

December 2006

To: Worldwide members of the OSU Biochemistry and Biophysics Community
From: P. Shing Ho, Chairman

Dear Friends and Colleagues:

It is once again my pleasure to bring you news from the Department of Biochemistry & Biophysics at Oregon State University. We just weathered a rather intense wind storm that brought hurricane force winds to the Oregon and Washington coasts, and even the sleepy town of Corvallis saw gusts over 50 mph. Aside from the loss of power—some short term, some a bit longer—we were all able to weather this storm with little or no real damage.

OSU and Department News

The campus was relatively quiet this year, with the exception that the Beavers were crowned the NCAA National Champions in baseball this summer. For those who missed this historic event (this was only the second team national championship at OSU), the playoffs were incredibly exciting, with each round seeing OSU at the verge of elimination. The final game of the College World Series was won by the team with the most consistent play, particularly on defense (just as it should be for a Beaver).

The Department of Biochemistry & Biophysics has remained a strong research and instructional unit, despite many changes and challenges. Members of the faculty have been recognized for their research and teaching, we have once again recruited an outstanding class of new graduate students, and our current undergraduate and graduate students continue to be recognized for their academic and research accomplishments.

The Faculty and Staff

Transitions: Dr. Michael Freitag has now fully established himself in the Department as an Assistant Professor, and is busy staffing his laboratory with students and technicians, writing grant proposals to support his work on the epigenetics of the fungus *Neurospora*, teaching, and contributing to the daily operations of the Department. Jeff Greenwood was promoted to Associate Professor with indefinite tenure this June (how do you spell relief? "T-E-N-U-R-E"). Chrissa Kioussi relocated to the College of Pharmacy just down the road—her expertise, although no longer in the Department, remains available at OSU. Sonia Anderson took retirement this Fall, but will continue to teach her course on Proteins and engage in research at least through 2008. Marilyn Walsh retired and Lisa Shepard joined the Department Office this Fall. Lisa is serving a dual role as the Administrative Assistant in the Department and as the Office Manager in the Environmental Health Sciences Center. The saddest news this year was that Donald MacDonald passed away from amyotrophic lateral sclerosis (ALS, or Lou Gehrig's Disease). We will all miss having MacD around to keep our spirits up.

Faculty recognition: Kevin Ahern received the Frederick Horne Award for Sustained Excellence in Teaching from the College of Science. Jeff Greenwood was nominated by the students for the Loyd Carter Award for Outstanding Undergraduate Teaching, also in the College of Science.

Faculty News: Members of the Department faculty had three papers published in the *Proceedings of the National Academy of Sciences* this year that gained exposure in the national press. This includes a study from Michael Gross and Chrissa Kioussi which identified transcription factors that steer stem-cell development, work from Joe Beckman's group to develop a new tool (in collaboration with Molecular Probes in Eugene) to detect superoxide in a cell, and a collaboration between Chris Mathews, Shiwei Song (Ph.D., Mathews 2005) and a group at the NIH showing that a protein thought to be involved in deoxyribonucleotide uptake in human mitochondria is actually a thiamine pyrophosphate transporter.

The grant that funds the Environmental Health Sciences Center was renewed for 3 years, thanks in large part to the Herculean efforts of **Joe Beckman**. The **Linus Pauling Institute** celebrated its tenth anniversary on the OSU campus this year. **Balz Frei** continues to work towards a new building for the LPI (this monumental task took one more step forward this year).

Andy Karplus' research and research group continues to grow, adding two new graduate students (**Andrea** and **Justin Hall**), starting a collaboration with **Elisar Barbar** and **Gregory Benison** (a postdoc in Elisar's group) to determine the crystal structure of *Drosophila* LC8 bound to a peptide, and continuing a collaboration with **Joe Beckman** and **Blaine Roberts** (a 5th year grad student with Joe) to determine the crystal structure of zinc-free superoxide dismutase. The multi-investigator grant from the NIH to fund structural and functional work on peroxiredoxins was renewed for four more years. In **Elisar Barbar's** group, **Greg Benison** and **Gretchen Clark-Scannell** received American Heart Association postdoctoral and NIH predoctoral fellowships, respectively. **Gary Merrill**'s efforts as Chair of the Graduate Committee has netted another strong, albeit smaller, entering graduate student class, despite the very limited resources this year. **Phil McFadden** continues his collaborations at Woods Hole and the University of California at Santa Barbara to studying the mechanisms of bio-camouflage in squid and cuttlefish. **Victor Hsu** returned from a sabbatical leave in the laboratory of Robert Kaptein at Utrecht University in the Netherlands, and is currently working on testing methods to model protein-protein and protein-nucleic acid complexes. The work from my students to identify left-handed Z-DNA sequences in genomes was part of a larger story on "DNA's molecular gymnastics" published in *Science*, and our paper on the effect of sequence on the formation of Holliday junctions in solution was identified as a "Hot Article" and was one of the most accessed papers in the journal *Biochemistry* in 2006.

Chris Mathews' grant from the Army to study DNA precursor synthesis in mitochondria was renewed, and he is a collaborator on a new grant, very likely to be funded by the NIH, for similar studies (so much for a relaxing retirement). Ken van Holde and I will team-teach a new graduate level course on Biology at the Single-Molecule Level this Winter (this time for real). **Bob Becker** suffered a brief case of vasovagal disorder, but has appeared to have fully recovered (much to the chagrin of the smokers in Oregon). **George and Margot Pearson** are now fully enjoying their retirement, spending time visiting with their grandchildren. Although **Wil Gamble** moved out of his laboratory this summer, he continues to come into the Department every day to impart his wisdom and wit. We had the opportunity to catch-up with many of the emeritus faculty at the memorial service for MacD. **Henry** and **Jamie Schaup** enjoy splitting their time between the Oregon coast, Eagle Crest in central Oregon and sailing. **Derek** and **Elizabeth Baisted** golf in many beautiful courses around the world (time shares), including Australia and their native U.K. **Don Reed** keeps on working hard (its difficult to break old habits), participating in site visits, reviewing papers and grants, and writing reviews and papers in his own areas of interest. **Dave Loomis**, unfortunately, remains in poor health, with loving care from Jane. Our thoughts and our hearts go out to both Dave and Jane.

Recognition of Current Undergraduate and Graduate Class

Anahita Fallahi (senior) and **Taralyn Tan** (junior) both received Barry M. Goldwater Scholarships (Eddie O'Donnell, BS 2006, was also a Goldwater Scholar this year). **Edmond O'Donnell** (BS, 2006) also received the first Writing Intensive Course Award in Biochemistry & Biophysics. **Heather Bolstad** (BS, 2006) was a runner-up for the MacArthur Award. **Daniel Bai** (junior), **Drew Calhoun** (senior), **Gina Capri** (senior), **Elizabeth Cobarrubias** (sophomore), **Andrew Kiemnec** (senior), **Katherine Lebold** (sophomore), **Gautam Mankany** (senior) all received Ray & Fran Cripps Memorial Scholarships. **Drew Calhoun**, **Elizabeth Cobarrubias**, and **Andrew Kiemnec** also received Andy Aitkenhead Memorial Scholarships, while **Drew Calhoun** drew the hat-trick by also receiving the Mary Hutchins Hohner Scholarship.

Jessica Page (senior) received the Donald MacDonald Award in Biochemistry & Biophysics. **Brianna Gilmour** (sophomore) and **Valerie Harnish** (sophomore) received Excellence in Science Scholarships from the College of Science, while **Henry McNett** (junior) received a scholarship from the Pre-Health Sciences Fund. **Jeremy Gregory** (BS, 2005) received the Alumni Physician Scholarship in Medicine, while **Jennifer Atkin** (BS, 2005) and **Brett Palama** (BS, 2005) received Ralph H. Bosworth scholarships for medical school.

Undergraduate and Graduate Class of 2006

Congratulations to all of the students who earned their Biochemistry and Biophysics degrees this year. Two students earned the degree of Ph.D. in Biochemistry and Biophysics: **Ganapathy Sarma** (Ph.D. Karplus) is a postdoc with Susan Taylor at the University of California, San Diego and **Rongkun Shen** (Ph.D. Mathews) is a postdoc with Todd Mockler in the Department of Botany and Plant Pathology at OSU. In addition, two students completed their MS degrees in Biochemistry & Biophysics: **Stephen Full** (BS 2003, MS) with Jeff Greenwood and **Sesha Duvvuri** (MS) with Balz Frei.

Bachelor's of Science degrees were conferred to 16 undergraduates this June, and included **Valerie Black** (engaged to Eddie O'Donnell), **Heather Bolstad** (Ph.D. program at the University of California at Davis), **Lindsey Crawford, Aron Geelon** (Dental School), **Crystal Hammer** (completing her degree in the International Program, spent time in Honduras, and is currently working with Eilsar Barbar), **Kinsley Hubel, Crystal Ives** (finished her Honors degree by writing a play about Russian science in the 1940's, and is currently living in Russia for six months and applying for medical schools), **Dan Koch** (Ph.D. Program in the Environmental & Molecular Toxicology Program at OSU), **Katy (Marvel) Lauderdale** (recently married, and applying to pharmacy schools), **Nancy Lee** (working at the University of Texas Southwestern), **Katie Maxey** (working at CH2M Hill), **Luis Monson** (medical student at Johns Hopkins University), **Eddie O'Donnell** (engaged to Valerie Black, and currently working in the Environmental & Molecular Toxicology Program at OSU before starting medical school), **Angie Pagano, John Stenberg** (working in Corvallis and interviewing for medical schools), .

Alumni News

Dan Albershardt (BS, 2005) is a first year medical student at Dartmouth College, but tells me that he remains keenly interested in research. **Amy Dinh** (BS, 2005) and **Tony Tong** (BS, 2005) are both currently in the Pharmacy Program at OSU. **Laura Miller** (BS,) is in dentistry school at Pacific University. **Nima Motamedi** (BS, 2005) is planning to start medical school. **David Stanley** (BS, 2005) is in the Ph.D. Program at the University of California, San Francisco. **Christine (Nyguyen) Vo** (BS Biology, 2000) and her husband Tony announced the arrival of their daughter Tiffany. **Vivian (Madison) Zumstein** (BS, 1980) is currently a recruiting advisor for the Office of Naval Intelligence. **Derek Youngblood** (BS, 2005) is currently working at AVI Biopharma and plans to start dental school this year. **Ben Youngblood** (BS, 2001), Derek's brother, is completing his Ph.D. in the Department of Chemistry & Biochemistry at the University of California at Santa Barbara.

Beth Basham (Ph.D., Ho, 1998) is head of "the world's second smallest informatics group" at SP Biopharma (formerly DNAX). **Mark Bernard** (Ph.D. Mathews, 1999) assumed a new position as Principal Research Scientist for Bayer Health Care in Berkeley, CA. Mark is working toward improvements in Factor VII, used in treating hemophilia. **Brandt Eichman** (Ph.D., Ho, 2000) continues to establish himself as an Assistant Professor at Vanderbilt—he recently received a grant from the American Cancer Society to study mechanisms of DNA repair. **Tom Ellen** (Ph.D., van Holde, 2003) is working with Max Costa at the New York University School of Medicine. We were saddened to hear that **Jens Hauge** (Ph.D., Cheldelin, 1954) passed away after a long career as a Biochemistry Professor at the Royal Veterinary School in Oslo, Norway. **Jiuping Ji** (Ph.D. Genetics, Mathews, 1990) assumed a new position as Director of the National Clinical Target Validation Laboratory, National Cancer Institute, in

Bethesda, MD. **Janet M. Leeds** (Ph.D., Mathews, 1986) is currently Director of Pre-Clinical Development at MRSSI/CHDI, inc in Los Angeles, CA. **Blaine Mooers** (Ph.D., Ho, 1997) accepted an offer to join the faculty as an Assistant Professor in Biochemistry and Molecular Biology at the University of Oklahoma Health Sciences Center. **Nancy Ray** (Ph.D. Mathews, 1992) is Assistant Research Scientist at the University of Iowa College of Medicine in Iowa City, where she is working on aspects of lipid metabolism in lung disease. It has been a productive year for Nancy, because she recently gave birth to twins, a boy and a girl. **Christian UngermaNN** (M.S. Mathews, 1993) recently moved to the University of Osnabrück, Germany, where he assumed the position of Professor of Biochemistry. Christian was required to get a new license plate for his car, with the first two letters being OS, designating the state. As a loyal OSU alumnus his car now sports the license OSU 1993. **Jeffrey Vargason** (Ph.D., Ho, 2002) returned to Oregon, after a successful postdoctoral stint at the NIEHS, to start his academic career as an Assistant Professor at George Fox University. **Patrick Varga-Weisz** (Ph.D., Barnes, 1992) tells us that he is now in Cambridge (the real one in the UK), and was pleased to see that we had hired a 'new' chromatin person to the faculty (**Michael Freitag**). **Xiaolin Zhang** (Ph.D. Genetics, Mathews, 1995) is heading a large new research unit being developed by AstraZeneca in Shanghai, China. **Zhizhuang Joe Zhao** (Ph.D., Anderson, 1990) has advanced to the position of the Alfred M. Shideler Professor of Pathology and Director of Pathology at the University of Oklahoma Health Sciences Center.

Jeff Watson (Postdoc, Ho) is currently an Assistant Professor of Chemistry at Gonzaga University. **Enoch** and **Jeanne Small** (former Research Assistant Professors) have moved to Shoreline, WA, Enoch still commuting occasionally to Spokane because his business (Quantum Northwest, Inc.) is still located there. Jeanne has taken a position as Program Director in the Science and Technology Center in the Department of Chemistry at the University of Washington.

Development Efforts in the Department of Biochemistry and Biophysics

The MacDonald Scholarship Fund received many generous gifts this year, helping to support undergraduate education in Biochemistry & Biophysics, in loving memory of MacD. We are working with Oregon State University in its first Capital Campaign, with the specific goals of trying to raise funds to endow a named Professorship, Graduate Fellowships, and Undergraduate Scholarships in this Department. Finally, I would like to extend a special "Thank-you" once again to all those who have contributed so generously to the Department this year. Your gifts help to support, among many things, the undergraduate BB Club, graduate student recruitment, and the department seminar series.

In closing, on behalf of the faculty, staff and students in the Department, I would like to extend to you and yours a wonderful Holiday Season, and best wishes for the New Year. As always, our doors are open to welcome your visit, and our ears attentive to news of your well being, wherever you may reside.

Yours warmly,

P. Shing Ho

P.S., As always, I would like to thank Chris Mathews, Robert Becker, Kevin Ahern, and Barbara Hanson for their help in assembling information and providing editorial help with the writing of this letter.