



MICROTIME

The Georgia Society for Histotechnology

Histopalooza 2014!

The Dates are April 25-27th

At the

THE LODGE & SPA

AT

Callaway Gardens in Pine Mountain, GA

This year's line-up does not disappoint

Jim and Theresa Burchette~ IHC workshops (Dako)

Vinnie Della Speranza~ Management workshops
(Medical University of South Carolina)

Lamar and Wanda Jones~ key note speakers
(Carolinas College of Health Sciences)

Dave Kemler~ MOHS workshop & HISTOTALK

Ely Klar~ microscopic tissue identification
(Columbus State University)

Robert Lott ~ HT/HTL review (Ventana)

Joe Myers~ IHC (Biocare)

Jack Ratliff~ Hard Tissue Committee chair of NSH
(and karaoke)

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President's Letter....

Dear GSH members,

We've had a busy year within GSH and you will notice a few changes. We are asking for your input to update our logo. We've had a few ideas submitted and will retire the original logo before HISTOPALOOZA 2014. Several members attended the NSH annual symposium in Providence, Rhode Island. It was an eventful time for our Region as the decision was made to discontinue Region III meetings.

The GSH is excited to offer you another opportunity for CEU's next April, with nationally recognized speakers. Go to our website to get the latest details and call any of the board for information. When you go to the website, notice the committees that still need a chair. This is the perfect time to volunteer and share your expertise. We are continuing to amend the Bylaws of the GSH and will have a final copy, for approval, at the next general membership meeting. We will need a majority vote for amendment. We look forward to your input.

Lastly, we thank Amanda Knowles for stepping up as editor of our MICROTOME. Carole Fields returned to California and we miss her dearly. We continue to welcome articles and anticipate the return of our newsletter article award.

In the last issue of MICROTOME we revealed the memorial award for Rhonda Rogers, past newsletter editor and editor of the NSH in Action.

I look forward to hearing your comments and suggestions. Remember to support our vendors and we anticipate an increase of exhibitors at HISTOPALOOZA 2014.

Warm Regards,

Wanda K Simons

www.histosearch.com/gsh

SAVE THE DATE: APRIL 25~27, 2014

GEORGIA SOCIETY for HISTOTECHNOLOGY
HISTOPALOOZA 2014!

THE LODGE & SPA at Callaway Gardens, a Marriott property

Please make plans to participate in our annual symposium as we bring together incredible regional speakers in a tranquil atmosphere. But don't be surprised if you have a little fun, as you network with your peers and meet with your favorite vendors in a casual setting. Room rates have been set at \$135 and the return of the all inclusive price of \$135 for a possible 12~15 CEU's by NSH. The gardens will be gorgeous during spring and a pass to the gardens is included with your room rate.

Our website has the registration form available for vendors: www.histosearch.com/gsh
This year at NSH a vote was taken to discontinue Regional III meetings. So we welcome all vendors and attendees to take advantage of our affordable rate with approved NSH credits. Our program will be approved by our board in the next few weeks.

We look forward to celebrating HISTOPALOOZA 2014 with YOU!

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Books & Articles:



WILD COLOR

The Complete Guide to Making and Using Natural Dyes by: Jenny Dean Karen Diadick Casselman, consultant published by Watson-Guption Publications, revised edition 2010.

How to make your own mordants was a favorite chapter-my kind of recipe book. This book is recommended for anyone fascinated by natural dyes.

~ Wanda Simons

**Georgia Society
for Histotechnology**



Website connections~

<http://www.nsh.org/>

<http://www.histonet.org/>

<http://www.histosearch.com/>

<http://www.histotalk.com/>

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**Upcoming workshop at Histopalooza 2014:
Immunohistochemical Detection of Infectious
Diseases**
Jim Burchette, HT (ASCP)



90 minute workshop/presentation

The use of immunohistochemistry for identification of infectious diseases is a very important role in diagnostic clinical pathology. Often times, results obtained with IHC testing gives definitive diagnosis especially in patients with compromised immune systems such as transplant patients where the preoperative diagnosis is rejection versus viral infection. This is a major contribution with regards to medication and treatment.

Routinely used antibodies for identification of infectious entities will be reviewed during this presentation. Digital IHC images will be shown with histologic descriptions describing immunoreactivity and staining patterns. Technical comments regarding antibody clones and pretreatment methodologies will also be addressed.

Information shared in this presentation will give the technologist increased knowledge with identification of proper staining patterns, pretreatment techniques and histologic descriptions of diseased tissue. Audience participation is encouraged.



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Histology Openings!

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Deadlines for Submission are:

September 1 - Fall

December 1 – Winter

March 1 - Spring

June 1 - Summer

Clip this card to create your own technical reference file. Look for more cards in future issues!



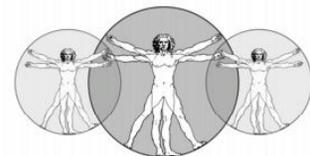
wonder...
What is the purpose of the alcohol rinse prior to the eosin stain?

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Guide to Shoulder Anatomy
 Vicki L. Kalscheur, HT (ASCP)
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The shoulder is a remarkable joint built for movement and stability. Joints such as the knee, spine, and ankle derive their stability from ligaments. The shoulder is unique due to the fact that the majority of its stability is provided by muscles. These stabilizing muscles are called the “rotator cuff”, and are found underneath the deltoid muscles.

Sports injuries (rotator cuff) such as football, baseball and gymnastics commonly involve the shoulder. For histologists, overuse and repetitive stress injuries such as tendinitis and arthritis are common. In a shoulder the muscle, tendon and ligament interconnectivity can begin to produce small aches and overtime can develop into a chronic, painful and debilitating injury. Poor posture, weak muscles, shoulder component inflammation, wrist involvement and even the elbow can contribute to painful shoulder movement.

Anatomy of the Shoulder: The shoulder is complex. If one component is compromised it can domino into other related soft tissue damage. Briefly, the shoulder blade or scapula is a large flat bone. The acromion attaches to the collarbone. The shallow socket is called the glenoid and within this joint the ball-like head of the humerus fits. This joint allows arm movement in all directions. There are other joints in this area (AC joint is one) that help maintain shoulder position (Fig. 1).

Ligaments connect bone to bone, thus the shoulder ligaments secure the joints of the shoulder to provide stability and strength.

A tendon is a tough band of fibrous connective tissue that connects muscle to bone and is capable of withstanding tension. The rotator cuff is a group of muscles and tendons that also provide strength and stability. Most importantly, it moves the arm turning it inward and outward. Ligaments are yellow/white when fresh and have great elasticity because of the high concentration of elastic fibers/collagen fibers (Fig. 4). Ligaments contain large, flat fibroblast cells that are derived from mesenchyme.

The **bursa** is a fluid filled sac that cushions the rotator cuff.

Muscles assist with movement of the shoulder and arm. The deltoid muscle gives the shoulder its round shape and assists in raising the arm at the shoulder. The biceps muscle helps bend the arm at the elbow. These muscles are very important and are attached to your arm and shoulder by tendons.

The **rotator cuff** is a tendon. There is also a biceps tendon. Tendinitis is an inflamed tendon causing pain and limited shoulder movement. Tendons are tensile, with the primary cell also being the fibroblast (Fig. 3). This is a simple anatomy overview – there are many more sub ligaments and muscles in the shoulder. Please see an anatomy book or websites for more information.

Shoulder “wear and tear” treatment to reduce inflammation and pain varies depending on the problem. Treatments include rest; ice (break up muscle knots); heat (increase motion); pain medicine/cortisone injection/or pill; and exercise. More recent therapies are electrical stimulation to reduce pain and swelling or ultrasound devices using sound waves to loosen shoulder tightness. Often rest and changing posture or work station area solves the problem. Physical therapy may be recommended.

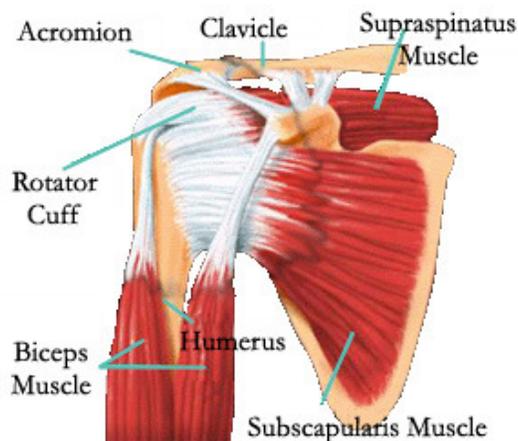


Figure 1

(www.chiorthosports.com)

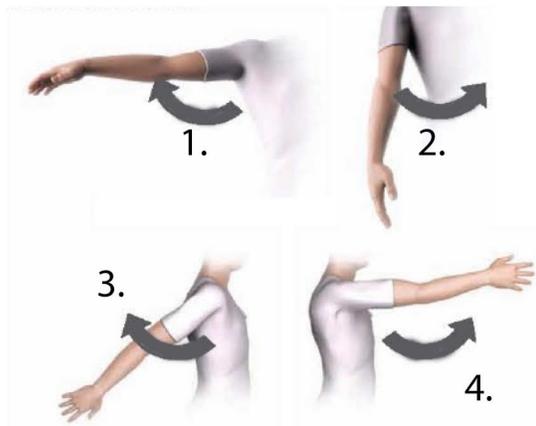


Figure 2: Optimal Range of Motion for Shoulder
(www.proprofs.com)

Common shoulder injuries may occur when the arm is jerked or one falls on a shoulder, outstretched arm, or elbow. Ouch! The most common injuries include dislocation, sprain, separation and fracture (broken bones). I will not cover each of these, however commonly the diagnosis will involve examination of the joint and diagnostic X-rays. In frozen shoulder (FS) a common method requires special mobilization techniques where the therapist moves the bones to free the adhesions. This is painful. In severe cases of frozen shoulder the treatment will be done in the hospital under general anesthesia to break the adhesions. Muscle inflammation resulting from these types of injuries causes discomfort and pain. Muscles, ligaments, and tendons can be pulled, sprained, or torn (Fig. 2).

Exercises to Increase Flexibility

If you have had a shoulder issue these will be familiar.

Home exercises, pendulum exercise, wall walking, cane exercises

Range of motion, isometric exercises

General exercises, light weights

Broom stretch, back scratcher, shoulder exercises with pulley

For inflammation of the joints incorporate in strengthening such as: internal rotation, external rotation (with weights), side raise and more.

The best way to avoid injury is by stretching before sports or heavy labor and learning to lift/ reach for objects the correct way.

The School of Veterinary Medicine – Comparative Orthopaedic Research Laboratory and the University of Wisconsin Hospital and Clinics have collaborated on a number of musculoskeletal projects that will benefit many of us. The animal (research) surgeries are performed in the veterinary school. Histologically, projects have involved equine suspensory ligament histology; canine extensor tendons (forelimb); canine hamstring graft histology; canine shoulder anatomy serial series in transverse, coronal and sagittal planes; and muscle fibrosis in rabbit tibia. Recently we began working on a rabbit project that involves cutting the lateral branch of the tendon, suturing the two ends back together, placing a mesh with growth factors on the repaired tendon, securing the mesh with suture and knot and ultimately doing histology to determine whether the growth factors accelerate healing. The above samples are difficult to work on as orientation, dryness of animal tissue, suture & pin location must be preserved. I am challenged and rewarded by the histology results prepared for our researchers. I suspect some of my shoulder issues developed from microtoming series of research slides and from sitting at the microscope evaluating musculoskeletal architecture.



(aofoundation.org)

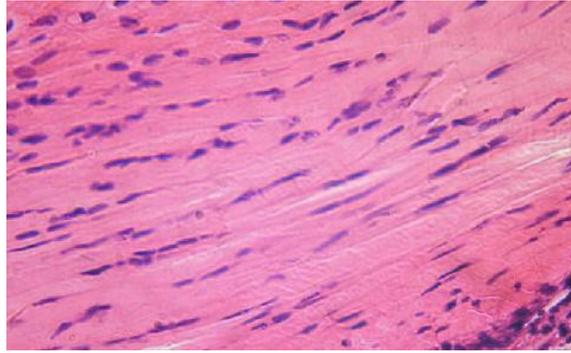


Figure 3: Longitudinal Section of Tendon (H&E)
(www.onlineveterinaryanatomy.net)



Figure 4: Ligament Showing Both Elastic and Collagenous Fiber Bundles (Elastin Stain)
(www.courseweb.uottawa.ca)

There are options and advances in shoulder injuries, surgery and research. Biotechnology continues to change and advance orthopedic options. Due to the complexity of the shoulder each patient process will be different.

Preventing shoulder injuries is wise. Maintain good posture, stay fit and avoid doing movement that may cause acute pain and start the inflammatory process. Participate in regular moderate physical fitness that will strengthen the muscles around your shoulder and neck. Get out and have fun, some things we just have to address as they happen!



Disclaimer: This article is for informational and educational purposes only. Always seek professional medical advice when experiencing shoulder pain and discomfort. Additionally, some of the information is from personal contacts and conversations. Images taken from google.com are for the informational purpose of this article and are not to be reproduced.

For further information on shoulder anatomy and function, the following references and Websites may be useful.

Websites:

Human Anatomy Pictures and Medical Software <www.human-anatomy.com>

American Shoulder and Elbow Surgeons

<<http://www.ases-assn.org/>>

The Journal of Bone & Joint Surgery

<<http://jbjs.org/>>

Shoulder Injuries and Disorders

<<http://www.nlm.nih.gov/medlineplus/shoulderinjuriessanddisorders.html>>

Shoulder Instability

<<http://www.orthogate.org/patient-education/shoulder/shoulder-instability.html>>

Sports Medicine and Shoulder Research

<<http://orthosurg.ucsf.edu/research/clinical-research/sports-medicine/>>

Frozen Shoulder

<<http://www.mayoclinic.com/health/frozen-shoulder/DS00416>>

References:

Gibson, M., Oaks, J. Veterinary Histology 934:051 Lecture Handout. 2010.

Greco, Ralph. *Implantation Biology: The Host Responses and Biomedical Devices*. New Brunswick, NJ: CRC Press. 1994.

Kalscheur, Vicki. Personal Experience. 2012-2013

Wheater, Paul R., H. George. Burkitt, and V. G. Daniels. *Functional Histology: A Text and Colour Atlas*. Edinburgh: Churchill Livingstone, 1987. Print.

Woo, Savio L-Y., and Joseph A. Buckwalter. *Injury and Repair of the Musculoskeletal Soft Tissues: Symposium: Papers*. Park Ridge, IL: American Academy of Orthopaedic Surgeons, 1988. Print.

What do you think?

We want to know how you like the possible logo below for GSH:

Send your feedback to gshmicrotime@gmail.com



NSH-2013 RHODE ISLAND

IN ORDER FROM LEFT TO RIGHT



Wanda Simons, Wanda Jones, and motivational speaker Bill Clement with his wife Cissy



Mequita Praet and Janet Tunncliffe



Norba Targa
GSH member and NSH workshop room volunteer



Billie Zimmerman and new friend
GSH secretary

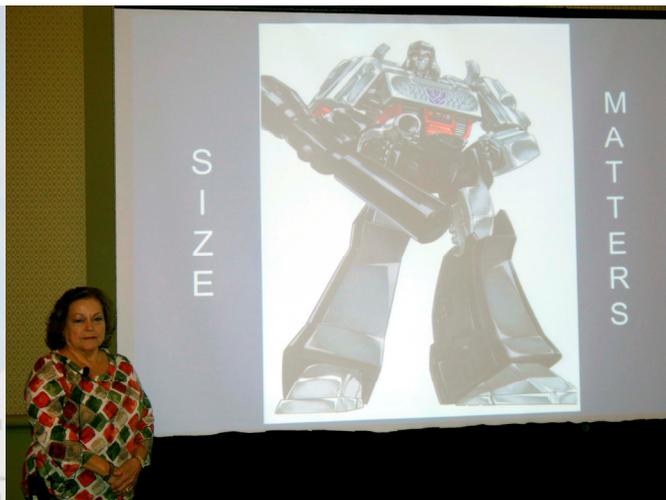


Janet Hobbs
GSH, CEU chair
Local restaurant in Rhode Island





Sheri Blair, Diane Sterchi, and Colleen Forster (NSH/HOD)



Shirley Powell GSH Treasurer at her Size Matters workshop



Jack Ratliff and Andi Grantham



Janet Hobbs GSH CEU chair volunteering for NSH registration

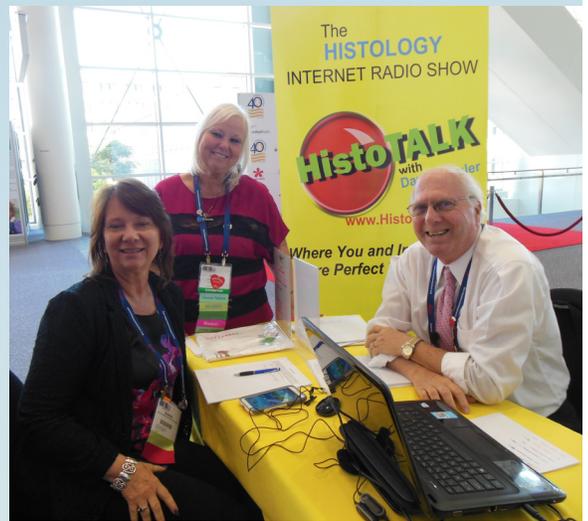


Lamar Jones, Carrie Diamond, Wanda Simons, and Wanda Jones

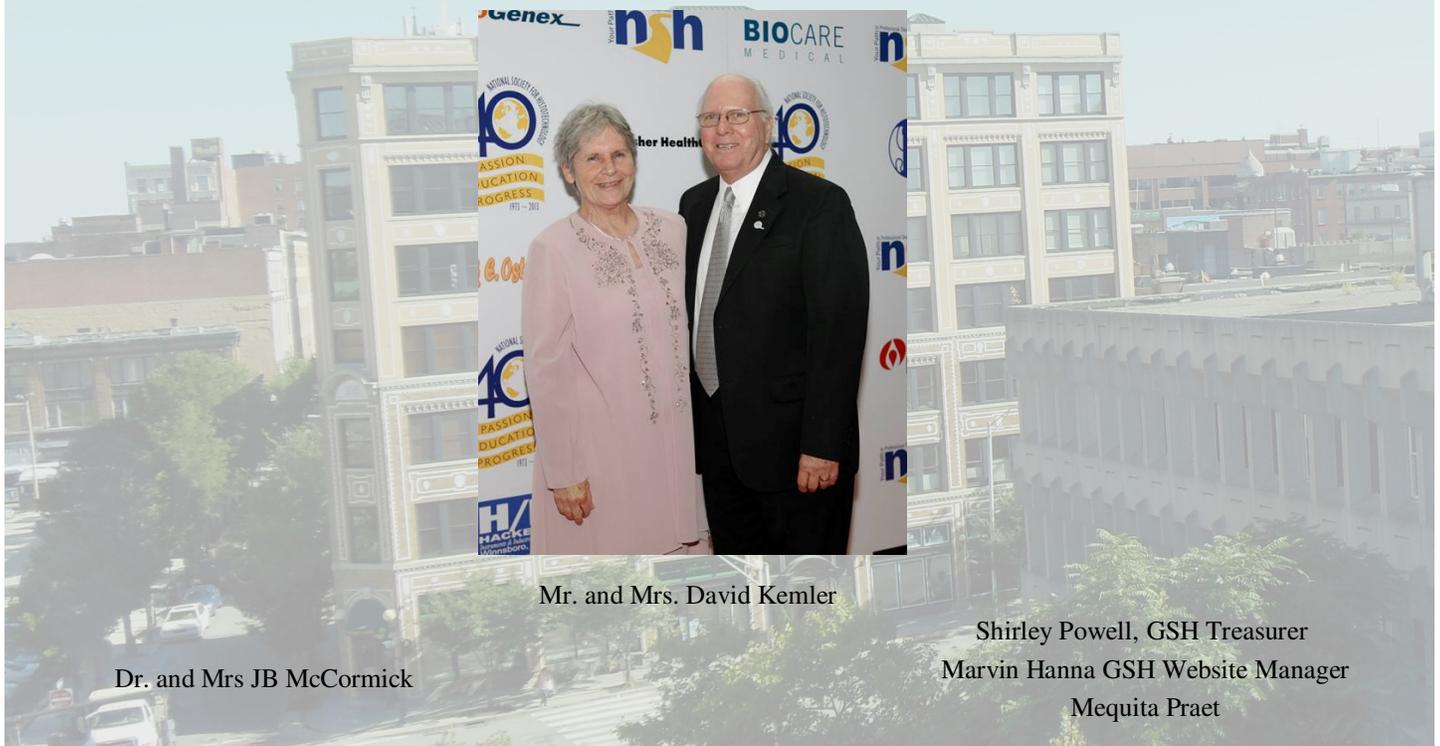




Mequita Praet, Janet Tunnicliffe, and Dot Kubler



Wanda Simons, Elaine Basham FSH VP, and Dave Kemler of Histotalk



Mr. and Mrs. David Kemler

Dr. and Mrs JB McCormick

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Mequita Praet





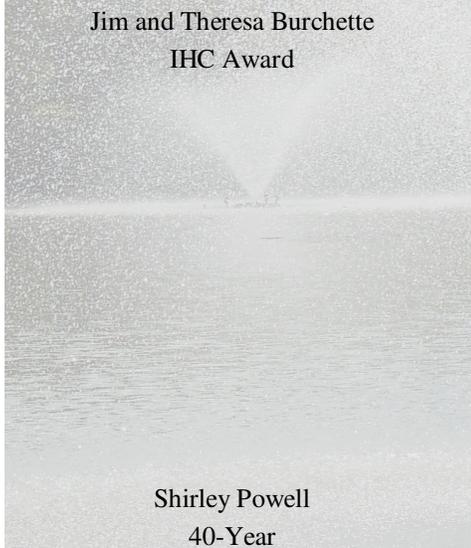
Jim and Theresa Burchette
IHC Award



Elaine Basham
Leica Advocacy in Teaching Award



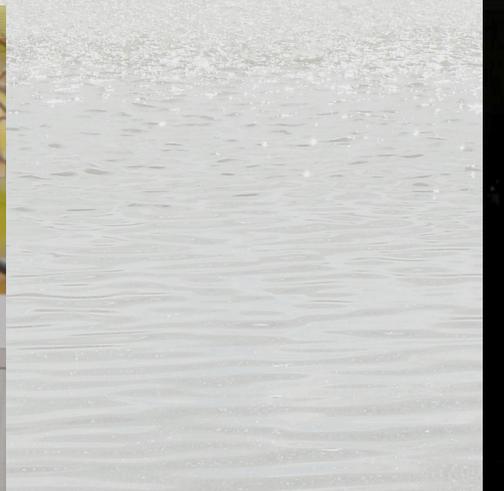
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Lamar Jones, Leica Travel Award
Peggy Wenk, Dr. JB McCormick Award
Wanda Jones, NSH Histotech of the Year



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