

# Penn Medicine Pathology & Laboratory Medicine REPORT

*A quarterly newsletter  
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Department of Pathology  
and Laboratory Medicine*

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Pathology and Laboratory Medicine  
 Penn Medicine



## Chair's Corner

**David B. Roth, MD, PhD**  
*Simon Flexner Professor and Chair*

Dear Members of the Pathology and Laboratory  
Medicine Community:

As you well know, our Department's behind-the-scenes operations are substantial. With all of our facilities combined, we perform more than 10 million tests annually and I see the results of your hard work in the multiple summary reports and spreadsheets that cross my desk every day.

But last year, my wife and I were treated to a very different perspective—that of a patient. We had a number of routine procedures that needed to be done (the price of growing older, I guess) and, while I may be surrounded by all of the expert physicians at Penn Medicine, I am not what you might call a very good patient.

From the phlebotomist, who swiftly and expertly drew my blood, to the specialty lab that takes excellent care of my wife, I was impressed by the professionalism, courtesy, and efficiency I encountered all along the way. I know most of you don't often interact with patients directly, but I was put at ease knowing how reliably and systematically our labs operate. And I know that improving workflow is always on your minds. You will read about one particular new personalized patient approach that was developed in our Toxicology Lab in this issue of our newsletter.

On a larger scale: Novartis is developing a therapy built on our Department's successful treatment of leukemia patients with immunotherapy. The approach involves extracting white blood cells and then re-engineering them in the lab into modified immune cells that are reinfused into the blood stream. This is performed right here in our own Transfusion Medicine and Therapeutic Pathology Division. Clearly, our Department is at the forefront of new therapies.

In fact, the biotech business in general is experiencing an almost unprecedented boom. Researchers like our own Drs. James Wilson and Carl June are leading the way here and we need to make sure the conditions are in place to continue building on such successes. Meanwhile we have climbed to the top for research funding by the National Institutes of Health (NIH). We are now number one, leaving Johns Hopkins in second place. I intend to keep our research portfolio robust and strong with all of your help.

Thank you for the great work you do here.

Best,

*David B. Roth, MD, PhD*

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## IN THE SPOTLIGHT

# Toxicology Lab

Michael Milone, MD, PhD, and **JoAnn Gardiner** from HUP's Toxicology Laboratory are working with **Lab IT** to create a database application that will improve the process for Busulfan testing in their laboratory. This exemplary project has required a major team effort that involved toxicology laboratory staff, JoAnn, and several IT staff, including **Rick Bryson**.

Busulfan is a cancer chemotherapy drug used primarily to prepare patients for bone marrow transplantation. The dosing of this drug is challenging because each patient who receives Busulfan metabolizes it at a different rate. A dose that is too high can be toxic. Too low of a dose places the patient at a high risk of transplant failure.

Our Tox Lab is a nationally recognized reference laboratory that monitors Busulfan. In order for the testing to be useful, the results must be available within 4-6 hours from the time the lab receives the specimens. This is not trivial because the testing requires significant manual labor by Toxicology Medical Technologists. Once testing is completed, the lab directors Drs. Milone and Leslie Shaw must evaluate the results, along with in-depth additional information, using separate

pharmacokinetic (PK) modeling software, then verbally report the results, and calculate dosage for the patient in consultation with the oncology and pharmacy team. Finally, detailed reports, which include modeling result graphics, are manually created. Due to the complexity of the testing and its critical nature, much of the workflow is managed by JoAnn along with the laboratory's two Technical Specialists, **Thuan Le** and **Kalapna Chauhan**.

The new database application streamlines this elaborate process into one single application. In the first phase of this project the new application will store essential information for the analysis, perform the PK calculations, automatically create graphic displays of results, collect and review the data, and create the final report. Phase two is planned, which will allow requesting physicians to submit patient information through a web-based portal prior to sending a specimen for faster result turnaround times. Once the second phase is complete, the application framework can be adopted by other labs and adjusted to meet their specific consults needs.

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## MILESTONES & ACHIEVEMENTS

■ This year, the School of Medical Laboratory Science introduced several new changes. In addition to rotations at **HUP** and **Pennsylvania Hospital**, some students will get to spend part of their Blood Bank rotation at **Presbyterian Hospital**. This has allowed the program to welcome a larger class of nine students.



*New class of the School of Medical Laboratory Science.*

■ The Department of Pathology and Laboratory Medicine at **PPMC** has been very busy and productive recently. In August, **Penn Medicine University City (PMUC)** at 3737 Market opened for business. The Department now provides the following services at PMUC: The outpatient lab on the 7th floor for phlebotomy, specimen processing and EKG, in addition to pre-admission testing services; specimen transport to testing sites; The point-of-care testing team provides POCT oversight and consultation for the outpatient practices and the ambulatory surgical facility; and a fine needle aspirate lab for FNA services for the outpatient practices on the 3rd floor.

■ In October, the **PPMC** Department also increased its presence in New Jersey by inaugurating Penn Medicine laboratory services in Cherry Hill, where the Quest lab collection station was replaced by a PPMC-mapped collection station, and in Woodbury Heights, where a patient service center with four phlebotomy stations has replaced the LabCorp location. The expansion project was a collaborative effort between **PPMC** and **HUP** and was fully supported and implemented by the **departmental integration team**.

■ As part of his annual tradition to educate visitors, staff, and faculty at the Hospital of the University of Pennsylvania, **Joseph DiRienzi**, PA Autopsy Coordinator in Medical Pathology, once again hosted an information table on the Ravdin Mezzanine during the American Cancer Society's Great American Smokeout (photo below). Joe's popular displays demonstrate the effects and hazards of smoking, made visible with a few graphic illustrations from autopsies to make it clear that "cancer cures smoking."



■ **Peggy (Margaret) Bulley, MS, BS, MT(ASCP)** was promoted to Technical Manager of Quality Systems and Compliance. Her previous role was as a Technical Specialist of Quality Systems & Compliance. She recently graduated from Jefferson with a Master of Science in Healthcare Quality and Safety.

■ **Kalapna Chauhan** has accepted a Technical Specialist position in Toxicology. Kalapna holds a BA in Laboratory Science – Medical Technology from Thomas Jefferson University Hospital and joined the Toxicology Lab in 2006.

■ **Nichole Howard** was promoted to Supervisor of Clerical Services, Lab Medicine. In addition to her current responsibility of supporting the Lab Medicine Director and Administrative Director, Nichole will be responsible for supervising the Administrative Assistant Staff in Chemistry, Hematology/Hematopathology, Microbiology, Molecular Pathology, and Immunology.

■ **Nichole Rulander** was appointed to the position of Technical Manager, Chemistry. Nichole received her BS in Neuroscience with a minor in Chemistry from The University of Pittsburgh and her Master's Degree in Bioscience Technologies from Thomas Jefferson University. She maintains her Medical Laboratory Scientist Certification through the ASCP and is also a member of the American Association of Clinical Chemistry.



*MOMA-1 by Alexis Lerro*

■ **Alexis Lerro**, Staff Assistant and Academic Coordinator in the Chair's Office, will be exhibiting her photos at the Burrison Gallery at the Inn at Penn. The show, titled *Lux ex Tenebris*, will run from February 14 to March 20. A reception is scheduled Monday, February 16, from 5 to 7 pm in the Burrison Gallery. All members of the Penn community are invited to attend!

## Department Trivia: Did You Know?

The Pathology and Lab Medicine Cardiac Chargers raised more than \$18,000 for the American Heart Association, making them the no. 1 team out of all 169 Penn Medicine teams that collectively raised a grand total of \$160,000 during the 2014 Heart Walk.



■ The **Penn Medicine Blood Donation Center** has moved from the Penn Tower Bridge level to the new Apheresis, Infusion and Blood Donor Center on 3 Ravdin. The Center is open Monday to Friday from 8 am to 4 pm. HUP uses over 60,000 blood components every year. Shortages of certain blood types are common. A blood donation will help ensure an uninterrupted supply of blood. Walk-ins are welcome and appointments can be made online at [www.pennmedicine.org/give-blood/](http://www.pennmedicine.org/give-blood/)



**Clarice Dixon** (left) and **Colleen Henry** (right) are just two of the friendly faces you'll see when you visit the new-and-improved Blood Donation Center. We are very lucky to count Clarice and Colleen, and the whole team at the Blood Donation Center, among our Laboratory Medicine Staff. They also help us exceed our blood drive goals on a consistent basis because they make donating fast, easy and—gasp—even fun!

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The Flow Cytometry and Cell Sorting Facility lost one of its longtime staff member in August with the tragic and untimely death of **Ryan Wychowanec**, who was a valued member of the staff of the Abramson Cancer Center Flow Cytometry and Cell Sorting Shared Resource. A graduate of the Thomas Jefferson University Biotechnology Program, Ryan was an accomplished cell sorter operator and teacher

of the technology to faculty, staff and students. He recently achieved the status of Certified Cytometrist, a new international designation attesting to his expertise. A gift award fund to support graduate students in his name has been set up. Donations can be made to the Ryan Wychowanec Memorial Fund online at <http://sn.im/wychowanec-fund>

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## Recent publications co-authored by staff members

■ Babushok DV, **Cardamone D**, **Rulander N**, Master SR, Hexner EO. A Common, Under-Recognized Cause of Elevated Serum Erythropoietin. *Am J Med.* 2014 Dec;127(12).

■ Azzato EM, Morrissette JJD, **Halbiger RD**, Bagg A, Daber RD. Development and implementation of a custom integrated database with dashboards to assist with hematopathology specimen triage and traffic. *J Pathol Inform.* 2014;5:29.

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and Laboratory Medicine is on Facebook:  
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## Blast from the Past



*The faculty members of the William Pepper Lab in a 1969 group portrait.  
Bonus points if you can identify the two women in the back row.*

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