Welcome from the Chair

I cannot believe that this is my fifth year serving as Chair of the Department of Biochemistry & Molecular Biology at CSU. To repeat the old cliché, “time flies when you’re having fun”, and fun it has been, thanks to the great students, staff, and faculty in this Department.

Despite the poor economic environment locally and nationally, the Department, the College of Natural Sciences, and University continue to advance its missions to educate the next generation of students and to generate new knowledge through scholarly research. These are the two most important investments for this nation to make in helping move its economy forward and to insure its future in an ever evolving world economy. We have broadened the base of the department’s budget to be less susceptible to down turns in state funding to the University. Some of the bright spots include an incredible 49% growth in external funding for the research in the department, thanks to the efforts of all members of the faculty, young and not so young. We have also started to offer an on-line course in General Biochemistry, which allows the Department to extend its educational mission to all corners of Colorado, the nation, and overseas.

As with many programs across campus, the Department has seen an upsurge in new undergraduate majors this year; however, the 17% increase in BMB majors has outstripped the growth in the College and the University. To accommodate the advising challenges for this expanding cohort of students, we have established three new areas of concentration: Biochemistry; Health and Medical Sciences; and Pre-Pharmacy, thanks to the work of Laurie Stargell (Associate Chair of Undergraduate Studies) and Aaron Sholders (Key Advisor).

The College celebrated the opening of the new Behavioral Sciences Building, which primarily houses the Department of Psychology. BMB’s part was to help design a 3-D classroom, which we use to teach concepts of molecular structure in Physical Biochemistry (the course that replaced the former Physical Chemistry for Biological Science requirement for the major).

New for this year’s newsletter is the Faculty Profiles section, where we provide some interesting details about individual members of the faculty.
Faculty News

Members of the BMB faculty in the past year have been highly productive in research, instruction and advising. It is always satisfying to see their accomplishments and efforts recognized.

James Bamburg: Dr. Bamburg was invited to Australia for keynote talks at symposia on neurodegenerative diseases in Sydney and Brisbane. He received funding from the CHDI Foundation to study cofilin-actin rods in Huntington disease.

Chaoping Chen: Dr. Chen was promoted to Associate Professor with tenure.

Robert Cohen: Dr. Cohen received a new grant from the NIH to study the linkage specific recognition of polyubiquitinated proteins.

Norm Curthoys: Dr Curthoys initiated collaborations with two biotech companies that are interested in developing glutaminase inhibitors as effective cancer chemotherapeutic agents.

Jennifer (Jake) DeLuca: Dr. DeLuca was named a Monfort Professor, the distinction given to faculty members considered to be “rising stars” at CSU (we would say that she already is a star).

Santiago Di Pietro: Dr. Di Pietro published a unique video “paper” with his lab through the Journal of Visualized Experiments. He also received two new major grants from the NSF and NIH to support his research on mechanisms of cellular endocytosis.

Jeff Hansen: Dr. Hansen has initiated an exciting new collaboration with a group in Japan that uses rapid atomic force microscopy to study time-resolved events in molecular assembly of chromatin complexes.

P. Shing Ho: Dr. Ho is a member of the work group charged by the International Union of Pure and Applied Chemistry to write a definition for “Halogen bonds”. He was also a co-recipient of the Preston Davis Award for Innovation in Teaching at CSU.

Paul Laybourn: We welcomed Dr. Laybourn back to his full time appointment in the Department after a stint as the Interim Associate Dean of Undergraduate Studies in the College. Paul also continues to serve as the Director of the Cellular and Molecular Biology Graduate Program as well as the NSF-funded Research Experience for Undergraduates program.

Karolin Luger: Dr. Luger was renewed as a Howard Hughes Medical Institute Investigator, a distinction that she will hold for another five years. She was also appointed to the Research Council of the National Institute of General Medicine at the NIH, which helps to direct and define the direction of biomedical research at the national level.

Jennifer Nyborg: Dr. Nyborg’s group published an important paper in 2010 in the Proceedings of the National Academy of Sciences, which showed that acetylation of a specific amino acid in histones accounts for the loss of nucleosomes and subsequent activation of a gene.

Marv Paule: Dr. Paule has completed his transition to full retirement. To celebrate, he will be presenting a set of informal talks leading to a “Final Seminar” that trace the historical development of modern molecular biology through the past five decades (see Faculty Profiles for more on Marv’s career).

Olve Peersen: Dr. Peersen’s group published an interesting paper in the Proceedings of the National Academy of Sciences, which described at the atomic level many of the key steps in the replication of the RNA genome found in viruses such as polio virus. He was a co-recipient of CSU’s Preston Davis Award for Innovation in Teaching, to recognize his contribution to the establishment of the 3-D classroom in the new Behavioral Sciences Building.

Eric Ross: Dr. Ross was also promoted this year to Associate Professor with tenure. He received a grant from the NSF in 2010 to study the mechanisms of prion-related diseases.

Aaron Sholders: Congratulations to Dr. Sholders, who received the Excellence in Undergraduate Teaching Award for the College of Natural Sciences.

Laurie Stargell: Dr. Stargell was named one of two Professor Laureates in the College of Natural Sciences, recognizing her as a model for all faculty in the College. Her service as the Associate Chair of Undergraduate Studies in the Department has resulted in a number of significant changes to the BMB curriculum, including the establishment of areas of concentration to help student advising.

Tingting Yao: Dr. Yao received one of two Webb-Waring Biomedical Research Awards by the Boettcher Foundation given to faculty at CSU. She is a coauthor of a paper in Science, along with Robert Cohen and Cynthia Wolberger at the Johns Hopkins University.

Emeritus Faculty

Anthony Tu: Dr. Tu has submitted a very interesting article on the fate of the Aum Shinrikyo terrorists convicted for the sarin attack in the Tokyo, Japan subways in 1995.

Robert Woody: Dr. Woody is hosting Christoph Bannwarth, an M.S. student from RWTH Aachen, Germany. Christoph’s thesis will include his work at CSU on protein structure.
Faculty Profiles: Faculty in Transition (Profs. Paule & Bamburg)

This year, we highlight the accomplishments of members of the faculty in transition prior to retirement.

Professor Marvin R. Paule (Ph.D.)

Professor Marvin R. Paule (Ph.D.) received a BS in Chemistry, with honors, in 1966 from California State University in Los Angeles. He completed his PhD in 1970 at UC Davis in Biochemistry with Dr. J. Priess, and continued on with postdoctoral work with Dr. W. J. Rutter at UC San Francisco, where several eukaryotic RNA polymerases were discovered. Dr. Paule started as an Assistant Professor of Biochemistry at CSU in 1972, where his research has defined much of what we know about the mechanism of ribosomal RNA (rRNA) precursor transcription. They were the first to show that rRNA transcription is species-specific, is regulated by modification of RNA polymerase I, and that eukaryotic RNA polymerases are recruited to promoters by protein-protein interactions, not sequence-specific DNA binding.

He has held a number of appointments to help promote science policy at the national and international level, including being a Senior International Fellow of the Fogerty Center at the NIH (to work with Dr. Chambon in Strasbourg, France), as an American Cancer Society Scholar (to work with Dr. Sentenac in Gif-sur-Yvette, also in France), and most recently as a Jefferson Fellow at the US State Department.

At CSU, he had served as the Assistant Chair and Chair of the Department, and received the CSU Alumni Association Best Teacher Award as well as the Oliver Pennock Distinguished Service Award. You may remember him from the courses that range from Freshman Seminar to Introductory Genetics, to undergraduate and graduate level Molecular Genetics.

Dr. Paule goes on full retirement at the end of Spring, 2012. Happy travels to you and Linda.

Professor James Bamburg (Ph.D.)

Professor James Bamburg (Ph.D.) received his BS in Chemistry in 1965 from the University of Illinois in Urbana and his PhD in Biochemistry from the University of Wisconsin in Madison in 1969. He was a Project Associate with Dr. H. J. Sallach at Wisconsin and a Postdoctoral Fellow with Dr. E. M. Shooter at Stanford Medical School before accepting his position as an Assistant Professor of Biochemistry at CSU in 1971.

Dr. Bamburg's laboratory studies the cytoskeletal dynamics of actin filaments (F-actin) in eukaryotic cells. Most recently, the work has become particularly relevant in our understanding of the molecular mechanisms associated with a number of neurodegenerative diseases, including Alzheimer’s and Huntington’s disease, and could help to establish treatments for such debilitating diseases. In 2006, he received the inaugural Scholarship Impact Award, recognizing a member of the CSU faculty whose research has had a major impact at the national and international level. He has held Fellowships from the Guggenheim Foundation and Fogarty Center to pursue his research in England and Australia.

Dr. Bamburg had served as Interim Chair in the Department twice and twice received the Oliver Pennock Award for Service to CSU. He has also been recognized for his mentoring through the Cermak Award. Although he is on transition, he remains fully active in research, teaching, and service. He is planning to fully retire in 2013, but we are not sure he knows the definition of “retire”.
Graduating Seniors: The Department conferred Bachelors of Science degrees in Biochemistry and Molecular Biology to 27 students in 2011. Spring 2011 degree recipients were Charles Anderso n, Matthew De Miranda, Peter Frost, Alicia Guardado, Christopher Haberkorn (magna cum laude), Jeffrey Henton, Imane Oubou, Jennifer Ross, Tyler Santomaso, Alexander Verma, Morgen Weatherly.

Summer 2011 degree recipients: Bradley Jones, Natalie Lesko, Andrea Stevens.

Fall 2011 degree recipients: Brooke Bell (cum laude), Katy Benson (magna cum laude), Alena Campbell, Laura Carson, Colin Cowdrey, Kari Ecklund, Christopher English, Jaycee Gaspar, Jeffrey Gumina, Patrick Kervin, Maxwell Peters,Brittany Rummel, Chelsea Sax.

Congratulations to the newest class of BMB alumni.

BMB Majors: The department now has 163 undergraduate majors. Some of our majors that received special recognition this year include:

Professor Parviz Azari Fellowship: This fellowship was established by Dr. Dean and Mrs. Ping-Ping Tsao in honor of Dr. Azari to enhance student research opportunities in biochemistry and molecular biology research labs. This year’s recipient is Benjamin Schmitt.

David Fahrney Scholarship: This scholarship was established by Dr. Fahrney to recognize outstanding juniors or seniors who have excelled in higher level biochemistry classes. This year’s recipients are She Hang Chen and Ryan Vonfelt.

Frank X. Gassner Award: This is the oldest award given by the department. It was established to recognize an undergraduate student who excels in research in biochemistry and molecular biology. This year’s recipients were Ryan Henderson and Benjamin Schmitt.

Alok Mehta 9-11 Scholarship: This was created by Dr. Gopal and Mrs. Sneh Mehta in honor of the victims of the 9-11-2001 terrorist attacks on the World Trade Center. Their son, Alok, was working in the First Tower at the World Trade Center and has been missing since that date. This scholarship is especially for undergraduate students in biochemistry and molecular biology. This year’s recipient is Alaine Ziegler.

Charlotte and Gordon Myers Memorial Scholarship: This scholarship is made available to biochemistry students through a generous donation by the estate of Charlotte & Gordon Myers. This year’s recipients are Carl Dernell, Molly Plehaty and Erin Renfrew.

Biochemistry Undergraduate Research Fellowship: This fund provides financial assistance to students in the Biochemistry major dedicated to pursuing research. Joshua Fainsod was this year’s recipient.

Natural Sciences Undergraduate Scholarship: These scholarship gifts provide financial assistance and opportunity for committed and talented students to attend Colorado State University. This year’s Biochemistry recipients were Michelle Kamandy, Ashanti Robinson and A. Kumar Verma.

Colorado State University Research Symposium: The following students received recognition for their poster presentations: Jennifer Ross (Dr. Randall Basaraba, MIP) received College Honors.

Outstanding Biochemistry Senior: Katy Benson was recognized with this honor this year.


The Spring 2011 BMB Graduating Class at the Annual Spring CNS Graduation Ceremony. Congratulations!
Graduate Students

Ph.D. Program: The BMB faculty is currently training 36 graduate students in the BMB Ph.D. program and 4 students in the Cellular & Molecular Biology Program headed by Dr. Paul Laybourn. Among the current students who deserve recognition are:

Gina Caldas & Ada Ndoja: Gina & Ada received the Mauricio X. Zuber Award for most outstanding first or second year graduate students.

Megan Carter: Megan received the Preecha Kownin Memorial Award which honors exceptional senior BMB graduate students.

Daniel Feliciano: Daniel received the P. Azari Graduate Fellowship for excellence in research.

Jarred Bultema, Geoff Guimaraes, Lakshmi Gummadi, Ada Ndoja, Lynsie Sundin & Ling Zhang: Geoff & Lynsie received Highest Honors and Jarred, Lakshmi, Ada & Ling received High Honors in the BMB/CMB/MCIN Graduate Student Poster Competition. Honorable Mentions were: Gina Caldas, Nicholas Clark, Courtney Springer & Matthew Kortus.

Recent Ph.D. Graduates: In 2011, the BMB faculty graduated 5 Ph.D.s. They are:

Sarah Hobdey: Sarah completed her degree with Dr. Peersen in Spring 2011. Her thesis was on “RNA Replication by Poliovirus RNA-Dependent RNA Polymerase: Effects of Residue 5 on Elongation Complex Stability and Processivity”. She is currently working at the National Renewable Energy Lab in Golden CO.

Geoff Guimaraes: Geoff completed his degree with Dr. DeLuca in Fall 2011 with a thesis on “Mediation of Kinetochore-Microtubule Interactions through the Ndc80 Complex Component Hec1.” He’s now working with Zeiss Instruments.

Kristopher Hite: Kris completed his degree with Dr. Hansen in Summer 2011 with a thesis on “Exploring Induced Secondary Structure and Unmethylated DNA Binding Domains of Methyl CPG Binding Protein 2 (MECP2).” He has moved to Jacksonville, Oregon and is seeking a teaching position there.

Troy Sorensen: Troy completed his degree with Dr. Hansen in Fall 2011 with a thesis on “Nucleosomal Array Condensation: New Insights Into An Old “Tail””. He is currently working as an inspector for the Potato Certification Assn. of Nebraska.

Scott Walmsley: Scott completed his PhD in the Cell and Molecular Biology Program with Dr. Curthoys in Spring 2011, and is now a Postdoc at University of Michigan.

Recent M.S. Graduates: In 2011, the BMB faculty graduated 11 M.S. degree students. Among them are:

Adam Almeida: Adam completed his BS/MS degree with Dr. Stargell in Spring 2011 with a thesis on “Spn1, a highly conserved and essential node of RNA Polymerase II dependent functions”. He is currently a PRA at Anschutz Medical Campus, Denver CO.

Kristi Barker: Kristi completed her degree with Dr. Stargell in Spring 2011 with a thesis on “In Vivo Regulation of Chromatin Dynamics By Saccharomyces cerevisiae Histone Chaperone Nap1”. She is currently working at Arizona State University Biodesign Institute in Tempe AZ.

Carolyn Burek: Carolyn completed her degree with Dr. Di Pietro in Fall 2011.

Shuang Hu: Shuang completed his degree in Fall 2011 and is currently pursuing a PhD in the Cell & Molecular Biology program at CSU.

Grace Kan: Grace completed her degree in Fall 2011.

Michael Kramer: Michael completed his BS/MS degree in Spring 2011 with Dr. Luger. His thesis was on “Poly(ADP-Ribose) Polymerase 1 (PARP1) and its DNA-Binding Characteristics”.

Erik Hartwick: Erik completed his BS/MS degree with Dr. Curthoys in Summer 2011. He plans to pursue a PhD at University of Colorado, Denver next fall.

Matthew Kortus: Matt completed his BS/MS degree with Dr. Peersen in Summer 2011 with a thesis on “Role of Basic and Hydrophobic Residues in the Poliovirus Polymerase Elongation Complex and the Structure of a Coxsackievirus Polymerase Elongation Complex”. He is now enrolled in a PhD program at University of Michigan.

Srivatsan Parthasarathy: Srivatsan completed his degree in Fall 2011.

Brittany Rummel: Brittany completed her degree in Fall 2011 with Dr. Ho. Her thesis was on “Solving the Crystallographic Structure of the Cl2J Construct and Occupancy Titration Trials to Quantitatively Approximate Isomer Ratio”.

Milena Veselinovic: Milena completed her degree in 2011 and is currently pursuing a PhD in the Cell & Molecular Biology program at CSU.
Staff & Postdoc News

BMB continues to very well served by and highly dependent on its office staff. We greatly appreciate Neda Amidon, Yvonne Bridgeman, Justine Barela, and Nancy Reeves for their work in keeping the Department, and the Graduate and Undergraduate Programs running. Some specific news includes: Yvonne Bridgeman celebrated 10 years of service with CSU in April 2011. We welcome Neda Amidon as the new Graduate Program Assistant in the Department. She replaced Sharon Gale, who took a position in the Department of Geosciences. Marti Stokes retired this year from her position as the Undergraduate Program Assistant. Information technology in the Department is now supported by the CNS South IT group, which is staffed by Ross Madden and Caty Critz.

We are also fortunate to have a very talented group of staff and postdocs that keep the research enterprise running smoothly by maintaining instrumentation and training students, among other things.

Brian Geiss: Dr. Geiss (Research Scientist II) was appointed an Assistant Professor in MIPS.

O’Neil Wiggan: Dr. Wiggan was received a Mentored Research Development (K01) grant from the NIH to study the role of cofilin and wnt signaling in neural crest development.

Duane Winkler: Received a fellowship for his research in the Luger lab from the National Institute of General Medical Sciences at NIH.

Alumni News

Dr. Julian Spallholz, MS 1968 and postdoc w/Dr. John Martin 1971-74 (Professor in the Department of Food and Nutrition at Texas Tech University) has recently seen his research on selenium anti-bacterial coatings commercialized and approved for dental appliances in 2009 and dental sealants in February of 2010. In March, received Texas Tech University’s 2010 Barnie E. Rushing Distinguished Research Award. As he states: “My CSU education and selenium have taken me to many parts of the world I would not have otherwise seen. I go to Japan next month for the 9th International Selenium in Biology and Medicine Symposium that Dr. Martin helped to reestablish at Texas Tech in 1980. I attribute much of my very good fortune and my present job of 31 years to Dr. John Martin. Dr. Martin, Ms. Addie Kano, Paul Azari and other members of the CSU faculty at the time helped mold my future and my present endeavors. My undergraduate education at CSU was retrospectively superb and I appreciate very much now NOT having been accepted to the Veterinary program which attracted me to CSU from New York in 1963.”

Lubna Tahtamouni (Ph.D. 2005), currently an Associate Professor and Chair of the Department of Biochemistry and Biotechnology, Hashemite University, Zarqa, Jordan received the Young Women Scientists Award from the Organization for Women in Science for the Developing World (OWSD).

Jonna L. Gentry, BS 1996, Physical Sciences, Minor Biochemistry (9th Grade Earth Science Teacher at Green Mountain High School, Lakewood, CO) was named 2012 Earth Science Teacher of the Year by the American Association of Petroleum Geologists. She was nominated for this award by the Rocky Mountain Association of Geologists. In addition to teaching both the regular and honors earth science courses, Ms Gentry teaches a section in “Beginning Robotics”, and volunteers on the Board of Directors for the Friends of Dinosaur Ridge in Morrison, CO.

If you have news to include in the next newsletter, please feel free to send them to us by e-mail or snail-mail. We have set up the following e-mail address for alumni to contact us: bmbalumni@colostate.edu

Development News

Thanks to the generous gifts from the friends and alumni of BMB, the funds available to the Department have been growing, even at a time when other endowments are shrinking. These funds have allowed us to support students, bring world-class scientists to campus, and recruit a new member to the faculty.

Robert W. and A-Young M. Woody Lectureship in Biochemistry and Molecular Biology: The first lecture in this series was given by Carlos Bustamante, Professor at the University of California at Berkeley. Dr. Bustamante presented a brilliant talk about the exciting work from his laboratory, studying, for example, how single molecules of nucleic acids are pushed into and out of viral particles by molecular machines.
What’s Happening on the CSU Campus

The College of Natural Sciences celebrated the opening of the new Behavioral Sciences Building, which features several well-equipped classrooms/lecture rooms, modern laboratories, and a very nice coffee shop.

Joe Blake has announced his retirement as the Chancellor of the CSU system. In his speech at the Winter Graduation Ceremony for the College of Natural Sciences, it is clear that he will continue to work to build CSU’s reputation in research and instruction.

Some of the positive things that continue to happen at CSU include the volleyball team winning the MWC title and advancing to the NCAA tournament. There has been much excitement (and some controversy) over the hiring of the new Director of Athletics (Jack Graham) and the recent proposal to build a new football stadium on the main campus. The recruitment of Jim McElwain (the former offensive coordinator responsible for the impressive BCS win by the University of Alabama) as the new Head Coach is greatly anticipated to push the CSU football program forward.

Perhaps a bigger move is the consolidation of the Mountain West with Conference USA to build essentially a stronger athletic conference that spreads from the East Coast to Hawaii (giving us a good “reason” to travel to the Aloha State during those cold November weekends). Go Rams!

The new Behavioral Sciences Building on campus houses the Department of Psychology and the Department of Human Development and Family Studies.