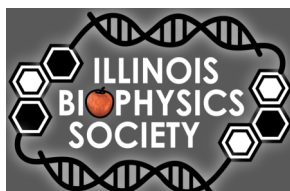




RESONANCE



BIOPHYSICS ANNUAL NEWSLETTER

Resonance

Fall 2017

Adding Flexibility to the Agenda

Every August thousands of people flood into Urbana-Champaign bringing excitement, traffic, and the prospects of a fulfilling new school year. Bearing this in mind, graduate students and professors alike know that their schedules will become even more hectic: teaching, studying, writing, going to conferences, and doing research. We busy ourselves with these essential tasks often lamenting the loss of flexibility that our summer schedules once allowed. Even though the school year brings added stressors such as attending lectures, planning experiments, and finishing school work graduate students do still have flexibility and should use it to pursue passions and restore their energy.

Recently, the New York Times published an article outlining a new workplace sociological structure like that in higher education. In the study, a group of employees were given the freedom and encouragement to do their work

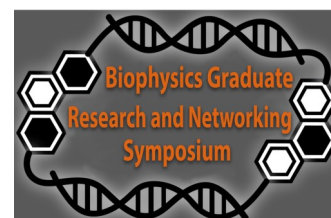
wherever, and whenever they pleased to test previous claims that low control and high demands increase work stress. After the twelve-month trial, the study showed that employees experienced lower levels of psychological and physical stress while completing their work as reliably as the control group. This shows that students should continue to volunteer at soup kitchens, play ultimate frisbee, attend concerts, and even spend time with friends. Even when work reaches its fingers into all aspects of our life to try to snatch up free time, the other activities can be integrated in. Such is the case with Dr. Diwakar Shukla: "As an assistant professor, it is difficult to have hobbies." But, Dr. Shukla has enjoyed astronomy since his undergraduate studies and even rolls out his Dobsonian telescope on clear nights to look at the stars in deep space. Dr. Aditi Das is a mother of two outside of work but says that, "everything is merged together and I don't distinguish between

family life and research life". Rather Dr. Das says, "You have to do everything efficiently and at the same time...It's all in a day's work" Or take Dr. Satish Nair who has a "small collection of old cookbooks from all over the world." He even finds the time to use them even among other hobbies saying, "I love to cook and enjoy testing new and different cooking techniques. I am a big fan of learning to do things from scratch like making my own butter, breads, and spice blends. I also love to tinker with electronics and like to tweak old audio equipment by replacing newer parts."

On October 23, 2017 the Biophysics Society Research and Networking Symposium will feature three more professor lectures on non-research topics in hopes of encouraging all of us to pursue our passions and accomplish our goals in the coming academic year.

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Date: October 23, 2017

Time: 10:30 AM to 3:00 PM

Place: 104 Illini Union

Lunch is provided

Tentative Speakers:

Martin Gruebele, Emad Tajkhorshid and Paul Selvin

Poster session participation is open to all Biophysics graduate students

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RESONANCE



HIS LEGACY
CONTINUES
THROUGH THESE
STUDENTS AS
THEY HOLD
NOTABLE
POSITIONS IN
BOTH ACADEMICS
AND INDUSTRY

A Legacy in Computational Biophysics: Klaus Schulten

Dr. Klaus Schulten was an integral member of our computational biology program and very active in the biophysics community. Schulten passed away due to an illness this past year. As a greatly respected scholar at the University of Illinois and beyond we would like to honor him and his contributions to science. The past year he was recognized during a memorial lecture by distinguished biophysicist and advisor, Dr. Martin Karplus. During this lecture, Karplus spoke about the great advancements that have been made by Schulten and others in the past few decades. During Schulten's almost 25 years at the University of Illinois, he was a faculty member in physics and at the Beckman institute. His legacy will continue through

a new symposium on November 7-9, 2017 where some of the world's top talents in computational biophysics among other fields will be displayed. Schulten's research focused on the structure and function of cells using molecular dynamics. His research group in collaboration with many others looked to build a computational model of the entire cell. Using Nonequilibrium dynamics Schulten was able to develop efficient computational methods to analyze cellular processes. During his 40 years of work Schulten established new programs for structural analyses that are used throughout the field of computational biophysics. Training more than 80 PhD students, his group has produced countless publications in the areas of biophysics

and quantitative biology. Now, his legacy continues through these students as they hold notable positions in both academics and the industry. At the University of Illinois Schulten earned the honors as Swanlund Professor of Physics, affiliated with the Department of Chemistry and, the Center for Biophysics and Quantitative Biology. He also served as Director of the Biomedical Technology Research Center for Macromolecular Modeling and Bioinformatics as well as Co-Director of the Center for the Physics of Living Cells. We were privileged to learn from Dr. Klaus Schulten and now remember him as a great man as well as a scholar. (Tajkhorshid and Chipot. Tribute to Klaus Schulten J phys chem B 2017)

Graduate Student Achievements

Kapil Dave (Gruebele) was chosen as one of the speakers at the 3rd International Conference on Protein Folding and Dynamics, all travel and expenses paid. The meeting was held from November 8-11, 2016 at National Centre for Biological Sciences, Bangalore, India.

Kevin Cheng (Shukla) was awarded the Ford Pre-doctoral Fellowship for his

proposal titled "Using Simulations and Machine Learning-based Markov State Models To Build a Tool for Rational Drug Discovery". The fellowship is administered by the National Academies of Sciences on behalf of the Ford Foundation.

The CSE program at Illinois chooses 8 fellows each year, and **Shriyaa Mittal** (Shukla) was awarded the

fellowship for the academic sessions 2016-2017 and 2017-2018.

Andres Arango

(Tajkhorshid) received the National GEM Consortium Associate Fellowship. The GEM Fellowship promotes opportunities for individuals to enter industry at the graduate level and also offers exposure to a number of opportunities in academia.

Congratulations Graduates!

During the past year 12 students received their doctoral degrees and another received their master's. Here is where they are headed next and we wish them our best in their journeys ahead!

Janish Desai (Oldfield) R&D Research Scientist, Abbott Laboratories

Seyfullah Kotil (Jakobsson) Postdoc, Dept of Microbiology, U of Wisconsin, Madison

Kai Wen Teng (Selvin) Postdoc, NYU Medical Center

Stuart Rose (Crofts)

Kevin Whitley (Chemla) Postdoc at Technical University of Delft, Netherlands and Newcastle University, England

Charles Wilson (Crofts)

Kapil Dave (Gruebele) Design and Yield Engineer, Intel R&D, Oregon

Tao Jiang (Tajkhorshid)

Piyush Labhsetwar (Luthey-Schulten)

Chen-Yu Li (Aksimentiev) Insight Data Science Fellows program

Wen Ma (Chemla/Luthey-Schulten)

Marco Tjioe (Selvin)

Sreeradha Biswas (Michael Oelze/Nair)

Welcome to our New Faculty!

Biophysics is excited to announce that four new faculty members from different departments around the campus have become biophysics faculty. We would like to welcome:

Taras Pogorelov As a Professor in the Chemistry department Pogorelov collaborates with many groups doing computa-

tional biophysics and chemistry. He is currently focused on membrane related dynamics and protein folding in more complicated environments.



Alex Evilevitch Working in the college of veterinary medicine in the pathobiology department Evilevitch looks at how viral DNA is packaged

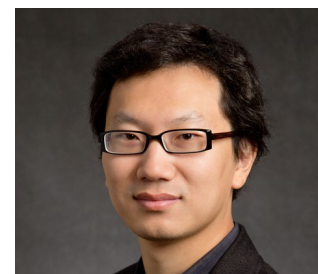
into the small capsids under high pressure.

Sergei Maslov In the bio-engineering department has focused on databanks for big data sets specifically in biomedicine, bio-fuels, and engineering. Using the supercomputing center at Illinois, Maslov



used trends in large data sets to make accurate predictions.

Yang Zhang uses computational and statistical physics in order to study the dynamics of liquids in extreme environments. In addition he studies the



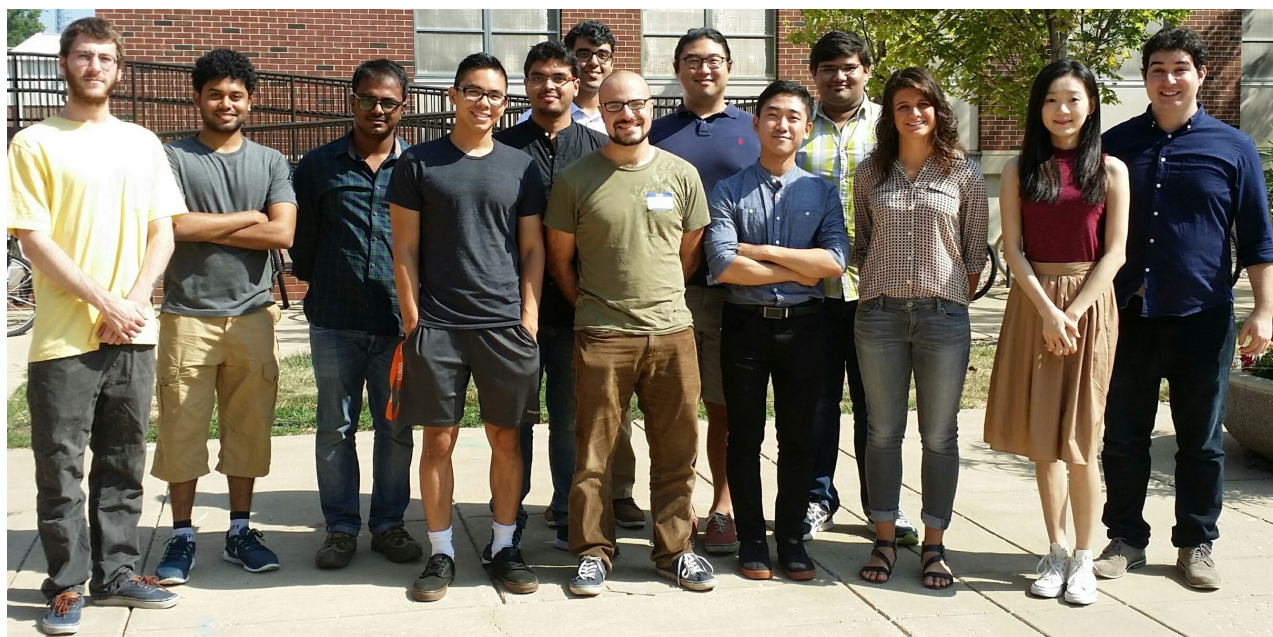
energy landscape of soft matter. Zhang is a professor in nuclear, plasma, and radiological engineering departments and the Beckman Institute (Photos from illinois.edu).



RESONANCE

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

ENTERING CLASS OF FALL 2016



The Biophysics program became home to 13 new students beginning in the Fall of 2016. Pictured above during their first week on campus.

Front Row: Kevin Cheng, Jordan Sickles, Yongjae Lee, Brittney Gorman, Shidi Zhao. Second Row: Justin Valletta, Aniket Ravan, Nandan Haloi, Shashank Pant, Steve Yeo, Mayank Boob, Andres Arango. Third Row: Archit Vasan.

Illinois Biophysics Society Update



Illinois Biophysics Society executive board 2017-2018

The Illinois Biophysics Society (IBS) is a student run organization comprised of Center for Biophysics and Quantitative Biology graduate students whose mission is to improve the lifestyle, educational experience, and future career opportunities of biophysics peers. The new Illinois Biophysics Society would like introduce this year's committee members comprised of Shriyaa Mittal as the President, Roshni Bano for Secretary and the

Treasurer, Eric Shinn. In the upcoming academic year IBS will have a new webpage that can be accessed through the Biophysics Program website: <http://biophysics.illinois.edu/ibs/> and a Facebook group (Illinois Biophysics Society). All IBS updates will be posted there.

Mark your calendars

September 19, 2017

CPLC Biannual Student/Postdoc Symposium

October 23, 2017

Biophysics Graduate Research and Networking Symposium

November 7-9, 2017

Klaus Schulten Memorial Symposium

Newsletter Team

Editors: Brittney Gorman & Shriyaa Mittal

Special Thanks to: Dr. Satish Nair & Cindy Dodds

Illinois Biophysics Society
Contact us at: smittal6@illinois.edu, bano2@illinois.edu, shinn3@illinois.edu
Facebook Page:
<https://www.facebook.com/groups/1190028721102690/>