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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

## Granting Wishes

One of the best kept secrets in the School of Medicine is the Office of Research Career Development (RCD) headed by Wendy Sanders. This office holds regular classes and workshops on myriad of topics that, as their web page states (<http://medschool.umaryland.edu/career/>), "are critical to an academic research career, including Grant Writing, Publishing Your Research and Identifying Funding Sources for Your Research." There are also day-long symposia on leadership and career development.



Dr. Maura Greiser, one of BioMET's newest faculty members, and Research Coordinator Pamela Wright attended a workshop, entitled Grant Writing Workshop for New Investigators, held on November 7. All newly hired faculty were invited. Ms. Wright attended at the behest of Dr. Greiser. One of Ms. Wright's activities at BioMET is to edit grants and manuscripts. She also advises faculty and trainees on grant processes. She was happy to attend, stating: "While I was aware of the program at SOM, I had not really had a chance to see the RCD office in action. While I did not totally agree with some of the things they suggested, most of what they presented was spot on. I would

certainly recommend their services to my faculty." Ms. Wright has all the handouts from the workshop and would be happy to share them.

Ms. Wright, in her advice to young investigators, expanded on what was presented. She notes, "Young investigators often approach grant writing as an off shoot of manuscript writing. However, it is significantly different. They do not truly appreciate the fact that a grant proposal is about what they would like to do, so that it is a much more personal statement about their research. Using the usual cool disinterested, objective tone expected for manuscripts makes for a very uninteresting and dry grant proposal. After all, if the person proposing the research is not enthusiastic about doing it, then why should the reviewer be enthusiastic? So the tone of a proposal is different from a manuscript.

Another point that a young investigator needs to keep in mind is that the evidence presented in a manuscript is expected to be substantial and complete and justify the conclusions. Evidence and justification is limited in a grant proposal. Manuscripts are about probabilities; grant proposals are about possibilities.

One last point that is critical for young investigators to understand is that reviewers are not experts in their field. They are the only expert on their own research. Too many young researchers assume that the reviewers will know what they are talking about. This is a bad assumption. Grant proposals need to be clear and logical, with all the information there to follow the approach proposed."

Grant writing, or grantsmanship, is a learned skill. As Dr. Martin Stuart, the last presenter in the workshop, noted "Write early... Write often."

RCD offers many classes and workshops with several different formats. A list of upcoming events can be found on the web site listed above.

### 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



UNIVERSITY of MARYLAND  
SCHOOL OF MEDICINE



UMCP

The University of Maryland School of Medicine hosted the second annual Festival of Science, December 12, 2014. Keynote speaker was Anthony Fauci, MD, director of the National Institute of Allergy and Infectious Diseases and an expert in AIDS. One of the main topics this year was infectious diseases and global viruses, particularly those that have made the news, such as Ebola. The second main topic was inflammation, intimately linked to infection. Speakers from a variety of UMB departments presented. BioMET Director W. Jonathan Lederer and several others from BioMET attended.

The Fischell Department of Biomedical Engineering will be getting new space, initiated with the ground breaking for the new A. James Clark Hall, designed to 'cultivate transformative new engineering and biomedical technologies to accelerate advancements in human health.' ([http://www.bioe.umd.edu/news/news\\_story.php?id=8679](http://www.bioe.umd.edu/news/news_story.php?id=8679)) The Fischell Department is one of the top biomedical engineering programs in the US, if not the world, and the new space will significantly enhance their research and education capabilities. Dr. Robert Fischell, along with A. James Clark, was one of the major and very generous contributors to the building. BioMET is thrilled for their colleagues at College Park.

## eRA Commons Account for Graduate Students



eRA Commons is the NIH portal for proposal tracking, report submission and a variety of other administrative functions. The web page describes it thus: "The eRA Commons is an online interface where signing officials, principal investigators, trainees and post-docs at institutions/organizations can access and share administrative information relating to research grants." Access requires an account, usually referred to as an eCommons account. As of October 2014, all graduate students who were paid off of any NIH grant had to have their own account. Prior to that only graduate students paid off of training grants had to have accounts.

Accounts are set up by the institution, but the account holder has to go in and complete their profile and maintain the account. If a student continues on with an NIH funded postdoctoral position, the account would follow him/her. Thus, it is critical that individuals maintain their account and know how to access it. Passwords do expire, and individuals should be aware of this and act accordingly to maintain regular access.

Since postdoctoral fellows and graduate students have no other reason to log on, they tend to forget they even have an account! Unfortunately, this can delay the mentor's submission of annual reports. Even if the person has left the laboratory, the report will still need to list them if they had been paid in the previous year for any length of time.

For Principle Investigators it is critical that they have the eRA Commons login name for all personnel, staff excepted. For new students coming into a laboratory, the PI should collect the login name if the student has one or contact Colin Hunter ([chunter1@umaryland.edu](mailto:chunter1@umaryland.edu)) to have one set up. The student must have a UMB email account. The PI must supply Colin with that email address, the position title and DOB.

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at: <http://biomet.umaryland.edu>

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## A Sweet Note

One never knows what one's colleagues are up to when they are not at work! On the weekend of October 24-25, 2014, the Mid-Atlantic District Barbershop contest was held in Wildwood, NJ. 25 Quartets and 28 Choruses qualified (from a field of 70 quartets and 50 Choruses) to compete in this contest. Of those competitors, there would be only one of each to bring home the gold. The winning Quartet was "Last Men Standing", including BioMET's very own Mike Kelly, who sings bass. All 25 quartets sang 2 songs in the first Semi-Finals round, and the top 10 quartets sang another 2 songs in the Finals round. You can find more about Mike's group at [lms.harmonize.com](http://lms.harmonize.com), including where they are going next.

The Chorus competition is only a single round, where again each competitor sings 2 songs. The winning chorus was the "Alexandria Harmonizers" in which Mike also sings. He is their bass section leader, and an assistant director for the chorus. Winning this contests qualifies them for the international convention in Pittsburgh in July.

Congratulations to Mike for an outstanding job and for being a Grand Champion (a person who competes in both winning groups) of the Contest!

*Mike Kelly, circled, showing off his impressive bass styling.*



BioMET had a chance to catch a performance with Mike and the Alexandria Harmonizers November 3rd at Meyerhoff Symphony Hall. They and the Pride of Baltimore Chorus (an all-female chorus) presented *Harmony on the Harbor*, featuring multiple championship Sweet Adelines quartets. Sweet Adelines are the female versions of male barbershop quartets. Research Coordinator Pamela Wright and her husband took advantage of the opportunity.

"What a fabulous sound and great entertainment!" Ms. Wright continued, "You cannot believe the complexity of the harmonies and not an instrument in sight. My husband was thrilled, and he is a singer and former choir member."

If you are interested, Mike can tell you when the next concert will be and where.



Right to left: Ed Bell (baritone), Mike Kelly (bass), Drew Feyrer (lead) and TJ Barranger (tenor).

### **Congratulations!**

Postdoctoral Fellow Liron Boyman and his wife Joanna welcomed a son, Nathan Avraham, on November 7.

# BIOMET HAPPENINGS

## Comings and Goings

Recent graduates, Drs. Mora Bamageboye and Dushon Riley have left the Lederer laboratory.

## Publications

Driesbaugh KH, Buzza MS, Martin EW, Conway GD, **Kao JP**, Antalis TM. Proteolytic activation of the protease-activated receptor (PAR)-2 by the GPI-anchored serine protease testisin. *J Biol Chem.* 2014 Dec 17. [Epub ahead of print].

Walker MA, Williams GS, Kohl T, Lehnart SE, Jafri MS, Greenstein JL, **Lederer WJ**, Winslow RL. Superresolution modeling of calcium release in the heart. *Biophys J.* 2014 Dec 16;107(12):3009-20.

Safren N, Chang L, Dziki KM, **Monteiro MJ**. Signature changes in ubiquitin expression in the R6/2 mouse model of Huntington's disease. *Brain Res.* 2014 Dec 12. [Epub ahead of print].

Lee YJ, **Baskakov IV**. The cellular form of the prion protein guides the differentiation of human embryonic stem cells into neuron-, oligodendrocyte-, and astrocyte-committed lineages. *Prion.* 2014;8(3):266-75.

**Karbowski M**, Cleland MM, Roelofs BA. Photoactivatable green fluorescent protein-based visualization and quantification of mitochondrial fusion and mitochondrial network complexity in living cells. *Methods Enzymol.* 2014;547:57-73.

Williams GS, Boyman L, **Lederer WJ**. Mitochondrial calcium and the regulation of metabolism in the heart. *J Mol Cell Cardiol.* 2014 Nov 7. [Epub ahead of print].

Li S, Xu S, Roelofs BA, Boyman L, **Lederer WJ**, Sesaki H, **Karbowski M**. Transient assembly of F-actin on the outer mitochondrial membrane contributes to mitochondrial fission. *J Cell Biol.* 2014 Dec 29. [Epub ahead of print].

## Grants and Contracts

### Awards

Shengyun Fang, 12/1/14, NSF, "Regulation of the ER-associated Degradation by Importin Beta," \$238,662, yr 3 of 3.

### Submissions

G.B.S. Williams, 11/12/14, NIH, "Mitochondrial Calcium Signaling in Heart," Total Request: \$693,099.

Bruce Vogel, 11/17/14, NSF, "The Role of Extracellular Matrix in Cytokinesis," Total Request: \$1,131,853.

Mervyn Monteiro, 11/17/14, NIH, "Identifying ubiquitin ligases that regulate APP processing," Total Request: \$422,125.

Iliia Baskakov, 11/21/14, CJD Foundation, "Development of a novel therapeutic approach to CJD via control of the sialylation status of the prion protein," Total Request: \$50,000.

## Talks and Travels

W. Jonathan Lederer, Invited Speaker, "Tugging on the Heart-strings: The Cardiac Calcium Signaling Challenge," Frankel Cardiovascular Center, University of Michigan, December 8, 2014.

## 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](http://mpowermaryland.com) for current information.*

Mpower's collaborative efforts are broader than just connecting UMB and UMCP. The Agriculture Law Education Initiative (ALEI) includes UMES together with UMB and UMCP. ALEI recently published the first ever assessment of the legal needs of Maryland's agricultural sector (November 12). Maryland has significant agricultural activity, especially on the eastern shore, but really throughout the state. UMES brings a different perspective than the larger institutions, critical to targeting the more rural concerns addressed in the report. More information can be found at <http://mpower.maryland.edu/uncategorized/new-report-highlights-legal-challenges-facing-marylands-agricultural-community/>.

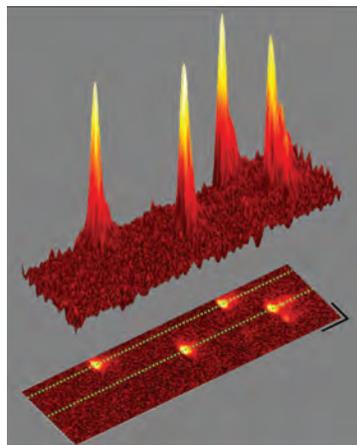
## Welcome

BioMET welcomes Wendy Granger as our new business manager. She replaces Jami Kasco. Wendy has a long history at UMB, having been in an Accounting Analyst with CITS and in a variety of positions in Financial Services for over 15 years. BioMET was very fortunate to recruit her. She was already proficient in most of the UMB financial systems.



## Getting Together

BioMET held its annual potluck on December 15, later than usual. Previous potlucks were held just prior to Thanksgiving. Held in Pharmacy Hall for the first time, the tradition of fabulous international dishes continued unabated. Scientists really are great cooks!



### Paired Calcium Sparks by Julio Altamirano

Calcium sparks are the unitary signal that underlie all muscle contracts.

Single cells are imaged using fluorescent dyes sensitive to calcium concentration. A computer then generates a picture from the imaging data.