In its sixth year the IHC/Molecular Forum program team has created a two day slate of general sessions and workshops for the intermediate to advanced attendee. Each day features a track of workshops dedicated to both the clinical and research arenas. The Forum is a great value for your training dollars featuring 12 expert speakers offering 12 continuing education credits for one low price! Spend your Monday & Tuesday choosing workshops that fit your needs, and enjoy your nights at Las Vegas casinos and shows!

**Registration Fees:**

- **Member:** $229
- **Non Member:** $269
General Session 1:
Technology Overview of Molecular Pathology
Presented by Jason Ramos, PhD, Education Program Manager, Biocare Medical

Molecular pathology is often a less familiar entity for those accustomed to IHC and proteins. This seminar is intended to provide a comprehensive overview of basic molecular biology to offer a better understanding of the applications and diagnostic relevance of molecular pathology. A review of the scientific principles of molecular biology will be conducted. This will include understanding the transcription and translation processes. Different molecular techniques from PCR to ISH will be covered. The pros and cons of these techniques will be discussed, including which molecular techniques and methods are best suited for diagnostic, screening or treatment assessment purposes. The presentation will also look at the future for molecular pathology, and discuss routes for personalized medicine.

General Session 2:
Genomic Health Medicine & The Electronic Health Record
Presented by Sally Lewis, PhD, MT(ASCP)HTL, MP, Department Chair, Medical Laboratory Sciences & Dale Telgenhoff, PhD, HTL(ASCP)CM, Assistant Professor, Tarleton State University

The conclusion of the Human Genome Project (HGP) including the collaboration of 23 labs around the world produced the initial draft of whole human sequence in 2001. This project lasted more 13 years and cost approximately 3 billion dollars. The HGP spawned tremendous advances in basic understanding of human DNA biology and individual sequence variation within the genome and produced technology capable of sequencing large parts of the genome rapidly at lower costs. Competition between instrument manufactures has led to numerous assays to diagnose, provide prognostic information and determine optimum treatment decisions and improve quality of care for life. Increased training of Histotechnologists to partner with Pathologists to fully understand the tissue preparation process and its effects on the variation of results will continue to be critical to provide support to make personalized medicine a reality. We will discuss the skills necessary to provide Histotechnologists the tools to support the adoption of quality laboratory practices in personalized medicine. We will include a discussion on the impact of the evolving electronic medical record to support personalized medicine. Additionally, we will explore the effect of the use of digital pathology to evoke additional demands and enhance the practice of Histopathology.

General Session 3:
Basics of Molecular Diagnostics and the Impact of Preanalytical Factors to Histopathology
Presented by Cecilia Yeung, MD, Fred Hutchinson Cancer Research Center

Modern surgical pathology involves more than grossing in tissues and making histologic sections, there are additional tests that the tissues may be used for. Tissue banking for research and additional testing required for personalized medicine should be considered when processing surgical pathology samples for histology. Pre-analytical variables play an important role in the quality of tissues that are used in these future tests. New advances in histological fixatives and guidelines in the processing of surgical pathology tissues has been proposed. This workshop will review basic molecular biology principles crucial to understanding some of the pre-analytical variables that come into play during tissue processing for optimal histology and additional testing such as IHC, cytogenetic, and molecular testing. Furthermore, we will look at new guidelines and recommendations for immunohistochemistry and new products available to improve downstream molecular and cytogenetic testing.

General Session 4:
Case Studies in Diagnostic Pathology with Emphasis on Immunohistochemical and In Situ Hybridization Testing
Presented by Dr. Richard Cartun, PhD, Director, Histology & Immunopathology Hartford Hospital

Various surgical pathology, cytology, and hematopathology specimens will be discussed in terms of the application of immunohistochemical and in situ hybridization testing for diagnosis and, when appropriate, identification of prognostic and predictive targets. Using Dr. Clive Taylor’s “Total Test Concept”, “pre-analytical” (ischemia time, fixation/processing, tissue sectioning, and test selection), “analytical” (antigen retrieval, antibodies/probes, detection systems, and use of positive and negative controls), and “post-analytical” (interpretation and quality control) issues will be covered.
Workshop A:
Molecular Biomarkers in Lung & Colon Cancer
Presented by Sally Lewis, PhD, MT(ASCP)HTL, MP, Department Chair, Medical Laboratory Sciences, Tarleton State University

Advances in understanding the molecular alterations in tumor development, progression and survival have made a profound impact on the treatment efforts directed at patients with cancer. Advances in the selection of appropriate targeted therapies are demonstrated by the success of tyrosine kinase inhibitors (TKI’s) used in patients with non-small cell lung cancer (NSCLC) and colon cancer. This presentation will begin with a review of the genetic basis of cancer followed by a brief discussion of the role of pathology in the era of personalized genomic medicine. A comparison of the shift from traditional cancer classifications to the current requirements for a molecular classification will encompass a discussion of the pathophysiology of KRAS, BRAF, mismatch repair mutations, Epidermal Growth Factor Receptor (EGFR) and Anaplastic Lymphoma Kinase (ALK) mutations. At the core of this presentation will be a discussion of the role of the Pathologist and the Histotechnologist in ensuring selection of appropriate patients for mutation testing, judgment of the adequacy of the specimen, selection of an optimum reference laboratory with consideration of testing methodology and turn-around time, and integration of the mutation report into the medical record. In conclusion, we will review other molecular tests that may have clinical implications in lung and colon cancer treatment.

Workshop C:
2014 Changes in IHC and Molecular Reimbursement
Presented by Pamela Younes, MHS, HTL(ASCP), CPC, PA(ASCP), Assistant Professor, Baylor College of Medicine

While we welcomed the changes that updated the molecular pathology CPT codes, the changes have not always translated into increased revenue or neutral revenue for laboratories. We will discuss how the codes apply, and how the reimbursement process is changing. Similar changes have created billing process difficulties for the immunohistochemistry codes in 2014. We will discuss how these changes have affected the laboratory, and how to audit the processes to ensure correct coding and payment.

Workshop E:
Introduction to ISH with Case Studies
Presented by Heather Renko, HT(ASCP)QIHC, Marketing Manager-Advanced Staining, Leica Biosystems

Many factors may introduce variations and limitations using protein chemistry therefore it’s sometimes necessary to introduce methods of detecting RNA/DNA in tissue. Principles of fixation, preservation, methodology and controls for ISH will be explored. Various recommendations from College of American Pathology and CLIA guidelines will be discussed. This course is not recommended for the research laboratories as we will focus extensively on a clinical pathology laboratory.

Workshop G:
Microsatellite Instability in Colorectal Cancer
Presented by Beth Sheppard, HT(ASCP), Director of Global Standards, Ventana Medical Systems

Microsatellite instability (MSI) is caused by the loss of DNA mismatch repair activity. MSI is detected in about 15% of all colorectal cancers and 3% of these associated with Lynch Syndrome. Immunohistochemistry (IHC) is a corresponding testing strategy used to evaluate the expression of MLH1, MSH2, MSH6 and PMS2 proteins in HNPCC/Lynch Syndrome related cancers. Loss of expression of 1 or more of these proteins within the tumor is helpful to determine which corresponding genes to target for mutation analysis. This lecture will discuss the presence and loss of these expressions and the corresponding diagnosis.

Workshop I:
Principles of in situ Hybridization
Presented by Jason Ramos, PhD, Education Program Manager, Biocare Medical

The use of in situ hybridization in the histology laboratory is increasing, and, in some cases, becoming the standard. This seminar is intended to provide an overview of basic in situ hybridization techniques to offer a better understanding of the utility of these tests. A brief review of molecular biology will be conducted. The in situ hybridization protocol will be elucidated, while outlining the potential pitfalls that may arise at each step of the process. All topics covered will be related back to the molecular laboratory to improve basic knowledge and in situ hybridization skills.
Workshop B:
Optimizing miRNA, & DNA ISH Assays
Presented by Adrian Murillo, Scientist, Ventana Medical Systems

Interrogation of nucleic acid presence in situ has been found relevant for many clinical and research applications. This workshop addresses methods and interpretation of nucleic acid status in situ. Topics related to methods will include: probe design and detection strategies to measure presence of DNA, mRNA and microRNA molecules in situ. Key assay optimization parameters will be defined and examples will be shown to highlight the best practices when optimizing an ISH assay. At the conclusion of this workshop, participants should be familiar with in situ applications of nucleic acid detection, and which parameters they can vary when optimizing an ISH assay.

Workshop D:
Protocol Development & Troubleshooting in Research IHC
Presented by Liz Chlipala, HTL(ASCP)QIHC, Manager, Premiere Laboratory, LLC

To many researchers, developing a new immunohistochemical staining protocol on any tissue type may be challenging. Overall, every scientist performing IHC protocol development should follow a detailed process that not only establishes clean and accurate staining, but also standardizes and validates the staining behaviors between the antibody, detection system and target species/tissue. This is to assure that the final staining protocol provides the most accurate and reproducible results. This session will explore a detailed approach to this developmental process including proper antibody selection, comparing different detection systems, troubleshooting options and protocol optimization. This session will also define guidelines for maintaining proper documentation during development an in troubleshooting.

Workshop F:
Enhancing Drug Target Validation Using a Novel, Dual ISH/IHC Assay
Presented by David Krull, HT(ASCP)QIHC, Investigator & Joanna Barton, HT(ASCP)HTL, Sr. Scientist, GlaxoSmithKline

In situ hybridization(ISH) and immunohistochemistry (IHC) are valuable methods to characterize gene transcript and protein expression in tissue sections. These methods identify cellular location, distribution and abundance of potential drug targets. IHC is routinely employed in research and clinical labs, ISH, however, is more restricted to research labs, although, it is approached with caution. This is primarily due to the greater potential for false positive or negative results and often-lengthy optimization time. Recently, excellent results are achieved using the novel RNAscope 2.0 High Definition Assay from Advanced Cell Diagnostics. It uses proprietary “Z-Probe” pairs and HRP amplification chemistry followed by DAB to label gene transcript in FFPE sections. The Z-probes are preconditioned to perform optimally with one standard protocol and is possible to identify single transcripts from a gene. This assay is automated. IHC methods using antibodies against the proteins encoded by target genes are run on adjacent sections and correlations between the two products (gene and protein) are evaluated. Goal of these efforts is to combine the RNAscope assay with IHC. Dual sample is quantified using image analysis and/or Laser Scanning Cytometry. Assay will enhance our understanding of gene and protein levels in various diseases. This workshop will present the successes and challenges of developing and applying these assays to target validation studies in human and animal tissues.

Workshop H:
Methods for IHC Multiplexing
Presented by Adrian Murillo, Scientist, Ventana Medical Systems

The ability to interrogate more than one antibody per slide and extract as much information from one IHC slide is quickly becoming more and more necessary. Researchers are needing the ability to see the interaction or relationships of proteins and cells in the context of tissue. In this workshop we will walk attendees through methods used for multiplexing. Attendees will get an in depth review of labeling and conjugating antibodies, detecting those antibodies, and ensuring that the proper controls were run to show that the signals and relationships observed are real.

Workshop J:
ROS1 Gene Rearrangements in Lung Cancer: Development of an IHC Screening Assay for Prediction of Response to Targeted Therapy
Presented by Sheryl Tripp, MT(ASCP)QIHC, R&D Scientist, ARUP Laboratories

Lung cancer is the leading cause of death worldwide, with adenocarcinoma being the most common subtype. The recent discovery of rearrangements of the ROS1 gene in a small subset of lung adenocarcinomas (1-3%) has sparked an interest in identifying these tumors since they may be sensitive to tyrosine kinase inhibitors (e.g. crizotinib). A rapid and inexpensive automated immunohistochemistry (IHC) screening test was developed to identify these patients for further molecular analysis.
Monday, July 21, 2014
7:30am - 8:00am Registration & Continental Brkfst
8:00am - 9:30am General Session 1
9:30am - 9:45am Refreshment Break
9:45am - 11:15am Workshops A & B
11:15am - 12:30pm Lunch on your own
12:30pm - 2:00pm General Session 2
2:00pm - 3:30pm Workshops C & D
3:30pm - 3:45pm Refreshment Break
3:45pm - 5:15pm Workshops E & F

Tuesday, July 22, 2014
8:00am - 8:30am Continental Breakfast
8:30am - 10:00am Refreshment Break
10:00am - 10:15am Workshops G&H
10:15am - 11:45pm Lunch Provided by NSH
11:45pm - 1:00pm General Session 4
1:00pm - 2:30pm Refreshment Break
2:30pm - 2:45pm Workshop I&J
2:45pm - 4:15pm

Bally’s Las Vegas | 3645 Las Vegas Boulevard | South Las Vegas, NV 89109

Registrants are responsible for hotel / travel arrangements. We have secured a small block of rooms at the discounted group rate of $119 plus applicable taxes. To make reservations call 1-800-358-8777 and request the group rate for IHC/Molecular Forum Meeting or the Group Code: IHC. The Hotel Deadline is: Wednesday, June 30, 2014
6th Annual IHC/Molecular Forum

Date: July 21-22, 2014
Place: Bally’s Las Vegas, Las Vegas, NV