A Message from the Department Head. Welcome to the second issue of the annual BMB newsletter. We are proud to highlight the achievements of our faculty and students over the past year. The department welcomed two new faculty members and saw a variety of honors bestowed upon our faculty. Of particular note Dr. Ulrich Melcher was appointed as the fourth Regent’s Professor in the department. The department participated in and hosted numerous activities throughout the year, including the DASNR Day at the Capital, a very special reception honoring Dr. Roger E. Koeppe, the Faculty Award Recognition Reception, and the Undergraduate Awards Reception held in conjunction with the Spring 2009 Commencement. Forty-two students earned their Bachelor of Science Degrees, and three students were awarded Ph.D. degrees. Our students received a host of awards and honors recognizing excellence in scholarship and research. In the upcoming year, we are focusing efforts to connect with alumni and are excited to learn more about the lives and careers of our graduates who have made this a vital department.

Gary A. Thompson, Professor and Head

Dr. Roger E. Koeppe Honored and Remembered

Professor Emeritus Roger E. Koeppe joined the department of biochemistry in 1959 and served as the fourth head of the department from 1963 to the time of his retirement in 1990. Dr. Koeppe died on May 16, 2009.

Dr. Koeppe was recently honored with a resolution naming the seminar room in the Jess L. and Miriam A. Stevens wing of the Noble Research Center as the Roger E. Koeppe Seminar Room in recognition for his for his 28 years of leadership as head of our department. The resolution was presented to Mrs. Norma Koeppe during the 2009 Koeppe endowed lectureship in April, which featured a seminar by Dr. Guoyao Wu, a renowned animal nutrition professor and biochemist at Texas A&M University.

Born on May 2, 1922 in Kalangsu, Amoy, China, Dr. Koeppe attended Hope College in Holland, Mich. where he graduated cum laude in 1944 with an A.B. degree in Chemistry. After serving two years in the Army, Dr. Koeppe attended graduate school at the University of Illinois where he earned a M.S. in Chemistry in 1947 and a Ph.D. in Biochemistry in 1950. After climbing the academic ranks at the University of Tennessee Medical School in Memphis from 1952-1959, Dr. Koeppe joined the department of biochemistry at OSU as an associate professor and was promoted to professor in 1960.

Dr. Koeppe’s research focused on intermediary metabolism and its control, with special interest in the metabolism of glutamate and related compounds in mammalian liver and brain. He directed the research of 22 graduate students who received M.S. and Ph.D. degrees and was the Oklahoma Academy of Sciences Award of Merit recipient as the Oklahoma Scientist of the Year in 1989.

Mrs. Norma Koeppe lives in Stillwater where they raised a family of five outstanding children: Roger II, Mary, Sarah, Edwin, and Peter.
Award Winning BMB Faculty

**Dr. Ulrich Melcher is appointed Regents Professor**

Dr. Melcher joined the elite group of OSU professors when he was appointed to the rank of Regents Professor. This honor recognizes him as a scholar of exceptional ability who has achieved national and international distinction. Dr. Melcher is the fourth faculty member of our department to earn this distinction, joining Dr. Margaret Essenberg, Dr. Chang-An Yu and Dr. Andrew Mort. According to the OSU website, the university established the rank of Regents Professor in 1971 as “the most prestigious rank that may be attained in recognition of scholarly accomplishments by faculty in the Oklahoma State University system.” Dr. Melcher also holds the Robert J. Sirny Memorial Endowed Professorship in Agricultural Biochemistry.

**Dr. Sharon Ford wins the Exemplary Faculty Award**

Dr. Ford was awarded CASNR’s Exemplary Faculty Award, which is determined by alumni surveys. Alumni were asked if there was “a faculty member, teacher or advisor who made a significant contribution to your success in college and beyond.” Of the 50 faculty identified in the survey, Dr. Ford was one of the 12 recipients of this award.

**Dr. Patricia Ayoubi: OSU Award of Excellence**

Dr. Ayoubi received the OSU Award of Excellence for Advisement at the OSU Fall Convocation. She was one of seven recipients of this award for 2008. This is her second award for excellence in advising, having earned the Agricultural Ambassador’s Outstanding Advisor Award in April 2008.

**Dr. Robert Matts receives the Sarkeys Distinguished Professorship**

Dr. Robert Matts was awarded the Sarkeys Distinguished Professorship in Agricultural Science in July 2008. Sarkeys Distinguished Professorships are presented by the Division of Agricultural Sciences and Natural Resources to recognize professors who make outstanding contributions to agricultural sciences and who have achieved a significant level of excellence at OSU. As leaders in key areas of science and education, Sarkeys Distinguished Professors serve as role models for other scientists at the university and throughout the profession. Dr. Chang-An Yu is among previous holders of the Sarkeys Distinguished Professorship in the department.
Dr. Rita Miller

Dr. Rita Miller joined the department as an assistant professor of biochemistry and molecular biology in August 2008. Before coming to Stillwater, Dr. Miller was an assistant professor in the Department of Biology at the University of Rochester. She earned a B.S. from Michigan State University and a Ph.D. in cell biology from Northwestern University Medical School in Chicago. Dr. Miller worked as a National Institutes of Health Postdoctoral Fellow with Dr. Mark Rose in the Department of Molecular Biology at Princeton University. Dr. Miller’s research interests involve the cytoskeleton and post-translational mechanisms that regulate positioning of the mitotic spindle in yeast. Rita and Mike have two children: Anna and Sarah, ages 12 and 4.

Dr. Randy Allen

Dr. Randy Allen joined the OSU biochemistry faculty as the Sitlington Chair in Agricultural Biosciences and professor of biochemistry and molecular biology. Dr. Allen moved his research program from Texas Tech University and is the inaugural faculty member of the Institute for Agricultural Biosciences to be located adjacent to the Samuel Roberts Noble Foundation in Ardmore.

Dr. Allen received a B.A. from Southwestern Adventist College and an M.A. in Biology at University of Texas-Arlington. He earned a Ph.D. at Texas A&M University and worked as a postdoctoral associate with Dr. Roger Beachy at Washington University in St. Louis. Dr. Allen’s research interests include the analysis of the regulatory mechanisms that control the expression of genes in response to environmental signals, especially those involved in stress tolerance. Randy and Jane have two children: Eric is working toward a Ph.D. in Paleontology at Iowa State University and Sarah is at Texas Tech studying Speech and Language Pathology.

Each year the Biochemistry and Molecular Biology Graduate Student Association (BMBGSA) strives to support graduate students and the department through cooperation and leadership. The association is active in departmental decisions and provides input to the Graduate and Professional Student Government Association. The BMBGSA sponsored something new this year, the graduate student run journal club, which provides an opportunity for critical scientific discussion among the graduate students.

The BMBGSA organized and conducted the 5th annual Graduate Research in the Biological Sciences Symposium that was held at the Noble Research Center on September 18-19, 2008. The symposium featured 22 oral and 13 poster presentations by students and keynote speakers Dr. Paul DeAngelis, OU Health Sciences, and National Academy of Sciences members Dr. Richard Dixon, Samuel Roberts Noble Foundation, and Dr. Brian Larkins, University of Arizona.
Delta Nu Alpha (Biochemistry Club) is a social fraternity that provides undergraduate students in the department additional opportunities to explore and enrich their experiences in the biochemistry degree program. The organization participated in various activities throughout the year including philanthropic activities such as Into the Streets and Relay for Life. Members also provide service to the community as volunteers at the Humane Society of Stillwater and the Stillwater Medical Center. Delta Nu Alpha members took several field trips in the spring to the Science Museum of Oklahoma, the Tulsa and Oklahoma City Zoos, and the Jenks Aquarium. Delta Nu Alpha also provided the staff and faculty with food and drinks to show their appreciation for their efforts and hard work.

Keeping up with the Essenbergs

Drs. Margaret and Richard Essenbergs, currently enjoying life in Eugene, Oregon, have recently touched base with the Department of Biochemistry and Molecular Biology. Margaret, a former Department Head and Regents Professor Emerita, is active in the Women’s Choral Society serving as co-president. She sings her heart away in three choirs and plays the continuo in the Baroque group. Margaret also takes pleasure in growing flowers in her sunlit flowerbeds. Richard, Professor Emeritus, plays in a band, two orchestras, and three chamber groups.

In August, they traveled with friends to the Grand Canyon. While in the southwest, they visited Santa Fe with their group, Five Finger Baroque, where they played at restaurants and completed a studio recording. We wish Margaret and Richard the best of luck in whatever journey life brings them.

Saying Goodbye to Dr. Joanna Ledford

Dr. Joanna Ledford, a valued member of the department and OSU community, retired in January 2009. Dr. Ledford’s passion and commitment to undergraduate education, especially undergraduate research, was often demonstrated through her service as an advisor and coordinator of numerous research projects and grants. Among her many activities, she served as the coordinator for the Howard Hughes Undergraduate Education Programs from 1998 to 2009; the Oklahoma Partners for Biological Sciences from 1995-1998; and the NSF-sponsored Research Experiences for Undergraduates from 1989-1991.

BMB Outstanding Senior

Ilya “Eli” Sluch

Ilya “Eli” Sluch was selected by the faculty as the 2009 Biochemistry Outstanding Senior. Eli received two B.S. degrees in biochemistry and in chemistry from the Honors College in the 2009 OSU spring commencement. He is a 2006 graduate of the Oklahoma School of Science and Mathematics and the son of Mikhail Sluch and Yulia Soloviova of Stillwater. Eli is also a Goldwater Scholar, a Wentz Scholar, and a recipient of the Paul F. Kruse Award. He will be pursuing a medical degree from the University of Oklahoma Health Sciences Center and plans to earn a Ph.D. degree.
Class of 2009

The following graduates earned a Bachelor of Science Degree in Biochemistry or Biochemistry and Molecular Biology. Congratulations and may your hard work and determination let you accomplish all of your goals.

- Jessica Abbey
- Zoel Allen III
- R. Mathew Atkins
- Mark Birchell
- Justin Booth
- Jordan Brady
- Joseph Branchek, Jr.
- Caleb Brewer
- Jolie Britt
- Heath Burchfield
- Christopher Cain
- Marla Carrick*
- Meagon Crowl
- Kimberly Curley
- Jessica Dawson
- Jeff Glasgow
- Brian Herrin*
- Aubrey Hnatusko
- Mindi Howe
- Kirk Kaupke
- Edward Kent III
- Lacey Knapp
- Luisa Krug
- Whitney Lewis
- Kyle Mackin
- Kaela Maxwell
- Blaire McNeil
- Adriana Moreno
- Curtis Neveu
- Stella Onyeri
- Jarryd Osburn
- Plo Parker II
- Steve Pennington
- Jillian Prather
- Joshua Reavis
- Evan Schwenk
- Ilya Sluch*
- Craig Stanley, Jr.
- Laura Tarrh
- Kendra Todd
- Travis Wolff
- Sean Zrust

*Honors College Degrees

Undergraduate Scholarships and Awards

**Biochemistry Outstanding Senior**
- Ilya Sluch

**CASNR Outstanding Senior**
- Travis Wolff

**Arts & Sciences Top Ten Seniors**
- Jolie Britt
- Evan Schwenk

**OSU Alumni Outstanding Seniors**
- Ilya Sluch
- Jolie Britt
- Jeff Glasgow
- R. Matthew Atkins
- Joseph Branchek, Jr.
- Brian Herrin
- Chelsea Aldridge
- Zoel Allen III
- Luisa Krug
- Lance Pate

**Graduate Degrees**
- Michael Puckett, Ph.D.
- Maria ElBerry, Ph.D.
- Shaqing Yang, Ph.D.

**Goldwater Scholar**
- Ilya Sluch

**Wentz Leadership Scholar**
- Zachary Hager
- R. Matthew Atkins
- Joseph Branchek, Jr.
- Marla Carrick
- Braxton Nottingham

**Wentz Project Awards**
- Joseph Branchek, Jr.
- Marla Carrick
- Braxton Nottingham

**Niblack Research Scholar**
- Lauren Colom
- Eric Lee
- Emily Sharpe
- Valentin Sluch

**Merck Index Award**
- Jeff Glasgow
- Rachel Branch
- Sarah Fry
- Sarah Oppel
- Valentin Sluch

**James E. Webster Award**
- Sarah Fry
- Sarah Oppel
- Valentin Sluch

**Graduate Student Awards**
- Shawn Daley - Summer Graduate Research Fellowship
- Shawn Daley - Sigma Xi Associate Membership
- Soreiyu Umezu - Travel Scholarship
- TeeCie West - FBI Laboratory Summer Internship
**Fall Semester**

**Dr. Randy Allen.** Department of Biochemistry and Molecular Biology, Oklahoma State University. “Forward and Reverse Genetic Analysis of Plant Responses”

**Dr. Roland Strong.** Basic Sciences Division-Structural Biology, Fred Hutchinson Cancer Research Center. “What makes things red: Siderocalin, siderophores & bacterial virulence”

**Dr. Gerald Carlson.** Department of Biochemistry and Molecular Biology, University of Kansas Medical Center. “Evolution and the Allosteric Activation Switch of Skeletal Muscle Phosphorylase Kinase”

**Dr. Xiaodong Cheng.** Professor and Eminent Scholar in X-Ray Crystallography, Emory University School of Medicine. “Epigenetic link between DNA methylation and histone modifications”

**Dr. Brian Larkins.** Departments of Plant Sciences and Molecular & Cellular Biology, University of Arizona. “Understanding the Molecular Basis of Quality Protein Maize”

**Dr. Xiaoqiang Wang.** Plant Biology Division. The Samuel Roberts Noble Foundation. “Structural Biology Study of Biosynthesis of Plant Natural Products”

**Dr. T-Hsiu Liao.** Institute of Biochemistry and Molecular Biology, National Taiwan University, College of Medicine. “Studies on the Structure-Function Relationships of Bovine Pancreatic Deoxyribonuclease”

**Dr. Jose Alberola.** Immunobiology and Cancer Research Program, Oklahoma Medical Research Foundation. “Genetic Analysis of the Signals that control Positive selection and CD4/CD8 Lineage Commitment”

**Dr. Young Xiong.** Yale University, Molecular Biophysics and Biochemistry. Yale University. “Precision and Perfection: Polymerization Without a Template”

**Dr. Steve Hartson.** Department of Biochemistry and Molecular Biology, Oklahoma State University. “The Hsp90-dependent Phosphoproteome v.s. Orbitrap Mass Spectrometry”

**Dr. Michael Massiah.** Department of Biochemistry and Molecular Biology, Oklahoma State University. “How structure reveals function: the study of MID1, a RING E3 Ub ligase targeting PP2A”

**Dr. Stephen Sprang.** Director, Center for Biomolecular, University of Montana. “G Protein Regulation of Rho: How Effectors Control G Proteins”

**Dr. Bing Su.** Department of Immunobiology, Yale School of Medicine. “mTORC2 Mediated PKB/Akt and PKC Regulation”

**Spring Semester**

**Dr. Ramamurthy Mahalingam.** Dept of Biochemistry and Molecular Biology, Oklahoma State. “Genetics and Genomics for Dissecting Oxidative Signaling In Plants”

**Dr. Rolf Prade.** Department of Microbiology, Oklahoma State University. “Antifungal Activation of Signaling: Osmotic Sensing Kills”

**Dr. Theodore G. Wensel.** Department of Biochemistry and Molecular Biology, Baylor College of Medicine. “RGS protein function in G protein signaling”

**Dr. Sanjay J. Bidichandani.** Biochemistry & Molecular Biology and Pediatrics, University of Oklahoma Health Sciences Center. “Friedreich ataxia: A genetic mutation with epigenetic consequences”

**Dr. Dario Vignali.** St. Jude Faculty, St. Jude Children’s Research Hospital. “Molecular control of T cell development and regulatory T cell function”

**Dr. Yetri Hatout.** Children’s National Medical Center, Research Center for Genetic Medicine. “Cellular and Molecular Mechanisms of Age-Related Macular Degeneration”

**Dr. Melvin Oliver.** Research Geneticist, University of Missouri and USDA-ARS. “Surviving Drying: Dehydration Tolerance in Plants”

**Dr. Rebecca Dickstein.** Department of Biological Science. Center for plant lipid research. University of North Texas. “Medicago truncatula symbiotic nitrogen fixing nodulation mutants with defects in rhizobial invasion: new links to nitrogen status?”

**CHANG-YU EMINENT SCHOLAR SEMINAR**

**Dr. Frank Millett.** Dept of Chemistry and Biochemistry, University of Arkansas. “Design of Photoactive Ruthenium Complexes to Study Biological Electron Transfer”

**Dr. Anatoli Melechko.** Materials Engineering, North Carolina State University. “Vertically aligned carbon nanofibres as nanotools for cellular interfacing”

**ROGER E. KOEPEPE ENDOWED LECTURE FOR 2009**

**Dr. Guoyao Wu.** Department of Animal Science, Texas A&M University. “A pathway from glutamine and glutamate to arginine: nutritional significance for neonates”

**Dr. Roberto De Guzman.** Molecular Biosciences, University of Kansas. “NMR studies of bacterial nanoinjectors”

**Dr. Christopher West.** Biochemistry and Molecular Biology, University of Oklahoma Health Science Center. “Role of prolyl hydroxylation and glycosylation of Skp1 in O2-dependent development of Dictyostelium”

**Dr. Timothy J. Tschaaplinski.** Oak Ridge National Laboratory. “Accelerated Domestication of Populus for Bi-energy Production and Enhanced C Sequestration”
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

Or

For updates join our Facebook group:

“Biochemistry and Molecular Biology—OSU Alumni Chapter”

“America’s Greatest Homecoming Celebration”

October 16-17, 2009

Giving 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. 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, educational and research opportunities, and a variety of scholarships and awards. A gift to the Biochemistry Department Fund will help support the Biochemistry and Molecular Biology Seminar Series.

BMB Student Scholarship Fund

Biochemistry Department Fund

Please make your contributions payable to OSU Foundation and indicate your desired area of support. Also contact the department if you would like to endow a scholarship or seminar for specific individual recognition. For example, we currently have the Chang-An Yu Eminent Scholars Seminar and the Roger E. Koeppe Endowed Lectureship.

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