

Newsletter

Biophysical Society

MARCH-APRIL 2017

DEADLINES

Society Awards

May 1
Nomination Deadline

Meetings 2017

**Single-Cell Biophysics:
Measurement, Modulation,
and Modeling**

June 17–21
Taipei, Taiwan

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

Biophysics in the Big Easy



Society President Suzanne Scarlata (center) honoring 2017 Program Co-chairs David Piston (left) and Catherine Royer (right).

Biophysicists from around the world arrived in New Orleans, "the Big Easy," for five days of learning and sharing the latest research in biophysics at the Society's 61st Annual Meeting. The meeting kicked off with 14 subgroup programs on Saturday followed by 23 symposia, 4 workshops, and over 500 platform talks over the next four days. The Exhibit Hall was jam-packed with over 600 poster presentations daily. *Catherine A. Royer*, Rensselaer Polytechnic Institute, and *David W. Piston*, Washington University, St. Louis, were recognized at the Awards Ceremony on Monday evening for their efforts as Program Committee Co-Chairs.

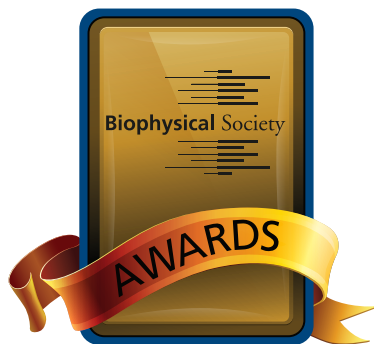
For meeting highlights, see page 10.



Society Awards Nomination Deadline: May 1

Through its awards program, the Biophysical Society honors its members and recognizes excellence in biophysics. The Society offers awards in nine different categories. Nominations for the awards are evaluated by the Biophysical Society Awards Committee.

Nominations are now being accepted for 2018 awards through May 1, 2017. All awards will be presented at the 2018 Biophysical Society Annual Meeting in San Francisco, California. For information and to submit a nomination, visit www.biophysics.org/awards.



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Biophysicist in Profile

VIDHYA SIVAKUMARAN



Vidhya Sivakumaran

Vidhya Sivakumaran spent her early childhood in the midwestern United States, but largely grew up in Toronto, Ontario, Canada. Her parents were educators and many of her uncles were engineers, so there was always a strong emphasis on education in her family. “They always pushed us to get good grades and plan for graduate school, whatever the field may be,” she says.

She was interested in science from an early age, whether through tinkering with robotics or trying to find the answers to complicated questions. She also found inspiration from famous scientists from history. “As cliché as it sounds, *Marie Curie* was a big influence on my life as a child,” she shares. “I enjoyed reading about her activism, fighting against the deep prejudice against women in sciences, which I think is something that we all need to keep fighting for — in multiple domains and intersections — so that science is a safe place for us all.”

Sivakumaran stayed in Toronto until she returned to the United States to attend Saint Paul’s College, a small historically black college in southern Virginia. She had not thought seriously about getting a PhD and pursuing a career in science until then. “I got to work with really great professors, who drew me into the sciences and made me want to pursue it,” she says. “Having great mentors is a big part of any field, and having that helps drive and motivate a person.”

She continued on to Virginia Tech, where she earned her PhD in biochemistry, with a focus on cardiac membrane biophysics. From there, she worked as a postdoc at Johns Hopkins University in the Department of Cardiology, working on heart failure and redox signaling. She then undertook a second postdoc at Loyola University Chicago, “focusing still on the heart, but more in using biophysical techniques for structural biology and physiology,” she explains.

This research held personal significance for her. “My mother had a heart attack — which she survived — the year before I went into graduate school,” she says. “When I came across a lab in my department as a first-year graduate student, I knew this was the field for me. I needed to work on and with the heart. It felt like I was paying respect to my mother.”

“Combining physics and biology to figure out structural changes and movement in proteins, and how these changes affect kinetics and function that can answer physiological questions, is fascinating. Being in the lab, what was most rewarding for me was knowing that something I was working on could lead to further insights into the unknown,”



Cartoon of Sivakumaran created by her husband.

she says, “and to the eventual development of pharmaceuticals, function, and generally answer questions we don’t know the answers to.”

Her biggest challenge as a scientist, and in academia, was being taken seriously. “On the exterior, I am short and small, and that combined with being female can make things difficult in such a male-dominated field,” she says. “I sought out female mentors — not necessarily ones I worked for, but ones my labs collaborated with or other women in the science field — in order to discuss issues affecting females in academia and just generally know that others made it through.”

Since her postdocs, Sivakumaran has been working out of the lab. She worked at an education start-up, Kids Science Labs, and is now an analyst at a software company. She also works as a freelance scientist writing up approaches and methods for a technology scouting company. “At my current job, it’s completely different than working in academia, so that’s been a challenge. The transition from the academic mindset to an industry mindset has been an adjustment,” she says. “I find that my work has an immediate and direct impact on a customer base, which is awesome and something I think we all work toward: making a difference.”

“While it’s not lab work and I didn’t move on to becoming a professor like I thought I would, my current job does implement a lot of the same skills: analyzing data, researching terms and methodologies, looking at trends and getting the information to ‘speak’ to you,” she says. “Our skills as scientists can be applied to so many different endeavors, it’s just figuring out where you want to go and what you want to do. Now that I’ve left the lab, I’m not sure where my path in biophysics will lead, but I’m sure I’ll enjoy the ride.”

Sivakumaran currently serves on the Biophysical Society’s Early Careers Committee, which aims to support early career biophysicists in all careers. “The Society has so many different opportunities — some of which I didn’t take advantage of, but should have — for personal development skills, as well as career workshops and networking events

specifically formulated for students to meet peers and discuss issues, ask questions, and make their own mark on the Society,” she says.

“ Our skills as scientists can be applied to so many different endeavors, it’s just figuring out where you want to go and what you want to do ” – Vidhya Sivakumaran



Sivakumaran in the lab.

“I also met my second postdoc advisor as a second year grad student at the BPS Annual Meeting, so you can even make moves in terms of your career at conferences!”

When she’s not working, she enjoys reading, drawing, and painting. “I find that doing these things really relax me and get me ready for the next day and week ahead,” she says.

“If you really want a career in biophysics, stick with it through the ups and downs, but also keep in mind that the skills that you develop in graduate school and through your postdocs can be applied elsewhere,” she says. “You can be happy utilizing the same skills in a job of a different format — I’m a prime example of that!”

Profilee-at-a-Glance

Institution

Intelligent Medical Objects and PreScouter, Inc.

Area of Research

Heart failure and redox signaling

Public Affairs

March for Science to Take Place April 22

A grassroots group of scientists have organized the March for Science, which will take place on April 22, 2017, in Washington, DC, as well as at additional locations around the world.

The official mission of the March is as follows:

The March for Science champions robustly funded and publicly communicated science as a pillar of human freedom and prosperity. We unite as a diverse, nonpartisan group to call for science that upholds the common good and for political leaders and policy makers to enact evidence based policies in the public interest.

Members interested in learning more or participating can visit the Society website for up-to-date information on the March and ways to get involved.

Biophysical Society Responds to Executive Order Restricting Travel

The Biophysical Society joined over 170 science organizations in sending a letter to President *Trump* opposing the White House Executive Order on visas and immigration, explaining that it has "profound implications for diplomatic, humanitarian, and national security interests, in part because of the negative impact on US science and engineering capacity."

In order to learn exactly how the Executive Order affected members and meeting attendees, the Society also created a survey to collect firsthand accounts from those whose science had been or would be adversely affected. This includes travel or visa difficulties related to attending the BPS Annual Meeting and other scientific meetings, international collaborations, school attendance in the United States, and pursuit of professional

opportunities. The Society is using the information to demonstrate to elected officials how the restrictions hurt scientists, scientific discovery, and the US economy. Personal information will not be shared without permission.

The Society leadership recognizes that the implementation of the order has been temporarily stopped by the courts, but an appeal has been filed and it is possible that the order will be reinstated. Thus, the Society would like to continue to collect the information and be prepared to act as necessary. You can share your story on the Society's website under Policy/Advocacy and Action.

Francis Collins Remains at NIH for Now

President *Trump* has asked National Institutes of Health (NIH) Director *Francis Collins* to continue in his position through the presidential transition. While Collins has expressed interest in remaining in the role and has met with the President about the position, a decision on whether he will stay long term has not been made. Collins has indicated that if he is not asked to stay, he will return to his lab on the NIH campus.

Federal Funding Update

US federal agencies are currently operating on a continuing resolution that funds the government at Fiscal Year (FY) 2016 levels through April 28, 2017. The Society has joined the biomedical research community in asking the White House and Congress to pass a spending bill to fund the government for the rest of FY 2017, rather than pass a year-long continuing resolution that funds the government at the FY 2016 rate for the rest of the year. NIH received a \$2 billion increase in appropriation bills passed by the House and Senate Appropriations Committees last summer. This increase has little chance of coming to fruition without a spending bill.

2017 Science and Engineering Report on Diversity Released

The National Center for Science and Engineering Statistics (NCSES) at the National Science Foundation (NSF) released the 2017 *Women, Minorities, and Persons with Disabilities in Science and Engineering* (WMPD) report at the end of January. This report is the federal government's most comprehensive look at the participation of these three demographic groups in science and engineering education and employment.

Data from the report show that women, people with disabilities, and minorities from three racial and ethnic groups – black, Hispanic, and American Indian or Alaska Native – are underrepresented in science and engineering (S&E). Women have reached parity with men in educational attainment but not in S&E employment. Underrepresented minorities account for disproportionately smaller percentages in both S&E education and employment.

Congress mandated the biennial report in the Science and Engineering Equal Opportunities Act as part of the NSF mission to encourage and strengthen the participation of underrepresented groups in S&E.

For more information, visit the WMPD website at <https://nsf.gov/statistics/2017/nsf17310/>.

Biophysical Society Adopts Policy Position on Climate Change in the 21st Century

With scientific research and evidence being called into question on non-scientific grounds, the Society's public affairs committee and Council prepared and officially adopted a position on Climate Change in the 21st Century at the BPS Annual Meeting in February. In the statement, the Society acknowledges and supports the conclusion of years of scientific research that "human activity is responsible for the rapid global warming that is occurring now on earth." The Society also calls for policies and actions that "halt global warming, promote renewable energy sources, and recognize environmental justice for all people."

The Society will use the statement in its future advocacy and education efforts and encourages members to do so as well. It can be read in its entirety on the Biophysical Society website under Policy/Policy Issues.

International Relations

International Meeting Support Program

The International Relations Committee provides grants of up to \$2,500 to promote and facilitate the organization of biophysical meetings and courses around the world. Funds are provided to current Biophysical Society members organizing workshops and meetings that are held in countries experiencing financial need or in nearby countries where organizers will use the funds to help students or early career researchers from countries in need attend the meeting.

In recent years, the Committee has supported meetings in Chile, Uruguay, Brazil, Argentina, Spain, Italy, and India. Applications are now being accepted for meetings taking place in 2018. Read more about the program and apply for funding here: <http://www.biophysics.org/AwardsFunding/GrantsOpportunities/InternationalGrants/tabid/521/Default.aspx>



Stephanie DeLuca

From the Trenches: BPS Congressional Fellow Reports

It is hard to believe that I have been working on Capitol Hill for over three months. I was an inside-the-Beltway witness to one of the most historical elections in US history, in which *Donald Trump* was elected President while losing the popular vote. His election has already had profound impacts on Congress's modus operandi, largely in ways that many people did not anticipate.

I have the good fortune of working in the office of Senator *Elizabeth Warren*, the Democratic Senator from Massachusetts. I have already experienced the three main phases of an election-year fellowship: the pre-election phase, the lame-duck, and the new Congress. The month of October was very quiet, which provided an opportune time to develop good work habits and get my bearings on how the office operates, as well as get to know my co-workers. Senator Warren's office is unsurprisingly academic, given that she is a former Harvard law professor, and several staff members hold doctorate degrees. It is great to work in an environment where science and education are so highly valued, and where people appreciate the transferrable skills scientists gain through their training. I am also happy to be part of a team that cares deeply about its work on behalf of people in Massachusetts and across the United States.

The lame-duck session, which began after the election and concluded in mid-December, was busy due to consideration of the 21st Century Cures Act. The Cures bill authorized funding for the National Institutes of Health (NIH) and the Food and Drug Administration (FDA), as well as funding to combat the opioid crisis. It also included hundreds of policy provisions related to drug and medical device development and regulation, mental health, biomedical workforce, etc. As part of Senator Warren's health team, I was responsible for analysis of the bill, which involved summarizing provisions relevant to our office and to other stakeholders. In this respect, my PhD training was particularly useful, as I could analyze new information quickly, discern what pieces of information were relevant and reliable, and com-

municate that information concisely. My biomedical research background was immensely helpful in my work on, as I was familiar with some of the challenges the NIH, FDA, and drug companies face in developing new drugs and therapeutics. However, I also learned a great deal about the regulatory process and the concerns and challenges patient groups face.

Policy is always more complicated than people anticipate. It is nuanced and detailed, and, more often than not, confusing and convoluted. Much like science, there is frequently no clear solution, and progress can be slow, if it happens at all. Importantly, policy is not the only factor taken into account in the decision-making process. The science and the policy matter, but so do the political environment, constituent concerns, consumer group perspectives, party leadership recommendations, and timing.

The 115th Congress has now been in session for about three weeks, and I have already helped our team navigate the Fiscal Year 2017 budget vote-a-rama, in which Senators filed and voted on dozens of amendments to a budget skeleton bill. The passage of the budget served as the first step in repealing the Affordable Care Act, one of the Republican party's top priorities. Further, the President's nominee for Secretary of Health and Human Services, Congressman *Tom Price*, has already testified before the Senate Committees on Health, Education, Labor, and Pensions (HELP) and Finance. I helped write questions for the record and draft memos and letters in preparation for the Price hearing before the HELP Committee, and I look forward to assisting in the thorough and extensive vetting of the President's future nominees.

Regardless of your political views and opinions, it is safe to say that 2017 will be an exciting, intriguing year, and I'm grateful to have the opportunity to bear witness from my cubicle in the Hart Senate Office Building.

—*Stephanie DeLuca*, Biophysical Society Congressional Fellow

Biophysical Journal

Know the Editors



James Shorter

James Shorter

University of Pennsylvania

Editor, Proteins

Q. What are you currently working on that excites you?

In my lab we are uncovering and engineering various protein-disaggregases to counter harmful protein misfolding connected to diverse neurodegenerative diseases, including amyotrophic lateral sclerosis (commonly referred to as ALS or Lou Gehrig's disease) and Parkinson's disease. We are also isolating drug-like small molecules that enhance the activity of endogenous human protein disaggregases, which may have therapeutic applications in several devastating neurodegenerative diseases. These endeavors keep us very excited as they will enable us to understand protein disaggregates at a fundamental mechanistic and

structural level. Indeed, it is a very exciting time due to the current revolution in cryo-EM, which will empower important advances. At the same time, we are excited to develop these fascinating molecular machines (and small molecules that stimulate their activity) as therapeutic agents for several presently incurable diseases.

Q. What have you read lately that you found really interesting or stimulating?

I am very excited to read about the latest developments with CRISPR/Cas9 and how it might be applied to treat devastating human diseases. One particularly exciting recent paper by Shin et al. (Hum. Mol. Genet. 2016. Doi: 10.1093/hmg/ddw286) demonstrated permanent inactivation of the Huntington's disease (HD) mutation by personalized allele-specific CRISPR/Cas9 in cell culture. The ability to specifically inactivate the HD mutant allele would be transformative if it could be achieved in HD patients. Although many challenges remain in translating these findings to the clinic, this paper provides an important proof-of-principle, which could be broadly applicable to many other disorders caused by gain-of-function mutations.

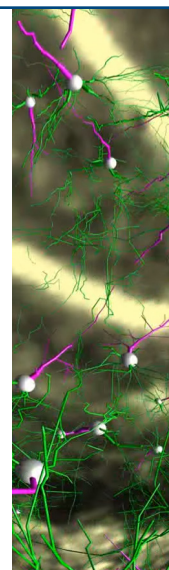
Biophysical *Journal* Call for Papers

Brain Biophysics

For publication November 2017

Deadline for submission: May 1, 2017

To submit, visit biophysj.msubmit.net



Education Committee

BPS Outreach to Next Generation of Biophysicists

The Biophysical Society is charged with promoting and fostering education in biophysics at all levels, including providing information and career development opportunities to future biophysicists. This means that education plays a vital role in helping BPS reach its goals; however, many young people today display a lack of willingness or interest to enter STEM degree programs. Social, structural, and economic barriers undoubtedly factor into the ability and desire of many students to enter STEM fields. To break down these barriers, and inspire students to become future scientists and to pursue biophysics as a career or course of study, it is essential that more effort be taken to reach students earlier in the education pipeline. This is especially true for students in schools with limited resources and opportunities.

Recently, the Society, through the efforts of the Education Committee, has been working on a plan for outreach to high school students and teachers to engage students in exploring basic biophysics concepts. To do this, a series of lesson plans (*BASICS: Biophysics - A Step-by-Step Introduction to Concepts for Students*) has been created by focusing on a number of core concepts, for example, diffusion, viscosity, elasticity, and light microscopy. The lesson plan on light microscopy is centered on a small wooden microscope (pictured) that can be used to image objects not easily seen by the naked eye, and is designed for students with no previous experience with a light microscope.

Using a number of these microscopes, courtesy of a generous donation from Echo Laboratories and Chroma Technology Corp, makes demonstration of principles of light microscopy possible, in conjunction with the lesson plan.

In the next stage, the Education Committee is seeking to identify teachers working in under-resourced schools, or student groups who go into these schools to improve science education, to conduct the light microscopy lesson with the students

and provide them with the wooden microscopes. To that end, the Committee is calling on all BPS members to reach out to any contacts at the high school level they may have in science education at under-resourced schools, who may be interested in utilizing these resources in the classroom.

Additionally, the Committee is working to recruit enthusiastic members who are interested in helping the Society achieve its mission by volunteering their time and knowledge to visit high school classrooms to conduct a lesson based on the other lesson plans, and discuss the field of biophysics.

Current lesson plans and supplemental materials can be found at www.biophysics.org/edresources and small wooden microscope kits are available to those interested in purchasing one or more at <http://echo-labs.com/woodenscope>.

For more information, to request materials, or to volunteer in the classroom, at science fairs, or teachers' conferences, contact [Daniel McNulty](mailto:dmcnulty@biophysics.org) at dmcnulty@biophysics.org.

Members in the News



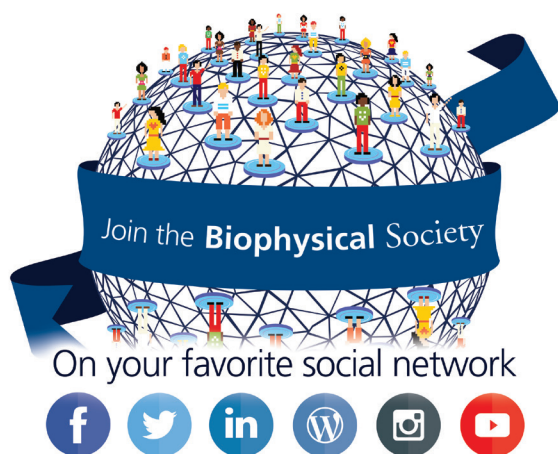
Ahmad Khalil, Boston University, and Society member since 2005, was honored by President *Obama* as a recipient of the Presidential Early Career Award for Scientists and Engineers, the highest honor bestowed by the United States government on science and engineering professionals in the early stages of their independent research careers.



Frances Separovic, University of Melbourne, Australia, and Society member since 1995, was named a 2017 IUPAC Distinguished Woman in Chemistry/Chemical Engineering. The announcement was made on March 8 to coincide with and celebrate International Women's Day.



Wood Microscope Kit by Echo Laboratories.



Biophysical Society Webinars

FREE TO ALL SOCIETY MEMBERS

**Career Planning and Job Searching
for Entrepreneurial-Focused
Science Professionals
May 25, 2017**

**Conflict Resolution
September 12, 2017**

**Communicating your Science
to Non-scientists
November 14, 2017**

Visit biophysics.org/Webinars

Grants and Opportunities

BRAIN Initiative: Research Career Enhancement Award for Investigators to Build Skills in a Cross-Disciplinary Area (K18)

Objective: This funding opportunity announcement invites applications for mentored career enhancement awards in research areas that are highly relevant to the NIH BRAIN Initiative. It will support development of research capability for the BRAIN Initiative, with specific emphasis on cross-training independent investigators in a substantively different area of neuroscience, neuroethics, or in a quantitative and physical discipline (e.g., physics, chemistry, engineering, computer science, mathematics).

Who May Apply: Eligible candidates are independent investigators at any faculty rank or level.

Deadline: April 14, 2017

Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-DA-17-022.html>

National Centers for Cryoelectron Microscopy (U24)

Objective: This National Institutes of Health (NIH) Common Fund initiative will establish national service centers to increase research capacity for molecular structure determination by high resolution cryoEM. The centers will provide access to state-of-the-art equipment, technical support, and cross-training for the production and analysis of high resolution cryoEM data.

Who May Apply: Institutions in the United States

Deadline: June 30, 2017

Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-RM-17-002.html>

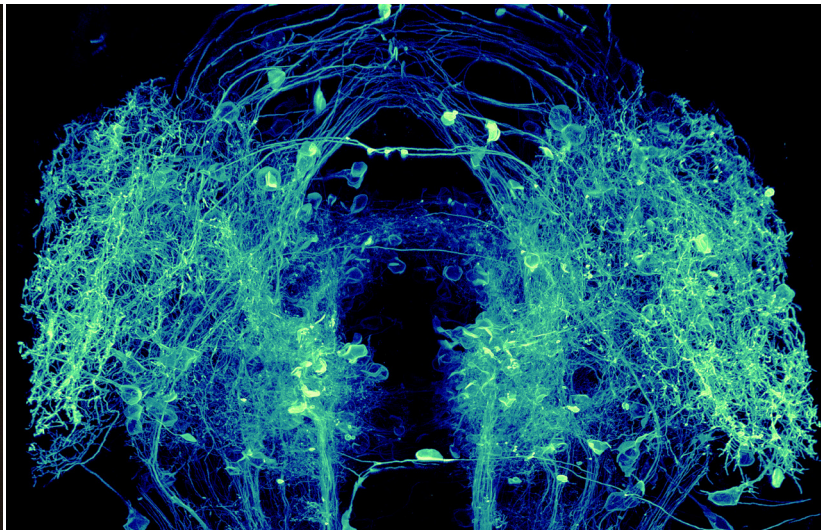
61ST Annual Meeting

February 11–15, 2017 • New Orleans, Louisiana



Symposia & Workshops

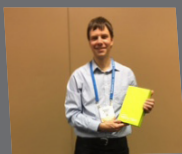
Meeting attendees in New Orleans enjoyed five days filled with 14 subgroup symposia, 23 symposia, 4 workshops highlighting the latest research topics and biophysical techniques, and 64 platform sessions.



National Lecture

Eric Betzig, from Howard Hughes Medical Institute and a 2014 Nobel Laureate in Chemistry, presented *Imaging Cellular Structure and Dynamics from Molecules to Organisms* at the National Lecture on Monday, February 13. To view the National Lecture online, go to www.biophysics.org/2017meeting.

Samsung Tablet and Fitbit Winners



Daumantas Matulis, Vilnius University Inst. Biotech Lab, won the exhibitor Samsung Galaxy Tablet raffle.

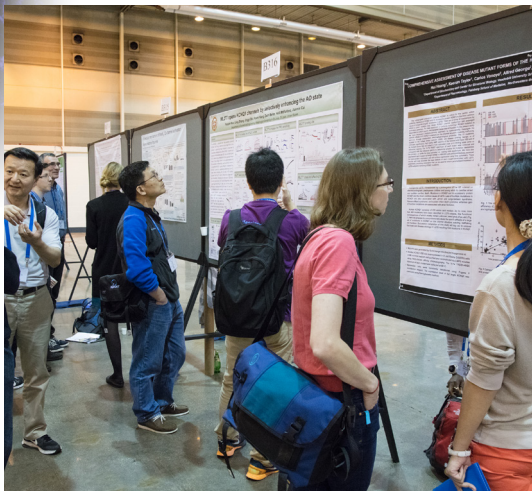


Marcelle Koenig, PicoQuant GmbH, won the Fitbit during the Wednesday poster session raffle.



Career Programs

Attendees had over 35 career educated-related sessions for all career levels to choose from scheduled throughout the meeting.



Poster Presentations

Over 600 posters were presented each afternoon in the exhibit hall which spanned the interdisciplinary field of biophysics. Another 500 oral platform presentations were selected from among submitted abstracts.

1st Place

Handmade Painting of Group II Intron Robozyme

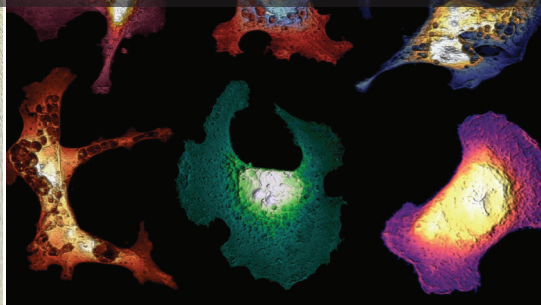
Giulia Palermo (UCSD, EPFL), Amelia Palermo (ETH), Lorenzo Casalino (SISSA, EPFL)



2nd Place

A Morphological Examination of Programmed Cell Death

Eammon Kennedy, University of Notre Dame



3rd Place

Fluorescent Muscles in Living C. elegans

Ryan Littlefield, University of South Alabama

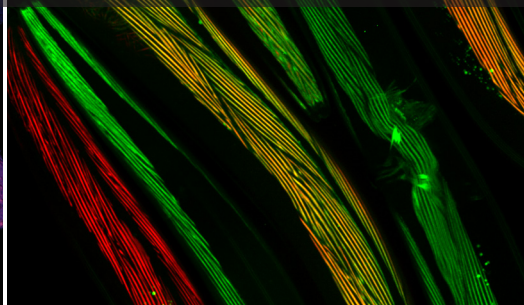


Image Contest

Congratulations to the 1st, 2nd, and 3rd place winners of the Biophysical Society Art of Science Image Contest. The Society received over 25 submissions and the 10 finalists were displayed at the Annual Meeting where attendees voted on their top two images. Prizes were sponsored by Chroma Technology. Visit the website for the description of the images, www.biophysics.org.



Exhibits

Attendees visited exhibitors and viewed product demonstrations, saw the latest lab equipment, and scientific publications, and explored new technologies in the Exhibit Hall.

2017 SRAA Poster Competition Winners

The 14 winners of the annual Student Research Achievement Awards were recognized at the 61st Annual Meeting Awards Ceremony on February 13. These students were selected by judges from the Society's subgroups for their outstanding presentations during the poster competition. One hundred-two students participated in the competition. The winners are:

Bioenergetics

Divakaran Murugesapillai, Northeastern University
Mitochondrial Protein Abf2p Intercalates, Bends, Loops, And Compacts Dna.

Biological Fluorescence

Mykola Dimura, Heinrich-Heine-Universität Düsseldorf
Protein Structure Determination By High-Precision FRET And Molecular Modeling.

Biopolymers in Vivo

Hugo Brandao, Harvard University
Elucidating The Role Of Transcription In Shaping The 3D Structure Of The Bacterial Genome

Exocytosis & Endocytosis

Alex Kreutzberger, University of Virginia
Calcium-Mediated Docking And Fusion Of Purified Dense Core Vesicles With Reconstituted Membranes

Intrinsically Disordered Proteins

Chandra Bappaditya, Tata Institute of Fundamental Research, India
Secondary Structure Flipping Connected To Salt-Bridge Formation Converts Toxic Amyloid-B40 Oligomers To Fibrils.

Tyler Harmon, Washington University in St. Louis
A Model For Hysteresis Observed In Phase Transitions Of Thermally Responsive Intrinsically Disordered Protein Polymers.

Mechanobiology

Ugur Cetiner, University of Maryland
Cell Population And Electrophysiology Approaches To Osmotic Fitness Of Pseudomonas Aeruginosa.

Membrane Biophysics

Caitlin Nurik, University of Texas Health Science Center
Phosphorylation In Ampa Receptor Carboxy-Terminus: Structure, Function, And Lipid Regulation.

Membrane Structure and Assembly

Raquel Arroyo, University Complutense Madrid
Structural Characterization Of Human Pulmonary Surfactant Protein Sp-D By Atomic Force Microscopy.

Molecular Biophysics

Sanaz Momben Abolfath, The Catholic University of America
Symmetry Match In Design Of Multivalent Inhibitors Of Anthrax Toxin.

Kalli Kappel, Stanford University
Blind Predictions Of Rna/Protein Relative Binding Affinities.

Motility & Cytoskeleton

Lucia Alonso-Carbajo, KU Leuven
Activation Of Trpm3 In Perivascular Sensory Nerves Induces Dilation Of Mouse Resistance Arteries.

Nanoscale Biophysics

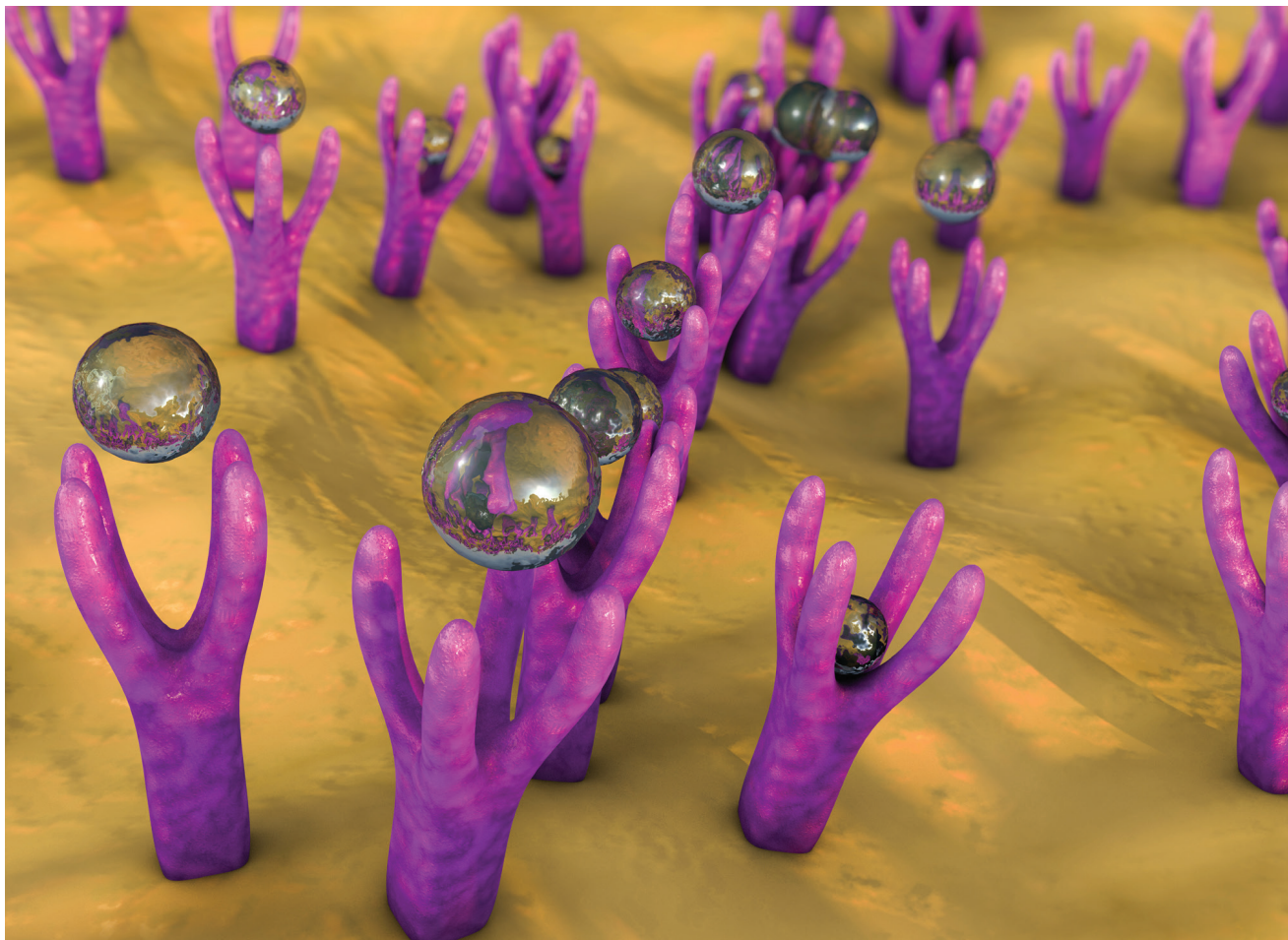
Rima Rebiai, Northeastern Illinois University
Light-Induced Conformational Changes Of S. Aurantiaca Bacteriophytochromes As Revealed By Atomic Force Microscopy.

Permeation & Transport

Sarah Kim, John Hopkins University
Mechanism Of Action Of Ph-Triggered Membrane Active Peptides

By the Numbers

Since 1958, BPS has held 601 different symposia at its Annual Meetings.



Get your Proteins Under Control

Proteins hold great promise for therapy, diagnosis and prevention of disease. But, their complex and unstable nature makes it them challenging to control during handling and processing.

HORIBA Scientific's Life Science Solutions help characterize the many complexities of proteins, and provide insight to help make decisions during the drug development process.

With instruments monitoring cell culture media conditions, analyzing and visualizing protein aggregation, stability, kinetics and size in a complex environment, protein management be under control!



Find out more at our presentation on Monday, February 13th in room 513 at 2:30, or stop by Booth #401!

horiba.com/scientific
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Molly Cule Advice

Molly Cule

How to Prepare for a Non-Bench Career

There is an increasing interest for science PhD students to pursue an "alternate" career beyond the traditional bench research followed by a tenure-track faculty position. The options include marketing, sales, intellectual property, policy, and writing, among others. This article highlights four important steps you can take to prepare for any of these non-bench careers.

Do your research:

Do not go into any non-bench career just for the sake of it. The career sections of most societies, as well as top journals like *Science* and *Nature*, have a treasure trove of information on various alternative careers. Reach out to alumni from your school or your lab, as well as to friends and family members, or use social media (Twitter/LinkedIn) to directly speak with people who have made the transition.

Along the same lines, make a list of your transferable skills. These skills could have been built up either as part of your graduate research (e.g., data mining and analysis), or at home or through community work (e.g., did you demonstrate leadership skills through some sort of volunteer work?). Then note how they align with the careers you are considering.

Work on your communication skills:

Most non-bench careers involve effective communication, whether it is written or verbal. Two particular skills that will be useful to master include (a) the "elevator pitch" — a quick summary of who you are and/or what you do and why it's valuable, and (b) communicating technical information to a lay audience.

Gain experience outside of your work: it can be difficult to break into a new industry without prior experience. However, it is possible to gain experience in other ways. If you are interested in science writing, think of maintaining an active blog, or contribute to your school or society newsletters; see if you can volunteer at your institute's technology commercialization office if you are interested in patent law. Employers also tend to look favorably upon those who have demonstrated a willingness to broaden their horizons beyond bench research.

Network:

It's gotten to be a cliché now, but the value of the mantra "network, network, network" cannot be overstated. Apart from helping you land that next job, networking will help all of the above — researching alternate careers, communicating, and broadening your horizons!

On the Move

Rose E. Dixon moved from a postdoctoral fellow position at the University of Washington and is now an Assistant Professor at the University of California

Yifan Ge has graduated from Indiana University – Purdue University Indianapolis and will begin her postdoctoral research at Massachusetts General Hospital with an additional appointment at Harvard Medical School.

Have you changed positions recently or know of a BPS member who has?

Send news of your move to ccurry@biophysics.org.

Networking Events

Call for Networking Events

Are you looking to connect with local biophysicists in your area? Do you have an idea for a networking event and want to host one in your area? BPS can help! Since 2011, BPS has encouraged local communities of biophysicists to come together by providing mini-grants. These events have brought together local scientists (Society members and non-members) to discuss various topics in biophysics and to share their experiences, research, and ideas with their local community. All current Society members inside and outside of the United States are eligible to apply.

Please note that your event must meet the following requirements:

- The event should be no longer than one day
- It should be a stand-alone event (not part of a larger conference)
- The event should promote interaction between different institutions and/or communities in a geographical area not served by the BPS Annual Meeting
- There should be an emphasis on promotion of biophysics
- The event must take place in an area not currently well served by other opportunities for networking among biophysicists
- A meeting size of approximately 25 to a maximum of 150 attendees is best
- It must be advertised prominently as a BPS-sponsored event
- The speaker list should include graduate students and postdocs

BPS will be accepting networking event proposals for 2017 events through April 30, 2017.

If selected, you may receive up to \$500 through the Membership Committee's mini-grant program to host the event.

2017 Networking Events

Congratulations to all applicants in the fall Call for Networking Events who were selected to receive a BPS mini-grant.

New and renewing networking event awardees include:

Mechanobiology: Molecules and Methods

March 2017, Sydney, Australia

Membrane Receptor Organization and Signal Transduction

April/May 2017, Stockholm, Sweden

6th Annual Bluegrass Molecular Biophysics Symposium

May 2017, Lexington, Kentucky

Ontario Networking Event in Biophysics ("ONE" – Biophysics)

June, 2017, Mississauga, Ontario, Canada

Biophysics in the Pacific Northwest

August, 2017, Portland, Oregon

Each year, the Membership Committee provides mini-grant opportunities. If your application is selected for an award, BPS will provide each event up to \$500 to help you host an event. The venue and format of the event are up to you — we are looking for creative ideas that will promote interactions between members and non-members interested in biophysics and the Society. Events must meet certain requirements.

Interested in Network Events?

Visit www.biophysics.org/NetworkingEvents.



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UPCOMING EVENTS

BIOPHYSICAL SOCIETY NEWSLETTER MARCH-APRIL 2017

April

April 24–25

10th Annual Proteins & Antibodies
Congress 2017
London, UK
<http://www.proteins-congress.com/>

April 29

The Future of Integrative Structural
Biology
Clemson, SC
[http://www.clemson.edu/science/
departments/physics-astro/news-
events/conferences/fisb/index.html](http://www.clemson.edu/science/departments/physics-astro/news-events/conferences/fisb/index.html)

May

May 10–14

Biomolecules and Nanostructures 6
Podlesice, Poland
[http://www.nanofun.edu.pl/bion-
ano6/](http://www.nanofun.edu.pl/biono6/)

May 14–20

FEBS/EMBO Lecture Course: Bio-
physics and Medicine of Channels
and Transporters: Electrifying New
Insights
Erice, Italy
<http://channels.ge.ibf.cnr.it>

June

June 4–7

Nucleic Acids and Immunity
Brno, Czech Republic
[http://www.nucleic-acids-immuni-
ty.ceitec.eu/](http://www.nucleic-acids-immunity.ceitec.eu/)

June 5–9

8th Workshop on Neutron
Scattering Applications in Structural
Biology
Oak Ridge, TN
[https://conference.sns.gov/
event/66/](https://conference.sns.gov/event/66/)

July

July 16–22

25th Annual International
Conference on Composites/Nano
Engineering
Rome, Italy
<http://www.icce-nano.org/>

July 16–20

19th IUPAB/11 EBSA Congress
Edinburgh, Scotland
<http://ebsa.org/portal/node/332>