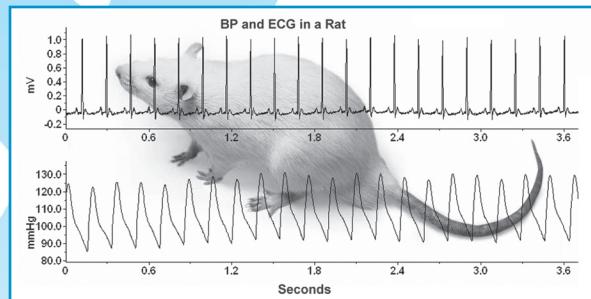


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*An illustration of the type of data obtained from telemetry.***Legislative Analysts**

MBC again hosted two legislative analysts (see *Inside MBC*, Vol. 7, No. 4 to find out more about what a legislative analyst does), Ericka Schissler, Budget Analyst for Department of Legislative Services and Charlene Uhl, Analyst for the Department of Budget Management. As a state funded institution, UMBI and its Centers are expected to answer questions about their missions and how they are using state resources. This is good for both the state and the institution as it fosters understanding and MBC Director Dr. W. Jonathan Lederer always welcomes the chance to highlight the accomplishments of MBC faculty members and the value their efforts give to the state. UMBI Vice President for Operations and Finance Daniel Reznikov and MBC Assistant Director Timothy Hughes also attended.

**Keep 'Em Movin'**

"Learn How Leading Scientists Use Telemetry for Their Research" was the title of a day-long symposium organized and hosted by MBC Assistant Professor Dr. Hali Hartmann and sponsored by Data Sciences International (DSI), a leading manufacturer of telemetry system for research.

Telemetry refers to the use of placing radio transmitters in living, moving research animals to measure real time heart functions (electrocardiograms or ECGs, blood pressure), muscle activity (electromyogram or EMG), brain activity (electroencephalograms or EEG), and/or body temperature. The animals can be monitored 24/7 via computer-based receivers, to look for functional abnormalities in animal models of disease or effects of drugs or drug therapies in living animals. This can be especially critical since isolated cells cannot duplicate what happens in a whole animal.

The symposium brought together about 70 researchers from all over the Atlantic seaboard and Midwest, including those from government and biotechnology companies. The speakers, including several from the University of Maryland Baltimore, talked not only about the methods and results from telemetry based research, but the

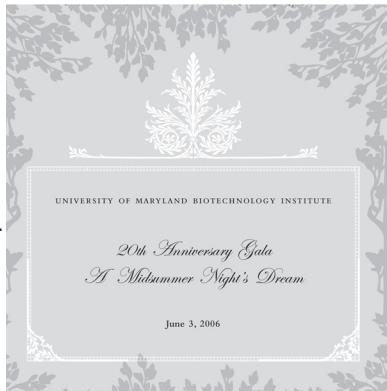
*continued page 3*



Left to right: Daniel Reznikov, Charlene Uhl, Timothy Hughes, Ericka Schissler, and Dr. W. Jonathan Lederer

### UMBI Video and History

The twentieth anniversary of UMBI ended with a spectacular Gala, held June 3<sup>rd</sup> at the Sheraton Hotel in Columbia, Maryland. The theme was "A Midsummer Night's Dream," and the event came complete with fairies, played by the drama group from Mercy High School in Baltimore. The Gala, a fund-raising event and the first of its kind for UMBI, was totally sold out. Among the dignitaries who attended was Governor Robert Ehrlich. The rising profile of UMBI in the Maryland biotechnology community was clearly evident, with a number of biotech companies sponsoring the gala. MBC was represented by Dr. W. Jonathan Lederer, MBC Director; Mr. Timothy Hughes, MBC Assistant Director; and Dr. Mervyn Monteiro, MBC Professor and UMBI Faculty-Staff Senate Chair. Every institution within the University System of Maryland is expected to fund raise to increase endowment which can be used to support new initiatives. As a relatively young institution and one without alumni, UMBI does not have a large endowment yet. If the success of the Gala is any indication, UMBI is well on its way to realize a significant increase in such support.



In conjunction with the Anniversary year and the Gala, UMBI produced a brief institutional history and video highlighting the research at all the centers. The video has a bit of fun with early Sci-Fi B-movies, as an introduction to the reality of the truly remarkable research that has been accomplished at all the UMBI centers. The video can be viewed at <http://www.umbi.umd.edu/gala/video.html>.

The filmmaker spent several hours at the MBC interviewing and filming, and a number of MBC staffers show up in the film. **Dr. Leonid Breydo** and **Natalia Makarava** from Dr. Ilia Baskakov's laboratory get a scene, or in Natalia's case two scenes. **Chaobo Yin** from Dr. Mervyn Monteiro's laboratory is also featured and there are brief shots of **Andria Apostolou**, Dr. Shengyun Fang's graduate student, and **Dr. Julio Altamirano**, Dr. W. Jonathan Lederer's Research Associate. As Director of the MBC, Dr. Lederer was interviewed as well. Long time MBC staffers might also pick out some footage from an earlier video done in 2001.

Despite the somewhat tongue-in-cheek start, the video is informative and interesting. If you would like to view it off the computer, Pamela Wright has the DVD.

The video was just one promotional project done for the Gala. A brief history booklet was also handed out. It gives an overview of the establishment of UMBI, the centers, and some milestones over the last 20 years. Copies of it are available in the office.

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<http://www.umbi.umd.edu/~mbc>

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### Congratulations!

Dr. Ilia Baskakov has been promoted to Associate Professor with Tenure. Since coming to the MBC in 2001, Dr. Baskakov has become an internationally recognized leader in prion research. He has developed a well-funded, productive laboratory and established the Program in Prion Disease.

# USM Regents Delay Vote

The May and June meetings of the University System of Maryland Board of Regents were of particular importance to UMBI, the MBC and its sister center, the Institute of Human Virology (IHV), with whom MBC shares UMBI's Medical Research Facility (MRF). Last year, the IHV requested that its current and future relationships within the System be evaluated. The evaluation included looking at all aspects of IHV, including whether its current space is appropriate and adequate, and whether its future needs could be met. Since MBC is directly impacted by any discussion of space, it, too, was evaluated. The Office of the Chancellor was charged with doing the evaluation and its report was given to the Regents at their May 10 meeting. Chancellor William Kirwan concurred with the conclusions of the report and recommended to the regents that, since the activities of the IHV had become increasingly clinical in nature and the bulk of its extramural funding was from UMB primary faculty, the IHV should move both administratively and physically to the University of Maryland School of Medicine. There was to be no change for the MBC, and it and UMBI would retain the MRF.

This is a very unusual and complex recommendation and has not been attempted previously within the system. While the Chancellor's recommendation was on the agenda for the June 23 meeting of the Regents, no action was taken. The next meeting is not until September. In the meantime, the process for moving and an analysis of the impact for all parties concerned continues.



## Telemetry continued

regulatory issues and appropriate use of animal research.

This is also an opportunity for DSI to obtain feedback from the researchers about their experience with DSI telemetry products. DSI is one of the few companies who offer small animal telemetry products. DSI technical personnel presented the latest upgrades to their systems and the participants got a "hands-on" opportunity to see how the company has responded to previous suggestions from earlier symposiums that DSI sponsors yearly.

Dr. Hartmann said that the feedback to her was very positive and that she and the others found this small, focused symposium to be very helpful and immediately useful. It is also a great way for telemetry users, who apply the technology to disparate fields, to share experiences.

Besides her role as host, Dr. Hartmann also spoke about her work on sudden cardiac death in mouse models. Dr. Hartmann manages the MBC's Institute of Molecular Cardiology's Animal Telemetry Laboratory. She and MBC's IT Coordinator, Mike Kelly, have also developed computer programs to help in the analysis of the large volume of information that this technique generates. For Dr. Hartmann's work, trying to capture the event or events leading to sudden cardiac death may generate months of constant, minute by minute monitoring of an animal, something akin to looking for a needle in a haystack. Without computer analyses, these events might not be found for months, since the events preceding the actual heart attack may take place days or weeks before the actual onset and may only last a minute or two.



Dr. Hali Hartmann at work.

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## Spring Seminars

# MBC Happenings

### Comings and Goings

Elena Artimovich has joined Dr. Mervyn Monteiro's laboratory as a Laboratory Assistant.

### Grants and Contracts

**Dr. Mervyn Monteiro**, NIH, "Functional Studies of Ubiquilin," 5/1/06, \$287,120, yr 4 of 4.

**Dr. George Rodney**, NIH, "Calmodulin & Calmodulin Binding Domains in E-C Coupling," 5/1/06, \$129,330, yr 3 of 6.

**Dr. Ilia Baskakov**, NIH, "Self-propagating Mechanism of Prion Disease," 6/1/06, \$309,066, yr 3 of 4.

### Publications

Zhang J, Gryczynski I, Gryczynski Z, **Lakowicz JR**. Dye-labeled silver nanoshell-bright particle. *JOURNAL OF PHYSICAL CHEMISTRY B* 110 (18): 8986-8991 MAY 11 2006

Novitskaya V, Bocharova OV, Bronstein I, **Baskakov IV**. Amyloid fibrils of mammalian prion protein are highly toxic to cultured cells and primary neurons. *JOURNAL OF BIOLOGICAL CHEMISTRY* 281 (19): 13828-13836 MAY 12 2006

Song H, Lee MY, Kinsey SP, Weber DJ, **Blaustein MP**. An N-terminal sequence targets and tethers Na<sup>+</sup> pump alpha 2 subunits to specialized plasma membrane microdomains. *JOURNAL OF BIOLOGICAL CHEMISTRY* 281 (18): 12929-12940 MAY 5 2006

Fouts DE, Rasko DA, Cer RZ, Jiang LX, Fedorova NB, Shvartsbeyn A, Vamathevan JJ, Tallon L, Althoff R, Arbogast TS, Fadrosh DW, **Read TD**, Gill SR. Sequencing *Bacillus anthracis* typing phages Gramma and Cherry reveals a common ancestry. *JOURNAL OF BACTERIOLOGY* 188 (9): 3402-3408 MAY 2006

Miyamoto Y, Iimura M, **Kaper JB**, Torres AG, Kagnoff MF. Role of Shiga toxin versus H7 flagellin in enterohaemorrhagic *Escherichia coli* signalling of human colon epithelium *in vivo*. *CELLULAR MICROBIOLOGY* 8 (5): 869-879 MAY 2006

Zhu CR, Feng S, Thate TE, **Kaper JB**, Boedeker EC. Towards a vaccine for attaching/effacing *Escherichia coli*: a LEE encoded regulator (ler) mutant of rabbit enteropathogenic *Escherichia coli* is attenuated, immunogenic, and protects rabbits from lethal challenge with the wild-type virulent strain. *VACCINE* 24 (18): 3845-3855 MAY 1 2006

Shen JG, Liu SM, Miyake M, Liu WL, Pritchard A, **Kao JPY**, **Rosen GM**, Tong Y, Liu KJ. Use of 3-acetoxymethoxy carbonyl-2,2,5,5-tetramethyl-1-pyrrolidinyl oxyl as an EPR oximetry probe: Potential for *in vivo* measurement of tissue oxygenation in mouse brain. *MAGNETIC RESONANCE IN MEDICINE* 55 (6): 1433-1440 JUN 2006

Makarava N, Bocharova OV, Salnikov VV, Breydo L, Anderson M, **Baskakov IV**. Dichotomous versus palm-type mechanisms of lateral assembly of amyloid fibrils. *PROTEIN SCIENCE* 15 (6): 1334-1341 JUN 2006

Lehnart SE, Terrenoire C, Reiken S, Wehrens XHT, **Song LS**, Tillman EJ, Mancarella S, Coromilas J, **Lederer WJ**, Kass RS, Marks AR. Stabilization of cardiac ryanodine receptor prevents intracellular calcium leak and arrhythmias. *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA* 103 (20): 7906-7910 MAY 16 2006

Novitskaya V, Makarava N, Bellon A, Bocharova OV, Bronstein IB, Williamson RA, **Baskakov IV**. Probing the conformation of the prion protein within a single amyloid fibril using a novel immunoconformational assay. *JOURNAL OF BIOLOGICAL CHEMISTRY* 281 (22): 15536-15545 JUN 2 2006

MBC hosted two seminars during May and June. On May 16, Dr. Ralph A. Nixon from the New York University School of Medicine spoke on "Genetic and cellular roadblocks to neuron survival in Alzheimer's disease." Neurodegenerative diseases, like Alzheimer's, is one of MBC's major research areas. One of MBC's other major areas is cardiovascular disease which was the topic for the June 20 seminar by Dr. Wienian Shou of Indiana University who spoke on "The role of FKBP12 and BMP signaling in cardiac development and function." As always, the audience included scientists from across the street at the University of Maryland Baltimore.

### New Copier Arrives

MBC finally replaced the old paper eating copier with an advanced machine. Since the old machine had to be replaced, it was decided that the new one should have added functionality; in this case, the ability to scan in documents to pdf files and have them sent to an email address or a server. As more and more documents are expected to be exchanged digitally, and even grants are going to be submitted online (some already are), the ability to go from paper to pdf is critical. In addition, MBC will be able to archive old documents quickly and easily.

Vij N, **Fang SY**, Zeitlin PL. Selective inhibition of endoplasmic reticulum-associated degradation rescues Delta F508-cystic fibrosis transmembrane regulator and suppresses interleukin-8 levels. *JOURNAL OF BIOLOGICAL CHEMISTRY* 281 (25): 17369-17378 JUN 23 2006

**Aslan K**, Holley P, **Geddes CD**. Microwave-Accelerated Metal-Enhanced Fluorescence (MAMEF) with silver colloids in 96-well plates: Application to ultra fast and sensitive immunoassays, High Throughput Screening and drug discovery. *JOURNAL OF IMMUNOLOGICAL METHODS* 312 (1-2): 137-147 MAY 30 2006

Chowdhury MH, **Aslan K**, Malyn SN, **Lakowicz JR**, **Geddes CD**. Metal-enhanced chemiluminescence. *JOURNAL OF FLUORESCENCE* 16 (3): 295-299 MAY 2006

### Talks and Travels

**Dr. Long-Sheng Song**, invited speaker, "Local excitation-contraction coupling in normal and diseased hearts," Division of Cardiology, Carver College of Medicine, University of Iowa, Iowa City, IA, May 24, 2006.

**Dr. Valeriy Lukyanenko**, invited speaker, "Aqueous diffusion Pathways as a part of the ventricular cell ultrastructure," Department of Pharmacology and Physiology, George Washington University Medical Center, Washington, D.C., June 5, 2006.

**Dr. Long-Sheng Song**, invited speaker, "Local excitation-contraction coupling in normal and diseased hearts," Department of Physiology, Wayne State University, Detroit, MI, June 28, 2006