The National Society for Histotechnology Presents

Application and Practice of Hard Tissue Histology Forum

Saturday, August 18, 2012 in Bethesda, MD | 8:00 am – 5:00 pm | Earn 7.5 Contact Hours

Why Should I Attend?

The NSH Hard Tissue Committee is proud to present a one day Hard Tissue Forum. Building on the success of the 2010 forum which focused on theory, this all day event will be an interactive day focused on applications and new technologies. Join us as we seek to further our knowledge and understanding of the histology and analysis of bone. How this information can better serve in the diagnosis of bone related diseases and the efficacy and safety of therapeutic treatments.

Lodging

Doubletree by Hilton: 8120 Wisconsin Ave, Bethesda, MD 20814

Registrants are responsible for hotel / travel arrangements. We have secured a small block of rooms at the discounted group rate of $99 per night plus applicable taxes. To make reservations call 1-800-222-TREE or 301-652-2000 and inform the agent that you are with the NSH Hard Tissue Forum. NSH cannot guarantee the rate after the hotel deadline of July 18, 2012 or once the block is sold out.

Flying to the Forum

The hotel is just 15 miles from Ronald Reagan Washington National Airport (DCA); 27 miles from Washington Dulles International Airport (IAD); and 38 miles from Baltimore Washington International Airport (BWI). Shuttle service from the airport can be booked with Maryland Shuttle (www.marylandshuttle.com) or Super Shuttle (www.supershuttle.com).

Cancellation/Substitution Requests

All cancellations must be received in writing by July 27, 2012 to receive a full refund. Cancellations received after July 27, 2012 and no shows to the forum are non-refundable. Substitutions submitted in writing are accepted at any time.

Contact the NSH Office at 443.535.4060 or histo@nsh.org with any questions or concerns.
The rotary microtome has a storied legacy as the premier technology for routine microtomy. Due to the advent of resins/plastics, thin section resin microtomy has been revolutionized and is now widely used in histology over the past three (3) centuries; however, it is not without limitations. In fact, the inability to adequately section certain types of tissue in specific microtomy planes (i.e. transverse sections of long bones), the introduction of mechanical stresses during sectioning and the equipment limitation with regards to specimen sizes are of the more notable limitations that immediately come to mind. Even with the design of larger microtome versions to compensate for larger specimen sizes and reduce vibrations during sectioning, one will easily find today the absence or elimination of this equipment, and with the development and technological evolution of medical device implants over the past century, one will also experience a difficulty or inability to cut tissues containing a variety of implantable materials (i.e. ceramics, metals, etc.), even though these specimens have been prepared with resin embedding methods to provide enhanced support and stability. With diamonds being labeled as one of the hardest if not the hardest materials on this planet, it is easy to concieve that they have the ability to cut through virtually anything! This workshop will demonstrate the use of a diamond studded wire and a diamond studied sand bladed saw as viable tools for saw-sectioning a wide range of specimens with regards to size and the presence of implantable devices that limit the sectioning ability of conventional thin section microtomy equipment. Since the primary action is of a gentle saw-sectioning nature, both specimen and material implants are less subjected to mechanical stress, as compared to the forces associated with conventional thin section histology. In fact, microstructure and physical properties are better retained and diverse composite samples are cut at sectioned easily. While this workshop will demonstrate the sectioning techniques of two similar pieces of equipment, it will also address two very different manual and precision methods for grinding and polishing these sections down to a desired thickness, so that proper histological staining and evaluation can occur.

New Results In Laser Sectioning For General Histology, Tissue Engineering, Medical Device Implants And Industrial Analyses

Presented by Henke Richter, Ph.D., Sales & Product Management, Ratiopharm GmbH

Conventional sectioning methods for histological analyses require a careful navigation throughout a variety of techniques. Whether it’s cutting frozen sections for fresh tissue analysis or the more highly technical and time consuming resin sectioning techniques for the evaluation of medical device implants, histological evaluation demands the convergence and precision of equipment to accomplish these tasks in an efficient manner and with minimal damage to specimen morphology. This also applies to industrial applications and especially when looking into quality control manufacturing. In any given laboratory or facility, equipment purchases and technician training easily become burdensome expenses, especially when both can become unavailable with minimal notice. In fact, for a laboratory or facility to maintain a competitive edge, it is necessary for both technicians and equipment to have flexible capabilities. While a number of specialty equipment has been designed and manufactured over the past 300 + years to compliment the variety of sectioning techniques, few designs have yielded the ability of a single sectioning unit to accomplish multiple tasks…..until now! This workshop will introduce and demonstrate a non-contact laser sectioning technology for use with multiple histological applications to produce sections from a variety of soft and hard tissue specimens. Participants will witness for the first time in North America a machine requiring a minimal level of understanding that is capable of performing a variety of applications in support of histological and industrial analyses.

Histomorphometry of Bone: A Quantitative Description of Bone Histology Using Sub-Micron Resolution Optical Microscopy

Presented by Nathaniel A Reveal, CEO, BIOQUANT Image Analysis Corp.

Bone histomorphometry is the quantitative description of bone histology. Using the sub-micron resolution of optical microscopy and the specificity of fluorescent, chemical and immunohistochemical stains, bone histomorphometry is uniquely qualified to describe the cellular activity that controls skeletal health. Specialized histomorphometry software like BIOQUANT® OSTEOMETER® rapidly extracts a wide range of quantitative data while minimizing repetitive stress. In support of histomorphometry, tools from clinical digital pathology are inspiring rapid growth in tools for research digital pathology. Research digital pathology collects images intended for quantitative results, not simply qualitative judgments. It uses a variety of imaging techniques from clinical digital pathology including fluorescent, polarized light, and darkfield imaging in addition to brightfield imaging. BIOQUANT® will offer tutorials in automated bone histomorphometry with the BIOQUANT® OSTEOMETER® software and in imaging for quantitative analysis with the new OSTEMAGER® a research digital pathology scanner. As an added bonus, we’ll tell you how to start exploring research digital pathology for free with your own laboratory equipment!