Scott Receives Lifetime Achievement Award

Mitchell G. Scott, PhD, DABCC received the 2019 Outstanding Lifetime Achievement Award in Clinical Chemistry and Laboratory Medicine from the American Association for Clinical Chemistry (AACC). This prestigious award recognizes people who have made significant contributions to the field of laboratory medicine via service, education and research, is the highest honor given by the association.

Dr. Scott is Professor of Pathology & Immunology and serves as Co-Medical Director of the chemistry laboratory at BJH. As co-director of the clinical chemistry postdoctoral training program at the School of Medicine, Scott has helped train 63 clinical chemistry fellows and more than 200 pathology residents. Dr. Scott has led more than 70 clinical studies of new laboratory tests and markers of disease, with a special focus on ways to monitor blood sugar in hospitalized patients and detect signs of heart disease.

Dr. Scott also received the AACC Outstanding Contributions to Education in Clinical Chemistry Award in 2000.
Efforts to Improve Utilization of Urine Cultures at Barnes-Jewish Hospital

by Melanie Yarbrough, PhD

The goal of diagnostic stewardship is to ensure that the right test is ordered on the right specimen from the right patient at the right time. While diagnostic testing of urine can reveal useful clinical information regarding renal status or provide a diagnostic clue for urinary tract infection (UTI), testing on this specimen type is often over-utilized because of the ease of availability of this non-invasive specimen type.

Urine cultures are a good example of this phenomenon. Cultures are not indicated for uncomplicated UTI in symptomatic patients with positive urinalysis but are frequently ordered in ambulatory patients for this indication. In hospitalized patients, who are at increased risk for asymptomatic bacteriuria, a positive urine culture result is difficult to ignore and often leads to inappropriate treatment. A review of urine culture ordering practices at BJH revealed that over 20% of urine cultures are ordered in the absence of concurrent urinalysis, confounding interpretation of culture results (Carlson AL et al, Infect Control Hosp Epidemiol, 2017).

In collaboration with colleagues in Infection Prevention, Infectious Disease, and Laboratory and Genomic Medicine, the BJH Clinical Laboratory developed and instituted a reflex algorithm to decrease incidence of isolated urine cultures and improve utilization rates across the BJC system. With the reflex algorithm, urine cultures are only added on to urinalysis orders when results are consistent with UTI (see flow chart for reflex parameters). This process has been in place for almost 4 years at Barnes-Jewish Hospital. Of note, if a patient requires a urine culture regardless of the UA macroscopic/microscopic results, a stand-alone urine culture may be ordered at any time. (continued next page)
Efforts to Improve Utilization of Urine Cultures at Barnes-Jewish Hospital *(continued)*

Implementation of a reflex algorithm for microscopic and urine culture analysis led to improved diagnostic stewardship, as urine culture orders among inpatients have decreased (Munigala S, et al, Infect Control Hosp Epidemiol, 2019). However, there is still room for improvement. A recent study on urine culture utilization at BJH reported that over 7% of negative urine cultures are repeated within 48 hours and over half of the repeated orders were inappropriate (Foong KS et al, J Clin Microbiol, 2019). The diagnostic yield of the repeat orders was low, as less than 5% yielded detection of bacteriuria. These findings highlight opportunities to further optimize urine culture ordering to improve diagnostic and antimicrobial stewardship and patient care.

While there are many reasons that repeat urine cultures are ordered, a lack of awareness of the initial negative urine culture was cited as a major driving force for inappropriate repeat orders at BJH. Beginning in November 2019, a comment is now appended to the urine macroscopic and microscopic results to clearly denote if reflex testing for microscopic analysis and/or culture will be performed (see example below). The goal of this change is to facilitate understanding of urinalysis results that reflex to microscopic analysis and urine culture to enable a thoughtful and informed decision-making process to guide antimicrobial stewardship efforts and improve patient outcomes.

<table>
<thead>
<tr>
<th>Test</th>
<th>Ref Range &amp; Units</th>
<th>3d ago</th>
</tr>
</thead>
<tbody>
<tr>
<td>WBC, ur</td>
<td>0 - 5 /HPF</td>
<td>11–20 !</td>
</tr>
<tr>
<td>RBC, ur</td>
<td>0 - 2 /HPF</td>
<td>0–2</td>
</tr>
<tr>
<td>Epithelial cells, squamous, ur</td>
<td>0 - 5 /HPF</td>
<td>1–5</td>
</tr>
<tr>
<td>Bacteria, ur</td>
<td></td>
<td>2+ !</td>
</tr>
<tr>
<td>Mucous, ur</td>
<td></td>
<td>Present !</td>
</tr>
<tr>
<td>Culture Reflex</td>
<td>Reflex to urine culture will be performed.</td>
<td></td>
</tr>
</tbody>
</table>
Laboratory and Genomic Medicine at AABB

By Suzanne Thibodeaux, MD, PhD

The annual AABB meeting, a major conference for transfusion medicine professionals, was held October 19-22, 2019 in San Antonio, TX. Transfusion medicine and cellular therapy experts from around the world meet to share knowledge and discuss new ideas in the ever evolving field of transfusion medicine. The Division of Laboratory and Genomic Medicine was well represented!

Transfusion medicine fellows Dr. Nick Gau and Dr. Ray Zhang each presented posters. Dr. Gau presented “A Practice Shift in Transfusion-Transmitted CMV Risk Reduction Strategies?” with LGM faculty member Dr. Ron Jackups. Dr. Ray Zhang presented “Platelet Transfusion Patterns in Bone Marrow Transplant and Surgical/Cardiothoracic Intensive Care Units before and after the 2015 AABB Guidelines” with LGM faculty member Dr. Chang Liu.

Dr. Jackups chaired an educational session entitled “From Transmutation to Rejuvenation: Transfusion in Popular Culture”, in which he presented on the topic of the same name. Fellow faculty member Dr. Suzie Thibodeaux delivered a talk entitled “Breaking Bad Habits: Exploring Portrayals of Transfusion Medicine in Popular Culture”.

Dr. Chang Liu presented in two educational sessions, “Great Expectations for High-Resolution HLA Genotyping By Second- and Third-Generation Sequencing” and “HLA Epitope Matching: Towards Precision Medicine in Transfusion and Transplantation”.

Dr. Thibodeaux chaired an educational session entitled “Under the Hood of the CAR: Progress, Practical Considerations, and Product Quality Aspects of CAR-T Cell Development”. She also presented “Improvement of Red Blood Cell Exchange in Sickle Cell Disease by Targeting the Densest Red Blood cells” in an educational session on “Emerging Technologies in Continuous Cell Separation for Cellular Therapy and Sickle Cell Disease”.

Pictured from left to right: Nick Gau, Brenda Grossman, Ron Jackups, Suzie Thibodeaux
New Computational and Digital Pathology Seminar Series

The Department of Pathology and Immunology introduced a new monthly seminar series in July 2019 on Computational and Digital Pathology. The series is the result of a collaboration with several of the department's faculty, trainees, and staff and is led by Laboratory and Genomic Medicine faculty members Dr. Ron Jackups and Dr. Ann Gronowski, with the support of Department Chair Dr. Richard Cote.

This endeavor features a mix of internal and external speakers, and content ranges from journal clubs to presentations of original research.

The seminar is held the first Wednesday of every month at noon in 3510 IOH. Everyone is welcome to attend.

DID YOU KNOW?
by Chris Farnsworth, PhD

The pneumatic tube system at BJH transports specimens at speeds up to 20 feet per second. That's over 13 miles per hour!

We welcome Dr. Brestoff to the LGM community!