INTERMOUNTAIN STATES SEMINAR EDUCATIONAL PROGRAM
OCT. 3-5, 2021 Note: all session times are MDT

SUNDAY, OCTOBER 3, 2021

General Session: 11:00 am-12:00 pm

Session 1: Personalized Medicine: Transforming Health Professions

Speaker: Hassan A. Aziz, PhD, FACSs, MLS(ASCP)^{cm}

Level of Instruction: Intermediate

Sponsor: ASCLS Region VIII

Contact Hours: 1.0

The emerging practice of personalized medicine has a broad impact on all those practicing in the fields of disease prevention, diagnosis, and treatment for the optimal goal of enhancing delivery of healthcare. In this presentation, we take a conservative approach to focus on trends that will form a probable future through systematic study and pattern-based understanding of past and present.

At the end of the session, the participant will be able to:

- Describe the trends that have major implications for the future of healthcare.
- Explain how the listed trends may affect the healthcare careers in the future
- Evaluate possible approaches in preparing skillful workforce

Scientific Assembly: 12:15-1:15 pm

Session 2: Scientific Assembly Roundtable Discussions

Level of Instruction: Intermediate

Contact Hours: 1.0

These informal round table presentations and discussions will center on issues that are recently impacting laboratory practice in the represented area of knowledge. The facilitator will present at least one "Hot Topic" for discussion and lead the roundtable participants in a discussion about issues pertinent to their area of expertise. The group will brainstorm about possible solutions to problems and "best practices" will be shared:
Choose one to attend

1. **Management: Robyn Sorrell, Facilitator**
2. **Microbiology: Rodney Rohde, Facilitator**
3. **Hematology: George Fritsma, Facilitator**
4. **Immunohematology: Jennifer Wolcott, Facilitator**
5. **Chemistry: Jed Doxtater, Facilitator**

At the end of the session, the participant will be able to:

- Summarize the findings represented in one roundtable presentation.
- Discuss 2 ideas discussed in the roundtable presentations that will help the participant perform his/her job more effectively.

SUNDAY, OCTOBER 3, 2021

Breakout Sessions: 1:30-2:30 pm

Session 3: Digital Cell Morphology with Esoteric Case Studies

Speaker: Scott Dunbar, MS, BS

Level of Instruction: Intermediate

Sponsor: Cellavision

Contact Hours: 1.0

The speaker will detail how digital cell morphology can help standardize a very subjective area of laboratory testing using esoteric case studies and live software demonstrations.

At the end of the session, the participant will be able to:

- Describe how neural networks help standardize morphology
- Discuss remote review software to improve turnaround time
- Practice esoteric case studies for teaching

Session 4: COVID-19 Challenge: Setting Up a High Complexity Molecular Lab in a Rural Hospital During the Pandemic.

Speaker: Hannah Mirrashed, Ph.D., CLS (ASCP)

Level of Instruction: Basic

Sponsor: Quidel

Contact Hours: 1.0

After establishing a COVID Lab in 2020, we have provided a safe, fast and convenient COVID-19 testing to our community and the surrounding areas. Plumas District Hospital is a rural and critical access hospital with 16 beds in Quincy, California. By opening the COVID lab, PDH quickly supported by local public Health, Schools, Colleges, Fire Departments, Correctional facility, U.S. Forest Service and nearby hospitals for COVID testing.
PDH lab has established six significant objectives for the community;

1. Ensuring patient safety in patient management
2. Community surveillance by helping the community return to work and school safely
3. Keep open the hospital departments offering tests for patients and increasing number of the patient by 10%.
4. Increase revenue, especially from elective procedures and Laboratory in-house testing
5. Providing a significant support to Plumas county Public Health department for Covid-19 testing and vaccination.
6. In addition, opening the COVID lab moved the PDH lab faster to a Molecular testing level in whole.

At the end of the session, the participant will be able to:

1. Explain ways to meet challenges in a pandemic situation
2. Describe how to research and connect with Vendor
3. Discuss skills necessary to balance between adding a new In-house testing and generate revenue-work with administration
4. Discuss how to maintain going forward in a post-pandemic

Session 5: Waiter There's a Double-Chromatin Dot in My *Plasmodium Vivax* Specimen. Or, Avoiding Dogmatism in Identifying Blood Parasites

Speaker: Blaine A. Mathison, BS, M(ASCP)

Level of Instruction: Intermediate

Sponsor: ARUP

Contact Hours: 1.0

Outside of large reference laboratories, blood parasites are rarely seen in clinical diagnostic laboratories. As such, it can be difficult for laboratorians to maintain confidence in identifying blood parasites. This often leads to getting caught in dogmatic pitfalls which may result in misidentifications that could have clinical significance. Presentation will include overview of blood parasites, focusing on key elements to consider when identifying them, with an emphasis on common dogmatic pitfalls that occur with Plasmodium identification. The goal is to present an approach to blood parasite identification with a 'big picture' viewpoint, and to avoid pitfalls that may lead to misidentifications.

At the end of the session, the participant will be able to:

- Describe the morphologic features of *Plasmodium* that are important for a reliable diagnosis
- Describe how to morphologically separate species of human trypanosomes
- List important criteria for the identification of microfilariae

SUNDAY, OCTOBER 3, 2021

Breakout Sessions: 2:45-3:45 pm

Session 6: TMA, TTP, aHUS, STEC-HUS, PLEX, TIC, ADAMTS13, VWF. What Does it All Mean?

Speaker: George A. Fritsma, MS, MLS

Level: Intermediate

Contact Hours: 1.0

Normal von Willebrand factor supports platelet adhesion, but functional VWF abnormalities and ADAMTS13 deficiency are implicated in thrombotic thrombocytopenic purpura, trauma-induced coagulopathy, arterial thrombosis and SARS-CoV2 infection. Other mechanisms trigger HUS. Help is on the way, not only plasma exchange and vintage factor concentrates, but we also now have caplacizumab, eculizumab, and ADAMTS13 concentrate. Let's sort this out in one hour.

At the end of the session, the participant will be able to:

- Diagram VWF production and the von Willebrand factor cleaving protease, ADAMTS13.
- Diagram the mechanisms behind the thrombotic microangiopathies STEC-HUS and aHUS.
- Illustrate how these disorders are implicated in arterial thrombosis, TTP, and SARS-CoV2 infection.
- Identify and manage the emerging therapies eculizumab, caplacizumab, and ADAMTS13 concentrate

Session 7: Manual versus Automated ABO and non-ABO Antibody Titration

Speaker: Amanda Barzak, MLS(ASCP)^{CM}

Level: Intermediate

Sponsor: Immucor

Contact Hours: 1.0

A comparison of titer strength and reproducibility of both ABO and non-ABO antibody titrations. Our lab evaluated performing these tests using our current method which is a single tube dilution for ABO for the purposes of producing low titer type O whole blood and serial dilution for non-ABO antibodies. These were compared to utilizing the Immucor Iris assays.

At the end of the session, the participant will be able to:

- Describe the purpose of ABO and non-ABO antibody titration testing
- Understand the differences between manual and automated antibody titration methodologies
- Understand the validation process for bringing on automated titration testing

Session 8: From Guatemala to Garage—Surviving Lab Work in Creative Ways

Speaker: Jon Windsor, MLS(ASCP), MPH

Level of Instruction: Intermediate

Contact Hour: 1.0

Doing laboratory work in a traditional or clinical setting is fun; but what if you could do it in other environments? Jon shares stories from his time working in the academic sector and a global health setting. Including when he processed COVID-19 samples in his garage…

At the end of the session, the participant will be able to:

1. Discuss the unique challenges of laboratory work in a global health setting
2. Describe fun ways to use your laboratory training outside a traditional setting

3. Explain the importance of Good Clinical Laboratory Practice (GCLP) Standards

SUNDAY, OCTOBER 3, 2021

General Session: 4:00-5:00 pm

Session 9: Career Options in Forensic Science with an MLS degree

Speaker: Tina Mattox, Forensic Scientist F-ABC, MLS

Level of Instruction: Intermediate

Contact Hour: 1.0

A review of the laboratory positions available at the Idaho State Police forensic services laboratories, what the educational requirements are, examples of case work, duties and responsibilities in the different sections of the lab.

At the end of the session, the participant will be able to:

- Describe the different areas of the forensic laboratory.
- Compare the similarities and differences in working in a crime lab v. hospital lab.
- Explain how having an education in Medical Laboratory Science can be versatile with the jobs available

MONDAY, OCTOBER 4, 2021

Opening Keynote 8:30-9:30 am

Session 10: Resilience: Turning Crisis into Opportunity

Speaker: Hassan A. Aziz, PhD, FACSs, MLS(ASCP)^{cm}

Level of Instruction: Intermediate

Contact Hours: 1.0

The pandemic has placed unprecedented stress on healthcare professionals. The resultant burden of burnout is extensive. Resilience is a potential tool to mitigate emotional injury to improve mental wellness. Audience will explore the importance of resilience to achieving success for developing skills that will help them persevere in the workplace.

At the end of the session, the participant will be able to:

- Define resilience and identify how it applies to adversities.
- Describe the three crisis time frames and explain resilient leadership.
- Explore strategies and attitudes associated with resilience building.
- Demonstrate focused skill-building curriculum to promote resilience behaviors

MONDAY, OCTOBER 4, 2021

General Session 9:45-10:45 am

Session 11: Be THE Expert: A Pandemic Opportunity!

Speaker: Rodney Rohde, PhD, SV (ASCP)^{CM}, SM^{CM}, MB^{CM}, FACSc

Level of Instruction: Basic

Contact Hours: 1.0

The speaker will discuss his experience with his role as a global subject matter expert during the SARS-CoV-2 / COVID-19 pandemic. During the pandemic, I have given 130+ interviews and podcasts, published 20 invited articles, and presented 25 webinars / presentations in leading state, national, and international venues. Quoted in dozens of outlets over 60+ countries, I will discuss how to leverage our expertise to raise our visibility.

At the end of the session, the participant will be able to:

- Discuss how to leverage one's medical laboratory expertise at the international and national level during public health and / or healthcare emergencies.
- Identify effective strategies to synergize one's expertise in social media channels and other digital media, including interviews.
- Summarize how to create explainer articles for science communication and health literacy while raising the visibility of our profession for the public.

MONDAY, OCTOBER 4, 2021

General Session 1:30-2:30 pm

Session 11: Creative Thinking and Problem Solving

Speaker: Michele Fisher, MT(ASCP) ASQ CLSSGB

Sponsor: ARUP

Level of Instruction: Basic

Contact Hours: 1.0

Problem solving has traditionally focused on constraining human behaviors to optimize system performance, but inhibiting behavior has the unwanted side effect of inhibiting creativity and innovation as well. In today's complex and ever-changing environment, stifling creativity and innovation are dangerous strategies. Creative Problem Solving will explore methods for solving problems with creativity while accounting for human limitations and explore reasons that innovation can be challenging. Methods for stimulating new ideas while maintaining order and stability in the laboratory setting will be presented. Cycles of innovation and stabilization will be key to surviving in the current healthcare environment.

At the end of the session, the participant will be able to:

- Discuss problem solving skills
- Describe methods for creative problem solving
- Apply methods of creative problem solving to the laboratory environment

MONDAY, OCTOBER 4, 2021

Breakout Sessions 2:45-3:45 pm

Session 13: Hemoglobin A1c Testing. Is "Good Enough" Acceptable for Your Laboratory?

Speakers: Mike (Dusty) Rhodes, BS, MT(ASCP)

Level of Instruction: Intermediate

Sponsor: Bio-Rad

Contact Hours: 1.0
Question: "How do you feel about your method for A1c testing?"

Lab Response: "It is FDA approved, NGSP certified, Quality Control is great with no Proficiency failures. We are good".

Consideration: But are you certain that it is "good enough"?

In this presentation, we will dig a little deeper into the methodology differences, key in on some common interferences and how to avoid the cost of an inaccurate Hemoglobin A1c result.

At the end of the session, the participant will be able to:

- Differentiate between methodologies for A1c testing, along with the Pro's and the Con's of each.
- Identify key factors when selecting an A1c method, the "must haves" and the "definitely do not want".
- Discuss avoiding the cost of an inaccurate A1c result with Prevention, Appraisal and Failure review

Session 14: Antimicrobial Resistance Threats
Speaker: Jean Patel, PhD, D(ABMM)
Level of Instruction: Intermediate
Sponsor: Beckman-Coulter
Contact Hours: 1.0
We will discuss the changing epidemiology of MDRO infections and future treatment options for these infections.

At the end of the session, the participant will be able to:

- Describe the epidemiology of the most important antibiotic resistant bacteria
- Identify antibiotics that are used to treat infections caused by antibiotic resistant bacteria
- Explain strengths and weaknesses of antibiotics in development

Session 15:
Speaker: Dr. Plumier
Level of Instruction: Intermediate
Sponsor: Billings Clinic
Contact Hours: 1.0

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At the end of the session, the participant will be able to:

MONDAY, OCTOBER 4, 2021

Breakout Sessions 4:00-5:00 pm

Session 16: The Pathophysiology of COVID-19 Associated Coagulopathy
Speaker: John Mitsios, PhD
Level of Instruction: Advanced

Sponsor: Siemens

Contact Hour: 1.0

The focus of this presentation will be to explore the pathophysiology of COVID-19-associated coagulopathy and how the thromboinflammatory response (e.g., cytokine storm) contributes to severe coagulation abnormalities in COVID-19 patients. In addition, this presentation will also explore the potential mechanisms and laboratory parameters/markers that are helpful in guiding the management/monitoring of COVID-19 patients

At the end of the session, the participant will be able to:

- Describe the effects of SAR-CoV2 (COVID-19) on the host.
- Describe the pathophysiology of COVID-19 associated coagulopathy
- Describe the most commonly ordered tests in COVID-19 and how to interpret the results in the context of COVID-19.

Session 16: Biomarkers in Alzheimer's Disease

Speaker: Chris Stamatkin, PhD

Level: Intermediate

Sponsor: Roche

Contact Hours: 1.0

This session will present an overview and discussion of the impact of biomarker testing in Alzheimer's Disease.

At the end of the session, the participant will be able to:

1. Discuss aspects of Alzheimer's Diesease to include pathophysiology and disease burden
2. Describe current challenges with AD diagnosis and unmet need
3. Summarize current biomarkers in development, including impact on diagnosis and treatment

Session 17: The Invisible Enemy: Congenital CMV Infections in the US

Speaker: Sarah Elliott, PhD

Level of Instruction: Basic

Sponsor: DiaSorin Molecular

Contact Hour: 1.0

Congenital CMV infections affect more children each year than all the common conditions tested for during newborn screening combined, and yet public awareness remains low. This seminar will shed light on the prevalence, epidemiology, and clinical guidelines associated with congenital CMV infections, as well as available testing options for diagnosis.

At the end of the session, the participant will be able to:

- Describe the general biology of human herpesviruses and the viral life-cycle of CMV
- Summarize the prevalence, disease manifestations, treatment and management of congenital CMV infections
- Identify the current clinical guidelines and laboratory methods used to diagnose congenital CMV infections

TUESDAY, OCTOBER 5, 2021

General Session 8:00-9:00 am

Session 19: Admiral Nelson and Zulus What Do They Have in Common?

Speaker: Jewell Zweegman, Professional Speaker, LMT, MR

Level of Instruction: Basic

Sponsor: Billings Clinic

Contact Hours: 1.0

Admiral Horatio Nelson and African Zulus? They have something in common that will surprise you. Each helped others better themselves and to think outside the box for success and personal achievement.

At the end of the session, the participant will be able to:

- Describe how a person can grow from decisions good or bad.
- Develop a plan on how to see the good out of a bad situation.
- Discuss skills gained on mapping out a person's life journey.

TUESDAY, OCTOBER 5, 2021

Breakout Sessions 9:15-10:15 am

Session 20: Lab Testing Trends for Chronic Liver Disease

Speaker: Melanie Pollan, PhD, MT (ASCP)

Level of Instruction: Intermediate

Sponsor: Siemens

Contact Hours: 1.0

The WHO estimates that > 1 billion individuals are at risk for chronic liver disease, and the prevalence of NAFLD (non-alcoholic fatty liver disease) is between 30-40% for adults in the US. With intervention and treatment, fibrosis can be reversed, but identification is of disease is often coupled with a hospitalization or liver-related health event. By taking advantage of new testing algorithms and non-invasive tests offered by the laboratory, identification and intervention may be better facilitated to reduce the growing burden on the healthcare system.

At the end of the session, the participant will be able to:

- Define the stages of liver disease progression
- Identify common techniques for diagnosis of chronic liver disease
- Discuss the utility of non-invasive test methods for detection of liver disease

Session 21: New Approaches to Melanoma Screening and Monitoring

Speaker: Thomas Lohmann, MD

Level of Instruction: Intermediate

Sponsor: Sebia

Contact Hours: 1.0

This session will be a discussion of new methods for detection of MGUS and/or Myeloma, and new approaches to monitoring effectiveness of treatment.

At the end of the session, the participant will be able to:

- Discuss methods to detect monoclonal protein in patients.
- Outline risk factors for accelerated progression of MGUS.
- Discuss the role of mass spectrometry in screening for MGUS

Session 22: The Evolution of Phlebotomy

Speaker: Erin Peper, M.S., PBT (ASCP)

Level of Instruction:

Sponsor: Mayo

Contact Hours: 1.0

Have you ever wondered how we came from bloodletting and leeches to present day phlebotomy? This presentation is going to walk you through the history and what has led us to some of the advancements in the field of phlebotomy including safety and regulations.

At the end of the session, the participant will be able to:

- Describe the introduction of safety devices on venipuncture equipment.
- Discuss some of the regulatory agencies, certifying bodies and standard practices associated with phlebotomy.
- Share how phlebotomy has benefitted from advancements in medicine.

TUESDAY, OCTOBER 5, 2021

Breakout Sessions 1:30-2:30 pm

Session 23: When Schistocytes Hit the Fan: Clinical Implications of Schistocytes in Peripheral Blood Smears

Speaker: Angela Durden, MD, FCAP

Level of Instruction: Intermediate

Sponsor: Yellowstone Pathology Institute

Contact Hours: 1.0

An uneventful shift in Hematology is drawing to a close as you review a peripheral smear, when suddenly, your shift becomes a little more interesting…"Are those schistocytes? Oh my!" This session will explore how schistocytes form, why recognizing and reporting their presence is important, and the various clinical conditions associated with schistocyte formation.

At the end of the session, the participant will be able to:

- Confidently identify schistocytes in peripheral blood smears and appropriately refer such smears for pathologist review.
- Recall the mechanism of schistocyte formation and its clinical significance.
- Explore clinical and laboratory scenarios in which schistocytes occur.

Session 24: Coronavirus and the Kidneys: Electrolyte Abnormalities, AKI, and CKD in COVID-19

Speaker: Dennis Begos, MD, FACS

Level of Instruction: Intermediate

Sponsor: Nova Biomedical

Contact Hour: 1.0

The session will discuss the impact of COVID-19 as it relates to electrolyte homeostasis and kidney function. We will describe the common electrolyte abnormalities and their significance in COVID-19. The attendee will understand the prognostic importance of closely monitoring electrolytes, specifically Na, K, Mg, and Ca in patients with COVID-19. We will discuss the common finding of acute kidney injury (AKI) in COVID-19 patients, its pathophysiology, and strategies to manage it in the acute care setting. We will also touch on COVID-19 and its impact in patients with pre-existing kidney disease including those on dialysis, and those with renal transplants.

At the end of the session, the participant will be able to:

- Identify common electrolyte abnormalities and their significance in COVID-19
- Discuss the impact of acute kidney injury in COVID-19
- Explain the significance of COVID-19 in patients with chronic kidney disease

Session 25: A REAL Discussion About POC Upper Respiratory Testing and Microbiology

Speaker: Joel Mortensen, PhD, MLT, HCLD, FAAM

Level of Instruction: Intermediate

Sponsor: Abbott

Contact Hours: 1.0

Dr. Joel Mortensen, Director of the Diagnostic Infectious Diseases Testing Laboratory and clinical virologist from Cincinnati Children's Hospital Medical Center, will provide an engaging and practical assessment of rapid, point-of-care testing for upper respiratory infections across an entire health system. This is an ideal session for understanding rapid, molecular POCT.

At the end of the session, the participant will be able to:

- Characterize upper respiratory diagnostic terminology and associated POCT devices
- Discuss the evaluation and implementation of POCT devices
- Discuss the potential impact of POCT on patient care, workflow and resources

TUESDAY, OCTOBER 5, 2021

Closing Keynote 2:45-3:45 pm

Session 26: Quality Management for Your Life

Speaker: Lucia Berte, MA, MT(ASCP)SBB, DLM; CQA(ASQ)CMQ/OE

Level of Instruction: Intermediate

Contact Hours: 1.0

A quality management system for laboratory services has been published that has a foundation of 12 basic building blocks of quality. In the laboratory environment we know equipment maintenance, document management, and inventory control. But what happens when you apply these same requirements to your personal life? Come see!

At the end of the session, the participant will be able to:

- Briefly describe the 12 Quality System Essentials (QSEs) of a basic quality management system.
- Explain how the QSEs can be applied to your personal activities for a more organized and less stressful life.
- List at least 5 examples of where you can apply the QSEs in your life.


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