senate's American Innovation and Competitiveness Act (AICA) before closing out the 114th session of Congress. The bill, an update to the 2007 and 2010 American COMPETES Acts, reauthorizes programs at the National Science Foundation (NSF), the National Institute of Standards and Technology, and the White Office of Science and Technology Policy. AICA does not include provisions related to the Department of Energy, as the COMPETES legislation did. President *Obama* signed the bill into law on January 6.

The bill received bipartisan support, unlike a House version passed in 2015 that was never considered by the Senate. To secure the votes necessary to pass, the final bill does not include any authorization levels indicating how much money Congress could put towards these programs each year, and also omits controversial language from the House bill that required NSF to certify that each and every grant was in the national interest.

The bill does reaffirm NSF's continued use of the merit-based peer review process, and acknowledges the work done by NSF to improve its transparency and accountability process and to communicate to the public why research grants are in the national interest. It also tweaks the broader-impacts criterion for grant approval.

The bill also establishes an interagency working group to examine ways to reduce the administrative burden on universities and researchers.

To get the bill to the president's desk, the House, which already adjourned for the year, passed the bill by unanimous consent, a way to pass legislation quickly as long as no legislator objects. This was a surprise not only to the scientific community, but to the Senate Commerce Committee, which drafted the legislation, and expected to reintroduce the bill in 2017. "Sending this bill to the White House is an overtime victory for science in the closing days of 2016," said Senate Commerce Committee Chair *John Thune* (R-ND) in

a press release. House Science Committee Chair *Lamar Smith* (R-TX), a critic of the NSF, stated that the passage of AICA was the result of "a four-year effort to strengthen and reform the agencies and programs that administer taxpayer-supported basic research."

The New US Cabinet: What We Know

While we don't know where President *Trump* stands on many science and research-related matters, his appointments can provide a hint at what his administration's priorities might be. Here is a list of the appointments that include oversight of biophysical-related programs announced by press time, as well as a few key facts about that person's public positions on science and research. These individuals are all subject to approval by the US Senate.

Tom Price (R-GA), nominated to secretary of the Department of Health and Human Services, which includes the National Institutes of Health (NIH), Food and Drug Administration, and Center for Disease Control. Price, an orthopedic surgeon, has served as the Chair of the House Budget Committee. He has voted against expanding the number of human embryonic stem cell lines eligible for use by NIH-funded researchers. He has spoken in support of increased funding for the National Science Foundation and NIH.

Rick Perry, a former governor from Texas, has been nominated to the position of secretary of energy. He has made public statements denying climate change, and has been a proponent of teaching evolution and creationism in Texas public schools.

Wilbur Ross, an investor, has been nominated secretary of the Department of Commerce, which includes the National Oceanic and Atmospheric Administration and the National Institute of Standards and Technology. He has not taken public positions on science-related matters.

Positions at both the cabinet level and below will continue to be filled over the next several months.



Biophysical Society

2017 Summer Research Program in Biophysics

May 9 – July 28, 2017 | University of North Carolina at Chapel Hill

Apply Today!

**Priority Application Deadline:
February 22, 2017**

Interested in interdisciplinary science? Want to work in the fast growing area of biomedical research? Looking to learn new techniques through hands-on lab experience this summer? If so, then check out the Biophysical Society's Summer Research Program in Biophysics, an 11-week scholarship program hosted by the University of North Carolina at Chapel Hill that introduces underrepresented* students to the field of biophysics. The program includes lectures, seminars, lab work, team-building activities and field trips. The Summer Research Program is designed to reflect a graduate-level research program and prepare students for the next step in their careers.

All tuition and fees during the program are covered. Participants also receive travel assistance, and a **stipend totaling \$4,480** for meals and living expenses throughout the summer.

Program includes:

- Lectures with UNC faculty members and seminars with leading scientists representing graduate programs from across the country
- Mentored research experience
- Team-building activities and field trips
- Professional Development
- GRE & MCAT Preparation
- Numerous networking opportunities

Prerequisites:

- Studying a quantitative science: chemistry, physics, biochemistry, engineering, and/or computer science (required)
- 2 semesters of biology (preferred)
- 2 semesters of calculus-level physics (preferred)
- 3.0 cumulative or higher GPA in science courses (preferred)
- US citizen or permanent resident (required)

See what past students have to say about the Summer Course!

"...this has been the most useful and wonderful summer of my college career. Not only have I learned academically, I have built multiple bridges that can only benefit me in the future."

"The BPS summer program was an incredible opportunity that allowed me to grow as a scientist, student, and person. I gained critical thinking skills, mastered new techniques, and developed relationships with peers and professors that have continued to benefit me since the program."

"I learned new lab techniques as well as worked on the project independently. I was able to complete my own experiments and when I had questions or hit a snag, my mentor was available to help."

To apply and for more information visit the program webpage at www.biophysics.org.

For questions, email Daniel McNulty at dmcnulty@biophysics.org, or call 240-290-5611.

*Financially disadvantaged individuals, students with disabilities, and individuals who have been found to be underrepresented in biomedical or behavioral research are eligible to apply. Nationally, these individuals include, but are not limited to: African Americans, Hispanic Americans, Native Americans/Alaska Natives who maintain tribal affiliation or community attachment, Hawaiian Natives and natives of the US Pacific Islands. Individuals with disabilities are defined as those with a physical or mental impairment that substantially limits one or more major life activities.

The Biophysical Society Summer Course in Biophysics: Case Studies in the Physics of Life is funded by The National Institute of General Medical Sciences, National Institutes of Health. [2 T36GM075791]

Biophysical Journal

Know the Editors



Mónika Fuxreiter

Mónika Fuxreiter
University of Debrecen,
Hungary

Editor, Proteins

Q. What has been your most exciting discovery as a biophysicist?

The theory of “fuzzy” protein complexes. According to the concept, conformational diversity can persist in the bound forms of proteins and has an impact on the biological function or regulation of complexes and higher-order assemblies. Fuzzy regions can fold into alternative conformations within the context of the same interacting partners (static polymorphism) or retain their conformational freedom within the assembly (dynamic disorder). Fuzzy regions serve either as direct interaction elements, or as unstructured tails or linkers that connect separate binding modules to increase their local concentration, exert transient interactions to influence adjacent binding elements, facilitate allostery, or may promote intramolecular autoinhibition via well-characterized mechanisms (see in FuzDB, <http://protdyn-database.org>). Recently fuzziness has been demonstrated to be a common biophysical characteristic of different types of higher-order assemblies that defy classical structure-function principles (Wu, H. and M. Fuxreiter. 2016. The structure and dynamics of higher-order assemblies: amyloids, signalosomes, and granules. *Cell* 165[5]:1055-1066.2016). I believe that understanding the molecular basis of fuzziness will lead to a more stochastic structure-function paradigm that will also help to explain pathological conversions of higher-order assemblies.

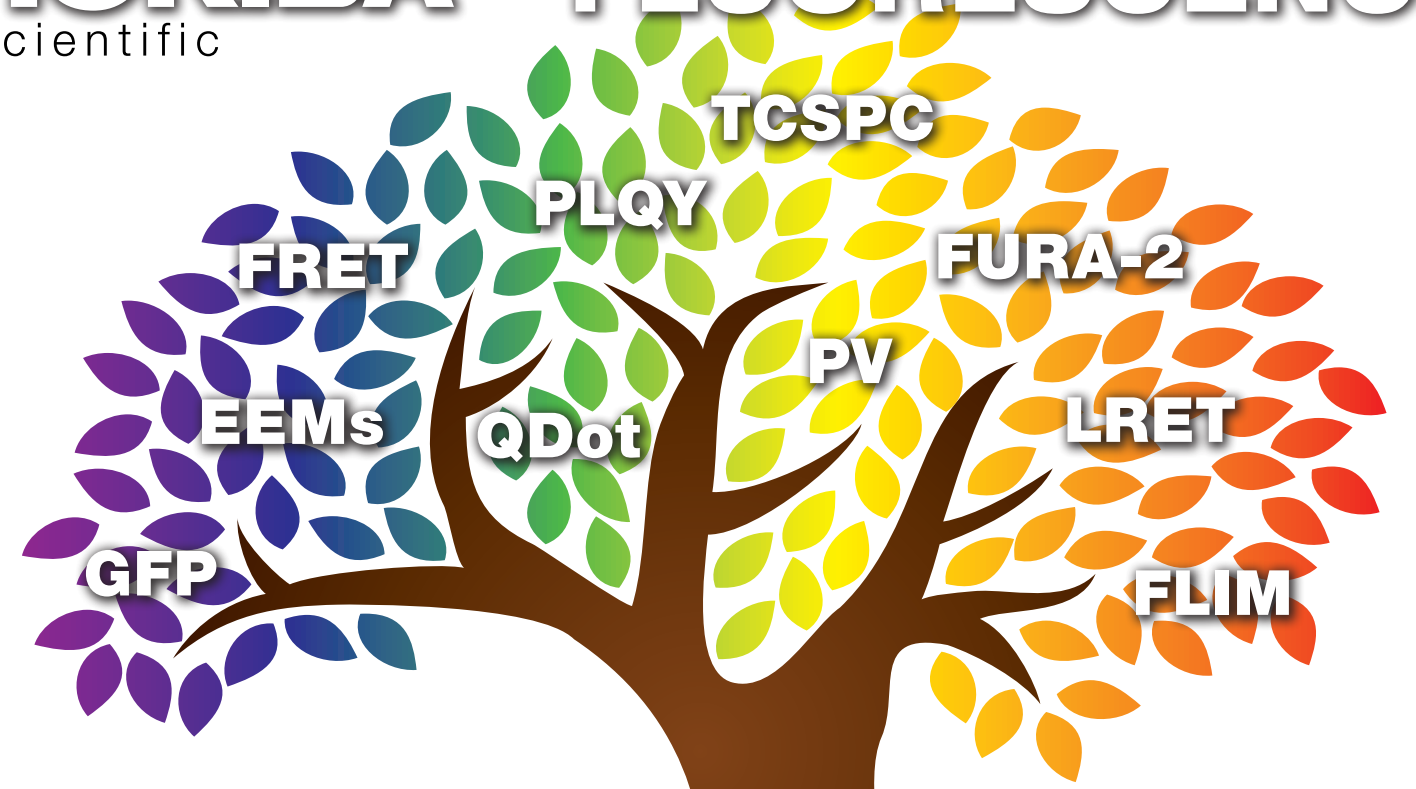
Q. What are you currently working on?

What currently excites me is how merely modulating protein dynamics could affect biological activities. We observe that manipulation of fuzzy regions in many cases also induces alterations in phenotypes. We develop computational algorithms to design fuzzy region variants with various cellular functions. These are paralleled by wet-lab experiments, where we monitor the in vivo consequences of dynamical perturbations.

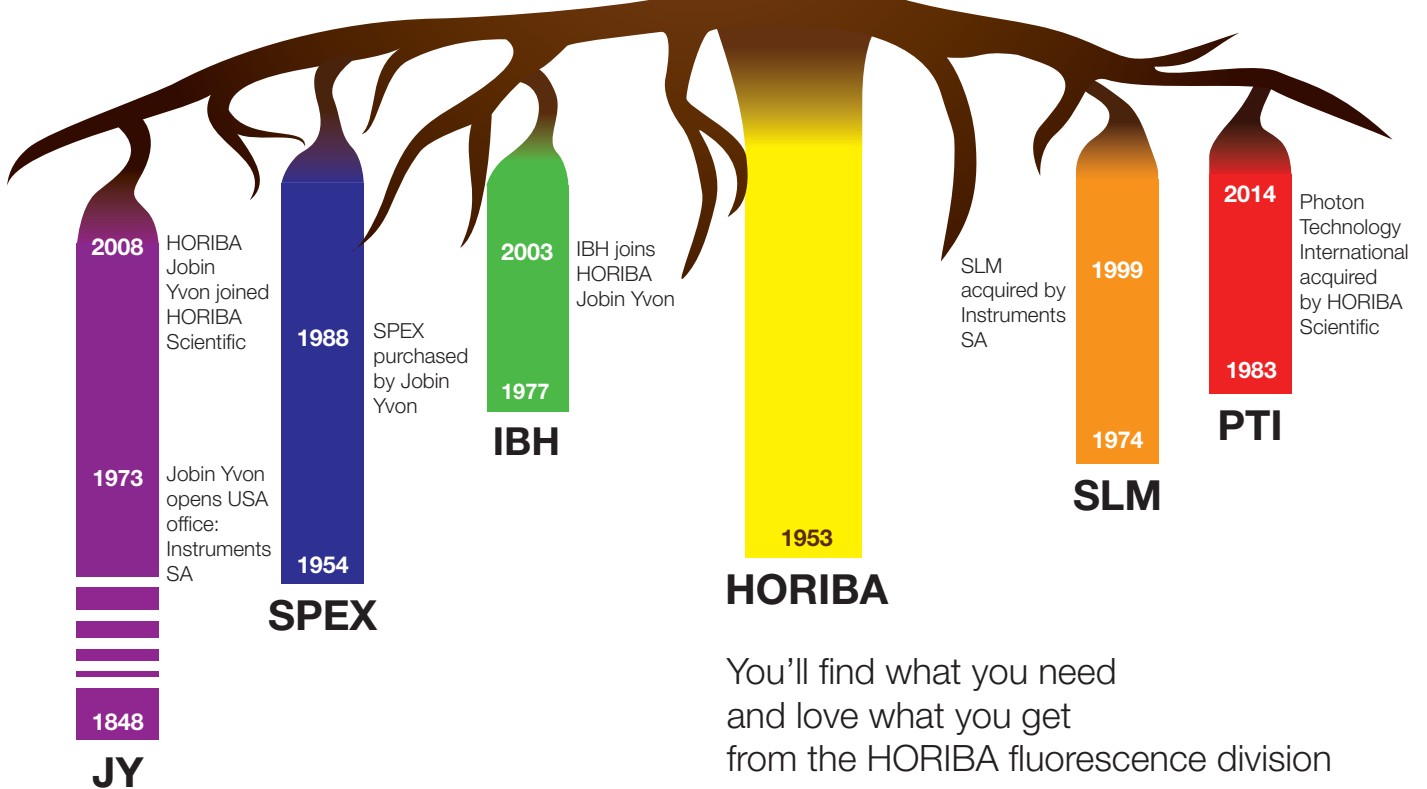
Your Best Research Deserves to Be Published in the Best Journal: Think BJ

This is the year to publish your research in *Biophysical Journal*. Here is why.

- Seven sections devoted to specific areas of biophysical research
- New rapid publication of Letters for important and timely information
- High-quality science
- Rapid turnaround times
- No page limits
- Rigorous and constructive peer review by working scientists
- Affordable publication fees with discounts for BPS members
- Author friendly pre-print policy
- Policies that promote transparency and data sharing
- Hybrid journal with open access and licensing options
- Publisher deposits to PubMed; compliance with federal agency policies
- Broad focus, wide dissemination
- Easy submission with ORCID IDs
- Authors receive link to share their articles for 50 days
- Opportunities to have your work highlighted in cover art, sliders, video clips, news releases, the BPS Newsletter, and more
- Automatic consideration for the Paper of the Year Award



Our Roots Grow Deep



You'll find what you need and love what you get from the HORIBA fluorescence division



Molly Cule
Advice

Molly Cule

How do you know if you need a second postdoc?

Let's examine what the postdoc is and the need for multiple postdoc positions. A postdoc is traditionally a "training phase" of a scientist's career, typically performed immediately after graduate school. But since there are so few professorships currently available, a career inside the ivory tower may not be a realistic option for many, so it is important to ask yourself: Does one postdoc make sense, let alone two?

There are a few reasons to do a postdoc:

1. Because this is the right next step for you, that is, you want to.
2. To prepare yourself to become a professor or, in general, for the next step in your career.
3. To get additional training, either in your field or another.

Now, let's discuss why you want to do another postdoc. Is your lab running out of funding? Is your project not moving? What is the end goal? If you answered that you want to be a professor and no other job appeals to you (and you think this goal is reachable), then yes, you should probably consider another postdoc. If you want to become a professor, a successful postdoc period is the backbone for your career. If you feel your first postdoc isn't enough for some reason, and the professoriate is your end goal, then consider a second postdoc.

Consider carefully how you would like to spend the next few years of your life. Are you willing to live on postdoc wages for a few more years? Consider both the financial and career implications of doing a second postdoc and don't forget to consider all available options such as teaching or industry postdocs.

Don't forget to keep in mind, if your end goal is not to become a professor, then a postdoc, let alone two, is probably unnecessary.

Student Center



Arielle Tripp

Arielle Tripp

Department of Chemistry and Biochemistry, University of California, Los Angeles

Q: What has been your favorite course while studying biophysics? Why?

Molecular Biology of Cellular Processes has been my favorite biophysics course thus far. Using a practical and experiment based approach, we

deconstructed the fundamental molecular mechanisms regulating embryonic development, reprogramming, cancer and stem cells. I loved how this course not only taught me basic theoretical and laboratory tools in biophysics, but it also gave me a foundation for how life works at a molecular and cellular level.

Calling All Students!

Want to be featured in Student Center? Answer the question: As a student of biophysics, what has been your favorite course and why? Send a photo and your answer to bstaehe@biophysics.org.

Biophysical *Journal* Call for Papers

Brain Biophysics

Editors: *Vasanthi Jayaraman, University of Texas Health Science Center-Houston, and Larry B. Cohen, Yale University*

Perspectives by: *Larry Cohen, Yale University; Miriam Goodman, Stanford University; Mark Mayer, National Institutes of Health; Ryohei Yasuda, Max Planck Florida Institute for Neuroscience*

For publication November 2017

Biophysical Journal will publish a special issue with a focus on brain biophysics. The Journal welcomes submissions that report on advances in the field of brain biophysics and its applications. Biophysical studies of the brain ranging from molecular- and cellular-level investigations such as those focusing on biophysics of channels and transporters, mechanisms involving secondary messengers and signaling, to large-scale biophysics of neural circuitry are invited. Research studies using computational techniques as well as experimental techniques such as structural, spectroscopic, electrophysiological, optogenetics, and imaging methods for investigating components of the neural systems are welcome.

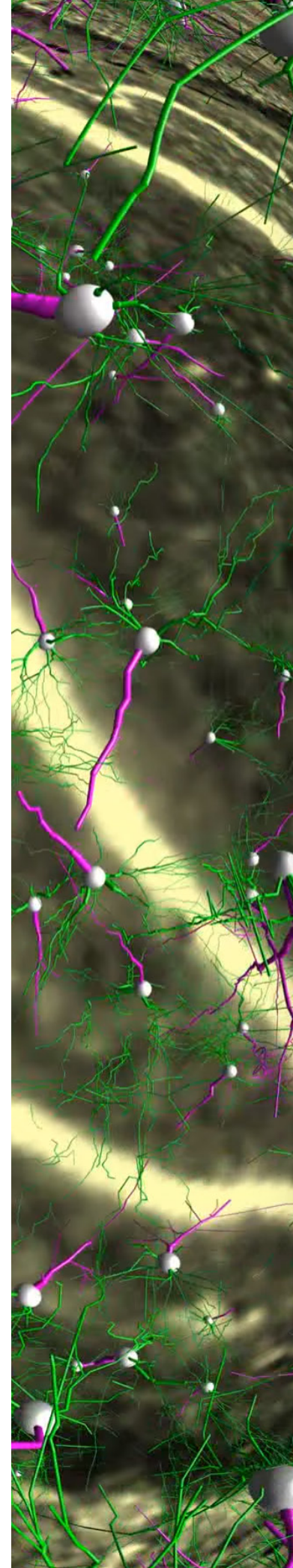
The *Biophysical Journal* aims to publish the highest quality work and we expect that all the articles should have significance and appeal to a broad community of biophysicists.

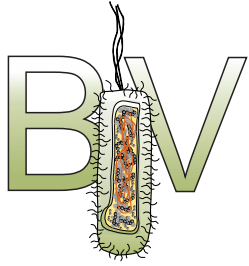
To allow rigorous peer-review, the deadline for submission to this special issue on brain biophysics is May 1, 2017, and authors interested in having their work in this issue should include this information in their cover letter.

Deadline for submission: May 1, 2017

- All articles will be published online ahead of print following proof corrections.
- Instructions for authors can be found at:
http://download.cell.com/images/edimages/Biophys/Instructions_to_Authors.pdf
- Journal publication fees will apply
- Questions can be directed to the BJ Editorial Office at BJ@biophysics.org or (240) 290-5545.

To submit, visit biophysj.msubmit.net





Subgroups

BIV

A Good Year

Understanding the properties of biological polymers in living cells is extremely challenging, but these efforts are at the forefront of biophysics. I have thoroughly enjoyed my year as Chair of this august group of dedicated, good hearted, and fun-loving scientists. Working together this past year, we brought to fruition the extraordinary efforts of *Silvia Cavagnero* and bestowed our first Junior Faculty Award. We have also implemented two student/postdoc talks at our symposium. None of this would have happened without the sage advice of *Martin Gruebele*, our immediate past chair; *Patricia Clark*, the incoming chair; and *Daryl Eggers*, our most excellent secretary-treasurer. *Margaret Cheung* and *Tanja Mittag* made organizing this year's symposium look easy. I am grateful to all these folks and more.

I have just one more duty: run the subgroup business meeting/election starting at 10:00 AM on Saturday, February 11. After that I kick back and enjoy our symposium, *Interactions and Phase Transitions*, which begins at 1:00 PM. Please come and tell us what you want from the subgroup.

I leave you with four thoughts: (1) Be sure to attend our exciting symposium, *Interactions and Phase Transitions*; (2) If you are a BIV member, make sure to renew your membership for 2017; (3) If you are not a member, please consider joining; and (4) sign up for the post-symposium banquet.

—*Gary J. Pielak*, Chair, BIV Subgroup

Intrinsically Disordered Proteins

Everyone is invited to attend the IDP subgroup symposium on Saturday at the BPS annual meeting in New Orleans. The program will begin at 1:00 PM with a keynote talk by *Susan Taylor*, University of California, San Diego, and conclude with a keynote by *Richard Kriwacki*, St. Jude Children's Research Hospital. The program will include exciting results on disordered proteins in signaling and the cell cycle, disordered membrane proteins, and disorder in the circadian clock. There will also be short talks by two postdoctoral awardees.

The IDP subgroup has a strong history of trainee involvement. There is a monthly trainee-run newsletter — the IDP State Letter — and both a postdoctoral representative and a graduate student representative serve as subgroup officers. New graduate student and postdoctoral representatives will be elected at the subgroup business meeting; if you are interested in standing for election please send an email to sjm24@georgetown.edu.

The subgroup business meeting will be held at 11:00 AM on Saturday, February 11, at the BPS Annual Meeting (in the same room as the afternoon symposium). We encourage you to come and get involved with this dynamic, exciting, and welcoming group! For full symposium information and information on the IDP State Letter please visit <http://www.biophysics.org/Membership/Subgroups/IntrinsicallyDisorderedProteins>.

By the Numbers

Over the past five years, more than 13,000 abstracts have been presented at the BPS Annual Meeting.

From the BPS Blog

<http://biophysicalsociety.wordpress.com>

Probing Water and DMSO near Lipid Membrane Surfaces

Yuno Lee, Korea Institute for Advanced Study (KIAS), *Philip A. Pincus*, University of California, Santa Barbara, and *Changbong Hyeon*, KIAS, had their work featured on the cover of *Biophysical Journal* volume 111, issue 11. Their cover image depicts a snapshot from the molecular dynamics simulation of POPC phospholipid bilayer in 7.5 mol% dimethyl sulfoxide solution. Read more about their research on the blog: <https://biophysicalsociety.wordpress.com/2016/12/06/probing-water-and-dmso-near-lipid-membrane-surfaces/>.

BPS Members Making a Difference Beyond the Lab: Karen Fleming

Society members make a difference in their communities in many ways. BPS member *Karen Fleming*, a faculty member and undergraduate program director in biophysics at Johns Hopkins University, put together an exhibit entitled “Women of Hopkins.” The purpose of the exhibit was to highlight the many successful women who have graduated from the university and been pioneers in their fields. Read more about the exhibit: <https://biophysicalsociety.wordpress.com/2016/12/08/bps-members-making-a-difference-beyond-the-lab-karen-fleming/>.



Grants and Opportunities

BRAIN Initiative Fellows: Ruth L. Kirschstein National Research Service Award Individual Postdoctoral Fellowship

Objective: The purpose of the BRAIN Initiative Fellows program is to enhance the research training of promising postdoctorates, early in their postdoctoral training period, who have the potential to become productive investigators in research areas that will advance the goals of the BRAIN Initiative.

Deadline: March 15, 2017

Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-MH-17-250.html>

Competitive Collaborative Projects for Human Islet Biology

Objective: The objectives of the Human Islet Research Network (HIRN) are increasing our understanding of how human beta cells are lost in Type 1 Diabetes, and finding innovative strategies to protect or replace functional beta cell mass in diabetic patients. This Funding Opportunity Announcement solicits applications for collaborative research projects that will join the existing collaborative research framework, HIRN.

Who may apply: Eligible organizations include higher education institutions, nonprofits, for-profit organizations, governments, and foreign institutions. **Deadline:** March 24, 2017

Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-DK-17-004.html>

2017 Society Awards

Nominate a Colleague
Deadline: May 1

biophysics.org/awards

Members in the News

The following BPS members were named 2016 AAAS Fellows:

James Ames (not pictured), University of California, Davis, and Society member since 1988.



Jose Arguello, Worcester Polytechnic Institute, and Society member since 1992.



William Cramer, Purdue University, and Society member since 1979.



Mark Chance, Case Western Reserve University, and Society member since 1984.



Chad Rienstra, University of Illinois, Urbana-Champaign, and Society member since 2007.



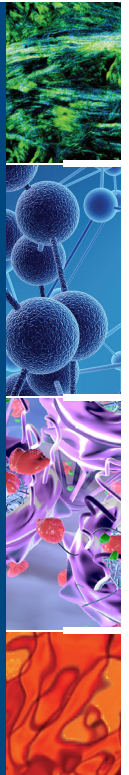
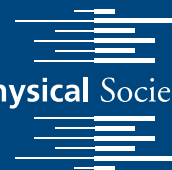
Charalampos Kalodimos, University of Minnesota, and Society member since 2004, was the recipient of The Raymond and Beverly Sackler International Prize in the Physical Sciences.

BPS Membership Can Help You Advance Your Career

Not a member yet? Or do you know colleagues who are not BPS members yet? Encourage them to join BPS and be among thousands of biophysicists like yourself who can take advantage of membership benefits that will help with career advancement.

Visit biophysics.org/join

Biophysical Society



Single-Cell Biophysics: Measurement, Modulation, and Modeling

Taipei, Taiwan | June 17–20, 2017

Biophysical studies in individual living cells enable a quantitative understanding of the structures and dynamics of macromolecules and cellular processes in their own physiological context. This is a grand challenge in biophysics as the complexity of a single cell is multi-scale both in time and space. Addressing this challenge requires the concerted effort of biologists, physicists, chemists, and bioengineers. The goal of this meeting is to bring together scientists and engineers to discuss current and future experimental, computational, and theoretical advances in the field of single cell biophysics. Topics will include advances in single-molecule, single-cell, and tissue imaging, dynamics and spatial organizations of cellular structures and processes, responses of cells to three-dimensional microenvironments, new experimental and computational methods for single cell analyses, and the interaction of cells with materials.

ORGANIZING COMMITTEE

Jung-Chi Liao, Institute of Atomic and Molecular Sciences, Academia Sinica, Taiwan
Keng-Hui Lin, Institute of Physics, Academia Sinica, Taiwan
Christine Payne, Georgia Institute of Technology, USA
Jie Xiao, Johns Hopkins University, USA

SPEAKERS

Julie Biteen, University of Michigan, USA
Shean-jen Chen, National Cheng Kung University, Taiwan
Bi-chang Chen, Academia Sinica, Taiwan
Johan Elf, Uppsala University, Sweden
Chin-lin Guo, Institute of Physics, Academia Sinica, Taiwan
Taekjip Ha, Johns Hopkins University, USA
KC Huang, Stanford University, USA
Hsiao-Chun Huang, National Taiwan University, Taiwan
Yanyi Huang, Biodynamics Optical Imaging Center, Peking University, China
Pakorn Kanchanawong, National University of Singapore, Singapore
Achillefs Kapanidis, Oxford University, United Kingdom
Melike Lakadamyali, Institute of Photonic Sciences, Spain
Nam Ki Lee, Pohang University of Science and Technology, South Korea
Chien-jung Lo, National Central University, Taiwan
Suliana Manley, École Polytechnique Fédérale de Lausanne, Switzerland
Wallace Marshall, University of California, San Francisco, USA
Sua Myong, Johns Hopkins University, USA
Takeharu Nagai, Osaka University, Japan
Phillip Nelson, University of Pennsylvania, USA
Amy Palmer, University of Colorado Boulder, USA
Yujie Sun, Biodynamics Optical Imaging Center, Peking University, China
Megan Valentine, University of California, Santa Barbara, USA
Antoine van Oijen, University of Wollongong, Australia
Paul Wiggins, University of Washington, USA
Sunney Xie, Harvard University, USA
Haw Yang, Princeton University, USA
Xianren Zhang, Beijing University of Chemical Technology, China
William Zagotta, University of Washington, USA

Abstract Submission Deadline:
March 1, 2017

Early Registration Deadline:
March 24, 2017

Biophysical Society



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UPCOMING EVENTS BIOPHYSICAL SOCIETY NEWSLETTER FEBRUARY 2017

March

March 5–8

Synapses and Circuits: Formation, Function, and Dysfunction

Santa Fe, NM

<http://www.keystonesymposia.org/17X1>

March 14–16

Ki-Net Workshop: Dynamics and Geometry from High Dimensional Data

Pittsburgh, PA

http://www.ki-net.umd.edu/content/conf?event_id=693

April

April 5–7

Chromatin and Epigenetics: from Mechanism to Function

Munich, Germany

<http://www.abcam.com/events/chromatin-and-epigenetics-from-mechanism-to-function>

April 21–23

7th International Conference on Biomedical Engineering and Technology

Kowloon, Hong Kong

<http://www.icbet.org/index.htm>

May

May 21–23

Molecular and Cell Biology of Membranes

Heidelberg, Germany

<https://www.embo-embl-symposia.org/symposia/2017/EES17-03/index.html>

May 25

Targeting Cancer Metabolism and Signaling

New York, NY

<http://www.nyas.org/Events/Detail.aspx?cid=bb1eb48e-f2b8-43e1-a249-a92363ebe71a>

June

June 25–30

Mechanism and Regulation of Prokaryotic Transcription

Saxtons River, VT

<http://www.faseb.org/src/micro/Site/Prok/Home.aspx>

June 25–30

Advanced Fluorescence Imaging Techniques

Heidelberg, Germany

<https://www.embl.de/training/events/2017/MIC17-02/index.html>