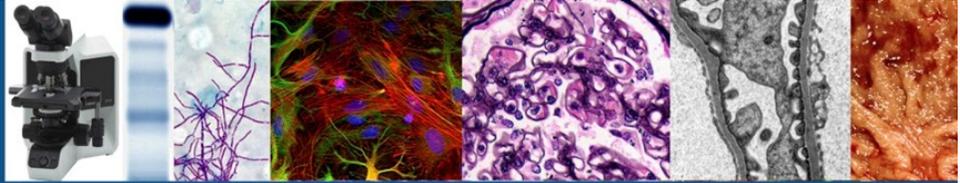


# THE PATH WAY

September 2015

Volume 7, Issue 3



DEPARTMENT of PATHOLOGY & LABORATORY MEDICINE



Steven L. Carroll, M.D.,



DEPARTMENT of PATHOLOGY & LABORATORY MEDICINE  
FACULTY ~ NOVEMBER, 2015

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## SEAPC

SOUTHEASTERN ASSOCIATION OF PATHOLOGY CHAIRS AND  
ADMINISTRATORS REGIONAL CONFERENCE



This newsletter is made possible from the generous contributions of MUSC's Pathology and Laboratory Medicine Faculty and Staff. The success of this publication is dependent upon this support. Thank you for your interest, time and information. For inquiries, suggestions or submission information please contact Lori Roten (roten@musc.edu).



**NEWS FROM DEPARTMENT ADMINISTRATION & BUSINESS OFFICE**

# SERVICE AWARDS

EMPLOYEE NAME	POSITION	UNIVERSITY/HOSPITAL	YRS OF SERVICE
LaSonya Jordan	Fiscal Technician II	UNIVERSITY	20
Lisa Coulter	Accountant/Fiscal Analyst	UNIVERSITY	10
Brenton Grimball	Medical Assistant Technician II	UNIVERSITY	10
Amy Haynes	Grants Administrator I	UNIVERSITY	10
Teresa Kennedy	Fiscal Technician II	UNIVERSITY	10
Omar Moussa	Associate Professor	UNIVERSITY	10
Marla J. Lockhart	Program Coordinator I	HOSPITAL	20
Rosemary Wright	Transcriptionist	HOSPITAL	10
Terry F. Heuer	Medical Technologist Coordinator	HOSPITAL	20
Belinda Eloise Belisle	Cytotechnologist	HOSPITAL	10
Juanita A. Epps	Manager	HOSPITAL	40
Elizabeth K. Welling	Medical Technologist	HOSPITAL	40
Alvin J. Gadsden	Phlebotomy Technician III	HOSPITAL	20
David T. Henderson	Medical Technologist Specialist	HOSPITAL	10
Najah M. Jones	Medical Lab Clerk	HOSPITAL	10
Marketta P. Ladson	Chemist I	HOSPITAL	10
Gloria M. Barretto	Medical Lab Clerk	HOSPITAL	30
Linda Wenger Hubbard	Medical Lab Clerk	HOSPITAL	30
Samantha Shana Green	Medical Technologist	HOSPITAL	10
Nancy Alexis	Medical Technologist	HOSPITAL	10
Nicholas Moussa Sarji	Chemist I	HOSPITAL	40



**CONGRATULATIONS!**

**H. Rawlings Pratt-Thomas  
Endowed Chair  
in Pathology**

**Mary S. Richardson, M.D., D.D.S.**

**Effective October 1, 2015**

## ARRIVALS / DEPARTURES

### ARRIVALS:

- ◆ Katie Wilson, Research Specialist I, arrived on 6/29/15 in Dr. Mehrotra's Lab (worked in Dr. LaRue's Lab as Graduate Assistant)
- ◆ Uday Baliga, Research Specialist I, arrived on 8/3/15 in Dr. Mehrotra's lab
- ◆ Inhong Kang, Post Doc Graduate, arrived on 8/24/15 in Dr. Mehrotra's lab
- ◆ Dayvia Russell, Research Specialist I, arrived on 8/31/15 in Dr. LaRue's Lab
- ◆ Ying Xiong, Ph.D., Research Assistant Professor, began 10/15/15 in Dr. LaRue's Lab
- ◆ Eowyn Corcrain, Research Specialist II, arrived on 10/26/15 under Dr. Carroll

### DEPARTURES:

- ◆ Collin Homer-Bouthette, Research Specialist I on 6/26/15
- ◆ Joseph Eisenhart, Information Resource Consultant II, on 8/28/15

### CONGRATULATIONS!

**Yusheng Zhu, PhD, MS**  
elected as the  
**Director of the American Board  
of Clinical Chemistry**

### CONGRATULATIONS!

**Jerry Squires, MD, PhD**  
**Block 8**  
**2015 Faculty Excellence  
Award Winner**



**Nomination:** She is so committed to the Laboratory and providing excellent patient care that she came to work even when she had a pinched nerve in her neck and was in terrible pain. She is an exceptional technologist!

**Other Nominees:** Dolly Hope, Brent Grimball, Jarvis Jenkins, Teresa Kennedy, Tyrish Page, Lisa Reeves, Nancy Smythe, Ashley Woolridge



***Tara Ellingham***  
*Medical Technologist Coordinator*



## CONGRATULATIONS!

**David Lewin, MD, ASCP**, professor in the Department of Pathology and Laboratory Medicine, was inaugurated as President of the American Society for Clinical Pathology (ASCP) on October 30, 2015 in Long Beach, California at their annual meeting.



The ASCP is the largest and oldest pathology society with approximately 100,000 members including pathologists and laboratory professionals. The ASCP mission is to provide excellence in education, certification, and advocacy on behalf of patients, pathologists and laboratory professionals. Also unveiled in Long Beach was a new initiative: Partners for Cancer Diagnostics and Treatment for Sub Saharan Africa. This is 26.5 million dollar partnership supported by the White House with industry, governmental and non-governmental partners to provide anatomic pathology services paired with care and treatment to a number of countries in Sub-Saharan Africa starting with Rwanda in January 2016.

## CONGRATULATIONS!!

**Steven L. Carroll, M.D., Ph.D.**,  
on his appointment as  
Associate Editor of The American Journal of Pathology

## CONGRATULATIONS!

### Peggy Schachte Research Mentor Award



**Dennis K. Watson, Ph.D.**  
**Professor, Department of Pathology and Laboratory Medicine**  
**Associate Director of Education and Training, Hollings Cancer Center**  
**College of Medicine**

# LABORATORY MEDICINE UPDATES

## Clinical Chemistry Automation and Instrumentation

- The Fast Flow Laboratory went live on the Abbott Accelerator a3600 automation/instrumentation project on July 14, 2015.
- We were only the 3rd lab in the country to have the new a3600 Track.
- The Accelerator a3600 is a total laboratory automation system that maximizes efficiency, provides consistency, provides predictable sample management and improves patient care by minimizing opportunities for error.
- The a3600 currently includes 3 Chemistry and 3 Immunoassay analyzers as well as 3 centrifuges, an aliquotter, a decapper, a foil sealer and a storage unit that can hold 15,000 samples.
- The selection process for new automation/instrumentation began in October 2012. Fast Flow processed all lab samples manually for one year (July 2014-July 2015). Although long, it has been an exciting process and we were happy to have a successful go live.
- WINS: Chemistry Panels (BMPs and CMPs) Turnaround Time has improved by 10 minutes since the go live on the new Abbott a3600 Automation Track.

## A look inside the new Fast Flow Lab



Command Central



Automation Line and Storage Unit



New Immuno and Chemistry Analyzers

## Clinical Chemistry

- Service
- Developed and validated LC MS/MS for vitamin B1 testing, atomic absorption spectroscopy methods for blood copper and zinc testing and a ceruloplasmin assay
- Education
- New clinical chemistry fellow, Dr. Yun Wang, joined our program
- Scholarship/Research
- Dr. Zhu presented 1 symposium, 1 short course, 1 roundtable and 2 posters at the AACC Annual meeting
- Published 1 peer-reviewed paper

## **Laboratory Medicine Updates Continued:**

### **Transfusion Medicine**

- Service
    - Transfusion Stewardship Officer, Heather Toepfner, hired August 24, 2015
    - Serve as program manager for MUSC Patient Blood Management Program (Hospital Quality Improvement )
    - Improve patient outcomes and achieve significant reduction of blood acquisition costs
    - Annual RBC use down by 3.4% since FY 14
  - Scholarship/Research
    - 3 abstract accepted for AABB in October, 2 abstracts presented AAMC Medical Education Conference and ISBT Meeting
    - 1 published and 1 accept peer-review publications
- 

### **HLA Laboratory**

- Service
    - Implemented new real-time PCR-based HLA typing protocol for donors that includes 3 additional loci and reduced analysis time from 6 to 2 hours
  - Professional Recognition
    - Dr. Moussa elected as member of the ASHI Directors' Training and Review and Credentialing Committee
- 

### **Cytogenetics and Molecular Genetics**

- Professional Recognition
    - Dr. Wolff elected President of the Cancer Genomics Consortium
  - Scholarship/Research
    - 2 peer-reviewed publications (Wolff)
    - 1 funded pilot project grant (retinal dystrophy)
- 

### **Molecular Pathology**

- Service
    - Implemented HBV viral load test, validated ADV viral load test, and HIV resistance genotyping
  - People
    - New manager for Microbiology and Molecular Pathology, Lori Gauld, July 29, 2015
  - Education
    - Dr. Nolte Infectious Disease Grand Rounds (July) and Ob/Gyn Grand Rounds (Oct)
    - Dr. Hirschorn voted as a Top 10 Instructor, 1st year curriculum, Graduate Students
  - Research/Scholarship
    - Platform presentation at 2015 ICAAC meeting (Dr. Nolte)
    - 3 abstracts accepted AMP, ASCP and John Goldman Conference on CML (Dr. Hirschorn)
    - Molecular Diagnostic Methods for Solid Tumors (Nonhematological Neoplasms): Approved Guideline. CLSI document MM23
- 

### **Hematopathology**

- Education
  - Benign hematology conference – first 2 Fridays each month
  - Medical student lectures – Dr. Duong
  - Inclusion of residents Pathology and Pediatric and Adult Hematology in abstract submission and presentation – multiple national conferences
- People
  - New faculty member – Dr. Kate Lindsey
  - New HMP Fellow – Dr. Matt Mastrodomenico
- Service
  - Added ADAMSt13 to in-house lab testing menu
- Scholarship/Research
  - Publications – 2 manuscripts, one book chapter (Lazarchick and Duong)
  - New funded studies as PI – 3 ( Baxalta, Incyte, Stago)
  - New Funded studies as Co-Investigator – 3 (Pfizer, KIDDS, Seattle Genetics)
  - Pending funded studies – 2 (Novonordisk, Baxalta)

# GRADUATE STUDIES UPDATE

## STUDENTS PROPOSAL UPDATES:

- LaShardai Conaway/Brown (Dr. Lang) successfully proposed PhD July 8<sup>th</sup>
- Brooke King (Dr. Findlay) successfully proposed MS July 29<sup>th</sup>, will defend this winter

## PATHOLOGY RESEARCH/EXPOSURE DAY:

Different format received well by students

MS – 3 students

Laurel Black - Dr. Carroll & Findlay

Arjun Majumdar – Dr. Mehrotra

Bradley Krisanits – Dr. Turner

PhD – Rachel Johnston (Dr. Smits) 1<sup>st</sup> rotation

## MS PROGRAM UPDATE:

- University wide similar to PhD
- New committees to govern policy and evolution of program
- New interview process
- Professional Development series
- New director (Dr. Turner)

## COUNCIL NEWS:

- Electronic submission of theses are now through Medica not Proquest.
- Exit interview information not disseminated to coordinators to develop their programs, this will change
- Exposure days are under discussion to be improved and to be inclusive of MSTP students  
CGS Curriculum Committee are reviewing all existing courses approved before 2010  
List to be sent out of all existing courses – course directors please respond
- PhD rotations  
Shortened to 8 weeks  
This allows for all 3 rotations to be completed before selection of the spring selectives, which are often department specific.  
3 rotations are mandatory (as per Dr. Traktman).  
Mentors submit online evaluation; lab rotation talks (3 mins) and papers (1-2 pages)

# CONGRATULATIONS!

*TO: Drs. Kate & Chip Lindsey*

**IT'S  
A  
BOY!**

**James Henry Lindsey  
6 lbs. & 10 oz.  
Born 9/24/2015**



*TO: Drs. Jim & Becky Madory*

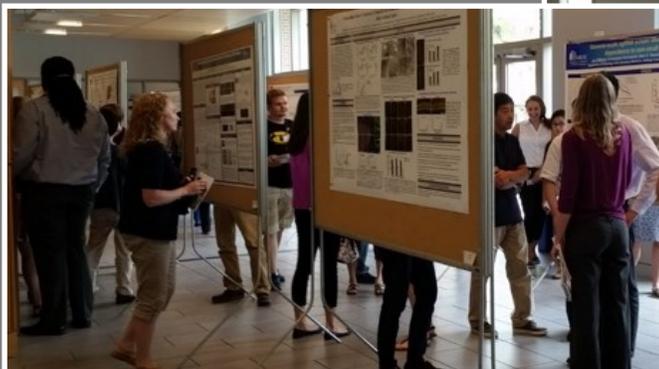
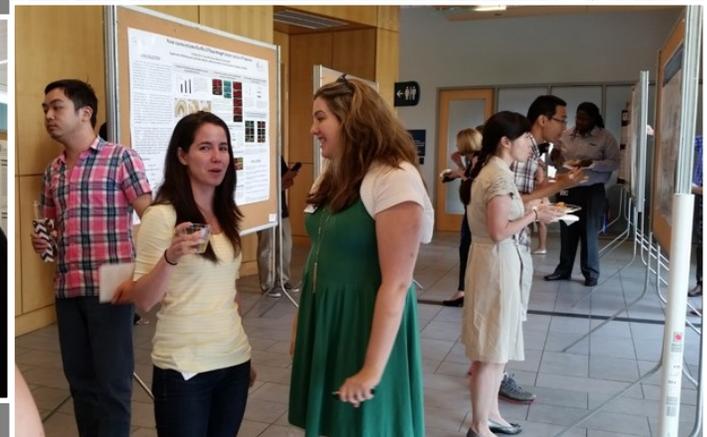
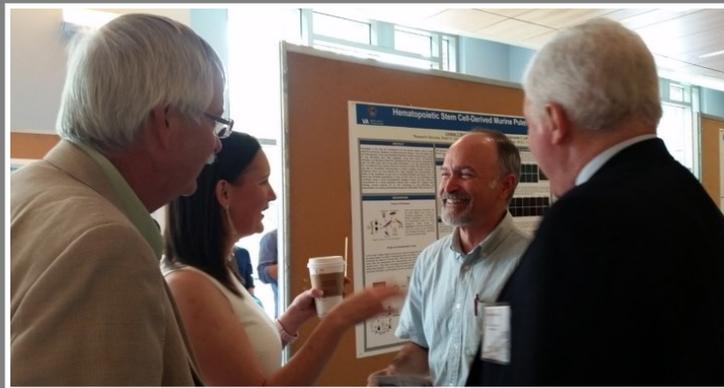
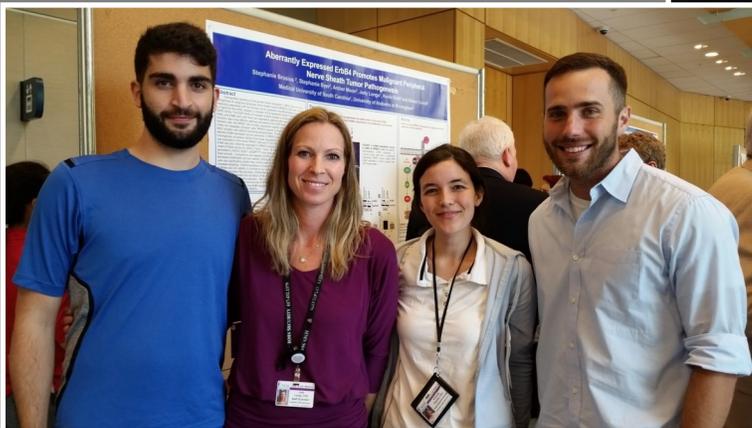
**IT'S  
A  
BOY!**

**James Clifford Madory  
7 lbs. & 11 oz.  
Born 8/16/2015**



# 2015

# RESEARCH DAY





## RESEARCH DIVISION UPDATE

Statistics for the Division of Research from July through September.

Eleven grant proposals were submitted requesting \$1,695,976  
in total first year costs.

Also, during this period six grants were awarded totaling \$823,476.

**Bradley Schulte, Ph.D., Vice Chair of Research**

### SUBMITTED 7/1/15 – 9/30/15:

**Chandrakala Puligilla, Ph.D.**

Title: Molecular Regulation of Sensory Epithelial Cell Patterning in the Mouse Inner Ear \$371,473 – Proposed Start Date 7/1/2016

**Suhua Sha, M.D.**

Title: A Rapid Assay for RSA Targeted Drugs \$63,047 – Proposed Start Date 7/5/2015

**Suhua Sha, M.D.**

Title: High-Throughput Screening for Ototoxicity of New Aminoglycoside Compounds \$141,187 – Proposed Start Date 9/1/2016

**Avtar Singh, M.D.**

Title: Nitrosylation Mechanisms for Protection Against Neurovascular Inflammatory Injury \$373,750 – Proposed Start Date 5/1/2016

**Ericka Smith**

Title: The Role of the PTEN Tumor Suppressor Protein in Activation of Canonical Wnt/beta-catenin Signaling \$47,059 – Proposed Start Date 4/1/2016

**Demetri Spyropoulos, Ph.D.**

Title: Using Embryonic Stem Cell Fate to Determine Potential Adverse Effects of Petroleum/Dispersant \$262,823 – Proposed Start Date 1/1/2016

**Demetri Spyropoulos, Ph.D.**

Title: Cryonic Approaches for Lengthly Space Travel: Temperature-Chemical-Based Infusion Method to Greatly Reduce Metabolism and Extend Stasis \$25,000 – Proposed Start Date 12/1/2015

**David Turner, Ph.D.**

Title: PC150637P1 RELATE Study: Survivorship care physical activity initiative to improve disparities in HRQOL for prostate cancer survivors \$72,137 – Proposed Start Date 4/1/2016

**Gavin Wang, M.D., Ph.D.**

Title: Sensitization of Lung Cancer to Radiotherapy via Targeting of c-Myc \$149,500 – Proposed Start Date 3/1/2016

**Gavin Wang, M.D., Ph.D.**

Title: Reversing Radioresistance in Lung Cancer Stem Cells by Targeting MicroRNAs \$50,000 – Proposed Start Date 10/1/2015

**Gavin Wang, M.D., Ph.D.**

Title: South Carolina COBRE in Oxidants, Redox Balance & Stress Signaling \$140,000 – Proposed Start Date 8/1/2016

### AWARDED 7/1/15 – 9/30/15:

**Steven L. Carroll, M.D., Ph.D.**

Title: Combinatorial Therapy with Receptor Tyrosine Kinase Inhibitors for Malignant Peripheral Nerve Sheath Tumors \$85,000 - Awarded Date 8/1/2015

**Steven L. Carroll, M.D., Ph.D.**

Title: Comparative Oncogenomics for Peripheral Nerve Sheath Cancer Gene Discovery \$281,867 - Awarded Date 9/15/2015

**Hainan Lang, Ph.D.**

Title: Auditory Nerve Degeneration and Repair \$365,062- Awarded Date 7/1/15

**Suhua Sha, M.D.**

Title: A Rapid Assay for RNA Targeted Drugs \$63,047- Awarded Date 7/1/15

**Gavin Wang, M.D., Ph.D.**

Title: Discovery - ATS Prodrugs \$23,500 - Awarded Date 7/27/15

**Zhu, Yusheng, Ph.D., DABCC, FACB**

Title: The Variance Between POC and Clinical Chemistry Laboratory Glucose Testing Results in Critically Ill Patients \$5,000 -Awarded Date 7/1/15

# TONY'S FAREWELL





## Hemophilia Therapy – The Future Is Now

**JOHN LAZARCHICK, M.D.**

Hemophilia A (FVIII deficiency) and hemophilia B (FIX deficiency) are rare X-linked bleeding disorders of variable clinical severity depending on the degree of each clotting factor deficiency. Approximately 60% of affected patients will have the severe form of the disease i.e. a factor FVIII or factor IX activity level of less than 1%. Both spontaneous and post-traumatic hemorrhagic episodes are frequent. Intracranial bleeding is uncommon in the newborn with hemophilia but does occur with prolonged labor or the use of forceps at delivery. Joint bleeds into weight bearing account for 80% of hemorrhagic episodes and bleeding into the muscles, oropharyngeal sites, gastrointestinal tract and genitourinary tract are relatively common. Joint bleeds inflame the synovia and, if chronic, result in an arthropathy with reduced mobility and eventually joint deformity and permanent disability. The mental, social and functional impact on the patient's quality of life can be overwhelming.

The therapeutic approach to these patient's has been two-fold; "on-demand" refers to giving FVIII replacement therapy at the time of a bleed; "prophylaxis" refers to infusing FVIII replacement therapy on a preset schedule to prevent bleeding. The vast majority of patients are now on a prophylactic infusion program. The replacement product initially used to treat hemorrhages was fresh frozen plasma (FFP) but this was of limited utility since large volumes of plasma were required. The initial factor VIII concentrate was the use of cryoprecipitate from FFP since this precipitate is rich in FVIII activity. This was followed in 1970's with the pharmaceutical companies purifying FVIII from donor pool plasma resulting in highly concentrated FVIII preparations. Unfortunately, it was soon discovered that these concentrates had a high risk of infection with hepatitis C, hepatitis A-D and HIV, approximately 50% being infected with the latter virus. In addition, inhibitors to the infused FVIII developed in 25% of patients who had severe hemophilia A rendering replacement therapy ineffective to treat bleeding episodes. To these patients, the infused factor VIII was a foreign protein followed by a normal immune reaction to its presence in circulation. The era of recombinant preparations of FVIII concentrates followed and are now in their third generation. The latter production phase is totally free of human and animal proteins and involves collection of cell culture supernatants of transfected hamster-derived cell lines and requires no further viral attenuation. Such products now available from several pharmaceutical firms including Novo Nordisk and Baxalta. The limiting issue in all of these preparations is that the FVIII product has the same half-life ( $T_{1/2}$ ) as normal factor VIII, 8-12 hours. To maintain a minimum level of FVIII activity of 1 to 2% while on prophylactic therapy means a patient has to infuse the product every 2 days. A major breakthrough that followed and is now the major treatment modality was the ability to produce recombinant factor with a half-life up to 18-24 hours. To achieve this, the recombinant FVIII is reconstituted with pegylated liposomes and termed recombinant PEG FVIII. The polyethylene glycol (PEG) polymer chain (of variable length depending on the pharmaceutical manufacturer) is attached to the factor VIII both covalently and non-covalently. Pegylation process is not limited to hemophilia drug production and is used to produce drugs to treat a wide variety of medical disorders. Although these advances have had a major impact on hemophilia care, they do not eliminate the need for factor VIII replacement therapy. However, the future of therapy for severe disease is on the horizon with the possibility of somatic gene therapy for both hemophilia A and B. Extensive progress has been made in viral vector selection, intravenous delivery of the capsid containing copies of normal FVIII and FIX gene product and preliminary studies showing variable but sustained FVIII and FIX clotting activity. As the title suggested, the future for the hemophilia A and B therapy is now. We have established a team with a focus on coagulation disorders consisting of physicians in Pediatric and Adult Hematology, Laboratory Medicine, clinical and research nursing staff, and laboratory coagulation personnel that allows us to participate in a number of ongoing clinical trials including the use of recombinant FVIII prophylactic therapy if previously untreated patients (PUP trial), use of pegylated recombinant FVIII in previously treated patients, use of recombinant von Willebrand factor in patients with vWD who are undergoing surgery (these patients are often also FVIII deficient) and will be participating in a gene therapy study for hemophilia B. Our ultimate goal is to establish a Hemophilia Treatment Center at the Medical University of South Carolina bringing together physicians, nurses and laboratory personnel to provide comprehensive care for pediatric and adult patients with bleeding disorders whether in hospital, clinic or home setting.



# PATHOLOGY SPRING SYMPOSIA 2016

DEPARTMENT OF PATHOLOGY & LABORATORY MEDICINE

February 23, 2016 - February 27, 2016

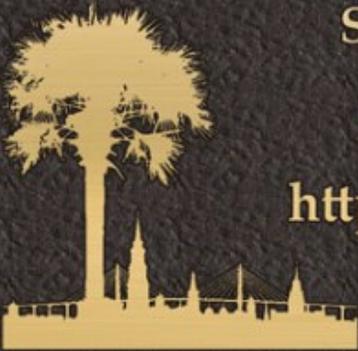


Charleston Place Hotel

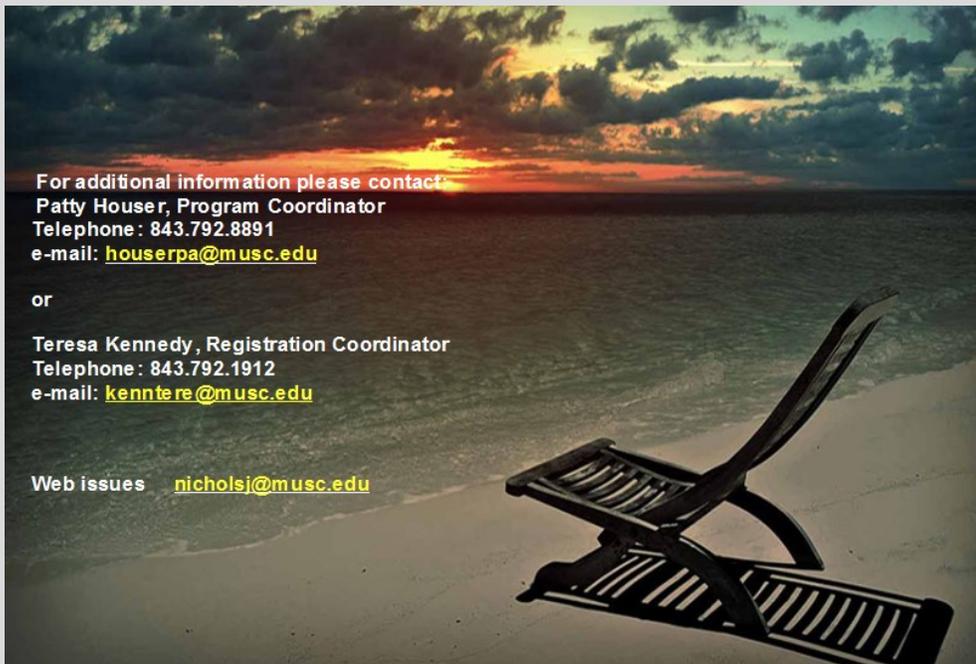


CLINICAL PATHOLOGY  
SURGICAL PATHOLOGY  
CYTOLOGY  
DERMATOPATOLOGY

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*Charleston* where history lives



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**HOUSING:** <https://mainweb-v.musc.edu/mckee-seminar/housing.html>

# UPCOMING MEETINGS

♦ SNO - Society for NeuroOncology Meeting, November 19 - 22, 2015

**NEXT ALL HANDS MEETING**

**WEDNESDAY, DECEMBER 16, 2015**

**DEPARTMENT HOLIDAY CELEBRATION**

**AT THE SC AQUARIUM**

**ON DECEMBER 11, 2015**

**EB — EXPERIMENTAL BIOLOGY  
AMERICAN SOCIETY FOR INVESTIGATIVE PATHOLOGY &  
THE HISTOCHEMICAL SOCIETY MEETING)**

**APRIL 2-6, 2016**

**IN**

**SAN DIEGO, CALIFORNIA**

## **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.

**[www.musc.edu/pathology](http://www.musc.edu/pathology)**