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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

Ghostly Residue



To paraphrase MacArthur, old facility managers never die, they just fade away. In this case, BioMET's old facilities manager, Mike McCrea, did more than fade—he left his trademark 'uniform' as a memento. When Assistant Director Brian Hockenberry came in on January 2, he found the light on in the office Mike was using. Fairly sure the light had been turned off over the New Year's holiday, Brian opened up the office to find the neatly laid out uniform as seen to the left. As the rest of the administrative staff came in, they too came to look at these ghostly remains.

Mike's practical jokes were well-known and well-taken, but it was a surprise that he managed to pull one off *in absentia*!

*Mike McCrea's Uniform Sans
Mike McCrea: Mike's trademark
white coat, white shirt, tie, black
pants and black shoes—always
with his IDs dangling from the
pocket.*

BIOMET SCIENTIFIC PROGRAMS

LABORATORY OF
MOLECULAR CARDIOLOGY

LABORATORY OF
NANOBIOLGY

LABORATORY FOR
NEURODEGENERATIVE DISEASES

LABORATORY FOR
PRION DISEASES

PROGRAM IN
CANCER BIOLOGY

PROGRAM IN
CELL STRUCTURE AND
DEVELOPMENT

PROGRAM IN
MITOCHONDRIAL DYNAMICS

SOM State of the School Published

The School of Medicine's Annual State of the School Report—"Forging Ahead"—was published, based on Dean Reece's address given in September. A video of the address can be found at http://medschool.umaryland.edu/public_affairs/sots.asp. The School has held its own in these troubling times, maintaining a strong portfolio of grants and contracts. In addition, it has significantly increased its private support. The report also highlights many of the faculty and programs that have made the University of Maryland School of Medicine one of the top ranked public schools in the nation.

BioMET faculty and staff are encouraged to look at the video or the written report.





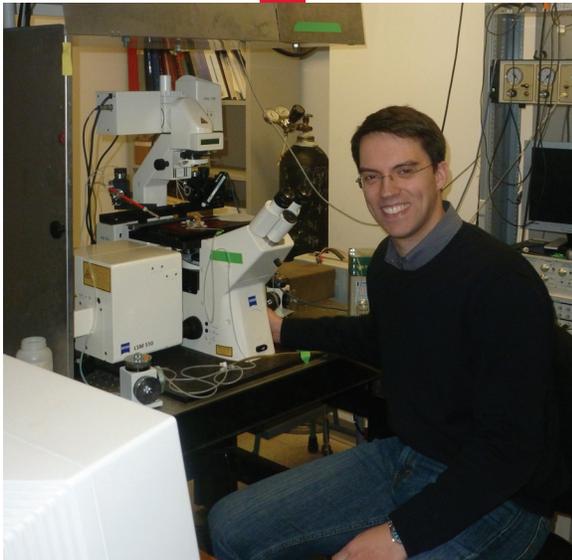
BioMET welcomes Christopher Harwick as the new assistant dean of Public Affairs and Communications for the School of Medicine. We look forward to working with Mr. Harwick.

Congratulations to Jeff Rappaport, one of Silvia Muro's Bioengineering students, who was awarded an Undergraduate Research Fellowship from the Howard Hughes Medical Institute. Dr. Muro's laboratory studies targeted drug delivery systems and Mr. Rappaport will continue to do research in this area. Dr. Muro's laboratory has won numerous accolades and continues to be a leader in the field of nanomedicine.

Lederer Laboratory Hosts Dr. Voigt

Dr. Niels Voigt from the University of Essen in Germany spent three weeks visiting the Lederer laboratory, joining them in a side trip to the Annual Biophysical Society meeting in Philadelphia. Dr. Voigt came to learn about some of the special techniques that the Lederer laboratory has developed to

image heart cells, including the now famous cellular stretch technique. The technique actually stretches individual heart cells, mimicking the stretch they undergo naturally. He and his colleagues in Essen are part of a collaborative research project funded by the Leducq Fondation that includes BioMET Director W. Jonathan Lederer. While he was here, the Lederer laboratory celebrated his birthday with a cake. He was much appreciative and invited the entire laboratory for drinks at a local wine bistro. All in all, a festive occasion that helped ease his missing a birthday celebration with his family. Dr. Voigt expects to try to bring the new techniques he saw in the Lederer laboratory to his laboratory in Essen.



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Congratulations

Dr. W. Jonathan Lederer gave The Dirk L. Brutsaert Lecture entitled "Elementary Ca²⁺ events: From discovery to their implication for the physiology and pathology of the heart," at the European Society for Cardiology Meeting in Les Diablerets, Switzerland on January 24, 2013.

Moving Update

Dr. Mervyn Monteiro completed his move to the sixth floor of Pharmacy South in early January. Considering that he was the first, there were only minor glitches, probably because Dr. Monteiro had carefully organized his laboratory for the move. He shared his experience with his fellow faculty members in the February faculty meeting.

Construction is underway on the fifth floor of Pharmacy South. Drs. Lederer, Kao and Karbowski will move in to this area once it is completed. Changes over the course of a month were very apparent. The pictures were taken on January 18 and February 22, respectively.

The East hallway (both pictures to the right) went from having built in lockers on the left to having the wall filled in with studs. The cold room seen on the right hand side of the hallway in first picture was removed, a doorway put in and the walls studded out. The cold room is being converted to an imaging room for Dr. Mariusz Karbowski.

Below, a laboratory is converted from a standard laboratory into two imaging rooms. As one can see, just clearing out the old material takes considerable effort.



As Pharmacy South was undergoing construction, the General Research Building (GRB) that will house BioMET's remaining faculty and all its administration was going through the design phase. The final construction drawings were finished in February. The project will then go out to bid. Construction will begin as soon as a contractor has been chosen. In the meantime, as seen to the right, the GRB has been completely gutted, awaiting construction.

BIOMET HAPPENINGS

Comings and Goings

Transferred: Long-time dishwasher, Ollie Collins, to the IHV.
Dr. Nuria Gonzalez Montalban has left Dr. Baskakov's laboratory.

Publications

Makarava N, Savtchenko R, **Baskakov IV**. Selective amplification of classical and atypical prions using modified protein misfolding cyclic amplification. *J Biol Chem*. 2013 Jan 4;288(1):33-41.

Baskakov I.V. "New Perspective on Prion Conversion: Introducing a Mechanism of Deformed Templating", In: *Prions and Diseases*, Springer New York, NY, 2013 p 121-133.

Grants and Contracts

Awards

Dr. W. Jonathan Lederer, 1/1/2013, NIH-NHLBI, "Calcium Entrained Arrhythmias," \$883,241, yr 3 of 5. Note: Due to cuts in NIH budgets, administrative cuts were made to funding. These cuts may be restored.

Submissions

Dr. Aristide Chikando, 1/30/2013, AHA, "Mitochondrial Calcium Signaling in Living Heart Cells," Total Request: \$308,000.

Dr. B. Maura Greiser, 1/30/2013, AHA, "X-ROS Signaling in Atrial Myocytes," Total Request: \$308,000.

Dr. Bruce E. Vogel, 1/30/2013, NSF, "The Role of the Extracellular Matrix in Cytokinesis," Total Request: \$1,027,499.

Dr. Mervyn J. Monteiro, 1/30/2013, NSF, "Impact of misfolded protein accumulation on organism survival and development," Total Request: \$752,008.

Dr. Mervyn J. Monteiro, 2/1/2013, Amyotrophic Lateral Sclerosis Foundation, "Deciphering the mechanism by which mutations in ubiquilin-2 cause ALS," Total Request: \$83,137.

Patents

Iliia Baskakov, **Natallia Makarava**, **Nuria Gonzalez-Montalban**, and **Robert Rohwer**, February 6th, 2013. UMB filed European Patent Application "Improving the Efficiency of Prion Conversion In Vitro and Sensitivity of Prion Detection"

Talks and Travels

Dr. W. Jonathan Lederer, The Dirk L. Brutsaert Lecture "Elementary Ca²⁺ events: From discovery to their implication for the physiology and pathology of the heart," The European Society for Cardiology Meeting, Les Diablerets, Switzerland, January 24, 2013.

Dr. Benjamin Prosser, Symposium Speaker, "ROS-mediated stretch-sensing by NOX2." ESC Heart Failure Association Winter Research Meeting. Les Diablerets, Switzerland, January 25, 2013.

Dr. W. Jonathan Lederer, Symposium speaker, "Mitochondrial Calcium Dynamics," Bioenergetics Subgroup Symposium on Mitochondria, Biophysical Society Annual Meeting, Philadelphia, PA, February 2, 2013.

Dr. Benjamin Prosser, Symposium Speaker, "Rate-dependent X-ROS signaling in cardiac ventricular myocytes." Biophysical Society 57th Annual Meeting. Philadelphia, PA. February 3, 2013.

Dr. Iliia Baskakov, Seminar Speaker, "Genesis of Mammalian

MPower Update

Editor's Note: While BioMET may not participate in all activities relating to the new initiative, the success of the entire enterprise benefits everyone. Thus, all activities of the new initiative will be highlighted in BioMET Now. As before, all members of the BioMET community are encouraged to look at the MPower web site at mpowermaryland.com for current information.

On January 22, UMB President, Dr. Jay Perman discussed the progress of the *MPowering the State* initiative. A summary of his remarks can be found at <http://www.umaryland.edu/offices/communications/news/?ViewStatus=FullArticle&articleDetail=19820>. There are two new centers that have been established that involve faculty from both campuses, but not joint appointments.

For BioMET, the ability to have joint appointments is of fundamental importance. However, in just this one area there are multiple issues with which to contend. Firstly, there are human resources issues like who administers the salary and benefits. Then there are academic issues like promotion and tenure. Additional questions include: Who administers the grants? How are indirect costs allocated? What about office and laboratory space? What about teaching duties?

The new initiative did not have additional resources given to it, so either old resources must be re-assigned or new sources developed, as for the new centers mentioned above. Both of these take time and effort, and it was not as if either university was inactive! Both the University of Maryland Baltimore and the University of Maryland College Park are vibrant academic communities in their own right. While the initiative holds great synergistic promise, this promise will not be realized if damage is done to either partner in the process of re-aligning activities. BioMET is eager to support the process and has made it clear to the steering committee that our staff and faculty are willing to do whatever is needed to help.

Prions: from protein to disease", Department of Biochemistry and Molecular Biology, University of Maryland School of Medicine, Baltimore, MD, February 4, 2013.

Dr. W. Jonathan Lederer, Advisory Board Meeting, National Resource of Cell Analysis & Modeling, University of Connecticut, Farmington, CT, February 11, 2013.

Dr. Mariusz Karbowski, NIH, MBPP study section meeting in Washington, DC, February 14-15, 2013.

Dr. Iliia Baskakov, NIH Study Section ZRG1 IDM-S, February 15, 2013.

Dr. Benjamin Prosser, Seminar Speaker, "X-ROS in working myocardium." University of Maryland School of Medicine. Baltimore, MD. February 19, 2013.

Dr. Benjamin Prosser, Seminar Speaker, "Pulling on the heart strings - Stretch-dependent ROS and Ca²⁺ signaling." The George Washington University School of Medicine. Washington DC. February 21, 2013.

Dr. Iliia Baskakov, NIH Study Section CMND, San Francisco, CA, February 21-22, 2013.