

## *“Revealing how life works”*

December 2008

To: Worldwide members of the OSU Biochemistry and Biophysics Community  
From: P. Andrew Karplus, Chair

Dear Friends and Colleagues:

Greetings from all of us in the Department of Biochemistry & Biophysics at Oregon State University in always beautiful, but unusually snowy and cold Corvallis. On the national front, there was an energized atmosphere surrounding the elections this year with voters in both major parties very interested in change ... and change was ushered in with a sense of hope. With the current economic crises and global challenges, the incoming Obama administration will have difficult decisions to make with even more than the usual level of competition for resource allocation. But if we all pitch in, working together we CAN make a difference. Here in the BB community, we too are public servants, and will do our part to develop students into well-educated contributing citizens of the world and to carry out basic research revealing details of how life works that may be translated into improvements in technology and in human health. The recently uncovered Madoff Ponzi scheme emphasizes that a healthy society is built not just on knowledge but also on character, which must be one focus of our educational efforts.



*Blue skies and snow around the Ag & Life Sciences building December 18<sup>th</sup>.*

### ***OSU and Department News***

This fall football Beavers were in the national spotlight as in September they beat the then-#1-ranked USC team and made an exciting run for the Rose Bowl, only to be stopped by a loss to Oregon in the Civil War game. Additional sports/politics-related national attention came through the new men's basketball head coach Craig Robinson, who is the brother-in-law of President-elect Obama. On a more academic front, outstanding OSU College of Science professor Jane Lubchenco was just selected to head the National Oceanic and Atmospheric Administration.



*The planned Linus Pauling Science Center.*

The OSU capital campaign initiated by President Ed Ray continues attract donors who enhance OSU's ability to educate students and to carry out research that changes the world. The campaign theme "This is your OSU" captures the deep sense of appreciation and participation many alumni and friends feel toward OSU. At [oregonstate.edu/leadership/president/report/](http://oregonstate.edu/leadership/president/report/) you can see President Ray's most recent quarterly report that mentions BB major **Tari Tan** (BS, 2008), who was named one the the top 40 college scholars in the

nation. Also, one of the campaign centerpieces, the Linus Pauling Science Center, which will house the Linus Pauling Institute and some Chemistry faculty, is still on target for a move-in date in 2010.

A few new initiatives have continued to build a sense of community in the department. In February, **Jill Wait** in the office creatively energized our most active participation in the OSU annual food drive. Many faculty and students prepared treats and healthy foods for regular bake sales and a "Sundae party." All together, we raised nearly \$1200 to fight hunger and poverty in our community! Jill is already thinking about how we can do even more this year. Also, over the summer, we had two outdoor

adventures. In July, on what turned out to be a gorgeous day, everyone was invited to participate in an all-day excursion to Iron Mountain. On the way back, most of the hikers extended the fun with a swim in a scenic swimming hole just east of Sweet Home. Then in September, to kick off the school year, **Gary Merrill** organized for a few faculty and most of our grad students a one-day rafting trip on the Clackamas.



Group photos from the all-department Iron Mountain hike and the grad program fall rafting trip. Thanks to **Gary Merrill**, **Joe Beckman** and grad student **Justin Hall** for guiding boats. Note the blue boat piloted by unconventional Joe "Backwards" Beckman.

I note with sadness that **Frances Cripps**, a friend of the department who has given generously to support undergraduate scholarships, passed away in May shortly after her 93<sup>rd</sup> birthday. Frances was a spunky woman who developed friendships with **Kevin Ahern**, **Indira Rajagopal**, and **Victor Hsu** and when in her 80s audited Biochemistry classes. I wish you all could have met her. Frances gave with the purpose of making a real difference. As I talked with her, less than a month before her death, about the students whom her donations supported, she enthused, "I hope one of them does something big!" Frances also gave a generous testamentary endowment of over \$2 million to be administered by our department to "improve human health." As this endowment becomes available, it will significantly enhance the scope of our accomplishments.



Frances Cripps (1915-2008)

### ***The Faculty and Staff***

*Faculty and Staff Recognition:* At University Day in September, President Ed Ray announced he had selected **Kevin Ahern** and **Indira Rajagopal** as the only two 2008 recipients of the OSU Beaver Champion Award. The President gives this honor for "outstanding effort and achievement of excellence, extra effort beyond that requested, and performance of the highest quality." This is well-deserved recognition for two people who teach and individually mentor countless students. Kevin and Indira are a big part of what makes our undergraduate program outstanding. **Indira** was recognized also this year with a Mortar Board Top Prof Award



*Kevin and Indira receive the OSU Beaver Champion Award from President Ed Ray.*

**Tory Hagen** had a banner year, as he was promoted to Professor, installed as the inaugural holder of the

Burgess and Elizabeth Jamieson Chair in Healthspan Research, given the Oxygen Club of California Outstanding Investigator Award, and also recognized for his teaching with a Mortar Board Top Prof Award.

Also, in this section I am pleased to note that the department faculty are indebted to **Barbara Hanson, Lisa Shepard, and Jill Wait** in the BB office for providing the administrative support that is a key part of all our successes!

*Faculty News:* This year both **Sonia Anderson** and **Mike Schimerlik** closed their labs after 40 and 30 years, respectively, with the department. Both Sonia and Mike asked that no official gatherings mark their retirement, but nevertheless we will miss them and the expertise they brought to the department. If you would like to contact them directly to send them your well-wishes, please do! As expertise in protein and enzyme characterization is a crucial need for our program and OSU, we are lobbying to carry out a search next year to bring in a new faculty member in this area.



*Elizabeth and Burgess Jamieson with Tory Hagen*

Speaking of new faculty, BB has again been the beneficiary of the Linus Pauling Institute's (LPI) presence on campus. The LPI carried out a search for a new faculty member in their Healthy Aging Program (headed by **Tory Hagen**), and succeeded in attracting **Fritz Gombart** from Cedars Sinai Medical Center as a new Associate Professor. His research focuses are the molecular mechanisms of Vitamin D action, innate immunity, and aging, and so he chose Biochemistry & Biophysics as his home department. This is a bit of a homecoming for Fritz, as he got his Bachelor's degree in Microbiology at OSU.



*Fritz Gombart, his wife Kayoko and three boys Jeffrey, Nicholas, and Sean*

One other faculty member arriving in the department this year is **Jim Hurst**, a chemistry professor from Washington State University, who is developing research collaborations with Joe Beckman on the function of NADPH oxidases in

phagocyte action. Together with two post-docs, Jim is using the recently vacated Schimerlik lab.

Our faculty and students have also carried out much fruitful research in 2008, advancing understanding in many areas including protein assembly and the importance of dynamics for function, the causes of Lou Gehrig's disease, the molecular events leading to atherosclerosis, the patterns of protein expression that determine cell type during development, the mechanisms and physiological roles of key redox enzymes, the genetic and epigenetic patterns allowing chromosomes to be recognized during cell division, and the molecular events involved in normal and tumor cell migration. Also, new grants were won this year by **Elisar Barbar, Joe Beckman, Michael Freitag, Gary Merrill, Jeff Greenwood, and me.**

In order to keep down the length of this newsletter, yet at the same time to give you all better insight into the BB faculty's activities, this year I have asked each faculty member to prepare his or her own mini-newsletter for posting on the web. So to learn more about individual faculty activities (including our emeritus faculty who no longer have active research programs) please visit our website at <http://biochem.science.oregonstate.edu/2008-newsletter>. All the individual newsletters may not be up right away, but should come with time. This page also offers a reprint of Chris Mathews' reflections on his career as a scientist, teacher, administrator and textbook author. It is entitled *Academic Life: The Whole Package* and originally appeared in the Reflections section of the *JBC*.

### ***Recognition of Current Graduate Students***

This year's incoming class consists of three talented Ph.D. students: **Camden Driggers** (Montana State), **Chunxiao (Shawn) Guo** (Third Military Medical University) and **Brian Sinnott** (Trinity College). Coincidentally, three grad students finished up this year. Congratulations to newly minted Ph.D.s **Trish Kuu** (Shing Ho) and **Olga Golonshka** (Mark Leid). Olga has begun a post-doc at UCSF, and Trish is still arranging her post-doctoral plans. Joe Mendoza (Joe Beckman) completed a Master's degree and is now pursuing a career in firefighting.



First-year students Camden, Chunxiao, and Brian (from left to right). Each got off to a solid start in classes and in rotations in the Beckman, Gross, and Barbar labs respectively.

Awards won by current graduate students include Oregon Sports Lottery scholarships to **Andrea Hall** and **Hyo Sang Jang** and a Center for Healthy Aging Research fellowship to **Jeff Monette**. **Justin Hall**, **Andrea Hall**, **Donnie Berkholz**, and **Sangeet Lal** all received College of Science travel grants to present their work at meetings. We are grateful to the donor who enhanced grad student development by providing funds to support such travel. At the Protein Society Meeting, **Justin Hall** received an award for his poster on the thermodynamics of dynein assembly. Congratulations are also due to **Hyo Sang Jang** and **Donnie Berkholz** who welcomed daughters Violet and Autumn to their families, and **Megan Stewart Hirko** who married Jason Hirko.

### ***Recognition of Current and Recent Undergraduate Students***

This year, I've handed **Kevin Ahern**, chief advisor of our undergraduate majors, the job of chronicling some achievements of our current and recent undergrads. Our students are a remarkable group who chose to challenge themselves by taking this major that encompasses physics, chemistry, and biology but that is worth the effort because of how well it prepares them for many different paths.

### ***Alumni News***

It's nice how each year we hear from a unique set of alumni who send an email, stop by, and/or make a donation to support our program. Here are a few updates from graduate alumni and older undergrad alumni. Updates from recent undergrad alumni are in the "Undergrad News" section. **Yvonne Will** (Ph.D. Reed 1999) writes that she is working for Pfizer R&D and spending time with her four-year old daughter Tali; she has also co-edited a book on *Drug-induced Mitochondrial Dysfunction*. **Mark Bernard** (Ph.D., Mathews 1998) and wife Tanya are now in Massachusetts with daughter Amy (9), who is a budding scientist, and precocious 2-month old Justin. Mark's work with Pfizer is now on nucleic acid based therapeutics, and from previous work he has a patent pending on an anti-integrin monoclonal antibody that may be useful for treating multiple sclerosis. **Monica Ivancic** (Ph.D., Hsu 2001) continues as Assistant NMR Director at the University of Wisconsin, and she and husband George are enjoying parenting their 5-month-old daughter Zoe. **Ganapathy Sarma** (Ph.D., Karplus 2005) was married in September in a traditional Indian ceremony and continues as a post-doc with Susan Taylor in San Diego.

We also heard from a few alums from earlier years. **Christine (Byles) Phillips** (M.S., Anderson 1988) is married and works in Seattle with Pharmaceutical Product Development as a clinical research associate. She and her husband continue to be big Beaver athletics fans with a lot to cheer for compared to the late 80s. **Mike Bass** (B.S. 1982) is now a computational biologist with Amgen whose

work focus has shifted from structure prediction to microarray analyses. This fall, we also enjoyed seminar visits by **George Rose** (Ph.D., Van Holde 1975), who as usual is proposing paradigm shifting ideas about protein folding, and **Jeff Corden** (Ph.D., van Holde, 1979). George and Jeff are both faculty at Johns Hopkins.

### ***Closing Thoughts***

Whether our alumni pursue science as a career, invest in raising a family, or use their scientific skills in a non-science or non-traditional career, they give us much to be proud of. For us as faculty and staff, life includes much more than what happens here on campus, but we are particularly privileged to be public servants involved in education and research.

As Albert Einstein said, "In the middle of difficulty lies opportunity." With the worldwide conflicts, the economic trials, and the challenges and transitions we face as a university and a department, changes are ahead and how we are choose to focus our energies and resources matters. The tight funding at the state and federal level have definitely impacted us, but a testimony to our faculty, staff, and students is that despite what may be the most competitive funding climate ever, the total external funding for our faculty increased this last year. I take inspiration from Frances Cripps' confidence in us and want to honor her memory by continuing to invest with energy in our dual mission of research and teaching with the expectation that one or more of us or our students will "do something big!"

All of you who have supported the department through your philanthropy are also an unheralded part of every success. Our program would not be so strong without your generosity, as your gifts tremendously enhance what we can accomplish, especially in terms of mentoring undergraduate and graduate students! On behalf of the whole department and our students, I say *THANK YOU* to you who have contributed to the department this year! Whereas we are a small department, our students and faculty compete well with the best in the country. If you have an interest in impacting the lives of our students, please contact me or the OSU foundation to explore how to achieve your philanthropic goals through a gift to the BB program.

Finally, on behalf of the faculty, staff, and students in the Department, I would like to extend to you and yours best wishes for 2009 — the 50<sup>th</sup> anniversary of the determination of the first protein structure, that of myoglobin. We would love to hear from you and would welcome your visit at any time.

Yours warmly,  
Andy Karplus

P.S. I thank my colleagues and especially Kevin Ahern, Chris Mathews and Barbara Hanson for their help assembling information for and editing this letter.