

“Revealing How Life Works”

December 2015

To: Worldwide members of the OSU Biochemistry and Biophysics Community

From: Andy Karplus, once again at the department helm

Dear Alumni, Friends and Colleagues:

As 2015 draws to a close, I am very pleased to make time to send season's greetings and a brief bit of news about the department. Although being Department Head is challenging work, I feel privileged to help shape our future and grow our ability to make a difference for our students and the world around us. With new federal initiatives aimed at personalizing medicine and understanding the human brain, our mission of educating students and conducting forefront research in the molecular biosciences has never been more important.

Since our last BB newsletter in 2013, much has happened. At the college level, **Sastry Pantula** arrived in August 2013 as a new Dean who champions the values of excellence, harmony and diversity and is working to promote both student and faculty success. As one positive innovation, I point you to “Impact” (impact.oregonstate.edu/) with excellent articles about College of Science activities. The College also just launched a five-year strategic plan that will guide decisions about how best to innovate in education to prepare students to be leaders in science, to foster impactful discoveries and to improve our world. You can read the plan online at <http://www.science.oregonstate.edu/strategic-plan>.

At the University level, a huge OSU accomplishment was completing our first Capital Campaign with 106,000 donors giving \$1.14 billion that is making a difference every day for our students and faculty. Our own science alumni generously contributed more than \$95 million of total dollars raised in the campaign! At the Capital Campaign celebration, we were very proud of BB junior **Hayati Wolfenden** who spoke eloquently about teamwork and her OSU experiences. You can watch her speech online at www.youtube.com/watch?v=xQHoXhE_KUM.

At the department level, **Gary Merrill** finished a 4½ year term of effective leadership and passed the reins on to me in June. We also welcomed new BB Office Manager **Tony Reyna**, a veteran of the Marines who brings many skills. He splits his time half in BB and half in the Statistics Department. Since 2013, three junior faculty joined our ranks: **David Hendrix**, specializing in bioinformatics analyses of functional “long non-coding” RNA sequences; **Afua Nyarko**, conducting biophysical studies of proteins in the Hippo pathway involved in cell growth and cancer; and physicist **Weihong Qiu**, who has an adjunct appointment with BB to do single molecule studies of kinesin motor proteins using TIRF microscopy. During the same period, we have had losses in our community with the passing of **Bob Becker** in August 2013 at the age of 90 and the cognitive decline of **Wil Gamble**. Both touched so many lives over the years. Those of us who knew them are grateful to have worked with them and to have learned so much from them. Bob's obituary can be found at <http://www.mchenryfuneralhome.com/obituaries/Robert-Becker7/#!/Obituary>.

On the research front, although federal funding has become increasingly competitive, perseverance and excellence in scholarship has been paying off for many BB faculty. Among these I'll briefly highlight four.

- **Elisar Barbar** led a team winning funds from NIH and the Murdock Foundation contributing to a \$2.4 million sum to bring an 800 MHz biomolecular NMR facility to OSU next year. This will be the only instrument of its kind in Oregon and a terrific resource for students and faculty at OSU and Oregon.
- **Ryan Mehl** established a first-in-the-world “unnatural protein facility” to make genetic code expansion technology more widely available to researchers. In addition, he was awarded NIH and NSF grants totaling \$1.8 million to decipher disease mechanisms associated with nitrate stress and to develop better “click-chemistry” approaches for studying proteins and creating new materials.



BB faculty at our 2015 retreat at the coast. For a color version see biochem.science.oregonstate.edu/content/alumni-donors-friends

- **Joe Beckman** discovered, using a mouse model for Lou Gehrig's disease (ALS), that a known copper compound has very promising therapeutic potential. He won \$2.3 million in funding from the Department of Defense and the ALS Association to further this work.
- **Kevin Ahern** directs a \$1.5 million 5-year 'STEM Leaders' grant from the NSF to use workshops, community building and mentoring strategies to increase the diversity, success, and persistence to graduation of students under-represented in STEM fields at OSU.

Our undergraduate and graduate programs received high praise earlier this year in their decennial reviews, with **Indira Rajagopal** and **Michael Freitag** leading the preparation of the required self-study reports. The evaluating panels concluded that our graduate program curriculum is “comparable to that of any of the best graduate programs in this field in the country” and that our undergraduate program is “excellent and robust.” Reading the comments provided by many of you was a real joy. Thank you for taking the time to share your thoughts. One comment that captured a common sentiment was that our faculty “are incredibly knowledgeable, and they all are willing to put things aside to ensure the success of the students.” This reminds me that one aspect of our undergraduate program we are very proud of is how our students develop a supportive community and provide leadership on campus. For example, 2013-14 BB club president **Omar Rachdi** started a peer mentoring program in which BB juniors and seniors mentor freshmen. This is not only successfully continuing in BB, but has spread to other units across the College of Science.

Looking ahead, I'll mention two initiatives we are pursuing to improve our programs. One is to better educate our undergraduate and graduate students about non-academic careers and to develop partnerships with biotech companies and other relevant employers who can provide our students information about careers and internship opportunities. One way alumni could help us is to recommend an organization that you work for or know of that might be a good partner for us. Please email me with any suggestions. To achieve this goal, we'll be collaborating with the Microbiology and Integrative Biology programs in the new School of Life Sciences.

A second goal is to develop a *Biochemistry and Molecular Biology* major in order to extend our positive impact to students seeking in-depth training in molecular and computational biology, but who may have less interest in biophysics. One challenge we anticipate with this larger group of students is maintaining our strong sense of community, high quality of faculty-student interactions, and hallmark transformative experiences, such as long-term research projects guided by a faculty mentor, traveling to conferences to present their research and to network and make connections with others in the field. We are committed to doing this and are grateful to have many of you generously partnering with us to expand what we can accomplish.

Closing Thoughts

We are developing a 2016 newsletter with more in-depth news about our students, alumni, faculty and programs. We would like to include news and updates from you—our undergraduate and graduate alumni around the world. So please email me and share special memories of your time here, exciting news, or career highlights. Our faculty and I would love to hear what you have been up to recently.

Also, if you are visiting Corvallis, I'd enjoy meeting you and hearing some stories of your time at OSU and how things developed from there. And, I know students enjoy meeting and learning from our alumni too.

On behalf of the faculty, staff, and students in the BB Department, I wish you a special holiday season and a 2016 that is abundantly filled with the most important things in life. And Go Beavs!

Yours warmly,



Kevin Ahern leading students from the Class of 2014 singing metabolic melodies to their families and friends

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