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“He surely is one of the very finest teachers among all the faculty in the University System of Maryland”

-Mordecai Blaustein

## Kao is Teacher of the Year

It is highly unusual for a research institution to be recognized for its excellence in teaching, yet MBC faculty member, Dr. Joseph P. Y. Kao, has won the University of Maryland Baltimore's (UMB) Teacher of the Year award. Primary UMBI faculty members often have secondary faculty positions at nearby teaching institutions. Dr. Kao has a secondary faculty position in the Department of Physiology at UMB. It is this voluntary and unsalaried secondary appointment that enables Dr. Kao to teach. However, Dr. Kao's dedication and commitment to teaching is unsurpassed.

Dr. Kao has headed the Department of Physiology's Master's Degree Program since 1993. As the Director of Graduate Education-Program in Neuroscience, Dr. Margaret McCarthy put it: "This is a largely thankless job as it carries no prestige, no monetary compensation and a great many headaches." This administrator job is on top of the work he does to maintain an active and funded research laboratory at UMBI, the lectures he gives and the courses he organizes

Yet for all the time and administrative tasks that Dr. Kao has chosen to do, the true basis for this award is that Dr. Kao is a uniquely gifted lecturer and connects to students at all levels. His own enthusiasm and incredible ability to make complex topics understandable without losing the nuances of the topic enhances every student's educational experience. As one former student put it, "Dr. Kao's lectures were simply spectacular for their clarity and depth." He invigorates his students and colleagues alike. This is seen in both his approval ratings from students over the years, which are consistently the highest,

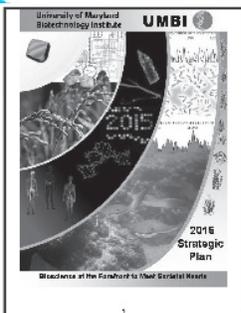
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Dr. Joseph Kao (center) receiving his award from Dr. David Ramsay, President of University of Maryland Baltimore, while Dr. Donald E. Wilson, Dean of the UMB School of Medicine looks on.

Photo from UMB, Office of External Affairs

## UMBI Strategic Plan



The Board of Regents of the University System of Maryland has begun a top to bottom evaluation of the system with an eye to reduce costs and increase efficiency. Announced on October 22, 2004, part of this Effectiveness and Efficiency Project is evaluating individual institutions within the system. To that end, UMBI was asked some time ago to develop a Strategic Plan. UMBI's plan was finished October 1 and distributed to faculty and staff on October 4. It is entitled "UMBI 2015 Strategic Plan: Bioscience at the Forefront to Meet Societal Needs."

The plan outlines five strategic goals and strategies to implement them. This is just the first step, however. Over the next few months, the goals and strategies will be dissected further into tactics and metrics before they are implemented. Each goal has been assigned to a committee to develop tactics for each strategy and to determine metrics which can be used to measure the success of each strategy.

If those interested in getting a copy of the plan, it is available to UMBI employees at <http://www.umbi.umd.edu/umbiwide>. This site requires a login. Outside individuals should call UMBI's central office.

## Seminar Series Starts

The seminar season got off to a good start with the Program in Neurodegenerative Disease hosting seminars in both September and October. Dr. Rosa Puertollano from NIH spoke on "Connections between Trafficking and Signaling at the Lysosomal degradative Pathway." Her research looks at how proteins are precessed for recycling or dismantling. When proteins are not properly recycled or broken down, they can accumulate and cause diseases. Alzheimer's, Parkinson's and Huntington's Disease are all thought to occur in such a way.

The second seminar was by Dr. Keping Xie from the Department of gastrointestinal Medical Oncology at M.D. Anderson Medical Center, University of Texas. He spoke on "Animal Models of Human Cancer and Experimental Molecular Therapy." The focus, however, was on the roles of nitric oxide and nitric oxide synthetase II (NOSII), one of the enzymes which produce nitric oxide in the body, in tumorigenesis. Dr. Xie found that tumorigenesis increase in knockout mice without NOSII. This was opposite of what had been found in some cancer cell lines which had increased NOSII expression, which suggested that cancers somehow made use of nitric oxide for metastasis. Based on cell culture work, blocking NOSII would seem a possible target for anti-tumor drugs. However, Dr. Xie's animals model indicates that blocking NOSII might actually increase tumorigenesis. Dr. Xie pointed out the importance of using animal models to test possible targets because the results in cells may not mimic the actual diseases process in the whole animal.



Dr. Keping Xie

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Award Continued

and the comments from his colleagues in their recommendations of him for this award. His joy of learning and love of science is infectious; his personal charm and happy outlook make him a pleasure work with. Dr. Mordecai Blaustein, Professor of Physiology and former Department of Physiology Chair, describes Dr. Kao as “a teachers’ teacher and many of us, his colleagues, have learned a great deal from him about teaching style....He surely is one of the very finest teachers among all the faculty in the University System of Maryland.”

Dr. Kao has been in the University System of Maryland since 1990. He joined the MBC with a secondary appointment in the Department of Physiology so that he could teach and participate in medical and graduate school programs. He inspired two of his UMB colleagues (Drs. Mordecai Blaustein and Richard Matteson) to join him in co-authoring a new text, *Cellular Physiology*, which was released in June, 2004.

Dr. Kao’s research centers on nanobiology, specializing in developing light triggered, fluorescent probes for calcium signalling and neurotransmission. He holds a number of patents in this area.

The formal award presentation was made at the UMB Founders Week Gala held October 14, 2004. Dr. Kao’s picture, on a banner (right), will grace the library for the next year, along with the other award winners.



## A Star is Born

We have a new star at the MBC—sort of. Dr. Ilia Baskakov got major media attention after the publication of a Science article on which he was co-first author as indicated in the publication notes. The paper, entitled “Synthetic Mammalian Prions” came out at the beginning of August (see *Inside MBC*, Vol. 7 No. 4) and was the first real proof of the “protein-only hypothesis.” This hypothesis states that under special circumstances proteins by themselves can become infectious. UMBI put out a press release on August 5, 2004 and WJZ-TV decided to do a story on it as part of their “Health Watch” segment.



The role of media star may look glamorous but Dr. Baskakov will tell you that a lot of it was just very unglamorous waiting. On the first attempt at an interview, it was canceled at the last minute by breaking news. The WJZ camera crew and reporter, Sharon Lee, finally made it and spent two hours taking footage and notes. UMBI Communications Specialist, Alicia Moran, was also on hand to make sure the institution was acknowledged properly and

that communications between UMBI, Dr. Baskakov and the TV crew were clear. In the end, there was a two minute segment which aired September 19 and 20, 2004, during the WJZ Health Watch segments.

When asked about the experience, Dr. Baskakov said: “We were very excited to be able to present our findings to the public. Our goal is to make scientific discoveries that will be useful for society.”

Dr. Baskakov has only been at MBC since 2001 (*Inside MBC*,

## MBC Happenings

### Honors

**Tim Hughes**, Assistant Director, celebrated 30 years with the University System of Maryland on September 4, 2004.

### Comings and Goings

MBC welcomes Timothy Michael who was born on September 27, 2004 to Dr. Monteiro's Research Assistant, **Lisa Ostrowski** and her husband Dan.

### Grants and Contracts

**Dr. W. Jonathan Lederer**, NIH, "Slip Mode Conductance in Heart," 9/1/04, \$371,250, yr 5 of 5.

**Dr. W. Jonathan Lederer**, UMB/NIH, "Subcellular Organization and Ca<sup>2+</sup> Signalling in Heart failure," 9/1/04, \$378,281, yr 3 of 5.

**Dr. Chris Geddes**, UMB/NIH, "Metal-enhanced Fluorescence Sensing," 9/1/04, \$104,812, yr 2 of 2.

**Dr. Chris Geddes**, Thermogenic Imaging, Inc., "Fluorescent Sensor Development and Screening Program," 10/1/04, \$128,635, yr 1 of 1.

### Publications

Weaver J, Porasuphatana S, Tsai P, Cao GL, Budzichowski TA, Roman LJ, **Rosen GM**. The effect of divalent cations on neuronal nitric oxide synthase activity. TOXICOLOGICAL SCIENCES 81 (2): 325-331 OCT 2004

Badugu R, **Lakowicz JR**, **Geddes CD**. Fluorescence intensity and lifetime-based cyanide sensitive probes for physiological safeguard. ANALYTICA CHIMICA ACTA 522 (1): 9-17 SEP 20 2004

Zhang J, **Geddes CD**, **Lakowicz JR**. Complexation of polysaccharide and monosaccharide with thiolate boronic acid capped on silver nanoparticle ANALYTICAL BIOCHEMISTRY 332 (2): 253-260 SEP 15 2004

Jordan DM, Cornick N, Torres AG, Dean-Nystrom EA, **Kaper JB**, Moon HW. Long polar fimbriae contribute to colonization by *Escherichia coli* O157 : H7 in vivo. INFECTION AND IMMUNITY 72 (10): 6168-6171 OCT 2004

Pearson T, Busch JD, Ravel J, **Read TD**, Rhoton SD, U'Ren JM, Simonson TS, Kachur SM, Leadem RR, Cardon ML, Van Ert MN, Huynh LY, Fraser CM, Keim P. Phylogenetic discovery bias in *Bacillus anthracis* using single-nucleotide polymorphisms from whole-genome sequencing. PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA 101 (37): 13536-13541 SEP 14 2004

Hermanson G, Whitlow V, Parker S, Tonsky K, Rusalov D, Ferrari M, Lator P, Komai M, Mere R, Bell M, Brennenman K, Mateczun A, Evans T, Kaslow D, **Galloway D**, Hobart P. A cationic lipid-formulated plasmid DNA vaccine confers sustained anti body-mediated protection against aerosolized anthrax spores. PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA 101 (37): 13601-13606 SEP 14 2004

**Ursitti JA**, Lee PC, Resneck WG, McNally MM, Bowman AL, O'Neill A, Stone MR, Bloch RJ. Cloning and characterization of cytokeletins 8 and 19 in adult rat striated muscle - Interaction with the dystrophin glycoprotein complex. JOURNAL OF BIOLOGICAL CHEMISTRY 279 (40): 41830-41838 OCT 1 2004

Torres AG, Kanack KJ, Tutt CB, Popov V, **Kaper JB**. Characterization of the second long polar (LP) fimbriae of *Escherichia coli* O157 : H7 and distribution of LP fimbriae in other pathogenic

## Secondary What?

Did you ever wonder about some of the names on our faculty list that do not correspond to laboratories in the building? They are 'Secondary Faculty'. These are individuals from sister institutions or close collaborators who are part of the network of professionals that MBC primary faculty members work with, teach with or share other professional activities with on a regular basis. Primary faculty members are those whose main appointments are at the MBC. Secondary faculty members have primary appointments elsewhere.

There are mutual benefits for both MBC and the primary institution of the secondary faculty member. These include shared administrative duties on committees or sharing costs for lecture and seminar speakers. Secondary faculty members regularly give seminars at the secondary institution, as well.

This networking is one of the hallmarks of MBC and the other UMBI centers. These mutually beneficial arrangements enhance the impact of UMBI and MBC within the USM system and beyond.

*E. coli* strains FEMS MICROBIOLOGY LETTERS 238 (2): 333-344 SEP 15 2004

Dilly KW, Kurokawa J, Terrenoire C, Reiken S, **Lederer WJ**, Marks AR, Kass RS. Overexpression of beta(2)-adrenergic receptors cAMP-dependent protein kinase phosphorylates and modulates slow delayed rectifier potassium channels expressed in murine heart - Evidence for receptor/channel co-localization. JOURNAL OF BIOLOGICAL CHEMISTRY 279 (39): 40778-40787 SEP 24 2004

Cai X, Liang CW, Muralidharan S, **Kao JPY**, Tang CM, Thompson SM. Unique roles of SK and Kv4.2 potassium channels in dendritic integration. NEURON 44 (2): 351-364 OCT 14 2004

Zhong XY, Shen YX, Ballar P, Apostolou A, Agami R, **Fang SY**. AAA ATPase p97/valosin-containing protein interacts with gp78, a ubiquitin ligase for endoplasmic reticulum-associated degradation. JOURNAL OF BIOLOGICAL CHEMISTRY 279 (44): 45676-45684 OCT 29 2004

**Baillie L**, Townend T, Walker N, Eriksson U, Williamson D. Characterization of the human immune response to the UK anthrax vaccine. FEMS IMMUNOLOGY AND MEDICAL MICROBIOLOGY 42 (2): 267-270 OCT 1 2004

### Talks and Travels

**Dr. W. Jonathan Lederer**, Invited Speaker, Tribute to Denis Noble, "Ca<sup>2+</sup> Handling in Cardiac Cells." Montpellier, France. September 3-5, 2004.

**Dr. W. Jonathan Lederer**, Invited speaker, 10th Annual Meeting of the Israeli Society for research, Prevention and Treatment of Atherosclerosis in Conjunction with the Frontiers in Cardiovascular Science, Eilat, Israel, "Calcium Handling in Cardiac Cells," October 14-17, 2004.

**Dr. Chris Geddes**, Seminar Speaker, Department of Biochemistry & Molecular Biology, University of Maryland, Baltimore, "A Glucose Sensing Contact Lens," October 25, 2004.