Department and Houston Society of Clinical Pathologists to Host Major Symposium

The Department of Pathology and Genomic Medicine is collaborating with the Houston Society of Clinical Pathologists (HSCP) to host a major symposium at Methodist in 2012. The Spring Symposium of the HSCP and the Department’s Seminar on Advances in Lung Cancer will combine for a two-day event on April 28th and 29th in The Methodist Hospital Research Institute auditorium. The event, the Houston Lung Symposium, is the brainchild of Dr. Philip Cagle, medical director of pulmonary pathology for the Department and editor-in-chief of Archives of Pathology and Laboratory Medicine.

“This symposium will convene some of the most accomplished pathologists, oncologists, and bioinformatics experts from Houston and around the world,” said Dr. Cagle. “This is an excellent opportunity for physicians, scientists, and trainees at all levels.”

The symposium will feature 20 speakers from institutions including Methodist, The University of Texas M.D. Anderson Cancer Center, the Mayo Clinic, Harvard Medical School, and the Memorial Sloan-Kettering Cancer Center. Lectures on April 28th will involve various topics in diagnostic pulmonary pathology, while those on April 29th will cover the current status and future directions of lung cancer diagnosis and treatment. Seating for the Houston Lung Symposium will be limited, registration is required, and advance registration is highly recommended.

To register for the symposium or obtain the speaker agenda, visit houston-pathologists.org/upcomingevents.

In Our Next Issue...

Dr. Michael Thrall is leading the Department’s efforts to implement digital pathology technology into specific clinical services in 2012. This cutting-edge technology will allow for more rapid diagnoses for our patients and will enhance education programs.

Look for a complete article on digital pathology at Methodist in the spring 2012 issue of The Laboratory Report!

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The Laboratory Report—Issue Archives
Would you like to view past issues of The Laboratory Report? All 2011 issues can be viewed by visiting our Department website at methodisthealth.com/TheLaboratoryReport.
The Department of Pathology and Genomic Medicine and The Methodist Hospital are further developing and expanding their laboratory outreach program with the formation of The Methodist Hospital Reference Laboratories (TMHRL). TMHRL will provide expanded clinical testing for The Methodist Hospital patients, additional testing volume for esoteric tests, and method development and teaching opportunities for residents and fellows.

“This is a tremendous opportunity for the Department and the hospital,” said Dr. Wayne Chandler, vice-chair of clinical innovation for the Department. “In addition to helping our institution, our program can provide a service that helps other institutions and providers improve their standard of care. It’s a win-win situation.” TMHRL extends the Department’s clinical services and expertise to subscribing non-Methodist hospitals, multi-specialty provider groups, and academic and commercial research groups.

“The Methodist reputation for excellence in patient care is strong, our department faculty members are renowned in their specialty and subspecialty fields, and we have great facilities,” said Phuong Nguyen, outreach specialist for TMHRL. “While the program has done well, it has the potential to be much bigger and better.” New infrastructure for the program is in the final stages of development, and a state-of-the-art test ordering and results delivery system is being implemented with the latest generation of operating system interface software. A website will be launched in early 2012.

For more information on TMHRL, please contact Phuong Nguyen at 713-441-3484 or ptnguyen@tmhs.org.

New Faculty Join Department

The Department of Pathology and Genomic Medicine continues to grow. Two new physicians have recently joined our faculty:

Lauri B. Campagna, M.D.
Staff Pathologist, Methodist West Houston Hospital

Dr. Campagna joins the Department from The University of Texas Southwestern Medical Center in Dallas, TX where she was an assistant professor of surgical pathology and cytopathology. She received her medical degree in 1991 from the University of Colorado School of Medicine in Denver, CO. She completed an anatomic and clinical pathology residency and a cytopathology fellowship at Methodist and the Baylor College of Medicine in Houston, TX. Dr. Campagna will primarily provide anatomic and clinical pathology services at Methodist West Houston Hospital.

For more information on Dr. Campagna, visit methodisthealth.com/Campagna.

Bisong Haupt, M.D.
Staff Pathologist, Methodist Sugar Land Hospital

Dr. Haupt is an alumna of the pathology training programs here at Methodist where she completed both an anatomic and clinical pathology residency and a surgical pathology fellowship. She rejoins the Department from St. Louis University in St. Louis, MO where she was an assistant professor of pathology. Dr. Haupt received her medical degree in 1982 from the Southeast University School of Medicine in Nanjing, China. She will primarily provide anatomic and clinical pathology services at Methodist Sugar Land Hospital.

For more information on Dr. Haupt, visit methodisthealth.com/Haupt.
New Diagnostic Test Offerings:

**Adenovirus Real-Time PCR Assay**

The Molecular Diagnostics Laboratory of The Methodist Hospital System has implemented a new real-time PCR assay to detect adenosivirus. Adenovirus are DNA viruses that cause several infectious manifestations, including gastroenteritis, pneumonia, conjunctivitis, and skin rashes. Importantly, adenovirus infection can lead to graft failure and life-threatening disseminated disease in transplant patients.

Real-time PCR is a highly sensitive and specific method to detect the presence of DNA from pathogens in clinical specimens. The adenovirus real-time PCR assay is the latest in a series of new molecular tests instituted by the Molecular Diagnostics Laboratory. This test, which was previously performed at a reference laboratory, was introduced in-house on November 1. Performing the test at Methodist will improve patient care by increasing quality, decreasing costs, and minimizing turnaround times.

For more information on this assay or other tests offered by the TMHS Molecular Diagnostics Laboratory, please contact Dr. Randall Olsen at 713-441-6802 (rolsen@tmhs.org) or Brant Hilson at 713-441-5725 (hilson@tmhs.org).

**BinaxNOW Malaria Test and Helicobacter pylori Stool Antigen Test**

The Clinical Microbiology Laboratory of The Methodist Hospital System will be offering two new antigen detection assays in December: the BinaxNOW malaria test by Inverness Medical and the Helicobacter pylori Stool Antigen (HpSA) test by Meridian Biosciences, Inc.

The BinaxNOW malaria test is an immunochromatographic assay for the qualitative detection of *Plasmodium* antigens. It targets the histidine-rich protein II (HRPII), which is a specific antigen common to all four malaria species capable of causing human infection—*P. falciparum, P. vivax, P. ovale,* and *P. malariae.* The BinaxNOW assay is to be used in conjunction with a malaria peripheral blood smear. Although the BinaxNOW assay is less sensitive than the malaria smear, it can provide results in 15 minutes. The advantage of this assay is that it allows for rapid identification and quicker implementation of therapy.

The HpSA test is an enzyme immunoassay that detects *Helicobacter pylori* proteins in human stool. This assay has demonstrated higher sensitivity and specificity than serology or the urea breath test, and thus is an important option in the non-invasive diagnosis of *H. pylori.*

For more information on the BinaxNOW malaria test or the HpSA test, please contact Dr. James Davis at 713-441-2437 or Pat Cernoch at 713-441-0333.

**BreathTek C-13 Urea Breath Test**

The Outpatient Laboratory in Smith Tower (Room 523) now offers the BreathTek C-13 urea breath test to aid in the initial diagnosis and post-treatment monitoring of active *Helicobacter pylori* infection. *H. pylori* is a Gram-negative, microaerophilic bacterium found in the stomach which causes duodenal and gastric ulcers, and has been linked to the development of stomach cancer. Several studies have reported that initial antimicrobial therapies can fail in as many as 1 in 4 patients, so post-treatment monitoring is important.

The BreathTek test from Otsuka America Pharmaceuticals is an easy, convenient non-invasive and non-radioactive test and can be administered in about 15 minutes. Patients should fast for at least one hour and refrain from using antimicrobials, proton pump inhibitors, or bismuth preparations for two weeks prior to testing.

For more information on the BreathTek C-13 urea breath test, please contact Dr. Ping Wang at pwang@tmhs.org or Tammy Lefevers at lifevers@tmhs.org.

**Triage TOX Drug Screen**

The Triage TOX Drug Screen (Triage Drugs of Abuse Panel) from Alere now also tests for the presence of methamphetamines and methadone. The assay has also changed from a visually interpreted chromogenic immunoassay to an automated fluorescence immunoassay.

The panel is highly accurate and screens for up to 10 distinct classes of abused drugs (illicit and prescription) with results obtained in approximately 15 minutes. The screen includes assays for the presence of amphetamines, methamphetamine, barbiturates, benzodiazepines, cocaine, methadone, opiates, phencyclidine, tetrahydrocannabinol, and tricyclic antidepressants.

This screen is especially useful in obtaining a differential diagnosis for emergency medicine cases that may or may not involve drug abuse as a primary cause or contributing factor. It is recommended that preliminary positive results from the screen be confirmed with gas chromatography-mass spectroscopy. At Methodist, acetaminophen/paracetamol is assessed using a quantitative serum measurement assay run on the Vitros Fusion platform.

For more information on the improved Triage TOX Drug Screen, contact Dr. Ping Wang at pwang@tmhs.org or Toni Emmott at temmott@tmhs.org.

**MALDI-TOF Mass Spectrometry**

The Bruker BioTyper is now being used in the Microbiology Laboratory. This new MALDI-TOF mass spectrometer rapidly identifies bacteria based on their unique protein fingerprints. Validation studies for Gram-negative organisms were completed in December. Additional validations for identifying yeast and Gram-positive bacteria are ongoing. Implementation of this exciting new technology at The Methodist Hospital will significantly improve patient care by increasing sensitivity and reducing turnaround times.

For more information on the BioTyper MALDI-TOF mass spectrometer, please contact Dr. James Davis at 713-441-2437 or Pat Cernoch at 713-441-0333.
Sugar Land Laboratory Supports Breast Center Expansion

The Breast Center at Methodist Sugar Land Hospital has undergone a significant expansion to meet the needs of the growing Fort Bend County community. The new facility is larger and provides the full continuum of care – from screening through treatment and survivorship – all in one integrated and multidisciplinary setting.

“Tissue diagnosis is a critical part of the multidisciplinary treatment plan of breast cancer,” said Dr. Seema Mullick, medical director of Laboratory Services at Methodist Sugar Land Hospital. “Our goal is to provide an accurate and timely biopsy report to facilitate the personalized care that each of our patients receive here at Methodist Sugar Land Hospital.”

Breast biopsies and related anatomic pathology volumes have risen considerably since the Breast Center moved to its new location in February. The laboratory is expected to assess more than 800 breast biopsies in 2012.

For more information on Methodist Sugar Land Hospital, visit methodisthealth.com/sugarland.

Trainee Spotlight:
Elizabeth B. McQuitty, M.D.
PGY4 Resident

Dr. Elizabeth McQuitty, a PGY4 resident, received a first place award for her oral abstract presentation, “CD8-positive CD30-positive lymphomatoid papulosis and its differential diagnosis: a review of 20 cases”, at the 48th Annual Meeting of the American Society of Dermatopathology (ASDP) in Seattle, WA. She is also developing a textbook with Dr. Jae Ro on evidenced-based approaches to cancer diagnosis.

Dr. McQuitty received her Master of Architecture degree from Rice University in 2002. She then pursued a medical degree from the Baylor College of Medicine where she was a member of the Alpha Omega Alpha Honor Medical Society. She graduated in 2008 and joined the pathology residency program at Methodist that same year. Dr. McQuitty will complete a fellowship in molecular genetic pathology at Methodist in 2012.

Dr. Adriana Rosato Leads Methicillin-Resistant Staphylococcus Aureus Research Effort

Dr. Adriana Rosato, a research scientist in the Center for Molecular and Translational Human Infectious Diseases Research, is leading the Department’s efforts to investigate the pathogenesis of multidrug-resistant bacteria. With a five-year R01 grant from the National Institute of Allergy and Infectious Diseases, her research aims to identify molecular genetic causes of drug resistance in methicillin-resistant Staphylococcus aureus (MRSA).

“MRSA strains with low-level antibiotic resistance are a serious concern in hospital settings and, more recently, the community,” said Dr. Rosato. “Data from our studies could identify new drug targets for development of a novel class of antibiotics.”

Dr. Rosato is also investigating the mechanistic bases and molecular pathways involved in resistance to daptomycin, a new class of cyclic lipopeptide antibiotic that is effective against MRSA. Although daptomycin-resistant S. aureus infections are extremely rare, they pose a considerable treatment challenge when they occur as optimal therapy remains undefined and the infections commonly appear in patients with complicated preexisting, deep-seated infections such as osteomyelitis, septic arthritis, or endocarditis.

For more information on Dr. Rosato, visit methodisthealth.com/Rosato.
The LABORATORY REPORT

Dr. Bogdan Czerniak to Present Chair’s Lectureship

Dr. Bogdan Czerniak, M.D., Ph.D.

Dr. Bogdan Czerniak, chairman ad interim and deputy division head for research in the Department of Pathology at The University of Texas M.D. Anderson Cancer Center, will present the Chair’s Lectureship at the Methodist Department of Pathology and Genomic Medicine Grand Rounds on Tuesday, February 7, 2012. Dr. Czerniak, a renowned genitourinary pathology expert, will speak on molecular pathology as it relates to bladder cancer development and detection.

“Understanding the molecular genetic basis of bladder cancers has allowed us to develop promising new non-invasive tests that detect the cancers in their earliest stages,” said Dr. Czerniak. “Genomic research will ultimately provide us with the information we need to improve the standard of care for this patient population – and many others.”

Dr. Czerniak’s research focuses on early events of carcinogenesis using human bladder cancer as a model disease. His laboratory is credited with the development of a strategy that combines whole-organ topographic histologic and molecular mapping. This approach has provided unique information on initiating cancer events and on the existence of a novel class of genes, termed forerunner genes, which contribute to early expansion of intraurothelial neoplasia by their loss of function.

The Department of Pathology and Genomic Medicine Grand Rounds program was established in 2010 and is directed by Dr. Geoffrey Land, medical director of histocompatibility and transplant immunology for the Department.

For more information on the Department Grand Rounds or a list of speakers with dates and topics, visit methodisthealth.com/pathologygrandrounds or contact Victoria Watson at vlwatson@tmhs.org.

Dr. Wayne Chandler Leads Test Utilization Improvement Effort

Test utilization management programs aim to evaluate the clinical and fiscal effects of test ordering with the goal of improving patient care, increasing efficiency, and reducing costs. Dr. Wayne Chandler, vice-chair for clinical innovation in the Department, is directing such an effort at Methodist.

“Laboratory testing should provide the necessary clinical information to the physician and use laboratory services appropriately and effectively,” said Dr. Chandler. “Advances in medical research and testing technology are continuously affecting evidence-based guidelines for patient care. It is imperative that Methodist continually monitor these changes and manage test utilization accordingly.”

Dr. Chandler and colleagues at the University of Washington and Johns Hopkins Hospitals have conducted several studies on test utilization. Their 2009 study focused on ionized calcium testing and their most recent study, published in Blood Coagulation and Fibrinolysis, investigated the overuse of coagulation test panels. Dr. Chandler and colleagues found that the common cycle of calcium screening and supplementation in unselected patients (patients without known or suspected specific derangements in calcium metabolism) had no positive effect on outcomes. They also found that the automated total calcium test was a clinically suitable screening test to determine the need for an ionized calcium test in this patient population. Their most recent study found that coagulation test panels are significantly overused and often not clinically indicated, and that the prothrombin time test more often diagnosed vitamin K deficiency than bleeding risk. The latter study also evaluated the most effective methods of implementing change in clinical test utilization. Implementation of new test utilization practices at Methodist will begin in 2012.

For more information on test utilization management at Methodist, please contact Dr. Wayne Chandler at wchandler@tmhs.org.
RECENT PUBLICATIONS


Feske ML, Teeter LD, Musser JM, Graviss EA. Including the third dimension: A spatial analysis of TB cases in Houston Harris County. *Tuberculosis (Edinb)*. 2011 Nov 15. [Epub ahead of print]


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RECENT PUBLICATIONS continued


