



Clinical Science Trumpet

Newsletter of the Association of Clinical Scientists

Vol 35, No 2 - April 2015

Final Program for the Annual Meeting

May 13-16, 2015 Salt Lake City, Utah

Deadline for Hotel Reservations: Monday, April 13

Deadline for Pre-registration for the Meeting: Friday, May 1

The 135th Meeting of the Association of Clinical Scientists will be held in Salt Lake City, Utah on May 13 to 16, 2015. Charles D. Hawker, PhD and the members of the Program Committee cordially invite you to attend this outstanding conference to be hosted by the Department of Pathology of the University of Utah School of Medicine and ARUP Laboratories. The host venue is the Little America Hotel (see next page). The Thursday and Saturday sessions will be held at the hotel, whereas the Friday morning lectures and tour will be at ARUP Laboratories. Tour participants will be able to see ARUP's world class automation systems as well as several leading edge technologies in specialized laboratories.

THURSDAY HIGHLIGHTS

The program theme will be *Clinical Applications of Next Generation Technologies*. The entire first day will be devoted to next generation sequencing and similar new technologies. The Claude P. Brown Memorial Lecture will be presented by Mary P. Bronner, MD, Director of the Anatomic Pathology and Oncology Divisions of the Department of Pathology and the Carl J. Kjeldsberg Professor of Pathology at the University of Utah. Her presentation is entitled "Circulating Tumor DNA: Disruptive Technology in Cancer."



Mary P. Bronner

FRIDAY HIGHLIGHTS

The Friday morning highlights are described to the left. On Friday afternoon, attendees will have an optional bus tour of downtown Salt Lake City with box lunches, culminating in a tour of the Natural History Museum of Utah (nhmu.utah.edu), an architectural marvel and a case study in "green" design created by community generosity and housed at the Rio Tinto Center. This world class museum opened in the fall of 2011 to rave reviews. The five levels are arranged in a manner that allows one to start at the top and gradually descend; exploring all that is of particular interest on each level, and ending with a walk over and under massive dinosaur skeletons.

CME/CMLE Accreditation Statements

Credits 19.75 CME/CMLE (CE) Credits

CME Accreditation Statement

This activity has been planned and implemented in accordance with the Essential Areas and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint sponsorship of the American Society for Clinical Pathology (ASCP) and the Association of Clinical Scientists (ACS). The ASCP is accredited by the ACCME to provide continuing medical education for physicians.

CME Credit Designation Statement

The ASCP designates this live activity for a maximum of 19.75 AMA PRA Category 1 Credit(s)[™]. Physicians should only claim credit commensurate with the extent of their participation in the activity.

CMLE (CE) Credit Designation Statement

The ASCP designates this live activity for a maximum of 19.75 CMLE (CE) Credits. This activity meets ASCP CMP and state licensure requirements for laboratory personnel, who should only claim credit commensurate with the extent of their participation in the activity.

Deadline to Make Hotel Reservations

Registration Now Open for the Annual Meeting

President's Column

**Proposed Bylaws Amendments for
Vote on May 16**

Activities of the Auxiliary

Final Program

Registration Now Open for the Annual Meeting



Will Bagley

RECEPTION AND BANQUET

The Association's annual reception and banquet will be held on Friday evening in the elegant Savoy Salon in the Grand America Hotel across the street from the Little America. In addition to the presentation of the Association's annual awards, the banquet will include a lecture by Will Bagley, a noted Western historian, author of more than 20 books, and a frequent speaker. His topic will be "Voices

from the Dust: How Forensic Pathology and Archeology Help Historians Understand the Past."

SATURDAY HIGHLIGHTS

Saturday morning will feature split tracks for Anatomic and Clinical Pathology. The clinical track will feature several presentations on mass spectrometry, in addition to submitted abstracts, whereas the anatomic track features presentations on breast pathology and gastrointestinal pathology along with submitted abstracts. The Saturday afternoon session includes submitted abstracts on a variety of current topics.

LUNCHEON SESSIONS

There will be outstanding luncheon seminars on Thursday and Saturday that registrants will definitely want to attend. On Thursday, Carl T. Wittwer, MD, PhD, the inventor of the Light Cycler and one of the world's most prominent scientists in the PCR field, will speak on "The Evolution of Molecular Diagnostics: Past, Present, and Future." On Saturday, Edward R. Ashwood, MD, President and CEO of ARUP Laboratories, will speak on "The Impact of the FDA's Initiative to Regulate Lab-Developed Tests."



Carl T. Wittwer



Edward R. Ashwood

HOTEL INFORMATION

The Headquarters Hotel is the Little America Hotel. This 3-star/4-diamond facility has been beautifully refurbished and is an ideal venue for our meeting. Located in the downtown area and a short ½ mile walk or TRAX ride to many restaurants and attractions, this wonderful hotel features Salt Lake's largest indoor/outdoor swimming pool, a large fitness center with sauna and whirlpool, retail shops, a business center, the Lucky H Bar and Grill, the Coffee Shop, and the Lobby Lounge. Among the many services there is complimentary in-room Wi-Fi access. All rooms have coffee makers and most have refrigerators. The conference rate for standard rooms is \$139, single or double, plus taxes, which currently total 12.72%. Online reservations can be made through a link on the Association's website.

Little America Hotel

www.saltlake.littleamerica.com

500 South Main Street

Salt Lake City, UT 84101

Telephone 800-281-7899

PRICING INFORMATION

Registration for the 135th Annual Meeting is now open on the Association's website at: clinicalscience.org/annualmeeting.html#Registration.

\$535 Full Meeting Registration

Includes one ticket to the reception and banquet, but does not include luncheons

\$275 Full Meeting Registration for Associate or Emeritus Fellows, Residents, Trainees, and Fellows

Includes one ticket to the reception and banquet, but does not include luncheons

\$0 One-day Registration for Speakers

Does not include luncheons, reception and banquet

\$40 Thursday Luncheon

Speaker: Carl Wittwer

\$40 Saturday Luncheon

Speaker: Ed Ashwood

\$50 Friday Afternoon Tour (optional)

Natural History Museum of Utah

Includes box lunch

\$95 Additional Ticket to Annual Reception and Banquet on Friday evening

\$0 Saturday Evening Musicale and Art Show

Includes wine and cheese reception



Kyle Kurek

President's Column

Greetings, and welcome to the ACS President's column. I want to highlight some of the great things that are happening in the Society.

As you are well aware, our annual meeting is fast approaching. The Program Committee, chaired by Dr. Charles Hawker, has done an outstanding job of programming the wealth of molecular and genetic diagnostic knowledge at the University of Utah and ARUP Labs. A highlight will be the Thursday sessions on clinical applications of next generation technologies, including the Brown Memorial Lecture by Dr. Mary Bronner on circulating tumor DNA diagnostics, and a luncheon lecture by Dr. Carl Wittwer, pioneer inventor of novel PCR-based technologies, including Real-Time PCR and other innovations that have revolutionized the practice of our clinical laboratories. A tour of the ARUP Labs, rehearsal concert of the Mormon Tabernacle Choir, and visit to the Natural History Museum of Utah will make this a must attend event for everyone. I hope to see you at the opening reception.

The Annals are experiencing such a great success that they have been expanded to six issues per year in 2015. Congratulations to our Editor, Dr. Nina Tatevian. We look forward to hearing more about the expanded format at the annual meeting.

We are in the process of reorganizing and revitalizing our committees, with the goal of having fewer, more active committees. Two of the most important changes are the addition of the Young Fellows Section, and the expansion of the Membership & Mentoring Committee. Our goal is to ensure that all new members are paired with a current ACS mentor to provide a personal contact in the Society. If you would like to become a mentor, contact Peter Hu, Vice President and Chair of the M&M Committee (pchu@mdanderson.org). You will be receiving email notifications about committee assignments shortly, and expect further communications from your Chairs prior to the meeting. If you would like to serve on a committee, please let me know.

I hope everyone is enjoying the new format of the Trumpet. We are indebted to Charlie Hawker for all of his work on this newsletter. Since no one person could do all that he has done for us as Secretary, we have created a new position of Newsletter Editor. I am pleased to announce that Dr. Lori Millner of the University of Louisville has agreed to serve as our first Editor.

Finally, the Executive Committee has been busy working with ASCP to continue to streamline and improve our administrative functions. I sincerely appreciate everyone's hard work, and your continued patience. Although many of the initial bugs have been fixed, should you encounter a problem, please pick up the phone and call. There is always someone available to assist with membership renewals and receipts, meeting registration and information, and general ACS questions.

It is an honor to serve all of you as president. If you have any comments, concerns, or ideas, feel free to contact me directly (kyle.kurek@ucalgary.ca).

Sincerely,

A handwritten signature in black ink, appearing to read 'Kyle Kurek', with a stylized flourish at the end.

Kyle Kurek



Proposed Bylaws Amendment

Rationale and Justification

Over the course of this year, the Executive Committee has had numerous discussions about re-vamping our committee structure. Central to these discussions were two objectives: first, to make the committees more relevant and functional than just something that was listed on the website, published in the newsletter, and listed in the CVs of members, and second, to enable more of our younger and newer members to serve on a committee and be involved in Association affairs. To that end the proposed Bylaws amendment changes the name of the Membership Committee to the Membership and Mentoring Committee to reflect the belief of the Executive Committee that establishing some mentoring programs for younger and newer members should be an important function of the committee, beyond seeking ways to attract new members to join the Association.

The proposed Bylaws amendment also eliminates three committees which the Executive Committee felt were no longer necessary and weren't functioning as intended when they were established early in the Association's history. These committees are Public Relations, Ethics and Professional Relations, and Educational Accreditation. The Public Relations Committee's purpose was to issue press releases about the Association's programs and award winners. This has never worked very well, largely because the clinical scientists who might belong to that committee have little or no experience in writing and issuing press releases. In addition, our website and broadcast emails provide substantial information to our members and others who are interested. And, if we do need a press release for some occasion, we could use the resources of ASCP. The Ethics and Professional Relations Committee has similarly faded from a role in the Association. No one on the Executive Committee can recall any time where such a committee might have been needed. Should such an incident occur, it could be handled by the Executive Committee.

Finally, the Educational Accreditation Committee's functions are now largely performed by the Program Committee. Each year's Program Committee reviews the speaker and program evaluations of the previous meeting and the recommendations regarding future programs. The Program Committee uses this information to guide the next year's program. The Program Committee always includes the Director of Scientific Sections and others from the Executive Committee to assure continuity in our programs and that the Association's goals are being met. If necessary, the President can appoint a Coordinator to assist the Program Committee in completing the package that must be submitted for CME approval. This process has worked quite well the past two years without need for a formal Education Accreditation Committee to also hold meetings.

The proposed amendments to the Bylaws are shown in red below. These proposed changes will be voted upon by the members attending the Business Meeting on Saturday, May 16.

ARTICLE III: DUTIES OF OFFICERS

Section 7. Additional Committees: The President appoints the following committees: Awards, Constitution and Bylaws, ~~Educational Accreditation, Program, Ethics and Professional Relations~~, Historical, Membership ~~and Mentoring, Program, and Publications~~, ~~and Public Relations~~ Committees. The President may appoint additional committees, such as the Music and Arts Committee and the Athletics Committee.

Activities of the Auxiliary

The Auxiliary of the Association of Clinical Scientists promotes and provides a forum of support, camaraderie and entertainment for Association members' family, friends and guests in attendance at the annual meetings. All are welcome to participate in these optional events of the Auxiliary.

WEDNESDAY, MAY 13

- 5:30 pm Auxiliary Reception
(Garden Room, Grand America Hotel)
Complimentary
- 6:30 pm Combined Reception
(Garden Room, Grand America Hotel)
*Auxiliary members to be joined by spouses
or significant others for drinks or dinner.
All charges are responsibilities of individuals.*

THURSDAY, MAY 14

- 9:30 am Tour of Temple Square and
the LDS Family History Library
*Reservations requested: patti@pattihawker.com
Free transport by TRAX three stops
North on Green Line or Blue Line*
- 3:30 pm High Tea in the Grand America Hotel
Reservations required: patti@pattihawker.com

FRIDAY, MAY 15

- 9:00 am Leadership Meeting of the Auxiliary
(Private Dining Room, Coffee Shop)
- 12:45 pm Afternoon Tour of the
Natural History Museum of Utah
*Box lunch provided
Registration and ticket required*

SATURDAY, MAY 16

No formal organized activity.

Suggestions include:

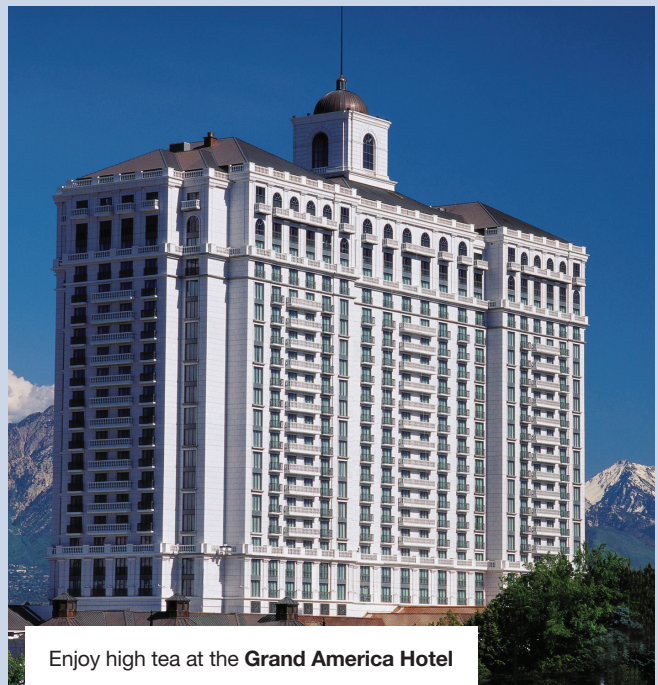
- Shopping at City Creek Centre in downtown Salt Lake City (use TRAX Green Line or Blue Line two stops North)
- Visiting Utah Museum of Fine Arts (Taxi)
- Mountain excursion to Park City Historic Main Street (Requires a car)

Auxiliary President:

Patti Hawker
patti@pattihawker.com



Salt Lake Temple, photo credit Eric Schramm



Enjoy high tea at the **Grand America Hotel**

Final Program

Subject to change. All events at Little America Hotel unless otherwise noted.

WEDNESDAY, MAY 13

- 2:30 pm Meeting Registration Opens (Lobby)**
- 3:00 pm-5:10 pm Executive Committee Meeting (Casper Room)**
- 5:30 pm-6:30 pm Welcome Reception (Olympus Room)**
Complimentary
- 6:30 pm Combined Reception (Garden Room, Grand America Hotel)**
Individuals responsible for charges

11:50 am NGS Variant Interpretation in Genetics and Oncology
Rong Mao

12:05 pm NGS Variant Interpretation in Oncology
Allie Grossman

12:20 pm Adjourn for Luncheon

Luncheon Seminar (Arizona Room)

12:30 pm The Evolution of Molecular Diagnostics: Past, Present, and Future
Carl Wittwer

Clinical Applications of Next Generation Technologies Session (Ballroom A)

1:30 pm Building a Clinical NGS Data Pipeline: Lessons From 2500 Samples
Brendan O'Fallon

2:00 pm Next Generation Sequencing-based Gene Panels for Primary Immunodeficiencies
Attila Kumanovics

2:30 pm Next-generation Sequencing-based Pathogen Detection Directly From Patient Samples
Robert Schlager

3:00 pm Coffee Break

3:15 pm CAP Accreditation Standards and Proficiency Testing for Next Generation Sequencing
Karl Voelkerding

3:45 pm Negative Depletion for Enrichment of Heterogeneous Circulating Tumor Cells
Lindsay N. Strotman

4:00 pm Next Generation Sequencing of Single Tumor Cell Isolated From Whole Blood
Lori M. Millner

4:15 pm Gene Expression in Primary Human Bone Marrow Adipocytes Versus Subcutaneous Adipocytes
Robert Hardy

4:30pm Bioinformatics Analysis to Determine Prognostic Mutations of De Novo Acute Myeloid Leukemia
Andy N.D. Nguyen

4:45 pm A One Year Experience of Developing a Molecular Tumor Board
Qian Dai

5:00 pm Genetic Counseling Via Telemedicine in a Newborn Screening Program: A Novel Approach
Sidney M. Hopfer

Evening Activities

7:00 pm Musicale Rehearsal (Olympus Room)

7:00 pm Awards Committee Meeting (Casper Room)

7:00 pm Optional Free Activity
Attend the weekly rehearsal of the Mormon Tabernacle Choir at the LDS Church's Conference Center Information at the registration desk

8:00 pm Nominating Committee Meeting (Casper Room)

THURSDAY, MAY 14

Morning Activities

7:00 am Breakfast Meeting of the Membership and Mentoring Committee
(Coffee Shop, Private Dining Room)

Clinical Applications of Next Generation Technologies Session (Ballroom A)

7:30 am Meeting Registration Opens (Ballroom A Foyer)

7:50 am President's Welcome
Kyle C. Kurek

8:00 am *Claude P. Brown Memorial Lecture*
Circulating Tumor DNA: Disruptive Technology in Cancer
Mary P. Bronner

8:45am A Primer on Next Generation Sequencing
Kyle C. Kurek

9:15 am NGS in Genetics, Exome, and Gene Panels
Pinar Bayrak-Toydemir

9:45 am Role of a Genetic Counselor
Chris Miller

10:05 am Coffee Break

10:20 am Coding and Reimbursement for Genomic Testing Procedures
Elaine Lyon

10:50 am NGS in Solid Tumors
Wade Samowitz

11:20 am The Impact of Next Generation Sequencing on Hematology
Todd Kelley

FRIDAY, MAY 15

Session and Tour at ARUP Laboratories

6:55 am Bus Loads
(Outside South Lobby Doors)

7:10 am Bus Departs Hotel

7:30 am Check-In
(ARUP Laboratories Main Lobby)
Required for HIPAA compliance

7:40 am Continental Breakfast

8:00 am Welcome to ARUP
Edward Ashwood

8:05 am The Structure of an Academic Reference Laboratory
Peter Jensen

8:30 am Cost and Accuracy Advantage in Medication Compliance Testing Using a Definitive Screen
Kelly Doyle

8:45 am Impact of Multiple CYP Variants on Tamoxifen Metabolite Concentrations
Jennifer Powers

9:00 am Benchmarking as a Screening Tool to Identify Potential Targets for Utilization Management
Heather Signorelli

- 9:15 am Umbilical Cord Tissue: An Ideal Candidate for Detection of In Utero Marijuana Exposure
Jennifer Byerley
- 9:30 am Validation of a Point of Care Chemistry Panel for Ebola Virus Patients
Justin Caron
- 9:45 am Undifferentiated Sarcoma with BCOR-CCNB3 Translocation: A Consideration in Reclassifying Certain Undifferentiated Tumors
John Hicks
- 10:00 am Overview and Explanation of the Tours of ARUP
Charles Hawker
- 10:05 am Coffee Break
- 10:20 am Tour of ARUP Automation and Selected Laboratories
- 11:55 am Reboard Bus for Return to Hotel

Natural History Museum of Utah Tour (Optional Event - requires ticket)

Box lunch provided at bus

- 12:55 pm Bus Loads
- 1:10 pm Bus Departs Hotel
- 1:30 pm Natural History Museum of Utah Tour
- 4:30 pm Reboard Bus for Return to Hotel

Evening Activities

- 6:00 pm Annual Reception
(Savoy Salon, Grand America Hotel)
- 7:00 pm Awards Banquet and Presentation
(Savoy Salon, Grand America Hotel)

SATURDAY, MAY 16

Morning Activities

- 6:15 am Walk or Run for the Lilies
- 7:00 am Breakfast meeting of the Young Fellows Section
(Coffee Shop, Private Dining Room)
- 7:30 am Registration
(Hallway outside Arizona and Idaho Rooms)

Clinical Pathology Track (Arizona Room)

- 8:00 am Evolution of Mass Spectrometry in Clinical Laboratory Testing
Alan L. Rockwood
- 8:30 am Mass Spectrometry in the Clinical Microbiology Lab
Adam Barker
- 9:00 am Tandem Mass Spectrometry for Screening, Diagnosis, and Monitoring of Inherited Metabolic Disorders
Marzia Pasquali
- 9:30 am Utility of Mass Spectrometry in Endocrinology: Reports from the Front Line
Joely Straseski
- 10:00 am Coffee Break
- 10:15 am Clinical Applications of Ethanol Metabolite Analysis in a Pain Management Population
Matthew H. Slawson
- 10:30 am LC-MS/MS Method for Quantitative Analysis of Mycophenolic Acid and Two Serum Metabolites
Stephen D. Merrigan
- 10:45 am LC-MS/MS Method for Quantitation of Thiopurine Drug Metabolites in Whole Blood
Erik Kish-Trier
- 11:00 am Predictive Value of Positive Urine Drug Screening
Roger L. Bertholf
- 11:15 am Hemoglobin A1C: Evaluation of Four Methods
Frederick L. Kiechle
- 11:30 am Comparison of the Sensitivity of a Type-specific and a Combined Immunoassay Against HSV-1 and HSV-2
Dejan Nickolic
- 11:45 am Long-term Evaluation of the Performance of an Automation System in a Hospital Setting
Joshua Bornhorst
- 12:00 pm Adjourn for Luncheon

Anatomic Pathology Track (Idaho Room)

- 8:00 am Diagnostic Dilemmas and Clinical Conundrums in Breast Pathology: Illustrative Cases
Rachel Factor, H Evin Gulbahce, and Erinn Downs-Kelly

- 9:00 am Diagnostic Dilemmas in Gastrointestinal Pathology: Illustrative Cases
Mary Bronner, Kajsa Affolter, and Erinn Downs-Kelly
- 10:00 am Coffee Break
- 10:15 am Coccidioidomycosis Presented as a Pelvic Mass in an Otherwise Healthy Female
Frances B. Compton
- 10:30 am Mutations in mTOR Signaling in 3 Cases of Sarcomatoid Renal Cell Carcinoma
Michael Ward
- 10:45 am Mixed Adrenocortical Adenoma and Myelolipoma in a Patient with Congenital Adrenal Hyperplasia
Nidhi Tandon
- 11:00 am Adenocarcinoma In Situ of the Uterine Cervix: Morphoproteomics Confirms the Expression of EZH2 with Pathogenetic and Therapeutic Implications
Yumi A. Kojima
- 11:15 am NUT Midline Carcinoma: Morphoproteomics and Ingenuity Pathway Analysis Identify the IGF-1R/mTORC2/Akt, Sirt1, EZH2 and c-Myc Pathways as Collaborators in Blocking Differentiation and Provide Pharmacogenomics Options
Hongxia Sun
- 11:30 am Morphoproteomics and Biomedical Analytics Confirm the mTORC2/Akt Pathway as a Resistance Signature and Activated ERK and STAT3 and EZH2 as Concomitant Prosurvival/Antiapoptotic Pathways in Metastatic Renal Cell Carcinoma (RCC) Progressing on Rapalogs: Pathogenesis and Therapeutic Options
Robert E. Brown
- 11:45 am Fetal Membranes Do Not Heal After Needle Guided Procedure
Amanda Tchakarov
- 12:00 pm Adjourn for Luncheon

Luncheon Seminar (Wyoming Room)

- 12:05 pm The Impact of the FDA's Initiative to Regulate Laboratory Developed Tests
Edward Ashwood

Final program continued on page 8



Final Program

Subject to change. All events at Little America Hotel unless otherwise noted.

Afternoon Session (Arizona Room)

1:10 pm	PAM50 Gene Assay for Breast Cancer <i>Philip Bernard (This lecture has no CME)</i>	2:55 pm	Management of Catastrophic Anti-Phospholipids Syndrome (CAPS) with Thrombocytopenia with Plasma Apheresis and Cyclophosphamide <i>Fouad N. Boctor</i>	4:25 pm	Laboratory and Clinical Features of EIA Toxin-positive and EIA Toxin-negative Community-acquired Clostridium Difficile Infection <i>Hiren Patel</i>
1:40 pm	Inflammatory Pathways Sculpt Microbial Communities <i>Jason Kubinak</i>	3:10 pm	Coffee Break	4:40 pm	Oral Feeding Lactobacillus Reuteri DSM17938 Reduces Inflammation in Lungs of Treg-deficient Scurfy Mice <i>Nina Tatevian</i>
2:10 pm	Homocysteine, Nicotinamide, Thioretinaco, and Oxidative Phosphorylation in Diseases of Aging <i>Kilmer S. McCully</i>	3:25 pm	Big Data: One Facility's Solution and Experience <i>Philip Foulis</i>	4:55 pm	Session Adjourns
2:25 pm	Limiting Blood Transfusion in Sickle Cell Disease (SCD) <i>Jonathan S. Krauss</i>	3:40 pm	Algorithmic Testing, Data Integration and Diagnostic Consulting: New Role of Clinical Pathologists <i>Semyon A. Risin</i>	5:00 pm	Annual Business Meeting (Arizona Room) <i>Kyle C. Kurek, presiding</i>
2:40 pm	Sickle Cell Trait (SCT): Benign or Serious Complications? <i>Chesinta Voma</i>	3:55 pm	Cervico-vaginal Epithelial Abnormality and HPV Prevalence in North Florida Population Subgroups <i>Anwer Siddiqi</i>	Evening Activities	
		4:10 pm	Investigating the Role of Epigenetic Modification on the Metastatic Potential of Breast Cancer Cells <i>Delu Yin</i>	7:30 pm	Musicale and Art Show (Olympus Room) <i>Includes complimentary wine and cheese at intermission</i>