

Lifeline

UMKC SCHOOL OF BIOLOGICAL SCIENCES

UNIVERSITY OF MISSOURI-KANSAS CITY • WINTER 2008

Message from the Dean

A POSITIVE STEP FOR NEXT YEAR



Dr. Lawrence A. Dreyfus

Early in the Fall Semester of 2008 the School of Biological Sciences took a step that may positively impact our School, and perhaps UMKC, for years to come. The step was so small, and in some respects so obvious, that it may have gone unnoticed as a

potential landmark event. Yet looking back, I am even more enthused about the prospect for next year's event.

Of course, I am referring to the SBS Research Day held on Saturday, Oct. 4, 2008. Planned initially as a retreat, the event took shape as a day for students and post-docs to present their research in poster form, a small group of faculty to deliver oral presentations and a time to socialize in a relaxed setting, share a meal and talk about science.

The day was a tremendous success. A number of students commented, "Why haven't we done this before?" The only answer that I could find was "Good question!" More than 30 students presented their research, and it was a great opportunity to experience first hand the quality of research going on in the School. Some enthusiasm of our newer students centered on the fact that they were unaware of the scope of research conducted at the School.

So how will this event change SBS and perhaps UMKC for the better? The Fall Research Retreat is now a fixture at SBS, and it is an event to build upon, improve and expand. The event will continue to energize and inspire our young researchers, hopefully for many years to come. The venue will also provide an excellent opportunity to recruit talented graduate students to our program and to engage with other life sciences colleagues at UMKC. The event may also be the seed to spawn a larger Life Sciences Research Day to include participation by faculty from other UMKC units engaged in Life Sciences Research. I am already looking with great enthusiasm to the event next Fall. The SBS Research Day might just become infectious!

— Lawrence A. Dreyfus
Dean

Major Conference Presentations

"A Unique Probe of Virus Assembly Mechanisms," 21st International Conference on Raman Spectroscopy, London (Uxbridge), England, 2008, **Dr. George Thomas Jr.**

"The Evolution of Histone H3 Protein," XX International Congress of Genetics, Berlin, Germany, 2008, **Dr. Jakob Waterborg.**

"A Start to Define the Ancestral Eukaryotic Nucleosome," 30th Annual International Asilomar Chromatin and Chromosomes Conference, Asilomar, Calif., 2008, **Dr. Jakob Waterborg.**

Publications

- Belostotsky, D.A. "Transcriptome targets of the exosome complex in plants," *Methods Enzymol*, Vol. 448, pp. 429-43, 2008
- Belostotsky, D.A., Sieburth, L., "Kill the messenger: mRNA decay and plant development," *Curr Opin Plant Biol*, 2009, Feb 12(1), pp. 96-102 (E-published Nov. 5, 2008).
- Geisbrecht B.V., "Staphylococcal complement inhibitors: biological functions, recognition of complement components, and potential therapeutic implications," *Adv Exp Med Biol*. 2008;632:221-36. Review.
- Ricklin, D., Ricklin-Lichtsteiner, S.K., Markiewski, M.M., Geisbrecht, B.V., Lambris, J.D., "Cutting edge: members of the Staphylococcus aureus extracellular fibrinogen-binding protein family inhibit the interaction of C3d with complement receptor 2," *J. Immunol*. Dec. 1, 2008; 181(11):7463-7.
- Haspel, N., Ricklin, D., Geisbrecht, B.V., Kavraki, L.E., Lambris, J.D., "Electrostatic contributions drive the interaction between Staphylococcus aureus protein Efb-C and its complement target C3d," *Protein Sci*. Nov. 17, 2008(11):1894-906 (E-published Aug. 7, 2008).
- Abmayr, S.M., Zhuang, S., Geisbrecht, E.R. "Myoblast fusion in Drosophila," *Methods Mol Biol*. 2008; 475:75-97.
- McCluskey, K., and M. Plamann, "Perspectives on genetic resources at the Fungal Genetics Stock Center," *Fungal Genetics Reports*, 55:15-17, 2008.
- Wiest, A., M. Plamann and K. McCluskey, "Identification of the Neurospora crassa mutation un-4 as the mitochondrial inner membrane translocase subunit tim16," *Fungal Genetics Reports* 55:37-39, 2008.
- Overman, S. A. and Thomas, G. J. Jr., "Filamentous ssDNA Bacterial Viruses," in Encyclopedia of Virology, Third Edition, Volume 2, Mahy, B. W. J. and van Regenmortel, M. H. V., Eds., Elsevier, Oxford, UK, pp.190-198, 2008.
- Nemecek, D., Lander, G. C., Johnson, J. E., Casjens, S. R. and Thomas, G. J. Jr., "Assembly Architecture and DNA Binding of the Bacteriophage P22 Terminase Small Subunit," *J. Mol. Biol.* 383:494-501, 2008.
- Benevides, J. M., Kawakami, J. and Thomas, G. J. Jr. "Mechanisms of Drug-DNA Recognition Distinguished by Raman Spectroscopy," *J. Raman Spectrosc.* 39:1627-1634, 2008.
- Smith, A., Rish, K.R., Lovelace, R., Hackney, J. and Helston, R. "Role for Copper in the Cellular and Regulatory Effects of Heme-Hemopexin," *Biomaterials*, 2008 (E-published Nov. 11, 2008).
- Tran, Q.K., Leonard, J., Black, D.J., and Persechini, A., "Phosphorylation within an autoinhibitory domain in endothelial nitric oxide synthase reduces the Ca²⁺ concentrations required for calmodulin to bind and activate the enzyme," *Biochemistry* Vol. 47, pp. 7557-7566, 2008.
- Voynova, N.E., Fu, Z., Battaile, K.P., Herdendorf, T.J., Kim, J.J.P., and Mizioroko, H.M., "Human mevalonate diphosphate decarboxylase: Characterization, investigation of the mevalonate diphosphate binding site, and crystal structure," *Archives of Biochemistry and Biophysics*, Vol. 480, pp. 58-67, 2008.
- Xu, X.P., Zhang, L.C., Weng, S.P., Huang, Z.J., Lu, J., Lan, D.M., Zhong, X.J., Yu, X.Q., Xu, A.L., and He, J.G. "A zebrafish (danio rerio) model of infectious spleen and kidney necrosis virus (ISKNV) infection," *Virology* 376:1-12, 2008.
- Ai, H.S., Huang, Y.C., Li, S.D., Weng, S.P., Yu, X.Q., He, J.G. "Characterization of a prophenoloxidase from hemocytes of the shrimp Litopenaeus vannamei that is down-regulated by white spot syndrome virus," *Fish Shellfish Immunol*. July 2008; 25 (1-2): 28-39.
- Wang, Q., Luo, Y.W., Dong, C.F., Weng, S.P., Xie, J.F., Ai, H.S., Lu, L., Yang, X.Q., Yu, X.Q., and He, J.G. "Identification of two novel membrane proteins from the tiger frog virus (TFV)," *Virus Res.* 136:35-42, 2008.
- Lao, H.H., Sun, Y.N., Yin, Z.X., Wang, J., Chen, C., Weng, S.P., He, W., Guo, C.J., Huang, X.D., Yu, X.Q.*, and He, J.Q. "Molecular cloning of two C1q-like cDNAs in mandarin fish Siniperca chuatsi," *Vet. Immunol. Immunop.* 125:37-46, 2008.
- Jin, F.L., Xu, X.X., Yu, X.Q., Ren, S.X. "High-level expression of active recombinant ubiquitin carboxyl-terminal hydrolase of Drosophila melanogaster in Pichia pastoris," *Protein Expr Purif.* Sept. 12, 2008 (E-published ahead of print).
- Chen, C., Li, Z., Zhou, Z., Yin, Z., Chan, S.M., Yu, X., Q., Weng, S., He, J. "Cloning, characterization and expression analysis of a CXCR1-like gene from mandarin fish Siniperca chuatsi," *Fish Physiol Biochem.* Dec. 18, 2008 (E-published ahead of print).

New Personnel

Deepali Agarwal
Research Associate

Jun Hye Shin
Research Associate

James Addo
Research Associate

Jinwon Lee
Research Associate

Bridget Biersmith
Research Assistant

Kasra Ramyar
Research Associate

Carlos Thompson
Storeroom Supervisor

Faculty Awards and Promotions

Dr. Michael Ferrari was promoted from assistant professor to associate professor in the Division of Molecular Biology and Biochemistry.

Dr. John Laity was promoted from assistant professor to associate professor in the Division of Cell Biology and Biophysics.

Dr. Michael O'Connor was promoted from assistant professor to associate professor in the Division of Molecular Biology and Biochemistry.

Dr. Sullivan Read was promoted from associate professor to professor in the Division of Cell Biology and Biophysics.

Dr. Xiao-Qiang Yu was promoted from assistant professor to associate professor in the Division of Cell Biology and Biophysics.

Student Award

Tiffany Fowlkes received \$2,000 in November from the SEARCH Undergraduate Grant Committee, UMKC. The grant was approved to fund a one-semester project, "Missense mutations linked to amyotrophic lateral sclerosis," under the faculty mentorship of Dr. Stephen King.

Maria Iiakova received \$1,495 in November from the SEARCH Undergraduate Grant Committee, UMKC. The grant was approved to fund a one-semester project, "Probing structure/function interactions in Zic1 and Gli3 zinc finger containing transcription factor protein," under the faculty mentorship of Dr. John Laity.

Diem Kieu Tran received \$1,248 in November from the SEARCH Undergraduate Grant Committee, UMKC. The grant was approved to fund a one-semester project, "A-minor interactions in 16S rRNA," under the faculty mentorship of Dr. Michael O'Connor.

Hannah Wilson received \$2,500 in November from the SEARCH Undergraduate Grant Committee, UMKC. The grant was approved to fund a one-semester project, "Point mutations domain of dynactin's p150 region and their effect on microtubule binding and enhancement of dye in processivity," under the faculty mentorship of Dr. Stephen King.



UNIVERSITY OF MISSOURI-KANSAS CITY

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New Research Funding

NATIONAL INSTITUTES OF HEALTH

Idnum, A., "Light-Regulated Genes Affecting the Pathogen Potential of *Cryptococcus Neoformans*," \$107,053, August 2008.

Yu, X., "Innate Immune Responses Modulated by C-type Lectines in *Anopheles Gambiae* and *Manduca Sexta*," \$242,753, September 2008.

Thomas, G., "Molecular Structure and Interactions of Viruses," \$295,284, September 2008.

NATIONAL SCIENCE FOUNDATION

Plamann, M., "Fungal Genetic Stock Center," \$273,421, September 2008.

UNIVERSITY OF MISSOURI RESEARCH BOARD

Dobens, L., "Microarray Screen for Ecdysone Regulated Genes in the *Drosophila* Ovary," \$31,572, July 2008.

Gogol, E., "Functional Conformations of the Proteasome Core Particle," \$26,372, July 2008.

Idnum, A., "Identification of Phototropism Genes in *Phycomyces blakesleeianus* Through Genetic Mapping," \$7,000, April 2008.

DARTMOUTH COLLEGE

Plamann, M., "Functional Analysis and Systems Biology of Filamentous Fungi," \$86,025, April 2008.

DEFENSE ADVANCED RESEARCH PROJECT AGENCY

Menees, T., "Fungal Retrotransposition as an Environmental Sensor," \$137,200, September 2008.

AMERICAN HEART ASSOCIATION

Miziorko, H., "Discovery and Evaluation of Novel Cholesterol Pathway Inhibitors," \$143,000, July 2008.

BIOINFORMATICS, LLC

Wyckoff, G., VaSSA Research and Development, \$62,000, July 2008.

Wyckoff, G., VaSSA Research and Development, \$15,000, October 2008.