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# BiOMET

Center for Biomedical Engineering and Technology - University of Maryland School of Medicine  
in conjunction with the Fischell Department of Bioengineering, School of Engineering, University of Maryland, College Park

## New Look Unites Campus Community

As one of the newest groups on campus, administratively at least, BioMET faculty and staff were often confused as to which entity we needed to contact for various functions. The logos and web pages all looked so different that it was hard to tell the relationships between groups, and where we would fit in. With the unveiling of a new logo and branding campaign, this is less of a problem. The comprehensive redevelopment of the public face of the University of Maryland here in Baltimore and the University of Maryland Medical Center should begin to reduce the confusion about the relationships between the Graduate School, the six professional schools, and the Medical Center. The background for the initiative can be found at <http://www.oea.umaryland.edu/communications/branding/background>.

For faculty and staff, it will take some time to become familiar with using the new logos. The new look of the newsletter incorporates the new colors, fonts, and logo that have been specified in the branding effort. The familiar red, yellow and black have been tweaked to be more vibrant, reflecting the exciting work going on all over campus. The logo retains a reference to Davidge Hall, the oldest, continuously used medical facility in the country, with the three



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SCHOOL OF DENTISTRY



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SCHOOL OF MEDICINE



UNIVERSITY of MARYLAND  
GRADUATE SCHOOL

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## STEM and Other Summer Visitors

While summer is generally the time to kick back and relax, many teachers and students take the opportunity to enhance their skills or acquire new ones. For science teachers, one pathway of enhancement is interning in a research laboratory. Over the years, BioMET has hosted these dedicated individuals. With the increase emphasis on science in the curriculum, especially through such federally sponsored initiatives such as STEM (Science, Technology, Engineering and Math) education, more paid internships are available, if the teachers can find laboratories to host them.

Maryland is a leader in STEM education, having developed a number of STEM opportunities for P-12 students and teachers. The University System of Maryland has made support of these opportunities a special priority (see [http://www.usmd.edu/usm/STEM/?zoom\\_highlight=stem](http://www.usmd.edu/usm/STEM/?zoom_highlight=stem)).

So when Dr. Mariusz Karbowski was asked to host a STEM teacher through the BEST (Baltimore Excellence in STEM Teaching) program administered through Towson University, he did not hesitate to

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### BIOMET SCIENTIFIC PROGRAMS

LABORATORY OF MOLECULAR CARDIOLOGY

LABORATORY OF NANOBIOLOGY

LABORATORY FOR NEURODEGENERATIVE DISEASES

LABORATORY FOR PRION DISEASES

PROGRAM IN CANCER BIOLOGY

PROGRAM IN CELL STRUCTURE AND DEVELOPMENT

PROGRAM IN MITOCHONDRIAL DYNAMICS



UNIVERSITY of MARYLAND  
SCHOOL OF MEDICINE



Dr. Scott Thompson has been named Acting Chair of the Department of Physiology in the School of Medicine. Dr. Meredith Bond resigned effective June 30 to become Dean of the College of Sciences and Health Professionals at Cleveland State University. Nine BioMET faculty members have their academic home in the Department of Physiology. Dr. Thompson is a well-known and well-respected professor in Physiology, and BioMET looks forward to working with him.

The Fischell Department of Bioengineering is beginning an ambitious project to include a new building and new opportunities to partner with their faculty and students. BioMET Acting Director Dr. W. Jonathan Lederer has already assured Dr. William Bentley, the Fischell Department Chair, of our Center's enthusiastic support of this endeavor.

## VISITORS, CONTINUED



agree. The program placed Nicole Veltre (top left), the AP Biology teacher and science chair at Digital Harbor High School in Dr. Karbowski's laboratory. Ms. Veltre is expecting to utilize her time here in developing the AP biology curriculum for Digital Harbor, incorporating expertise and input from BioMET faculty members. Dr. Karbowski has also been hosting Nina Mezu, a rising senior biology major at Towson University, as an intern for the past six months.

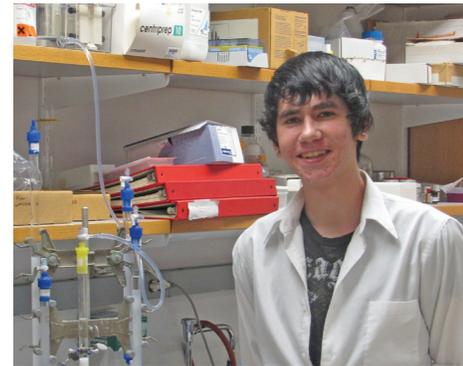
Besides Ms. Veltre in Dr. Karbowski's laboratory, Dr. Joseph Kao is hosting two students for the summer. Elise Mead is a junior majoring in Biochemistry at Cornell College in Mt.

Vernon, Iowa. She is working on the chemical synthesis of a new family of fluorescent calcium indicators that are "emission-ratiometric"—a property that makes the indicators quantitatively calibratable and also

immediately useful on confocal microscopes. Elise Mead (bottom left) is supported by a Kao Fellowship in Medical Biotechnology, established at Cornell College by Frances Kao, Esq., an alumna of Cornell College. The second student is Duncan Woodbury (right), a junior at Reservoir High School in Howard County. Duncan is a fast study with a fund of science knowledge that he acquired on his own through reading.

He is working on the isolation and synthetic modification of carotenoids from certain plants. The resulting semi-synthetic carotenoids are expected to have anti-oxidant properties and can be used in living cells and tissue to afford protection against oxidative damage, especially photo-induced oxidative damage during fluorescence microscopy experiments. Duncan came to Dr. Kao's lab on the recommendation of Dr. Kate Yienger, a former PhD student of Dr. Kao.

Additional summer interns are expected next month.



Editor and Designer: Pamela B. Wright  
Assistant Editor: Brian Hockenberry

Publisher: W. Jonathan Lederer, Acting Director  
BioMET  
Assistant Publisher: Joseph Kao, Acting Associate  
Director BioMET

Contact us at: pbwright@umaryland.edu  
or 1-410-706-8181

BioMET, UMB  
725 West Lombard Street, Rm 340  
Baltimore, MD 21201 USA

Back issues of *BioMET NOW* are available on the web  
at: <http://biomet.umaryland.edu>

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## **Congratulations!**

**Dr. Nuria Gonzalez-Montalban**, a postdoctoral fellow in Dr. Iliia Baskakov's laboratory, has won the "Student and Post-Doctoral Fellow Oral Award" for her presentation at the 2011 Prion Meeting, held in Montreal, Canada. The title of her talk was 'New PMCA format for ultra efficient Prion conversion.'



columns and stylized dome. (If you have not experienced a lecture in the Hall, you have missed a unique opportunity to truly feel the historicity of medical education at Maryland!) However, the red and yellow glosses give the entire logo a dynamic feel, and a sense of how active UM truly is.

The rules for various versions of the new logos, the specific colors required and the myriad of details in using the logos on publications, letterheads, PowerPoint presentations and many other communication tools utilized by the university, as well as its faculty and staff, can be found at <http://www.oea.umaryland.edu/communications/branding/>. Besides the actual logos, all of which can be downloaded from the link, a style guide includes the fonts to be used (Trajan Pro is used for the lettering on the logos, but there are others to be used in various situations), the specific colors (given as the Pantone Matching System number, CMYK, RGB, and Hex code) and the limits for size and configuration of logos.

The branding effort, though initiated from the top, requires the efforts of everyone. The process is being coordinated by Laura Kozak, interim assistant vice president of communications and marketing, with the help of “brand ambassadors” representing all of the various departments, schools, centers, and institutes. BioMET brand ambassadors are Dr. W. Jonathan Lederer and Pamela Wright.

Some of us may have noticed a new motto as well: “Real-World Thinking | Worldwide Reach,” which is prominently placed on the UM website (<http://www.umaryland.edu/>). All the web pages now have the same look and feel through the use of a standard header. The BioMET web page also has been updated, but has not yet implemented the full redesign.

## Here Comes the Judge

While BioMET’s former institution (University of Maryland Biotechnology Institute) no longer exists, its reputation lingers and our faculty’s association with UMBI still hangs around. So when the US National BioGENEius Challenge for high school students was looking for a judge for the final competition held during the 2011 BIO US National Convention (the premier biotechnology meeting), they understandably tapped Dr. Shengyun Fang (right), who is still listed as a UMBI faculty member in the FASEB database. Dr. Fang agreed to be a judge. Indeed, he was the only academic researcher on the panel of nine judges.

Dr. Fang found the experience to be interesting and illuminating. “The high school student projects were amazing,” he said. “And the BIO meeting was fascinating. The Maryland exhibit was very large. Maryland really has a significant presence in the biotech community.”

UMBI had regularly set up a booth as part of the Maryland exhibit. The Center’s current institution, University of Maryland, The Founding Campus (formerly University of Maryland Baltimore), was the only USM institution within the 2011 Maryland exhibit. The University of Maryland, Biotechnology Network in College Park was also listed as an exhibitor.



## Fairway Foursome

BioMET’s new Assistant Director, Brian Hockenberry, organized a foursome for the University’s annual spring golf tournament that benefits the University of Maryland Baltimore Foundation. Golf is in Brian’s family as his father is a golf pro. Brian recruited BioMET Professor Dr. Mervyn Monteiro, well-known as an avid golfer, and Acting Director Dr. W. Jonathan Lederer, not known as a golfer at all. To round out the foursome, Brian brought former Assistant Director Tim Hughes out of retirement, so to speak. The combination proved to be a winner, as the group took second place in their division. That garnered each of them a gift certificate to the clubhouse pro-shop. Who knows what will happen next year!

Congratulations to the fearsome foursome!

From left to right:  
Dr. Lederer, Brian Hockenberry, Dr. Monteiro, Tim Hughes.



# BIOMET HAPPENINGS

## **Comings and Goings**

**Dr. Leping He** has left Dr. Lederer's laboratory. **Xunzhang Chen** has left Dr. Xu's laboratory.

## **Publications**

Lee YJ, Savtchenko R, Ostapchenko VG, Makarava N, **Baskakov IV**. Molecular Structure of Amyloid Fibrils Controls the Relationship between Fibrillar Size and Toxicity. *PLoS One*. 2011;6(5):e20244.

Ke Z, Wang X, Liu Y, Fan Z, Chen G, Xu M, Bower KA, Frank JA, Li M, **Fang S**, Shi X, Luo J. Ethanol Induces Endoplasmic Reticulum Stress in the Developing Brain. *Alcohol Clin Exp Res*. 2011 May 20. [Epub ahead of print]

**Vogel BE**, Wagner C, Paterson JM, Xu X, Yanowitz JL. An extracellular matrix protein prevents cytokinesis failure and aneuploidy in the *C. elegans* germline. *Cell Cycle*. 2011 Jun 15;10(12).

**Karbowski M**, Youle RJ. Regulating mitochondrial outer membrane proteins by ubiquitination and proteasomal degradation. *Curr Opin Cell Biol*. 2011 Jun 24. [Epub ahead of print]

Ma D, Taneja TK, Hagen BM, Kim BY, Ortega B, **Lederer WJ**, Wellington PA. Golgi Export of the Kir2.1 Channel Is Driven by a Trafficking Signal Located within Its Tertiary Structure. *Cell*. 2011 Jun 24;145(7):1102-15.

## **Grants and Contracts**

**Williams, George S.B.**, NRSA/NIH, "Molecular Basis of Ca<sup>2+</sup> Leak in Heart," 5/16/2011, \$53,583, yr 1 of 3.

**Baskakov, Iliia** 6/1/11, NIH/NINDS, "Self-propagating Mechanism of Prion Diseases," \$294,000, yr 1 of 1.

**Lee, Young Jin**, 6/30/11, Maryland Stem Cell Research Fund, "Evaluating the Role of Prion Protein in Self-renewal and Differentiation of Human Embryonic Stem Cells for Neuronal Regenerative Therapy," \$55,000, yr 1 of 2.

## **Talks and Travels**

**Baskakov, Iliia**, Invited Speaker, Mammalian prions: from protein to disease," Department of Biochemistry, Dartmouth Medical School, Hanover, NH, May 6, 2011.

**Rosen, Gerald**, Marsico Visiting Scholar and Lecturer, Department of Chemistry and Biochemistry, University of Denver, May 9-13, 2011. Dr. Rosen is a core member of BioMET and a primary faculty member in the UM School of Pharmacy.

**Baskakov, Iliia**, Invited Speaker, "Mammalian prions: genesis and evolution of infectious protein structure," IXth European Symposium of the Protein Society, Stockholm, Sweden, May 23, 2011.

**Karbowski, Mariusz**, NIH Study Special Emphasis Study Section: "Biomarkers Indicative of Mitochondrial Dysfunction," Durham, NC, June 1-3, 2011.

**Kao, Joseph P.Y.**, Invited speaker, "Photochemical Neurobiology," Gordon Research Conference on Bioorganic Chemistry, Proctor Academy, Andover, NH, June 12 - 17.

**Lederer, W. Jonathan**, speaker, annual ENAFRA meeting, Utrecht, Netherlands, June 19-21, 2011. Dr. Lederer is a project leader on the ENAFRA grant funded by the Leducq foundation.

**Lederer, W. Jonathan**, speaker, annual EuTrigTreat meeting, Goettingen, Germany., June 22-24, 2011. Dr. Lederer is a project leader for the EuTrigTreat grant funded by the European Union.

## **Jami Kasco Promoted**

While Jami Kasco operates as BioMET's business manager, her formal title was Business Services Specialist, hardly reflecting the depth and level of responsibility that she has for BioMET's fiscal operation. She now has a title more fitting to the real impact she makes at BioMET—Budget Analyst. Jami has been and continues to be responsible for maintaining all grant and operating accounts. Nothing is spent without her knowing about it. In addition, she supervises HR operations. The move to UMB required hours of training on the administrative systems within our new institution. Until our new Assistant Director came on board, she was the only person who knew all the systems necessary to have BioMET fully functional within UMB!

Congratulations to Jami on a well-deserved promotion.

## **NIH Mitochondrial Symposium**

Mitochondrial biology is one of the hottest areas of research around. New research found that, besides being a cell's energy source, mitochondria controlled apoptosis, programmed cell death, among other functions. Since then a new appreciation for the dynamic nature of mitochondrial operations within a cell has brought the field new vigor. Research on mitochondrial biology is now part of NIH's Roadmap to Medical Research.

As part of this new appreciation, NIH's National Heart Lung and Blood Institute (NHLBI) sponsored the The Mitochondrial Biology in Cardiovascular Health and Diseases Conference in 2008. BioMET Acting Director, Dr. W. Jonathan Lederer was invited to attend that meeting. That was so successful, that NHLBI decided to continue to bring together mitochondrial researchers, sponsoring a second meeting on May 16-17, The 2011 NHLBI Mitochondrial Biology Symposium: Advances in Mitochondrial Dynamics and Mitochondrial-Cytosolic Communications, which is expected to be held biennially from now on. Dr. Lederer along with several members of his laboratory attended the Symposium. In addition, BioMET Assistant Professor Mariusz Karbowski, an up and coming mitochondrial dynamics researcher, attended, winning a travel award to help defray expenses. Both laboratories gave poster presentations.

## **Grant Review Meeting Redux**

Given the popularity of the first Grant Review Meeting (*BioMET Now* Vol. 14, No. 1), the faculty again came together on May 18 to review grants scheduled to be submitted on June 6 to NIH. Two grants were reviewed, one from Dr. W. Jonathan Lederer and the other from Dr. Bruce Vogel. Dr. Lederer had already indicated that he would not submit on June 6, but wanted his colleagues' comments. The resulting reviews of Dr. Vogel's proposal, however, convinced him not to submit in June but wait until October, in order to address a number of significant issues his colleagues found. In the current funding climate, any significant problem could result in a proposal being triaged and not reviewed. With only one re-submission possible, only a reviewed proposal would have any chance for funding the second time around.