



OKLAHOMA STATE UNIVERSITY

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BIOCHEMISTRY AND MOLECULAR BIOLOGY

A Message from the Department Head



Welcome to the first issue of the annual Department of Biochemistry and Molecular Biology newsletter that we've published since 2001. We'd like to take this opportunity to update our alumni and friends on the wide variety of activities that involved our faculty, staff, and students in the past year. We are proud to share with you the many accomplishments and honors that have been bestowed. Transitions are the hallmark of our academic endeavors. We will introduce you to our newest faculty members, but are also saddened by the passing of emeritus faculty who gave so much to the Department. Our undergraduate program now has ~280 majors in the Biochemistry/Molecular Biology and Pre-professional programs that span two colleges. Fifty-one undergraduate majors completed their studies

this year and will now move on to jobs or to graduate and professional schools. This is the largest graduating class in the Department's history! Our graduate program continues to grow and thrive as the students complete their advanced degrees. The Biochemistry and Molecular Biology Graduate Student Association highlighted the year with the 4th annual *Graduate Research in the Biological Sciences Symposium* that was held at the Noble Research Center. Our faculty members continue their excellent work in both teaching and research. In this issue, we are pleased to highlight the OSU Eminent Faculty Award received by Dr. Chang-An Yu and the Outstanding Advisor Award received by Dr. Patricia Ayoubi. Lastly, we hope to hear about your accomplishments as part of our alumni family.

Dr. Chang-An Yu receives the Eminent Faculty Award

Dr. Chang-An Yu, Regents Professor of Biochemistry and Molecular Biology, received the Eminent Faculty Award at the 2007 Fall Convention. Dr. Yu is highly regarded internationally as one of the top researchers working in the area of biological energy transduction. He received his Ph.D at the University of Illinois and joined the Oklahoma State faculty in 1981, where he currently serves as Regents and Sarkeys Distinguished Professor of Biochemistry. He is well respected among his colleagues and has the admiration of his students. The previous department head, Dr. Earl Mitchell, stated, "I have known Dr. Chang-An Yu as a superb scientist and as outstanding researcher and thinker." Dr. Yu has published over 180 articles in prestigious scholarly journals and has written 24 book chapters. Dr. Yu's focus at the university is research, but he also finds time to teach the graduate course, Biomembranes and Bioenergetics. His wife, Linda Yu, is also a professor at Oklahoma State University.



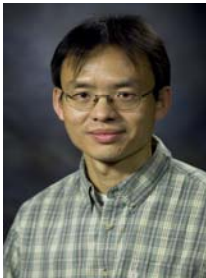
The Eminent Faculty Awards stands to recognize the highest level of scholarly achievement at the University. The Award is sponsored by the late alumni Willard Sparks along with Ann and Jim Vining.

Say Hello to the New Faculty



Dr. Ben Sandler

Ben Sandler is an assistant professor of Biochemistry here at Oklahoma State University. Before arriving in Stillwater in 2007, Sandler taught at the University of San Francisco. He obtained his BSc. in chemistry from Brown University and received his Ph.D. in Chemistry and Chemical Biology from Cornell. He is also working on establishing new courses in genomics. His current research and scholarly activities include assembling a master list of small scale funding sources to support undergraduate research; also developing a new methodology for teaching the mathematical aspects of scientific subjects.



Dr. Junpeng Deng

Late In 2006 Dr. Junpeng Deng joined the Biochemistry and Molecular Biology Department. Dr. Deng is a graduate of The University of Science & Technology of China where he got his B.S. in Biochemistry and Biophysics. He then went on and got his M.S in Biophysics at the Chinese Academy of Sciences. He received his Ph.D in Biophysics from the Ohio State University. His research interests include the structure function of: 1) essential proteins in mammalian apoptosis and aging; 2) Parkinson's disease related leucine rich repeat kinase 2; 3) host range proteins in poxyvirus; and 4) IL-18 signaling.



Dr. Ramanjulu Sunkar

Dr. Ramanjulu Sunkar came to Oklahoma State in 2006. He received his Ph.D in Botany from Sri Krishnadevaraya University in Anantapwe, India in 1996. His research interest are; identification and functional analyses of micro RNAS in plants; and improving plant abiotic stress tolerance.

The BMBGSA

The BMBGSA, Biochemistry and Molecular Biology Graduate Student Association, provides a clear structure by which graduate students are able to voice their concerns and opinions to the department head. One of their major roles is to coordinate a graduate research symposium which in the past five years has included 5 professors as keynote speakers. As the symposium grows it continues to receive more funding and support. Since 2004 it has awarded over \$14,000 to graduate students enrolled in several colleges. The BMBGSA actively participates in the OSU Graduate and Professional Student Government Association (GPSGA) to enhance the graduate students academic and student life. This organization is instrumental in contributing to the departmental strategic planning and student/faculty recruitment process.



Dr. Earl Mitchell Retires after 40 Years.



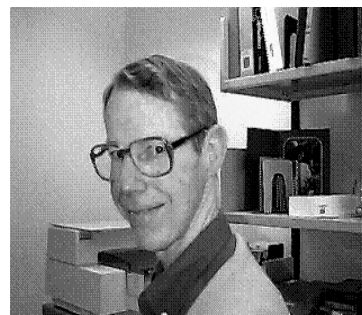
Dr. Earl Mitchell was a Professor in the Biochemistry and Molecular Biology Department for 40 years until his recent retirement in 2007. When Dr. Mitchell came to Oklahoma State University in 1967, he joined Dr. George Waller's research team. Out of this research came a 1969 cover story in Science Magazine about feline metabolism. During his tenure at Oklahoma State University, Dr. Mitchell served on many boards and chaired several committees. Since it was established in 1994, Dr. Mitchell served as the Oklahoma Director for the Louis Stokes Alliance for Minority Participation. He also served as Chair of the College of Arts and Sciences Black Studies Committee, Assistant Dean of the Graduate College from 1978-1982, Chair of the Oklahoma Advisory Committee to the U.S. Commission on Civil Rights, The Board of Trustees of the Oklahoma

School of Science and Mathematics, and was the Project Director of the OSU Talent Search Program that began in 2002. Dr. Mitchell served as Interim Head for the Department from 2004-2007.

In 2005, Dr. Mitchell was inducted into the Higher Education Hall of Fame, which was a prestigious honor for Oklahoma State University's first African American tenured Professor.

In Memoriam

Dr. Olin Spivey will be forever remembered as a beloved husband, father, and educator. Dr. Spivey was born in Gainesville, Florida in 1931. He graduated from The University of Kentucky Phi Beta Kappa with a degree in Chemistry. He then received his Ph.D. degree in Biological Chemistry at Harvard University in 1963. Dr. Spivey came to OSU in 1967 and by 1975, Dr. Spivey had become a full Professor of Biochemistry. During the 30 years at Oklahoma State University, Dr. Spivey made many contributions to the field of science. His research on physical properties of proteins and other macromolecules was nationally supported, while also being recognized for numerous journal publications. He was a mentor to many students coming through the graduate program in the Biochemistry Department and was dedicated to helping his students succeed.



In 1999, Dr. Spivey became a Professor Emeritus of Biochemistry and stayed active in the Department of Biochemistry and Molecular Biology until 2006. Dr. Spivey passed away on December 5th, 2007.



Dr. George Van Odell was a Professor Emeritus of Biochemistry at Oklahoma State University. He earned his undergraduate degree at Oklahoma A&M, which is currently OSU and he obtained his Ph.D. from Texas A&M University. When he first began teaching at the university in 1966 he taught beginning biochemistry for first year veterinary medicine students. He then went on to Organic Chemistry which was his specialty until his retirement in 1994.

Internationally, he was known for his research in spider and snake venom. He mentored 9 Ph.D and 15 M.S. students. When he retired from OSU he continued his research on venoms at The University of Mexico in Cuernavaca. On November 18, 2006 Dr. Odell passed away in Cuernavaca, Mexico.

Undergraduate Scholarships and Awards:

The following Awards and Scholarships were given to Biochemistry and Molecular Biology Undergraduate students :

- Phillip Friesen received the OSU Senior of Significance Award.
- Joshua M. Ward was awarded an Arts and Science Top 10 Senior Award, which is one of the most prestigious honors in the College of Arts and Sciences.
- Ilya Sluch was chosen for the Goldwater Scholarship, which is awarded each year to a student who has at least a 3.7 GPA and shows strong evidence of research potential in a designated area.
- Christopher Sartin was recognized as an Outstanding Senior in Biochemistry for his achievements in the study of Liberal Arts.
- The Paul F. Kruse Award was given to Amanda Miles by the Department of Biochemistry and Molecular Biology.
- Philip A. Friesen and Kristin R. Carrick both received the V.G. Heller Award, which is awarded to an outstanding junior or senior majoring in Biochemistry and Molecular Biology
- The following students received the James E. Webster Award: Chelsea L. Aldridge, Zachary K. Clary, David W. Bailey, Lindsay C. Clingenpeel, Ashley E. Berry , Ilya M. Sluch, Melissa N. Boothe
- In the College of Arts and Sciences the Fourjay Foundation chose Ilya M. Sluch to be the recipient of their scholarship, which is given for a full time student who demonstrated career potential.
- The Rebecca Going Scholarship was awarded to Zachary J. Hager. This scholarship is awarded each year to an outstanding junior or senior premedical student.
- The following Biochemistry and Molecular Biology majors were recipients of the Wentz scholarship for 2007-2008: Jennifer Hackett, Will Heise, Dersa Kiely, Aimee Magrath, Amanda Miles, Tyler Weirick, Travis Wolff. This scholarship recognizes 100 of OSU's best scholar-leaders for their academic work and activities in support of the campus and community.
- For 2007-2008, The Niblack Scholarship was awarded to Jessica Abbey, Marla Carrick, Brian Herrin, Chris Hoover, and Braxton Nottingham. The Niblack Research Scholars program provides support to Oklahoma State University undergraduates to conduct research in one of OSU's research laboratories under the guidance of a member of the research faculty and with day-to-day mentoring by a graduate student.
- Ninety-five Biochemistry and Molecular Biology undergraduate students were awarded scholarships.



Congratulations Dr. Ayoubi

Dr. Ayoubi is a dedicated teacher and mentor in the Department of Biochemistry and Molecular Biology. Her effort was rewarded at the CASNR Banquet as she received the Agriculture Ambassador's Outstanding Advisor Award. She was nominated by her students who appreciate and understand her devotion to education. This distinguished award is given each year by the Ag Ambassador Team to recognize outstanding faculty within the College of Agriculture.

Class of 2008 Graduating Seniors

The following are graduates with a degree in Biochemistry. Good Luck to all of you in the future and may your hard work and determination let you accomplish all of your goals .

- Clint Alsup
- Laurie Ariola
- Noah Barnes
- Mary Barnett
- Jack Bent
- Robert Blankenship
- Bandi Brown
- Donald Brown
- Savannah Burch
- Nathan Canada
- Kristen Carrick
- Susan Chapmann
- Erin Coleman
- Brian Cougar
- Angela Crispo
- Daniel Dye
- Mary Edgmon
- Lakesha Fisher
- Phil Friesen
- Deanna Grubb
- Jennifer Hackett
- Sarah Hartman
- Will Heise
- Buddhini Jayasundera
- Kelly Johnson
- Eric Kidwell
- Desra Kiely
- Janae Lamer
- Jennifer Land
- Lam Le
- Tiffany Lee
- Seng Wooli Lim
- Aimee Magrath
- Amanda Markel
- Caroline Menghini
- Sandra Mikulin
- Amanda Miles
- Josh Newcomb
- Minh Ngo
- Matt O'Riley
- Manny Otomewo
- Jonathan Paa
- Shannon Quinn
- Laticia Rivera
- Chris Sartin
- Jung-to Shen
- Michio Shimoyama
- Brandon Sumner
- Mary Talley
- Grady Thiems
- David Tree
- Erik VanArsdale
- Janine Veronneau
- Chris Wild
- Christina Wilkens
- Michelle Brewer
Withrow

Honors Degree Recipients

The following students have received an honors degree, which is the highest honor conferred with the undergraduate degree at OSU.

Congratulations honors recipients:

- Laurie R. Ariola, May 2008
- Kristen R. Carrick, May 2008
- Jennifer L. Hackett, May 2008
- Desra K. Kiely, May 2008
- Caroline Meughini, December 2007
- Amanda Miles, December 2007

M.S. and Ph.D Graduates

These individuals have worked extremely hard to accomplish their goals of completing a Masters or Doctoral Degree at OSU.

Congratulations to the following graduates:

- Jana Comer, M.S. May 08
- Vijay Muthkumar, M.S. May 08
- Anuradha Penaganti, M.S. May 08
- Kim Winkelman, M.S. May 08
- Dr. Phillip Verghese, Ph.D. Dec 07
- Dr. Buddha Gurung, Ph.D. Dec 07

2007-2008 Seminars

- August 24 **Dr. Robert Kuchta**, Associate Professor, Dept. of Chemistry and Biochemistry, University of Colorado. Title: "How Do DNA and RNA Polymerases Differentiate a Right (d)NTP from a Wrong(d)NTP?"
- August 31 **Dr. John Spudich**, Professor. Dept. of Microbiology & Molecular Genetics, University of Texas-Houston Medical School. Title: "Microbial Rhodopsins: Converting a Proton Pump into a Sensory Receptor" (Joint seminar, BMB and Microbiology).
- September 7 **Dr. Vibha Srivastava**, Associate Professor, Dept. of Crop, Soil and Environmental Sciences, University of Arkansas. Title: "Site-specific Recombination for Precise and Clean Transgene Integration in Plant Genome."
- September 19 **Dr. Pam Green**, Professor, Dept. of Plant and Soil Sciences, Delaware Biotechnology Institute. Title: "Elucidating the Small RNA component of the Transcriptome" (Botany and Plant-BioNet: Host: Dr. Kay Scheets).
- September 21 **Dr. ASN Reddy**, Professor, Dept. of Biology, Colorado State University. Title: "Calmodulin-Binding Proteins in Arabidopsis Proteome: Functional Analysis of Two Novel Calmodulin-Binding Proteins."
- September 27 **Dr. Carol Webb**, Oklahoma Medical Research Foundation. Title: TBA. (Sponsored by BMBGSA)
- September 28 **Dr. Robert Tabita**, Professor. Dept. of Microbiology, Ohio State University. Title: "RubisCO structure, function, and evolution from anoxygenic antecedents to proteins that withstand high levels of oxygen." (Sponsored by BMBGSA)
- October 12 **Dr. Jack Schultz**, Director, Christopher S. Bond Life Sciences Center, University of Missouri. Title: "Biochemical and molecular responses by Arabidopsis to diverse insect attackers."
- October 19 **Dr. Kay Scheets**, Adjunct Assistant Professor, Dept. of Botany, Oklahoma State University. Title: "Making Molecular Biology Tools from Maize Necrotic Streak Virus."
- October 26 **Dr. Ruth Welti**, Professor, Division of Biology, Kansas State University. Title: "Mass-Spectrometry-Based Analysis of Lipids."
- November 9 **Dr. Roya Khosravi-Far**, Associate Professor, Dept. of Pathology, Harvard Medical School. Title: "Signal transduction pathways that regulate cell death and survival."
- November 30 **Dr. Charlotte Ownby**, Director, OSU Electron Microscopy Laboratory. Title: "What's New at the OSU Microscopy Laboratory."
- January 18 **Michael Axtell**, Assistant Professor, Dept of Biology, Pennsylvania State University. Title: "Multi-genome Analysis of Small RNA-producing loci from Plants."
- February 8 **Uday DeSilva**, Associate Professor, Dept. of Animal Sciences, Oklahoma State University. Title: "Metagenomics of the Rumen Biome."
- February 15 **Guiliang Tang**, Assistant Professor, Plant and Soil Sciences, University of Kentucky. Title: "RNAi and microRNA: RISC assembly and miRNA atlas."
- March 7 **Eminent Scholars Seminar—in honor of Dr. Chang-An Yu**
William A. Cramer, Henry Koffler Distinguished Professor, Dept. of Biological Sciences, Purdue University. Title: "Energy Transducing Hetero-Oligomeric Integral Membrane Proteins: Similarities and Differences between Cytochrome bc₁ and b₆f Complexes."
- March 14 **Bharath Aggarwal**, Ransom Horne, Jr., Professor of Cancer Research, M. D. Anderson Cancer Center, University of Texas. Title: "Targeting Inflammatory Transcription Factors for Prevention and Treatment of Cancer: Food for Thought."
- March 28 **Greg Sawyer**, Associate Professor, Department of Biochemistry and Microbiology, Oklahoma State University Center for Health Sciences, Tulsa. Title: "Muscarinic Acetylcholine Receptor Trafficking."
- April 4 **Xuemei Chen**, Associate Professor, Dept. of Botany and Plant Sciences, University of California, Riverside. Title: "MicroRNA Biogenesis and Function in Arabidopsis."
- April 11 **Albert Mildvan**, Professor, Penn State University. Title: "Binuclear and Higher Enzyme-Metal Complexes: How Many Divalent Cations are Actually Needed?"
- April 18 **Lin Liu**, Professor and Director, Lung Biology and Toxicology Laboratory, Department of Physiological Sciences, Oklahoma State University. Title: "What MicroRNAs Do in the Lung?"
- April 25 **Jia Li**, Assistant Professor, Department of Botany and Microbiology, University of Oklahoma. Title: "Role of Receptor-like Kinases in Regulating Oxidative Stress Tolerance in Arabidopsis."

Alumni Contributions

How can I give back to the Department of Biochemistry and Molecular Biology?

The Department of Biochemistry and Molecular Biology encourages students to reach their full potential in every aspect of their education. In an effort to enhance their sense of pride in the University, the Department recognizes how important our alumni and the contributions they make are to the success of our students. Financial contributions help the Department provide a top-quality seminar series, various educational and research opportunities, and also provide a variety of scholarships and awards. You can contribute to the Department through either of the two following funds or by directly contacting the Department.

BMB Student Scholarship Fund

BMB Seminar Series Fund

Please make checks payable to OSU Foundation and indicate your area of support. Also indicate if you would like to endow a scholarship or seminar for specific individual recognition. For example, we have the Eminent Scholars Seminar in recognition of Dr. Chang-An Yu and the Rekel Seminar in recognition of Dr. Roger Koeppe.

Help us keep in touch with you!

Pride and tradition starts with our Alumni here at Oklahoma State University. That's why we want to know all about you. Email us at:

biochemistry@okstate.edu



Name:



Address:



Email Address:



When were you here at OSU?



Degree(s) and Date(s)

B.S.

M.S.

Ph.D



Other degrees after OSU:



Current employment, position, and title:



Accomplishments since graduation (work, family, hobbies, etc.):

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BIOCHEMISTRY AND MOLECULAR BIOLOGY
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