Washington University in St. Louis
School of Medicine

LGM | NEWS

Summer 2019 - Volume 6, Issue 1

Distributed by the Laboratory & Genomic Medicine Newsletter Commitee

on behalf of:

Division of Laboratory & Genomic Medicine,

Department of Pathology & Immunology

Division of Laboratory and Genomic Medicine at the Academy of Clinical Laboratory Physicians and Scientists Annual Meeting

by Suzie Thibodeaux, MD, PhD

The Division of Laboratory and Genomic Medicine (LGM) had a strong showing at the Academy of Clinical Laboratory Physicians and Scientists (ACLPS) Annual Meeting, hosted by hosted by the University of Utah in Salt Lake City, UT. ACLPS is an interdisciplinary society comprised of clinical laboratorians across all subspecialties, which allows for unique networking and collaborative opportunities among trainees, junior faculty, and senior faculty with different professional backgrounds, interests and expertise.

The Young Investigator Session is a major highlight of the meeting, and LGM trainees presented thirteen abstracts. Eight trainees were awarded the Paul E. Strandjord Young Investigator Award, two of whom, Adam Bailey and Jonathan Brestoff, received the Young Investigator Award with Distinction.

Young Investigator Award Recipients:

- Adam Bailey
- Jonathan Brestoff
- Melissa Budelier
- Christopher Farnsworth
- Chuck Gangahar
- Kaitlin Mitchell
- Daniel Webber
- Mark Zaydman

Pictured from left to right: Aidas Mattis, Melanie Yarbrough, Chuck Gangahar, Rehan Rais, Daniel Webber, Suzie Thibodeaux

CONTACT US

If you have an idea for a story or have questions about the information in this newsletter, please contact the editors.

Suzie Thibodeaux
srthibodeaux@wustl.edu

Tammy Robison
tammyrobison@wustl.edu

Barnes-Jewish Hospital BJC HealthCare | Washington University in St. Louis School of Medicine | Children's Hospital St. Louis BJC HealthCare

Coming soon to BJH: Pathogen-reduced Platelets

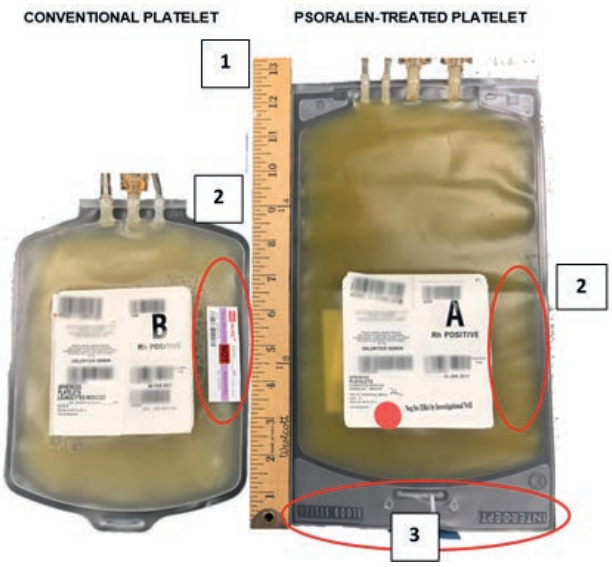
by Brenda Grossman, MD, MPH

Blood transfusions are one of the most common medical procedures performed in hospitals. Despite remarkable achievement in blood safety over the last two decades, bacterial contamination of platelet components remains a concern. To enhance the safety of the blood supply, in September, BJH will start the process to phase in a new platelet product treated with pathogen-reduction technology (PRT). PRT is a pro-active approach that utilizes psoralen and ultraviolet A light to inactivate bacteria and viruses and inhibit lymphocyte proliferation within blood products. These products were FDA-approved US in 2014 and have been used in Europe for over 14 years. Several clinical studies performed in the US have demonstrated the effectiveness and safety of the products. These platelet products will all be leu-koreduced and eliminate the need for CMV seronegative and irradiated platelets. In addition, it will eliminate the need to repeatedly perform bacterial cultures on the platelet products (held at room temperature) during storage.

Although there will be no change to ordering or administration practices, train-ing will begin in the near future because these products look different and have different labels. During this phase-in period, vigilance to which platelet product is being transfused is critical, since conventional platelets will still need to be irradiated when appropriate and cultured. Orders will not change because patient attributes will still be needed when ordering RBC-containing products and conventional products will be appropriately substituted if PRT platelets are not available.

The two platelet products look different. The figure shows distinguishing features:

1. PRT bag is longer
2. PRT will lack the Radsure sticker seen on the conventional platelet
3. PRT will be embossed across the top



During the phase-in period the PRT platelets will be clearly marked with a tag.

If you have questions, please contact Brenda Grossman at 314-362-3186.

CLINICAL FACULTY

*** Laboratory Director**

To contact an LGM faculty member, please email them or call 314-362-2998

Co-Chief Laboratory & Genomic Medicine
Charles Eby, MD*

BJH Blood Bank · Transfusion Medicine
Charles Eby, MD
George Despotis, MD
Brenda Grossman, MD*
Ron Jackups, MD, PhD
Chang Liu, MD, PhD
Suzie Thibodeaux, MD, PhD*

BJH Clinical Chemistry
Ann Gronowski, PhD*
Mitch Scott, PhD*
Christopher Farnsworth, PhD*

BJH Clinical & Translational Genomics
Jon Heusel, MD, PhD*
Latisha Love-Gregory, PhD
Samantha McNulty, PhD
Molly Schroeder, PhD

WU Clinical & Translational Genomics
Ina Amarillo, PhD
Yang Cao, PhD
Jon Heusel, MD, PhD*
Latisha Love-Gregory, PhD
Samantha McNulty, PhD
Julie Neidich, MD*
Molly Schroeder, PhD

WU Cytogenomics
Ina Amarillo, PhD
Yang Cao, PhD
Julie Neidich, MD*
Molly Schroeder, PhD

BJH Drug Monitoring · Toxicology
John Turk, MD, PhD*

BJH Flow Cytometry
Friederike Kreisel, MD*
Jonthan Brestoff, MD, PhD

BJH Hematology · Hemostasis
Charles Eby, MD*
John Frater, MD*
Ron Jackups, MD, PhD*

BJH Histocompatibility
Chang Liu, MD, PhD*
Bijal Parikh, MD, PhD

BJH Microbiology
Neil Anderson, MD*
Carey-Ann Burnham, PhD*
Melanie Yarbrough, PhD*

BJH Molecular Diagnostics
Julie Neidich, MD*
Bijal Parikh, MD, PhD
Wojciech Swat, PhD

BJH Serology · Immunology
Neil Anderson, MD*
Ann Gronowski, PhD*

SLCH Core Laboratory
Dennis Dietzen, PhD*
Ron Jackups, MD, PhD*
Stephen Roper, PhD*

LGM Trainees and Faculty at the American Society for Microbiology Microbe Annual Meeting

by Melanie Yarbrough, PhD

LGM faculty and trainees were well represented at the June 2019 American Society for Microbiology (ASM) Microbe meeting in San Francisco, where microbiologists from all disciplines come together to present cutting edge research and learn about emerging technologies in the microbial sciences.

Current and past clinical microbiology fellows from the WUSM Clinical and Public Health Microbiology Fellowship Program gathered at the Microbe meeting in San Francisco.

Some highlights from our LGM division include:

- Clinical microbiology fellows Drs. Sophonie Jean and Kaitlin Mitchell, were selected to present their fellow research projects at the Clinical Microbiology Fellows Research Session.
- Clinical Pathology Chief Resident, Dr. Daniel Webber, presented his work evaluating the utility of a molecular assay for detection of pneumonia pathogens during a symposium on novel diagnostics.
- Graduate students and post-doctoral fellows from the laboratory of LGM faculty member, Dr. Gautam Dantas, presented posters and platform presentations detailing their innovative translational research.
- LGM faculty member, Dr. Carey-Ann Burnham, discussed her career pathway in clinical microbiology with future trainees in a "Fireside Chat" session.
- Graduating fellow, Dr. Sophonie Jean, was the star of the WashU Microbiology team including former fellows from our clinical microbiology fellowship program who participated in the "Battle of the Brains" microbiology trivia challenge, where representatives from different fellowship programs vied for the championship. Competition was tough, but WashU ultimately took home first prize and bragging rights!

The victorious WashU Fellows team for the "Battle of the Brains" microbiology trivia competition at ASM Microbe.

LGM Trainees and Faculty at the AACC annual meeting

Members from the Division of Laboratory and Genomic Medicine recently attended the 71st AACC Annual Scientific Meeting & Clinical Lab Expo in Anaheim, CA. The conference connects global leaders in clinical chemistry, molecular diagnostics, mass spectrometry, translational medicine, lab management, and other areas of laboratory medicine.

Members of LGM gather for an early morning run. Pictured from left to right: Ann Gronowski, Melissa Budelier, Chris Farnsworth, Carey-Ann Burnham

A number of department individuals were recognized during the meeting:

- Mitchell Scott, PhD, Outstanding Lifetime Achievement Award
- Dennis J. Dietzen, PhD, Past President's Award
- Mark Zaydman, MD, PhD (current PSTP trainee), Distinguished Abstract Award
- Chris Farnsworth, PhD (former Clinical Chemistry Fellow and now LGM faculty), 2nd Place Student Oral Presentation Award
- Melissa Budelier, PhD, Richard Marshall Education Travel Award

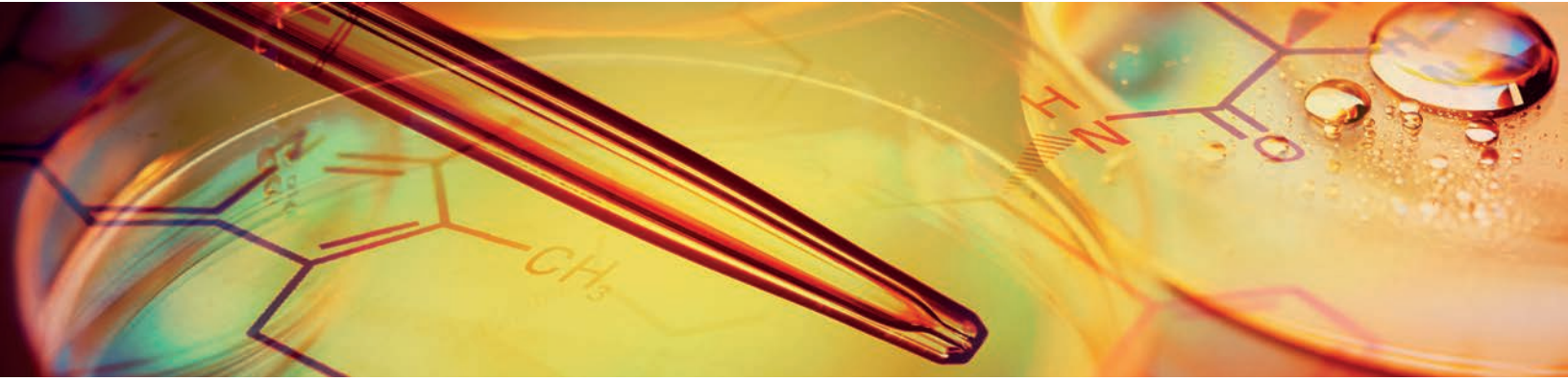
Members of LGM at the opening reception. Pictured from left to right: Caroline Franks, Melissa Budelier, Stephen Roper

FEATURED COLLEAGUE

Dr. Farnsworth joined the LGM faculty in July 2019 as Co-Medical Director of Clinical Chemistry and Medical Director of Point of Care Testing at BJH.

He received his PhD from the University of Rochester in 2017 studying host pathogen interactions in *S. aureus* infections. Dr. Farnsworth then went on to complete a fellowship in Clinical Chemistry here at Washington University School of Medicine. During this time, he had multiple peer-reviewed publications spanning much of laboratory medicine including the impact of pneumatic tube transport on laboratory testing of specimens, the concordance of natriuretic peptide tests for heart failure, and the risk of laboratory contamination and lab-acquired infections. Dr. Farnsworth's primary research and academic interests involve laboratory testing for cardiac disease and for sepsis.

We welcome Dr. Farnsworth to the LGM community!



Trainee Research Day

by Chang Liu, MD, PhD

Trainee Research Day (TRD) is an annual event in the Department of Pathology and Immunology that celebrates the research conducted by residents and clinical fellows. This year, there were eight oral presentations and 19 posters that covered many exciting topics in the frontiers of pathology research. Guest faculty Ulysses Balis MD, the director of the Division of Pathology Informatics from the University of Michigan, also participated by speaking and judging presentations. Trainee research day concludes with presentation of awards for the best oral and poster presentations in both anatomic and clinical pathology.

Pictured from left to right: Chang Liu, Joe Gaut, Ulysses Balis, Parker Wilson, Jie-Fu Chen, Ray Zhang, and Neil Anderson. Not pictured: Chris Farnsworth

The winners are listed below:

- Best clinical pathology (CP) poster award: **Christopher Farnsworth, PhD**
- Best Anatomical Pathology (AP) Poster award: **Jie-Fu Chen, MD**
- Best CP oral presentation award: **Ray Zhang, MD, PhD**
- Best AP oral presentation award: **Parker Wilson, MD, PhD**

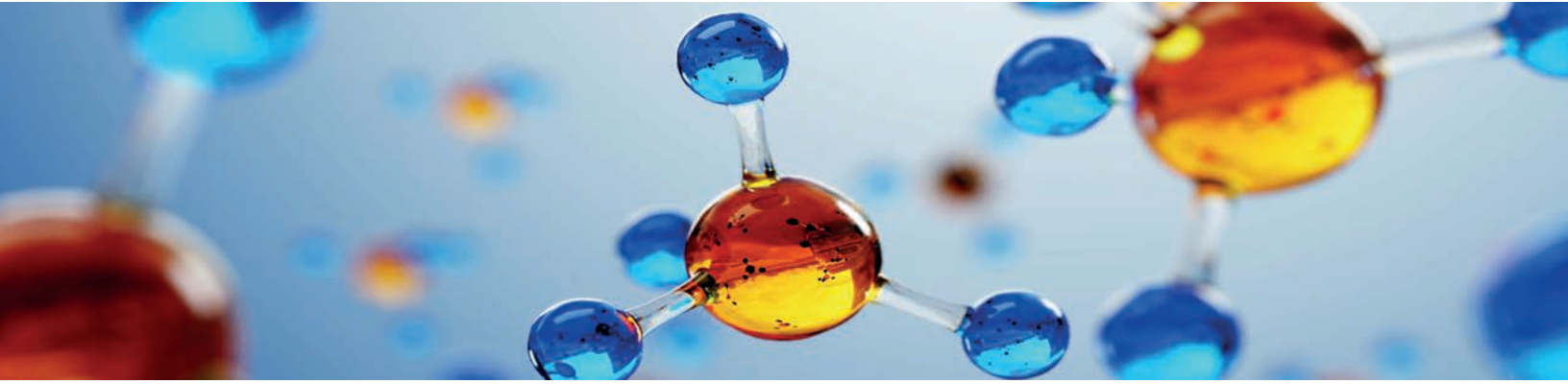
Carey-Ann Burnham to Receive Award for Research and Leadership in Clinical Microbiology

by Ann Gronowski, PhD

Carey-Ann Burnham, PhD, D(ABMM), FIDSA, F(AAM) will receive the 2020 Award for Research and Leadership in Clinical Microbiology from the America Society for Microbiology (ASM). This prestigious award recognizes an outstanding scientist/clinical microbiologist with distinguished research achievements and a record of innovation and advancement of the Clinical Microbiology profession.

Dr. Burnham is Professor of Pathology & Immunology, Molecular Microbiology, Pediatrics, and Medicine. She also serves as Medical Director of Microbiology laboratory at BJH. Dr. Burnham's research interests include development of novel diagnostics for infectious diseases, antimicrobial resistance, and hospital-acquired infection.

Dr. Burnham has a history of excellence having received the ASM Young Investigator Award in 2013 and the American Society for Clinical Pathology (ASCP) "40 Under 40" award in 2017. For more information on this award, see https://asm.org/Press-Releases/2019/September-1/Announcing-the-2020-ASM-Award-Winners.



New Test for the Diagnosis of Gonorrhea and Chlamydia

by Neil Anderson, MD

On August 27th 2019, the BJH Microbiology Laboratory changed testing platforms for gonorrhea and chlamydia diagnosis; this new testing platform will markedly improve the turnaround time for this testing. The new test, the Xpert CT/NG assay for *Chlamydia trachomatis* (CT) and *Neisseria gonorrhoeae* (NG), requires specimen collection in a different collection device. The current Aptima Combo 2 CT/NG assay will be discontinued.

Testing utilizing the Xpert CT/NG assay is orderable in Epic as follows:
"N. gonorrhoeae/C. trachomatis Amplification - Genital, Urine" (Epic lab number 4997)
"N. gonorrhoeae/C. trachomatis Amplification - Throat, Rectal" (Epic lab number 4889)

The Xpert CT/NG assay is a molecular assay with high sensitivity and specificity. A major advantage of the Xpert CT/NG assay is turnaround time—typically able to provide same-day results. This is in contrast to the previous methodology, where results routinely took more than 24 hours. With rapid and accurate results, we aim to create the opportunity for enhanced STI management in our patient populations.

Acceptable specimens for the Xpert CT/NG assay includes the following:

- Urine
- Endocervical swabs
- Self-collected vaginal swabs
- Rectal swabs
- Pharyngeal swabs

Urine specimens must be collected using the Xpert Urine Specimen Collection Kit (see figure). All swab specimens must be collected using the Xpert Vaginal/Endocervical Specimen Collection Kit or the Xpert Swab Specimen Collection Kit. Specimens submitted in alternative collection devices, including the APTIMA Unisex Swab Specimen Collection Kit and the APTIMA Vaginal Swab Collection Kit are NOT acceptable for testing. Urine specimens, as well as endocervical or vaginal swabs can also be tested for *Trichomonas vaginalis* with the Xpert TV assay (https://bjhlab.testcatalog.org/show/LAB1380-1).

Xpert collection devices, as well as information regarding how to order Xpert collection devices, are available through BJH customer service (314-362-1470). If you have any questions, please contact Neil Anderson, M.D., Assistant Medical Director of Microbiology (314-362-1307, nwanderson@wustl.edu).

New Test for the Diagnosis of Gonorrhea and Chlamydia (*continued*)

by Neil Anderson, MD

Urine collection device for Xpert CT/NG testing

Endocervical, vaginal, rectal and pharyngeal collection device for Xpert CT/NG testing

APTIMA collection devices no longer acceptable after 8/27/19

Figure. Acceptable Collection Devices for *Neisseria gonorrhoeae* and *Chlamydia trachomatis* as of 8/27/19.
Contact BJH Laboratory Customer Services to obtain appropriate collection devices (314-362-1470).

Norovirus Testing on Rectal Swabs

by Neil Anderson, MD

As of June 24th 2019, the BJH Microbiology Laboratory will accept rectal swabs for the molecular detection of norovirus. Rectal swabs must be submitted using the Eswab collection device, and a dedicated sample is required for testing (i.e. this testing cannot be added on to a swab submitted for other laboratory testing). We will continue to perform testing on diarrheal stool specimens as well. Rectal swab specimens facilitates prompt testing when a stool specimen is not readily available and also permits ease of collection while providing results with performance characteristics comparable to stool specimens. Published data demonstrates that rectal swabs are an effective method for detecting Norovirus-infected individuals, even those who present with isolated vomiting[1].

Molecular testing for norovirus can be ordered in Epic as "Norovirus PCR". Testing using the Gene Xpert assay is performed 7 days a week and results are available within 8 hours upon receipt to the microbiology laboratory. Stool and/or rectal swab specimens should be delivered to the laboratory promptly following collection.

Norovirus is responsible for 19-21 million cases of gastroenteritis annually in the US, making it the most common cause of food-related illness (https://www.cdc.gov/norovirus/index.html). The virus has a seasonal predilection for winter months, though sporadic cases and outbreaks are seen throughout the year. Infection in otherwise healthy people typically presents as a self-limiting acute gastroenteritis characterized by episodes of nausea, vomiting, diarrhea and occasionally fever. Infection is more severe in the immunocompromised and in the extremes of age. In these populations infection can lead to severe dehydration, prolonged hospitalization, and even death. This, coupled with its highly contagious nature, makes norovirus infection a particular concern in the health care setting. Outbreaks in hospitals can have serious implications, leading to dramatic increases in healthcare costs as well increased patient morbidity and mortality. As such, it is important to identify patients infected with norovirus promptly so appropriate infection prevention measures can be put in place as soon as possible. The addition of rectal swabs as an acceptable specimen type will simplify specimen acquisition, allowing for more rapid results.

If you have any questions, please contact Neil Anderson, M.D., Assistant Medical Director of Microbiology (314-362-1307, nwanderson@wustl.edu).

[1]Freedman S, Xie J, Nettel-Aguirre A, et al. Enteropathogen detection in children with diarrhoea, or vomiting, or both, comparing rectal flocked swabs with stool specimens: an outpatient cohort study. Lancet Gastroenterol Hepatol 2017.

DID YOU KNOW?

by Brenda Grossman, MD, MPH

Did you know that you can emergently request a finite amount of blood components from the blood bank without activating an MTP (massive transfusion protocol)? Emergency release blood may be requested by calling 314-362-3887.