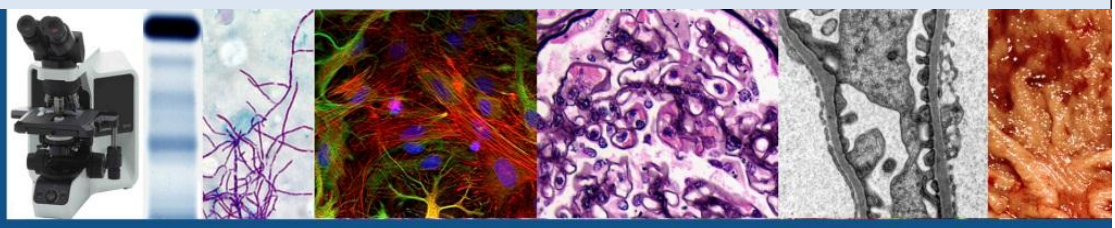
Volume 4, Issue 1 2013

THE PATH WAY

MUSC
MEDICAL UNIVERSITY of SOUTH CAROLINA
DEPARTMENT of PATHOLOGY & LABORATORY MEDICINE



Mary S. Richardson, MD, DDS

Dr. Andrew Kraft, Updates Faculty on New Chair Search

Dr. Andrew Kraft, the chair of the Pathology New Chair Search Committee, came to our faculty meeting to update the department members on the committee's proceedings and progress. Dr. Kraft stated the search committee was tasked with contacting pathologists around the country and inquiring if they would be interested in applying for the chair position here in MUSC. He relayed a variety of resources were being used by the Dean's office in conducting recruitments; among those resources is the Witt/Kieffer Consulting Firm.

The Search Committee itself is made up of many diverse faculty including Research, Clinical faculty that see patients daily and others that have direct contact with our department on a regular basis. The committee has received 40 applications and CVs. Dr Kraft was impressed with the number and quality of applicants. He thought this response reflected the good national reputation of our department. According to Dr. Kraft many of the applicants had significant leadership experience. A sheet of the criteria used by the search committee in evaluating each applicant was circulated. Dr. Kraft assured the department that the first three items listed, Leadership, Administrative skills and Clinical expertise had to be well established qualities before other qualities were assessed. The committee would only consider Research and Educational experience after the first 3 criteria were assessed. He also wanted to highlight the importance of the candidates having extensive clinical experience.

Dr. Kraft described the search process, informing the faculty that out of the pool of candidates the Dean has asked that they bring her at least 5 candidates for a first visit. He thought it may be a little more than 5. Once they give her the list of their choices for candidates, their job is done. The Dean will then bring in these candidates for a 2nd visit to meet with her and a few others. The Dean will make the final selection for the Chair.

The department was encouraged to think about how we want the candidates to view our department, its strengths and consider the breadth of opportunities occurring at MUSC. He stated that they are also looking for a diverse candidate.

Dr. Kraft then fielded questions.

Dr. Watson asked when the Search Committee would bring in the first set of candidates. Dr. Kraft stated it would probably be in the next couple of weeks depending on each candidate's schedule.

Dr. Nolte asked how many candidates they would bring in. Dr. Kraft said there would be between 5-10 individuals. He also wanted to make it very clear that they are looking for a chairperson who enhances the department. He stated this will be a positive for our Department.

Inside this issue:

NEWS FROM DEPARTMENT ADMINISTRATION & BUSINESS OFFICE

CONGRATULATIONS!

Stephen Ethier Ph.D.

Effective January 1, 2013, Dr. Stephen Ethier was appointed as Interim Director of the New Center for Genomic Medicine

Congratulations!

Dr. Yazhi Xing, a **Postdoctoral student** in my lab was selected to receive the Association for Research Otolaryngology (ARO) Graduate Student/Postdoctoral Fellow Travel Award. Almost 150 national and international graduate student and postdocs applied for this award this year.

Thank you for your support and providing a wonderful training environment to the students in our department!

Hainan Lang, M.D., Ph.D.
Assistant Professor

FACULTY EXCELLENCE AWARDS

January – Faculty Excellence Award Nominee
John Metcalf, M.D.

February – Faculty Excellence Award Nominee
Meredith Frame, M.D.

Pathology Faculty Excellence Award Nominees for **Block 4**

- **Nick Batalis, M.D.**
- **Rick Nolte, Ph.D.**
- **Erin Presnell, M.D.**
- **Sally Self, M.D.**

- **April 2013 - Dr. Woolworth voted one of the top ten instructors by the graduate students in the College of Graduate Studies core curriculum.**

Teacher of the Year Faculty Excellence COM1 and COM2

Winner COM1 – Dr. Mike Caplan
Runners up COM2: - Dr. Nick Batalis & Dr. Jerry Squires

Each month and block the students of the College of Medicine like to honor the professors, residents, and physicians who they feel have been exceptional and have made an impact on their education for a *Teacher of the Block* & *Teacher of the Month* Award.

ANNUAL CONFLICT OF INTEREST DISCLOSURES DUE APRIL 30

It is time for all MUSC employees to complete the mandatory annual Conflict of Interest Disclosure. As a public institution concerned with patient care, education and research, MUSC must solicit and review financial interests and outside activities in order to identify and manage any conflicts of interest for those who work here. A secure internet-based program allowing you to confidentially transmit information is used for the online disclosure and can be found at http://academicdepartments.musc.edu/coi. The deadline for completion of this form is **April 30**. Questions and comments regarding the COI disclosure should be sent to conflicts@musc.edu.

ANNUAL CATTS/MANDATORY TRAINING

The **deadline** for completing the Annual CATTS/Mandatory Training is **June 30, 2012.** You can access the system easily at www.musc.edu/catts and log in using your NETID and password.

2013 COLLEGE OF MEDICINE AND MUSC PHYSICIANS EMPLOYEE SURVEY

Beginning: Tuesday April 23rd, 2013
Ending: Tuesday, May 14, 2013

LOGON INFORMATION WILL BE EMAILED TO YOUR MUSC OUTLOOK ACCOUNT

LET YOUR VOICE BE HEARD!!!

Pathology and Laboratory Medicine:

National Medical Laboratory Week

April 22, 2013 – April 26, 2013

ARRIVALS & DEPARTURES

New Hires:

Zachary Kratche
Research Specialist
In Dr. Stephen Ethier's Lab
January 7, 2013

Christopher Hensley
Research Specialist I
Dr. Hainan Lang's Lab
January 22, 2013

Julia Kuhnert
Postdoc Scholar
In Dr. Omar Moussa's Lab
February 6, 2013

Virginia Davis
Administrative Assistant
For Dr. Stephen Ethier
March 11, 2013

Ludmilla Kochutin
Bone Pathology Assistant
For Dr. Christina Carrick
March 11, 2013

Departures & Transfers:

Meagan Nista
Research Specialist I
Dr. Omar Moussa's Lab
January 24, 2013

Shweta Singh
Postdoc Scholar
Dr. Erika Brown's Lab
January 31, 2013

Dion Foster
Graduate Student
Dr. David Turner's Lab
February 28, 2013

Meredith Robinson
Laboratory Technologist II
For Vinnie Della Speranza
March 8, 2013

Janice Lage, M.D.
Chair
January 31, 2013

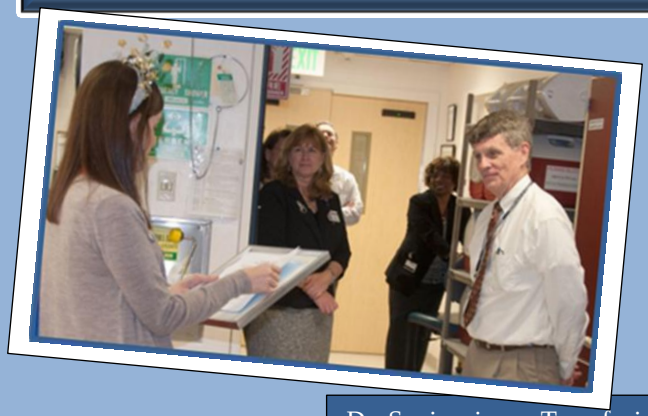
Lori Roten
Administrative Coordinator

Nomination: For doing a fantastic job keeping things moving on so many different tasks.

Other Nominees: Tony Eisenhart, Brent Grimball, Christopher Hensley, Carol Moskos, Margaret Romano, Nancy Smythe

DECEMBER PHYSICIAN OF THE MONTH

Jerry E. Squires, M.D., Ph.D.



Dr. Squires is very deserving - he maintains excellent communications between American Red Cross, MUSC Transfusion Service, and the MUSC patient clinicians. He is always - ALWAYS! - accessible to the Transfusion Medicine technologists, to answer our questions and educate us on the medical reasons for the unusual results we observe. Dr. Squires is a jewel and we are so proud and happy to have him on our MUSC Transfusion Team.
Nominated by: Gloria Prosser

Dr. Squires is our Transfusion Medicine Director. He always demonstrates enthusiasm for his work and goes above and beyond to identify areas of improvement - working collaboratively to improve the care of patients in a cost-effective manner. He takes the time to really "listen" to the staff and he always makes one feel that he is truly interested in what you have to say. MUSC is blessed to have someone with his talent, drive and determination to ensure our patients, systems and processes meet the highest of standards. Dr. Squires emulates the MUSC standards of behavior every day. He is a delight to work with and I am proud that he is on our Laboratory Services team!
Nominated by: Joyce Foster

Dr. Squires is the Transfusion Medicine Medical Director. I am nominating Dr. Squires because he is an excellent educator of the Transfusion Medicine staff, residents, and other health care practitioners throughout the organization. He supports the goals of the organization through his active participation in the Blood Utilization 5/5 plans by providing consultative services and education for patient care providers. Dr. Squires regularly comes in at night to discuss case studies with the third shift staff members. Dr. Squires is a valued team member of the Transfusion Medicine Department.
Nominated by: Karen Garner

Dr. Squires is not only a great Transfusion Medicine attending, he is also a really good educator. He is always concerned about the Technologists that work in the transfusion medicine department and always willing to share interesting case studies with the team.
Nominated by: Daniel Pach

Patient care is top priority, and Dr. Squires is always ready to assist the pathology residents and blood bank staff with education and support. He holds the upmost kindness and respect while maintaining a certain diligence and attitude to make sure testing is performed correctly.
Nominated by: Cassandra

RESEARCH DIVISION UPDATE

Statistics for the Division of Research from January through March.
Twenty three grant proposals were submitted requesting
$2,946,020 in total first year costs.
Also, during this period eleven grants were awarded totaling $1,193,102.

Congratulations and many thanks to everyone involved in obtaining these awards.

Bradley Schulte, Ph.D.
Vice Chair of Research

GRANTS

GRANTS

SUBMITTED 1/1/2013 – 3/31/2013:

Balasubramaniam Annamalai, Ph.D.
Title: Development of S-Nitrosothiol-Based Therapy for Late-Onset of Alzheimer's Disease (IPA) $61,465 – Proposed Start Date 6/1/13

Stephen Ethier, Ph.D.
Title: Amphiregulin Signaling in Human Breast Cancer $301,043 – Proposed Start Date 5/1/13

Stephen Guest, Ph.D.
Title: Modulating Responses to HER-2 Targeted Therapies in Breast Cancer $30,000 – Proposed Start Date 5/1/13

Hainan Lang, M.D., Ph.D.
Title: Experimental and clinical Studies of Presbyacusis (P50-project 4) $218,351 – Proposed Start Date 10/1/13

Amanda LaRue, Ph.D.
Title: Hematopoietic Stem Cell-Derived Carcinoma Associated Fibroblasts in Tumor (supplement) $50,000 – Proposed Start Date 6/1/13

Amanda LaRue, Ph.D.
Title: Circulating Fibroblast Precursors in Metastatic Sarcoma $38,371 – Proposed Start Date 4/1/13

John Lazarchick, M.D.
Title: Performance Evaluation of Sysmex DI-60 $20,606 – Proposed Start Date 4/1/13

Meenal Mehrotra, Ph.D.
Tile: Role of Hematopoietic Stem Cells in Establishing the Osteosarcoma Microenvironment $30,000 – Proposed Start Date 5/1/13

Omar Moussa, MSc, Ph.D.
Title: The Role of thromboxane A2 (TP) Receptor Beta in Bladder Cancer $296,902 – Proposed Start Date 4/1/13

Brad Schulte, Ph.D.
Title: Experimental and Clinical Studies of Presbyacusis (P50-project 3) $258,994 Proposed Start Date 10/1/13

Suhua Sha, M.D.
Title: Molecular Mechanisms in Noise-Induced Hearing Loss $373,438 – Proposed Start Date 4/1/13

Suhua Sha, Ph.D.
Title: Calcium Homeostasis and Epigenetic Modifications in Age-Related Hearing Loss $74,750 – Proposed Start Date 9/1/13

Avtar Singh, M.D.
Title: Mechanisms of Krabbe disease pathobiology and therapy $322,656 – Proposed Start Date 4/1/13

Avtar Singh, M.D.
Title: Nitrosylation Mechanisms for Protection Against Neurovascular Inflammatory Injury $322,521 – Proposed Start Date 5/1/13

Demetri Spyropoulos, Ph.D.
Title: A Human iPSC-derived adipogenesis assay plate for high throughput screening of obesogens $ 89,985 – Proposed Start Date 9/1/13

Demetri Spyropoulos, Ph.D.
Title: Developmental Transcription Factor in Prostate Cancer (sub w/CofC) $14,507 – Proposed Start Date 3/1/13

Demetri Spyropoulos, Ph.D.
Title: Crypreserved whale iPSCs for rapid, highly sensitive screening for obesogens $89,987 – Proposed Start Date 3/25/13

David Turner, Ph.D.
Title: ETS1 expression as a mechanism mediating the hormone refractory phenotype in prostate cancer $ 30,000 – Proposed Start Date 5/1/13

Yong Wang, M.D., Ph.D.
Title: Targeting Nrf2 for Lung Cancer Treatment $ 30,000 – Proposed Start Date 4/1/13

Dennis Watson, Ph.D.
Title: LSm1 expression contributes to alternative splicing in aggressive lung cancer $224,250 – Proposed Start Date 9/1/13

Dennis Watson, Ph.D.
Title: Building Next-Generation Bioinformatics Cyberinfrastructure for Genomics-enabled Research and Education in the Charleston Scientific Community $11,680 – Proposed Start Date 5/1/13

Je-seong Won, Ph.D.
Title: Development of S-Nitrosothiol-Based Therapy for Late-Onset of Alzheimer's Disease (IPA) $49,104 – Proposed Start Date 3/1/13

Yusheng Zhu, Ph.D., DABCC
Title: Evaluation of the V8 Capillary Electrophoresis Analyzer for Hemoglobin IEF $7,500 – Proposed Start Date 4/1/13

GRANTS

AWARDED: 1/1/2013 – 3/31/13:

Hui Wing Cheung, Ph.D.
Title: Development of Onocogene-Targeted Therapy for Ovarian Cancer $75,000 – Start Date 4/1/13

Amanda LaRue, Ph.D.
Title: Hematopoietic Stem Cell-Derived Carcinoma Associated Fibroblasts in Tumors $117,653 – Start Date 2/1/13

John Lazarchick, M.D.
Title: Performance Evaluation of Sysmex DI-60 $20,606 – Start Date 4/1/13

Omar Moussa, MSc, Ph.D.
Title: The Role of thromboxane A2 (TP) Receptor Beta in Bladder Cancer $133,597 – Start Date 4/1/13

Suhua Sha, M.D.
Title: Molecular Mechanisms in Noise-Induced Hearing Loss $320,147 – Start Date 4/1/13

Avtar Singh, M.D.
Title: Mechanisms of Krabbe disease pathobiology and therapy $290,391 – Start Date 4/1/13

Demetri Spyropoulos, Ph.D.
Title: Developmental Transcription Factors in Prostate Cancer (pre-award) $14,507 – Start Date 3/1/13

David Turner, Ph.D.
Title: Glycation as a Mechanism Promoting Cancer Disparity $146,201 – Start Date 4/1/13

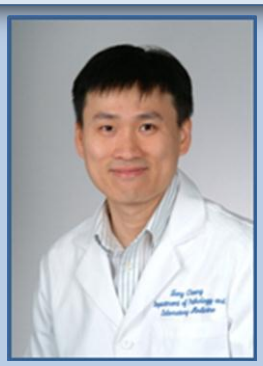
Yong Wang, M.D., Ph.D.
Title: Targeting Nrf2 for Lung Cancer Treatment $30,000 – Start Date 4/1/13

Yusheng Zhu, Ph.D., DABCC
Title: Using Serum HE4 and CA125 to monitor the therapeutic effects in ovarian cancer patients based on histological subtype $37,500 – Start Date 2/1/13

Yusheng Zhu, Ph.D., DABCC
Title: Evaluation of the V8 Capillary Electrophoresis Analyzer for Hemoglobin IEF $7,500 – Start Date 4/1/13

Grant Information provided by:
Kevin Hildreth, Grants Coordinator

Hui Wing "Tony" Cheung Awarded Prestigious V Foundation Grant



Tony Cheung, PhD, Assistant Professor of Pathology & Laboratory Medicine was named a 2012 V Scholar by The V Foundation for Cancer Research. Dr. Cheung's studies aim to unravel the genetic underpinnings of ovarian cancer, one of the most lethal gynecologic cancers.

The V Foundation was established by legendary basketball coach Jim Valvano to support cancer research. Valvano died of cancer in 1993.

Since awarding the first grant in 1994, The V Foundation has funded more than 450 grants to the brightest physicians and scientists pioneering techniques to make breakthroughs in cancer research. Grants are awarded by a scientific advisory board through a competitive process. Only cancer research projects with the most potential are funded.

Protect Your Email!

You can't log onto the system. Your NetID is not working for anything, email, Cerner\Co-Path, nothing. You call the helpdesk or your ITC and they explain to you that your email has been hacked into and the only way to stop it was to deactivate your account.

How did this happen?
You responded to a phishing email. A phishing email is an email sent by criminals in an attempt to trick someone into giving their personal information. The email message varies but the end result is always the same.

Once you give your credentials criminals can use your information to hack into your email. They can access your contact list and send viruses or Trojan programs to everyone in your contact list. Or they can maintain secret control by installing a key logger which will give them access to your personal data and passwords.

Although OCIO-IS has tools in place to ward off many attacks, criminals are constantly coming up with new ways to get around security blocks. When you reply to a phishing email this tells the criminals that they have a legitimate email address and that's all they need to start causing damage.

Once your email is hacked into, the only way to stop the criminals is to shut down your access, which means you cannot use your MUSC email account, cannot log onto any departmental managed workstation, cannot access myRecords, and so on. It can take up to thirteen hours of staff time to determine if damage has been done and before they can consider restoring your access.

How can I prevent this?

The first line of attack is prevention. And it starts with you. By educating yourself you can protect yourself from criminals.

What is the best way to protect yourself and your email?

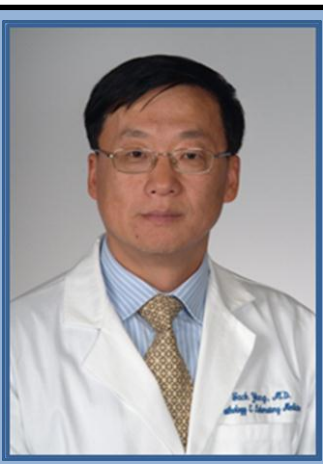
1. Never respond to a suspicious email and never give out your password. – According to the MUSC Computer User Policy, it is a security violation to give anyone your password.

2. If you get an email and you are not sure if it's legitimate or not – DO NOT REPLY or click on any links in the email – contact the help desk at 792-9700 or your ITC 792-2032 and they will help you determine if it's a phishing email or not.

3. If you get an email and you don't recognize the sender's email address DO NOT REPLY or click on any links in the email - call the help desk at 792-9700 and they will help you determine if it's a phishing email or not.

4. Poor grammar and spelling mistakes are another tip off. English is often not the criminal's first language, so this is another indicator the email might be a scam.

And remember - Never, never, never give out your NetID password. Not to co-workers, field engineers, ITC's or the OCIO-IS helpdesk, NO ONE.



Diagnostic Cytology: History, Challenges, and Opportunities

Jack Yang, M.D.
Director of Cytology

In 1665, using a microscope with focusing adjustment, Robert Hooke, the Secretary of the Royal College in London, observed that corks and sponges were composed of little boxes that he called cells (from Latin, *cellular*). This was considered to be the birth of cytology. Cytology emerged as a diagnostic tool in medicine in the early 1800's, when Johannes Müller, a German pathologist, first showed cancer cells as they appeared in the microscope on scrapings from the cut surface of surgically excised tumors. However, diagnostic cytology did not gain recognition until 1940's when George N. Papanicolaou, a research scientist, and his collaborator, Herbert F. Traut, a gynecologist at Cornell University, New York, published their studies on the diagnostic value of vaginal smears in carcinoma of the uterus.

As early as 1920s, Papanicolaou and a Romanian pathologist, Aurel Babès independently reported that vaginal/cervical smears were an accurate and reliable method of diagnosing cervical cancers. These findings, however, were weakly received and largely ignored at that time by many, especially the pathologists. Interestingly, it was gynecologists who quickly grasped the importance of Dr. Papanicolaou's subsequent publications in 1940s and promoted cervical cancer screening program in the United States. The test, known as a Pap smear or Pap test, has attributed to 70 – 80% reduction in mortality from cervical cancers in women and is one of the most successful screening tests in history of medicine. Unfortunately, cytology soon became a victim of its own success. Because of the general assumption that the test had very high sensitivity and specificity, no double-blind studies of the efficacy of the cervical/vaginal smear have ever been conducted. Towards the end of the 1960s, many hospital laboratories processed more Pap smears at the request of the gynecologists than pathologists could handle. The responsibility of screening and, usually the interpretation of the smears, was largely assumed by cytotechnologists who were better trained in performing this function at that time. By the 1970s, it was becoming apparent that the Pap test was far from perfect for cervical cancer detection. Failure of the Pap test to discover all precursor lesions before cancer developed was documented in the literature. Concerns regarding the efficacy of the Pap test increased in both medical field and general public. In 1987, Walt Bogdanich, an investigative journalist, published an article in the Wall Street Journal, in which he described the death for young women from cervical cancer and implied Pap tests as the potential cause. The article elicited a great deal of attention, and sensational copycat stories soon followed in magazines and on television. In response to public outcry, the Congress of the United States in 1988 passed a law, known as the Clinical Laboratory Improvement Amendments (CLIA '88), which imposed severe restrictions on pathology and laboratory medicine in general, and on gynecologic cytology (Pap tests) in particular. By the 1990s, Pap test-related litigation accounted for 40% of pathology malpractice claims and the charges ranged from misdemeanor to homicide. Today gynecologic cytology is one of the most regulated fields in medicine. In comparison to gynecologic cytology, nongynecologic cytology was introduced earlier and its development was less dramatic. The application of cytology techniques to various body secretions and fluids was well documented in 1800s. By the mid of 1900s, it became routine laboratory procedure to use fresh sputum for the diagnosis of lung cancer, urine for screening bladder cancer, and gastric lavage for screening gastric cancer. Sporadic use of aspirated cytology samples has been described in the literature of the second half of the 19th century and in early 20th century. One of the most notable figures in the development of needle aspiration cytology in the United States was James Ewing, a professor of Pathology at Cornell University Medical School.

In early 1900s, Ewing and his associates began to aspirate palpable tumors of various organs by means of a large-caliber needle attached to a syringe. However it was in Europe, especially in Sweden, that aspiration cytology flourished. The wide utility of aspiration cytology in the United States did not happen until broad acceptance of the Pap smear for detection and diagnosis of cervical cancer. Of note, Leopold G. Koss (1920 – 2012), a pathologist at the Memorial Hospital for Cancer and Allied Disease and a student of Papanicolaou and a disciple of Ewing, published the first comprehensive textbook on cytopathology in 1961, which became the standard text in cytology and contributed greatly in development of cytopathology in the United States and in the world.

Today, cytology has become a well-recognized subspecialty of pathology, which assumes the roles of both screening and diagnosing various diseases. The methods to obtain and process the cytology samples have been revolutionized with the advance in modern technologies. In the United States, liquid-based technique has widely applied in processing exfoliative cytology samples, such as cervical/vaginal specimens and body fluids. The method allows the cells form a monolayer in a defined area on a glass slide, making screening more efficient and allowing residual sample saved for ancillary tests, such as Human Papilloma viral (HPV) DNA test. Fine needle aspiration (FNA), as a minimally invasive procedure, has extended to any site in the body with imaging guidance. It is especially valuable in diagnosis of malignant neoplasm that is not amendable with surgical intervention and of lesions that are undesirable or unfeasible to tissue biopsy.

Although diagnostic cytology continues to flourish worldwide, the challenges to it are obvious. First and foremost, it is clear now that with about a sensitivity of 80% at best, the Pap test is not a fail-safe system for the prevention of cervical cancers. A more sensitive test, the high risk HPV DNA test, has been proposed to replace the Pap test as primary screening method in cervical cancer prevention program, for which several large scaled clinical trials are ongoing in some European countries. The results of these studies, together with the application of HPV vaccine in young girls, will have significant impact on the role of the Pap test in cervical cancer prevention. Second, the advance in clinical management of patients, especially those with cancer, requires accurate cytologic diagnosis and ancillary tests for therapeutic and prognostic purposes. However, traditionally it is not uncommon for cytologists to provide only categorical diagnosis, such Positive for Malignant Cells, without further characterization of the tumor. In addition, cytologic specimens as obtained are often not sufficient for some required ancillary tests, such as status of hormone receptors and Her2/Neu in the cases of breast cancer. Breast FNA, once a procedure of standard care for patients with breast mass, has nearly vanished in most hospitals in the United States. Last but not least, since the interpretation of the Pap test is mostly conducted by the cytotechnologists, the decrease in the volume of the Pap test has significantly affected the fate of this profession. Two thirds of cytotechnology schools and programs in the United States, including the one in our institution, have closed in past five years. Therefore, the possibility of future shortages in cytotechnologists has become one of the greatest concerns in the field of cytopathology. The American Society of Cytopathology has formed a special task committee to study the challenges and provide possible solutions.

Of course, the opportunities for advancing cytology have always existed. The advantages of being a simple, fast, non or minimally invasive, and in some circumstances, the optimal way to obtain specimens make it a valuable and irreplaceable tool for screening and diagnosing lesions in various organ systems. Cytology of thyroid gland is the first line and standard care in diagnosing thyroid nodules because it is accurate, minimally invasive, and cost – effective compared with other methods. Endoscopic bronchial ultrasound guided FNA on mediastinal lymph node is a simple and reliable way to diagnose and stage cancer in one procedure at the same time. Endoscopic ultrasound guided trans-gastric/duodenal FNA on pancreatic lesions enable a needle travelling a much shorter distance to reach the lesion, therefore greatly reducing adverse events such as infection and potential tumor seeding. In the meantime, collaboration between cytologists and clinicians has become closer. In 1988, groups of gynecologists and pathologists met in Bethesda, MD to discuss the terminology of the Pap test and management of patients with abnormal Pap test, resulted in birth of the first Bethesda System for Reporting Cervical/Vaginal Cytologic Diagnosis, which was revised in 2001 and continues evolving. The Bethesda System has played an important role in clinical management of patients and set a good example for a collaborated effort in patient care. Recently a Bethesda System for reporting thyroid cytology was also established, which is expected to have a positive impact on clinical care of the patients with thyroid nodules.

At MUSC, the Cytopathology Service annually examines over 12,000 gynecologic and 6,500 non-gynecologic specimens, including over 3,000 fine needle aspiration specimens. Ninety-nine percent of gynecological and exfoliative specimens are processed with liquid-based technology. The service provides onsite adequacy evaluation and preliminary diagnosis in almost 100% of FNA performed in the University Hospital, and in Ashley River Tower via Telecytopathology, which greatly improves sample adequacy and enables us to obtain additional material for ancillary tests, such as immunocytochemical, flow cytometric, and molecular analysis. With close collaboration with clinicians and our colleagues in the Department of Pathology, we have been successful in performing these ancillary tests by means of onsite triage and/or retrieval of pertinent cells from either a cell block or cytology smear in most cases. We are ready to face the challenges and grasp the opportunities to better serve the patients and clinicians in our community.

Reference

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UPCOMING MEETINGS

PATHOLOGY SPRING SYMPOSIA, APRIL 22-27, 2013 AT KIAWAH

APC 2013 ANNUAL MEETING, JULY 10-12, 2013, BOSTON, MA

ASCP ANNUAL MEETING, SEPTEMBER 18-21, 2013, CHICAGO, IL

SC SOCIETY OF PATHOLOGY, SEPTEMBER 7, 2013

CAP 2013 – THE PATHOLOGISTS MEETING, OCTOBER 13–16, 2013, ORLANDO, FL

MUSC DERMATOPATHOLOGY

John S. Metcalf, M.D.
Director of Dermatopathology

Last August we were pleased to welcome back to the MUSC faculty, Dr. John C. Maize, the original founder of our ACGME accredited fellowship program, and who, in addition to clinical duties in Dermatology returns to Pathology in the capacity of a senior consultant and advisor to fellows and residents with an interest in skin disease. As a consultant, he is an active participant in the Consensus Conference which is held daily, and during which outside consultations and difficult cases, especially biopsies of inflammatory diseases and difficult melanocytic neoplasms, are discussed and consensus diagnoses are logged.

John C. Maize, Sr., M.D.

The Dermatopathology Service provides diagnostic support for the Department of Dermatology in-patient and out-patient services as well as community dermatologists. In addition, it provides consultative services to the MUSC surgical pathology section as well as for Oconee Hospital and Stephens County Hospital (GA). With the support of the MUSC immunostains laboratory, the molecular pathology and microbiology sections, we are able to provide comprehensive diagnostic services for patients with cutaneous disease. Weekend coverage for diagnostic services is provided by DermPath attendings and fellows. This is the 31st year of the MUSC Dermatopathology Fellowship Program, one of the 4 or 5 oldest (continuously active) accredited fellowship programs in the country, and a program which has trained more than 45 board certified dermatopathologists. The majority of our graduates pursue careers in private practice, but a significant number have found themselves in academic medical centers such as Wake Forest, University of South Florida (Moffitt Cancer Center), University of Vermont, Geisinger, University of Michigan, Balboa NRMC, and the University of Tennessee.

With the departure of Dr. Maize from MUSC in 2003, the Fellowship Program which had been based in the Department of Dermatology transferred to the Department of Pathology and Dr. Metcalf became the program director. In 2010 we recruited a recent graduate of the NYU program, Dr. Jonathan Ralston, who, in addition to dermatopathology, has subspecialty interests in both Breast and Urologic pathology. Jonathan has rapidly assumed responsibility for teaching, patient care, and administration (Medical Supervisor for the Special/Immunostains Laboratory) and is a member of the MUSC faculty senate.

The dermatopathology faculty and fellows play an active role in the educational mission of both the Dermatology and Pathology Departments through weekly teaching conferences for resident physicians as well as scheduled rotations through the dermatopathology service. Review sessions are held for both dermatology pathology residents to help in board (and in-service) preparation. In addition, we offer support for Dermatology Grand Rounds, and the Melanoma Tumor Board (HCC). Annually, the Dermatopathology Section hosts a "Fellows' Weekend" which is a reunion of past fellows and an introduction of new fellows (and fellows to be) to our MUSC dermatopathology community. As in the past, the up-coming weekend will have a

relaxed and informal scientific session (Saturday, May 4) held in CH204 featuring the best cases from the past year presented by the current fellows. Interesting cases from the visiting alumni are also presented. This will be (and has been) an informative scientific meeting and educational opportunity for all attendees. Pathology and Dermatology residents and faculty are invited to this scientific session which begins at 8:30 a.m. and lasts until 4 p.m. with a break for lunch.

Finally, the Dermatopathology Section has been academically active. All fellows are expected to present at one or both of the major Dermatopathology Meetings (ASD and ISDP), either poster sessions or platform presentations and most publish case reports or clinical investigations based upon material examined during their fellowship experience. Since 2003, fellows have authored or co-authored 13 manuscripts (peer reviewed), 1 book chapter, 6 platform presentations, and 18 posters/abstracts.

Center for Genomic Medicine

Stephen Ethier, Ph.D.
Interim Director, Center of Genomic Medicine

Over the past few months, there has been a great deal of activity on the Genomics front, in the Department, in the Cancer Center, and more recently in the new Center for Genomic Medicine. From the Department perspective, Dr. Wolff's Clinical Cytogenetics and Molecular Genetics laboratory has been testing two different next generation sequencing platforms to determine which will be the preferred one for clinical mutation testing of cancer biopsies. The Ion Torrent verses the Illumina MiSeq "bake off" has been going strong for several weeks now, and the lab has made great progress in developing the work-flow and data analysis platforms that will be used to expand cancer mutation testing. Hopefully, we are just a few months away from full implementation of this technology so that we can expand the actionable cancer mutations from the few we are currently examining now, to over 400 mutations in 40 different oncogenes. This has the potential to radically change cancer therapeutics in the Cancer Center. On a related note, Dr. Wolff's lab is

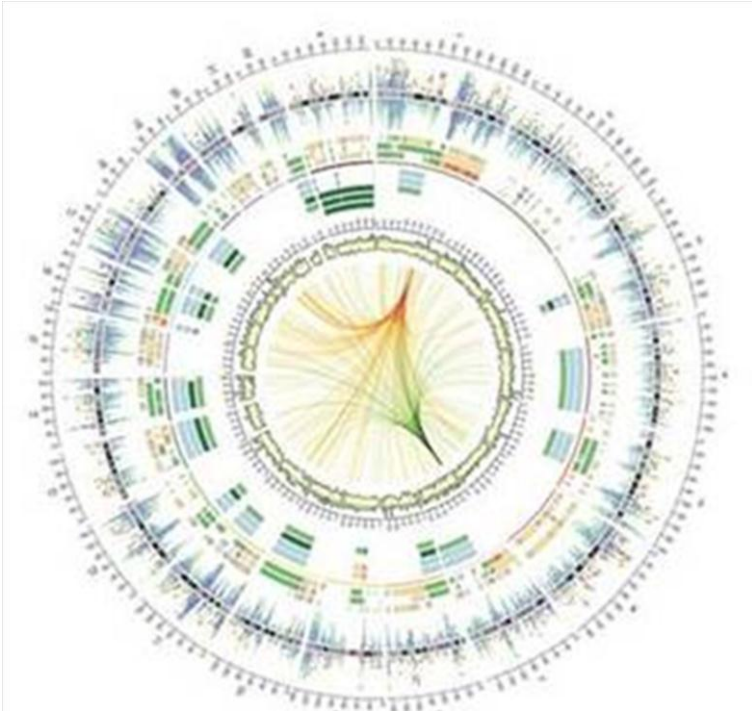

Image created by Martin Krzywinski, Staff Scientist
Canada's Michael Smith Genome Sciences Centre BC Cancer Research Centre

is also expanding the use of the SNP micro-array technology to identify copy number changes, both amplifications and deletions, in DNA from cancer tissues, and this will significantly expand the number of actionable oncogenes that can be detected, and provide further data toward the use of targeted drugs in individual cancer patients. Finally, Dr. Wolff's laboratory is working closely with Dr. Wilson's laboratory to develop the research arm of this genomics effort. Currently, DNA obtained from cancer biopsies is shared with Dr. Wilson's lab, where whole exome DNA sequencing is performed, and this expands dramatically the number of cancer gene mutations that can be detected in these specimens. As a group, we are making great progress in developing and using bioinformatic tools in conjunction with publically available data sets from The Cancer Genome Atlas Project (TCGA) to determine the genomic alterations in individual cancer tissues that are most likely to be driver oncogenes and therefore of direct relevance to the disease of the patient. So far, a handful of patient's specimens have been examined in this way with very encouraging results, and we will be working to develop a standard pipeline for genomic analysis of select cancer tissues this year. More recently, we have been working to launch the new Center for Genomic Medicine. Starting on January 1st of this year, I became the interim Director of the Center with the charge of recruiting a director of a Bioinformatics Core, developing both an internal and external advisory committee, and developing ties to other organizations in the state with an interest in Genomic Medicine. The search for the Bioinformatics Core director is well underway. Drs. Wolff and Watson are members of the search committee, and the first candidate will be visiting at the end of March. At this point, four top candidates have been identified and will be visiting MUSC through the month of April. My goal is

to have this position filled by summer, with the new Director being on campus by fall. To help in this recruitment, we have been working to consolidate and expand the computing resources on campus that can be applied to the bioinformatics effort, as it will be important for the new director to have a clear understanding of the starting point for the expansion of resources for the new core. The Internal Advisory committee is now meeting bi-monthly and has representatives from most medical school departments, including Pathology and Laboratory Medicine. Over the coming weeks and months, the committee will define the vision of the Center, and define the resources that will be needed to launch the Center under a permanent Director sometime in 2014. In addition, the Internal Advisory Committee will form the External Advisory Committee and my goal is to have this group come to campus in the fall for the first Center symposium on Genetic Medicine.

It's been a busy 2013 so far and we are looking forward to many exciting developments in the future as we grow the portfolio of genomics research and clinical activity in the Department and across the University.

MUSC Department *of* Pathology & Laboratory Medicine
Mission Statement:
To serve patients, health care providers, research scientists, scholars, and society by providing excellence and innovation in diagnostic services and educational resources in a respectful, professional and culturally diverse atmosphere.
Vision:
To become a preeminent leader in academic anatomic and clinical pathology while translating basic science discovery to improved clinical care.

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