2021 AACC ANNUAL SCIENTIFIC MEETING + CLINICAL LAB EXPO

THE LAB +BEYOND

SEPTEMBER 26-30 • ATLANTA, GA

MEETING.AACC.ORG

PROGRAM GUIDE

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CSCC

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Guides are accurate at the time of printing, but changes are bound to happen! Stay up to date on the latest by using the AACC mobile app.

SESSIONS BY DAY

GENERAL MEETING INFORMATION

REGISTRATION

Location: Exhibit Hall C Lobby

Saturday . . . . . 12:00 p.m. – 5:00 p.m.

Sunday . . . . . 8:00 a.m. – 6:30 p.m.

Monday – Wednesday. . . . . 7:00 a.m. – 5:00 p.m.

Thursday . . . . . 8:00 a.m. – 1:00 p.m.

ATTENDEE SERVICES: INFORMATION DESK, HOUSING AND LOST & FOUND

Location: Exhibit Hall C Lobby

INFORMATION DESK

Staff will be available to provide assistance with location of events and meeting areas and general meeting questions.

HOUSING

Representatives from SPARGO, AACC's official housing agency, will be available to assist with your hotel accommodations.

AACC HEADQUARTERS OFFICE

Location: Exhibit Hall C1 Lobby Office
Phone number: 404-222-5400

Contact the AACC Office if you have general questions at the meeting. Also use this number if you have an emergency situation.

Saturday . . . . . 12:00 p.m. – 5:00 p.m.

Sunday . . . . . 8:00 a.m. – 6:00 p.m.

Monday – Wednesday. . . . . 7:00 a.m. – 5:00 p.m.

Thursday . . . . . 8:00 a.m. – 1:00 p.m.

AACC MEMBERSHIP

To learn more about membership, visit the AACC booth #1941. To join immediately, stop by the AACC Conference Registration Desk. Membership is valid for one full year beginning on the date that you join. Dues are as follows: Professional $244; Professional Affiliate $144; Transitional $83; Express $65; Trainee $40. Customize your membership by participating in one or more scientific divisions for an additional $15, $20 or $25 each.

SPEAKER READY ROOM

Location: C206

All moderators and speakers will need to check in to the Speaker Ready Room at least two hours prior to your session beginning. Speakers will be able to check in with AACC staff, turn in updated presentations, schedule a time to run through their presentation, review and update COI disclosures, or pick up per diem checks, if applicable.

SPEAKER READY ROOM HOURS

Saturday . . . . . 12:00 p.m. – 5:00 p.m.

Sunday . . . . . 8:00 a.m. – 6:00 p.m.

Monday – Wednesday. . . . . 7:00 a.m. – 5:00 p.m.

Thursday . . . . . 7:00 a.m. – 12:00 p.m.

BAGGAGE CHECK

Location: Exhibit Hall C1 Lobby, Under Escalator

Tuesday – Wednesday. . . . . 7:00 a.m. – 6:00 p.m.

Thursday . . . . . 7:00 a.m. – 2:00 p.m.

Cost per item: coat check $3, bag or poster $4

CLINICAL LAB EXPO

Location: Exhibit Hall C

Tuesday – Wednesday. . . . . 9:30 a.m. – 5:00 p.m.

Thursday . . . . . 9:30 a.m. – 1:00 p.m.

Refer to Exhibit Guide or the mobile app for exhibit listings and booth descriptions.

AACC permits individuals age 16 and 17 with a photo ID to register for and attend the 2021 AACC Annual Meeting & Clinical Lab Expo, if accompanied by a registered adult. Children under 16 are not permitted on the exhibit floor or in the educational sessions at any time.

FIRST AID/EMERGENCY

Location: Exhibit Hall C1 Entrance
Exhibit Hall C4 Entrance

Emergency Phone Number: 404-223-4911 from any telephone in the convention center.

HEALTH & SAFETY

All event organizers, attendees, and guests will be required to wear face coverings inside. Learn more about AACC's Health and Safety Plan to keep attendees safe at **meeting.aacc.org/covid19safety** or in the mobile app. If you are experiencing new COVID-19 symptoms, please contact AACC at 404-223-4911 or report to First Aid located at the Exhibit Hall C1 entrance or Exhibit Hall C4 entrance.

NURSING ROOM

Location: Exhibit Hall C1 Lobby, Outside Room C101

Georgia World Congress Center installed private nursing pods called Mamava Lactation Suites. These nursing pods can be locked and unlocked by utilizing the free Mamava mobile app. Please download the Mamava Mobile App **(www.mamava.com/mobile-app)**.

PHOTOGRAPHY

Except for photography specifically authorized by AACC, use of video and photographic equipment is prohibited on the exhibit floor and in the meeting rooms. Photography of poster sessions is permitted only with expressed permission of the presenting author.

PRESS ROOM

Location: C106
Phone: 404-222-5401 and 404-222-5402

Sunday . . . . . 9:00 a.m. – 5:00 p.m.

Monday – Wednesday. . . . . 8:00 a.m. – 5:00 p.m.

Thursday . . . . . 8:00 a.m. – 1:00 p.m.

Members of the media can register for the AACC Annual Scientific Meeting in the press room, and pre-registered media can pick up their badges and other meeting materials here. The press room is available for journalists who wish to hold interviews away from the exhibit floor and other public areas, and press room staff can also help to set up interviews between reporters and scientific session speakers. Additionally, registered media are welcome to work on stories here.

MATERIALS

AACC media kits that include fact sheets and AACC press releases will be available, as well as Expo and conference program books. Phones, WiFi, and laptop charging stations are available for the press. Free breakfast and lunch are also available for registered press Monday-Thursday of the meeting, and afternoon refreshments are available on Sunday.

The press room is available to exhibitors to display promotional materials and media kits. However, only registered media may use the rest of the press room, and company and public relations representatives will not be permitted beyond the entryway table after dropping off their materials.

INTERVIEWS

Registered media can inquire with press room staff to reserve space in Room C104 for conducting interviews. Use of this room is by appointment only and subject to availability.

PRESS CONFERENCES

Press conferences take place in Room C105 on Tuesday and Wednesday of the meeting. Details of scheduled press conferences are available from the press room. Press conferences are open to all registered journalists.

DOWNLOAD THE 2021 AACC MOBILE APP

With hundreds of exhibitors to navigate and dozens of educational sessions to attend, planning your busy days at the 2021 AACC Annual Scientific Meeting & Clinical Lab Expo is essential to making the most of this dynamic event. Now you can do all that and more with the FREE 2021 AACC Annual Scientific Meeting & Clinical Lab Expo app. Available for smartphones, tablets and desktops from the Apple App Store and on Google Play for Android devices.

- Plan each day with a built-in calendar.
- Browse exhibitors and map out your path through the Expo.
- Browse through new products available at the Expo.
- Take notes on scientific sessions or about exhibitors.
- Follow live tweets and other social media about the meeting.

TO DOWNLOAD:

- Visit **meeting.aacc.org/2021app**
- Search "AACC" for the app on the Apple App Store or on Google Play.

REGISTRATION TYPES & EVENTS

EVENTS	ATLANTA ALL ACCESS IN-PERSON + DIGITAL ACCESS - AACC/CSCC Member - Non-member - Trainee/Student Member - Emeritus Member	GUEST/SPOUSE IN-PERSON ONLY Limit one per All Access registrant	DAILY ACCESS IN-PERSON ONLY Admission/ tickets for day registered *only*	EXPO ONLY IN-PERSON ONLY Exhibit Hall access	EXHIBITOR IN-PERSON + DIGITAL ACCESS	DIGITAL PASS SELECT DIGITAL ACCESS ONLY - AACC/CSCC Member - Non-member - Trainee/Student Member - Emeritus Member
Plenary Sessions 10000 Series	✔	✔	✔	✕	✔	✔
Scientific Sessions 30000 Series	✔	✔	✔	✕	✔	16 Select Hot Topic Sessions
Meet the Experts 60000 Series	✔	✔	✔	✕	✔	✕
AACC University 190000 Series	T TICKET $	$	$	$	$	$
Roundtable Sessions 40000 Series morning 50000 Series afternoon	T TICKET $	$	$	$	$	$
Poster Sessions In-Person + ePosters	✔	✔	✔	✕	✔	✔ ePosters Only
Special Events	T TICKET $	$	$	$	$	$
Clinical Lab Expo Exhibit Hall, September 28-30	✔	✔	✔	✔	✔	✕
Industry Presentations (Hotel + Expo Floor)	✔	✔	✔	✔	✔	✕
Sunday Special Session + Disruptive Technology Special Session	✔	✔	✔	✕	✔	✔
30 Day Access to All Digital Pass Select Content	October 1 - November 1, 2021	✕	✕	✕	September 26 - November 1, 2021 *Watch live or on demand 24 hours later.	September 26 - November 1, 2021 *Watch live or on demand 24 hours later.
Access Session Recordings November 2, 2021 - September 30, 2022	✔ AACC/CSCC Member $ Non-member	$	$	$	$	$

✔ Included with registration type T TICKET Ticket required $ May purchase ticket Not eligible to purchase ticket ✕ May NOT attend

AACC BOOTH & MEMBER LOUNGE

Stop by and visit booth #1941 on the Expo Hall floor to learn how AACC is at the forefront of new approaches in laboratory medicine, as well as addressing the complexity of an evolving healthcare landscape and promoting new thinking and new skills.

AACC MEMBER LOUNGE

AACC members are invited to visit the Member Lounge located at the AACC booth #1941 on the Expo show floor. This members-only benefit provides a place to recharge between sessions, mingle with colleagues, and enjoy light refreshments.

AACC BOOTH/MEMBER LOUNGE HOURS

Tuesday – Wednesday . . . . . 9:30 a.m. – 5:00 p.m.

Thursday . . . . . 9:30 a.m. – 1:00 p.m.

PARTICIPATE IN AACC'S COVID-19 IMMUNITY STUDY

It's Up to Us – Help Answer the Questions of Vaccine Efficacy and Longevity

September 28–30 | Exhibit Hall C

The study will examine immune responses to SARS-CoV-2 vaccination or infection, with the goal of gaining insight into how long the currently available SARS-CoV-2 vaccines will protect against the virus. Attendees and exhibitors 18 years of age and older are asked to donate blood for the study to ensure that the research cohort is as diverse as possible. **Participation takes just 20 minutes.** In return for donating blood, you will receive results from your antibody tests and be entered into a drawing for complimentary 2022 AACC Annual Scientific Meeting & Clinical Lab Expo registration.

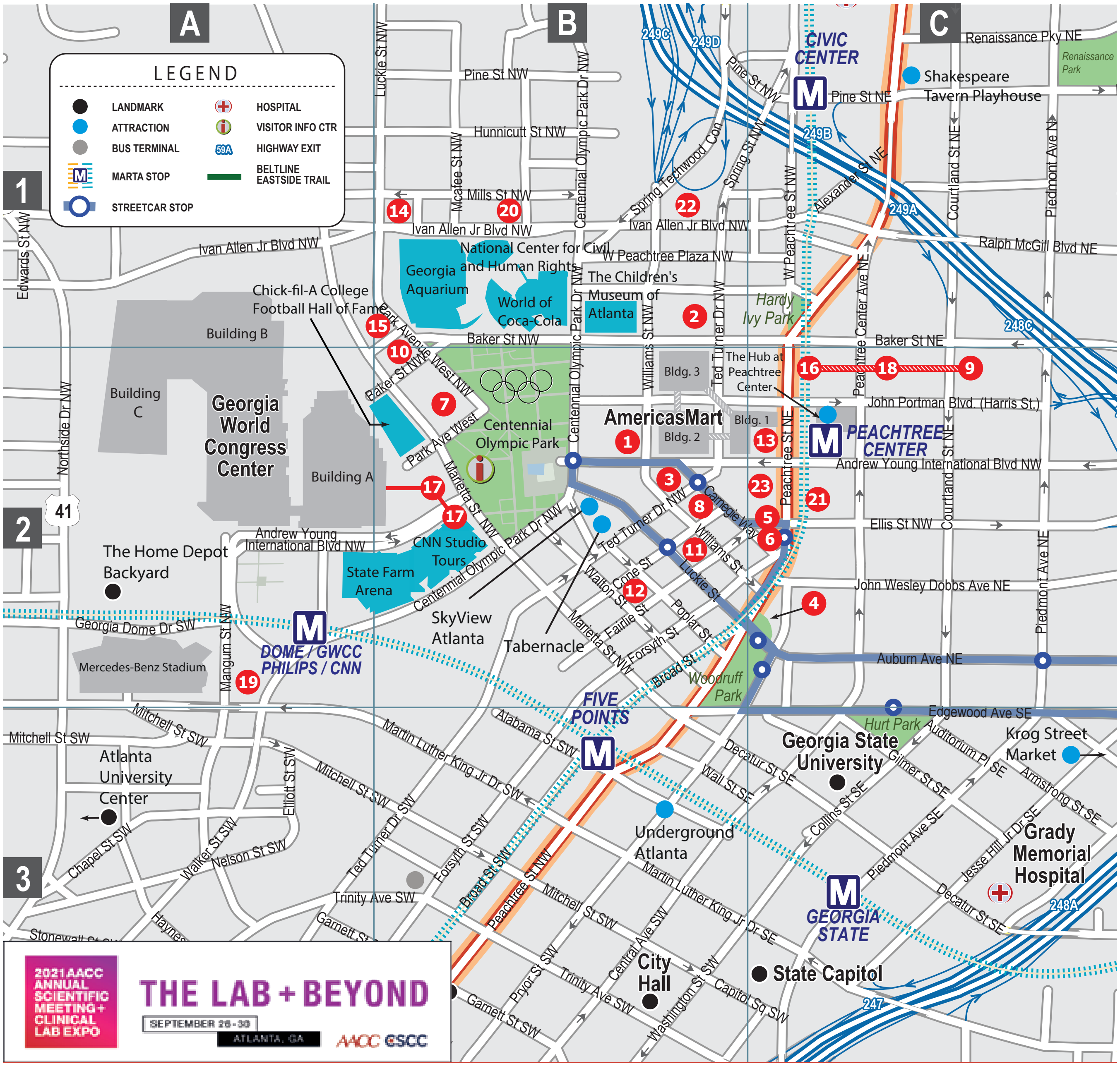
The investigator for this study is Dr. Robert Christenson, 685 W. Baltimore St., MSTF 865, Baltimore, MD 21201.

VISIT **AACC BOOTH #1941** FOR MORE INFORMATION

HOTEL INFORMATION

HOTEL	ADDRESS	*RATES SGL	DISTANCE TO CENTER
1 AC Hotel Atlanta Downtown	101 Andrew Young Internatoinal Blvd NW	$214	5 blocks
2 Aloft Atlanta Downtown	300 Ted Turner Drive NW	$210	8 blocks
3 American Hotel Atlanta, a Doubletree by Hilton	160 Ted Turner Drive NW	$256	6 blocks
4 Candler Hotel Atlanta, Curio Collection by Hilton	127 Peachtree Street NE	$179	8 blocks
5 Courtyard by Marriott Atlanta Downtown	133 Carngeie Way	$237	7 blocks
6 Ellis Hotel Atlanta, a Tribute Portfolio Hotel	176 Peachtree Street NW	$194	8 blocks
7 Embassy Suites Centennial Olympic Park	267 Marietta Street NW	$256	4 blocks
8 Hampton Inn & Suites Atlanta Downtown	161 Ted Turnder Drive NW	$199	6 blocks
9 Hilton Atlanta Downtown	255 Courtland Street NE	$220	11 blocks
10 Hilton Garden Inn Atlanta Downtown	275 Baker Street NW	$246	5 blocks
11 Holiday Inn Express & Suites Atlanta Downtown	111 Cone Street NW	$169	7 blocks
12 Home2 Suites by Hilton Atlanta Downtown	87 Walton Street NW	$199	6 blocks
13 Hotel Indigo Atlanta Downtown	230 Peachtree Street NE	$229	8 blocks
14 Hyatt House Atlanta/Downtown	431 Marietta Street NW	$194	6 blocks
15 Hyatt Place Atlanta/Centennial Park	300 Luckie Street NW	$154	6 blocks
16 Hyatt Regency Atlanta - Co-headquarter	265 Peachtree Street NE	$230	9 blocks
17 Omni Atlanta Hotel at CNN Center - Co-headquarter	100 CNN Center	$269	2 blocks
18 Marriott Marquis Atlanta	265 Peachtree Center Avenue NE	$246	9 blocks
19 REVERB by Hard Rock Downtown Atlanta	89 Centennial Olympic Park Drive NW	$214	5 blocks
20 Springhill Suites Atlanta Downtown	239 Ivan Allen Jr. Boulevard	$209	8 blocks
21 The Ritz-Carlton, Atlanta	181 Peachtree Street NE	$294	8 blocks
22 W Atlanta Downtown	45 Ivan Allen Jr. Boulevard	$269	10 blocks
23 The Westin Peachtree Plaza - Co-headquarter	209 Peachtree Street NW	$245	6 blocks

Rates do not include taxes or other fees



LOCATION OF ACTIVITIES

GEORGIA WORLD CONGRESS CENTER

- Registration
- Scientific Sessions, Plenary Sessions, Meet the Expert Sessions, Roundtable Sessions, AACC University Courses, Oral Abstract Sessions, Immediate Past President's Invited Session, Chair's Invited Session, CSCC President's Invited Session, Special Sessions
- AACC Clinical Lab Expo
- Poster Hall, ePoster stations and Oral Abstract Presentations
- Product Showcase
- Industry Workshop Theater Presentations
- Lecture Series Presentations

16 HYATT REGENCY ATLANTA

- Affiliated Organization Meetings
- Industry Workshops

17 OMNI ATLANTA AT CNN CENTER

- AACC Governance Activities
- Affiliated Organization Meetings

23 THE WESTIN PEACHTREE PLAZA ATLANTA

- AACC Governance Activities
- Affiliated Organization Meetings

AACC SHUTTLE SCHEDULES

DATE	SERVICE HOURS	FREQUENCY
SUNDAY SEPTEMBER 26	7:00 a.m. – 10:00 a.m.	Departures every 20 minutes
	10:00 a.m. – 4:00 p.m.	Departures every 30 minutes
	4:00 p.m. – 7:00 p.m.*	Departures every 20 minutes
MONDAY SEPTEMBER 27	6:00 a.m. – 10:00 a.m.	Departures every 15 minutes
	10:00 a.m. – 4:00 p.m.	Departures every 30 minutes
	4:00 p.m. – 6:30 p.m.*	Departures every 15 minutes
TUESDAY SEPTEMBER 28	6:00 a.m. – 10:00 a.m.	Departures every 15 minutes
	10:00 a.m. – 4:00 p.m.	Departures every 30 minutes
	4:00 p.m. – 6:30 p.m.*	Departures every 15 minutes
WEDNESDAY SEPTEMBER 29	6:00 a.m. – 10:00 a.m.	Departures every 15 minutes
	10:00 a.m. – 4:00 p.m.	Departures every 30 minutes
	4:00 p.m. – 6:30 p.m.*	Departures every 15 minutes
THURSDAY SEPTEMBER 30	7:00 a.m. – 10:00 a.m.	Departures every 15 minutes
	10:00 a.m. – 12:00 p.m.	Departures every 30 minutes
	12:00 p.m. – 3:00 p.m.	Departures every 15 minutes
	3:00 p.m. – 6:00 p.m.*	Departures every 30 minutes

** Indicates last time shuttle departs convention center to hotels. Last shuttle departs hotel coming to the center 1 hour prior to this time.*

ROUTES & BOARDING LOCATIONS

ROUTE #/COLOR	HOTEL	BOARDING LOCATION
ROUTE #1/RED	Home2 Suites by Hilton Atlanta Downtown	NE Corner Ted Turner Dr at Walton St
	Hampton Inn & Suites Atlanta Downtown	Curbside Ted Turner Dr by Lobby
	American Hotel Atlanta	at Hampton Inn Stop
	Holiday Inn Express & Suites Atlanta Downtown	at Hampton Inn Stop
	The Westin Peachtree Plaza	at Hampton Inn Stop
	AC Hotel Atlanta Downtown	Curbside Andrew Young Blvd by Lobby
ROUTE #2/YELLOW	Hyatt Regency Atlanta	Across Baker St at Peachtree St
	Marriott Marquis Atlanta	at Hyatt Regency Stop
	Hotel Indigo Atlanta Downtown	at Hyatt Regency Stop
	Aloft Atlanta Downtown	Curbside Baker St at Bus Stop by Lobby
ROUTE #3/BLUE	Ellis Hotel Atlanta	Curbside Lobby
	Courtyard by Marriott Atlanta Downtown	at Ellis Hotel Stop
	The Ritz-Carlton, Atlanta	On Ellis St across from Lobby
	Candler Hotel Atlanta	at Ritz Carlton Stop
	Hilton Atlanta Downtown	Across John Portman Blvd at Courtland St
	Springhill Suites Atlanta Downtown	Curbside Ivan Allen Blvd by Suite Food Lounge
	Hyatt House Atlanta/Downtown	at Springhill Suites Stop
	W Atlanta Downtown	Curbside Ivan Allen at Driveway
ROUTE #4/GREEN	Hyatt Place Atlanta/Centennial Park	Curbside Luckie St by Lobby
	Hilton Garden Inn Atlanta Downtown	Curbside Baker St by Lobby
	Embassy Suites Centennial Olympic Park	Across Marietta St in Front of Hall of Fame
	Omni Atlanta Hotel at CNN Center	Curbside Marietta St by Lobby
	REVERB by Hard Rock Downtown Atlanta	Curbside Magnum St

THANK YOU 2021 SPONSORS

WIth gratitude, we acknowledge the sponsors of the AACC Annual Scientific Meeting & Clinical Lab Expo.

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**as of 8/21/21*

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Director, Clinical Chemistry, Yale New Haven Health
New Haven, CT

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Akron, OH

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AACC
Washington, DC

GOVERNANCE & SPECIAL EVENTS SCHEDULE

TIME	MEETING NAME	LOCATION	MEETING ROOM	TICKETED SESSION
MONDAY, SEPTEMBER 27				
12:00 p.m. – 1:00 p.m.	Management Sciences and Patient Safety Division Virtual Leadership Symposium Viewing	Georgia World Congress Center	B401	
1:30 p.m. – 2:30 p.m.	Student Oral Presentation Contest	Georgia World Congress Center	C110	
5:30 p.m. – 7:00 p.m.	Division Mixer Personalized Medicine and Molecular Pathology Divisions	Omni Atlanta Hotel at CNN Center	Redwood	
5:30 p.m. – 9:00 p.m.	Lipoproteins and Vascular Diseases Division Membership Reception, Awards Recognition, and Dinner Lecture	The Westin Peachtree Plaza	Augusta Room	●
6:00 p.m. – 8:00 p.m.	ABCC-SYCL Awards and Recognition Reception	The Westin Peachtree Plaza	Savannah Ballroom A-C	
TUESDAY, SEPTEMBER 28				
12:00 p.m. – 1:00 p.m.	AACC Past Presidents' Luncheon	Omni Atlanta Hotel at CNN Center	Grand Ballroom A	
12:15 p.m. – 2:15 p.m.	Annual Therapeutic Drug Management & Toxicology Division Meeting	Omni Atlanta Hotel at CNN Center	Redwood	
5:30 p.m. – 7:00 p.m.	Clinical and Diagnostic Immunology Division Mixer	The Westin Peachtree Plaza	Peachtree Room	
6:00 p.m. – 10:30 p.m.	Critical and Point-of-Care Division Member Meeting, Awards Ceremony, and Afterglow	The Westin Peachtree Plaza	Augusta Ballroom A-H	
6:00 p.m. – 8:00 p.m.	Mass Spectacular hosted by Mass Spectrometry and Separation Sciences Division	The Westin Peachtree Plaza	Augusta Room	●

TIME	MEETING NAME	LOCATION	MEETING ROOM	TICKETED SESSION
WEDNESDAY, SEPTEMBER 29				
12:00 p.m. – 2:00 p.m.	AACC Academy Annual Membership Meeting and Awards Luncheon	Omni Atlanta Hotel at CNN Center	Grand Ballroom A-C	●
12:15 p.m. – 2:30 p.m.	Animal Clinical Chemistry Division Business Meeting and Lunch & Learn	Georgia World Congress Center	B405	
THURSDAY, SEPTEMBER 30				
7:30 a.m. – 10:00 a.m.	19th Annual Point-of-Care Coordinators Forum hosted by Critical and Point-of-Care Testing Division	Georgia World Congress Center	C108-C109	●

To purchase tickets for events, visit Conference Registration in the Lobby of Building C.

CONTINUING EDUCATION CREDIT & CERTIFICATE OF ATTENDANCE

AACC's 2021 Annual Scientific Meeting & Clinical Lab Expo, held in partnership with the Canadian Society of Clinical Chemists (CSCC) brings together the global laboratory medicine community and provides the latest education to meet the changing needs of laboratory professionals. Participants have two opportunities to connect with global leaders, learn about cutting edge technology, and stay up to date on best practices and advances in laboratory medicine.

Individuals may attend the AACC Annual Scientific Meeting educational sessions from Sunday, September 26 – Thursday, September 30, at the Georgia World Congress Center in Atlanta, Georgia. All Access registrants will also have access to the online Digital Pass Select content from October 1 – November 1, 2021.

ACCREDITATION STATEMENTS

AACC offers ACCENT® credit to laboratory professionals to document their continuing education and meet requirements for licensure or certification. AACC is an approved provider of continuing education for laboratory professionals in the states of California, Florida, Louisiana, Montana, Nevada, North Dakota, Rhode Island, and West Virginia. Florida clinical laboratory professionals requesting ACCENT® credit must provide their license number in the demographic form for credit to be reported to CE Broker. This educational activity (all access pass which includes all live courses and recorded virtual pass courses) is designated for a maximum of 63.0 ACCENT® credits. Learners should claim only the credit commensurate with the extent of their participation in the activity. For information about ACCENT® credit per session, visit the mobile app or www.aacc.org/ASMcredits21.

American Association for Clinical Chemistry (AACC) is accredited by the Accreditation Council for Continuing Medical Education (ACCME®) to provide continuing medical education for physicians. This educational activity (all access pass which includes all live courses and recorded virtual pass courses) is designated for a maximum of 47 *AMA PRA Category 1 Credits™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity. For information about *AMA PRA Category 1 Credits™* per session, visit the mobile app or www.aacc.org/ASMcredits21.

LEARNING OBJECTIVES

At the end of this activity, participants will be able to:

1. Discuss state-of-art research and technologies in laboratory medicine.
2. Apply updated knowledge of laboratory protocols, practice guidelines, and regulatory requirements in laboratory medicine.
3. Incorporate laboratory management strategies that ensure staff competency, enhance workflows, and support accurate and effective testing to improve treatment decisions and patient outcomes.
4. Implement up-to-date laboratory testing methods, technologies, and data-driven approaches in preanalytical, analytical, and postanalytical phases of sample handling.
5. Select appropriate testing methods and advise clinicians on appropriate testing that takes benefits, limitations, and patient outcomes into consideration.
6. Facilitate interprofessional communication with the broader healthcare team to demonstrate the value of laboratory medicine and role in treatment decisions and patient outcomes.

TARGET AUDIENCE

AACC's Annual Scientific Meeting is a global scientific/medical conference designed for clinical laboratory professionals, physicians, research scientists, and other professionals from around the world focused on clinical chemistry, molecular diagnostics, mass spectrometry, translational medicine, lab management, and other areas of progressing laboratory science and medicine.

STATEMENT OF INDEPENDENCE

As a provider of continuing education, AACC has a policy of ensuring that the content and quality of this educational activity are balanced, independent, objective, and scientifically rigorous. The scientific content of this activity was developed under the supervision of the AACC's Annual Meeting Organizing Committee (AMOC).

DISCLOSURE POLICY

The faculty, committee members, and staff who are in position to control the content of this activity are required to disclose to AACC and to learners any relevant financial relationship(s) of the individual or spouse/partner that have occurred within the last 12 months with any commercial

interest(s) whose products or services are related to the continuing education content. Financial relationships are defined by remuneration in any amount from the commercial interest(s) in the form of grants; research support; consulting fees; salary; ownership interest (e.g., stocks, stock options, or ownership interest excluding diversified mutual funds); honoraria or other payments for participation in speakers' bureaus, advisory boards, or boards of directors; or other financial benefits. The intent of this disclosure is not to prevent planners with relevant financial relationships from planning or delivering content, but rather to provide learners with information that allows them to make their own judgments of whether these financial relationships may have influenced the educational activity with regard to exposition or conclusion. AACC has reviewed all disclosures and resolved or managed all identified conflicts of interest, as applicable.

The following Annual Meeting Organizing Committee members reported relevant financial relationship(s):

- **Alicia Algeciras-Schimnich**
  Consultancy(ies), Advisory Boards: Roche Diagnostics
- **Vilte Barakauskas**
  Grants (received or pending), Including Contracted Research: Roche Diagnostics
- **Dennis Dietzen**
  Consultancy(ies), Advisory Boards: Danaher Diagnostics, Roche Diagnostics - Point of Care
- **Joe El-Khoury**
  Honorarium: Thermo Fisher Scientific
- **Paul Jannetto**
  Consultancy(ies), Advisory Boards: Breath Diagnostics, Roche Diagnostics, Thermo Fisher Scientific
- **Patricia Jones**
  Patents or Royalties Received or Pending: McGraw-Hill Publishing
- **Vathany Kulasingam**
  Consultancy(ies), Advisory Boards: Abbott Diagnostics
- **Sihe Wang**
  Consultancy(ies), Advisory Boards: Kingmed Diagnostics, Inc.; Tellgen Corporation
- **Y. Victoria Zhang**
  Consultancy(ies), Advisory Boards: Leidos Biomedical Research

The following Annual Meeting Organizing Committee members reported no relevant financial relationships:

- Linnea Baudhuin, Steven Cotten, Elizabeth Frank, Dina Greene, and Nathalie Lepage

A summary of the disclosures is available at www.meeting.aacc.org. All faculty will display their disclosure information at the beginning of each session, verbally and/or on their presentation slides. You may also view faculty disclosure via mobile app.

All AACC staff reported no relevant financial relationships.

CONTENT VALIDITY

All recommendations involving clinical medicine are based on evidence accepted within the profession of medicine as adequate justification for their indications and contraindications in the care of patients; AND/OR all scientific research referred to or reported in support or justification of a patient care recommendation conforms to generally accepted standards of experimental design, data collection, and analysis.

DISCLAIMERS

The information presented in this activity represents the opinion of the faculty and is not necessarily the official position of AACC.

USE OF PROFESSIONAL JUDGMENT:
The educational content in this activity relates to basic principles of clinical laboratory medicine and does not substitute for individual assessment based on the health care professional's examination of the patient, laboratory data, and other factors unique to the patient. Standards in medicine change as new data become available.

DRUGS AND DOSAGES:
When prescribing medications, the physician is advised to check the product information sheet accompanying each drug to verify conditions of use and to identify any changes in drug dosage schedule or contraindications.

POLICY ON UNLABELED/OFF-LABEL USE

AACC has determined that disclosure of unlabeled/off-label or investigational use of commercial product(s) is informative for audiences and therefore requires this information to be disclosed to the learners at the beginning of the presentation. Uses of specific therapeutic agents, devices, and other products discussed in this educational activity may not be the same as those indicated in product labeling approved by the Food and Drug Administration (FDA). AACC requires that any discussions of such "off-label" use be based on scientific research that conforms to generally accepted standards of experimental design, data collection, and data analysis. Before recommending or prescribing any therapeutic agent or device, learners should review the complete prescribing information, including indications, contraindications, warnings, precautions, and adverse events.

PRIVACY AND CONFIDENTIALITY STATEMENT

AACC will record learner's personal information as provided on continuing education evaluations to allow for issuance and tracking of CE certificates. AACC may also track aggregate responses to questions in activities and evaluations and use these data to inform the ongoing evaluation and improvement of its continuing education program. No individual performance data or any other personal information collected from evaluations will be shared with third parties.

ACKNOWLEDGMENT OF COMMERCIAL SUPPORT

This activity is not supported by educational grant(s) or other funds from any commercial supporter.

ELIGIBILITY TO EARN CONTINUING EDUCATION CREDIT

You must be registered for the Annual Scientific Meeting* to be eligible to earn continuing education credit (ACCENT® or *AMA PRA Category 1 Credit™*) for the following scientific sessions of the AACC Annual Scientific Meeting: AACC University, Plenary, Symposia, Roundtables, and Meet the Experts. CE/CME certificates are provided to registered participants based on completion of the activity, in its entirety, including the activity evaluation.

*Individuals registered as Guest/Spouse or Expo Only are not eligible to earn credit for these sessions.

SYSTEM REQUIREMENTS

To claim continuing education credit, participants must have access to a computer or mobile device with an Internet connection and use an up-to-date version of any major Web browser, such as Microsoft Edge, Firefox, Safari, or Google Chrome. Internet Explorer is no longer supported. In addition, cookies and Javascript must be enabled in the browser's options.

INSTRUCTIONS TO CLAIM CE/CME AND CERTIFICATE OF ATTENDANCE

1. To claim your credits and/or to obtain your Certificate of Attendance, click the CE/CME icon on the AACC mobile app or go to www.aacc.org/ASMcredits21.
2. Log in using your last name and AACC Customer number or Badge number. (See facing page.)
3. For CE and CME credits, you will be required to evaluate each session attended; then print (or save) your Verification of Participation (credit) certificate.
4. For sessions you attend where your name badge is scanned, sessions will automatically appear in your session list. You may add more sessions and you may delete sessions.
5. Credits may be claimed at any time, i.e., at the end of each session, each day, or after the meeting ends.
6. Credits may be claimed using a computer, laptop, tablet, smartphone, or other electronic device.
7. Credits for the 2021 AACC Annual Scientific Meeting must be claimed by November 30, 2021.

CALIFORNIA AND FLORIDA LICENSED LABORATORY PROFESSIONALS RECEIVING ACCENT® CREDIT

If you would like AACC to report your credits to your state licensing agency (Laboratory Field Services for California and CE BROKER for Florida), you must:

- claim your credits by the November 30, 2021 deadline; and
- enter your California or Florida license number in the appropriate box when claiming your ACCENT® credits.

CLAIMING CREDIT FOR ONLINE DIGITAL PASS SELECT SESSIONS

Atlanta All Access Pass registrants will receive access to online Digital Pass Select sessions from October 1 – November 1, 2021. Visit the mobile app or www.aacc.org/ASMcredits21 and evaluate each session you viewed to update your credits. You may not claim credit for a single session twice.

RELEASE DATE: SEPTEMBER 26, 2021

EXPIRATION DATE: November 30, 2021 (date after which this activity is no longer certified for continuing education credit)

For questions regarding continuing education, please email education@aacc.org.

SESSION INFORMATION

SESSION LEVEL CONTENT

Basic: Introductory content appropriate for participants who lack previous training or experience in the subject, or whose previous experience or training is minimal.

Intermediate: Requires knowledge of the basic theory applicable to the general subjects as well as some prior training and education in the subject.

Advanced: Specialized content appropriate for those with working knowledge of current theory and practices and who wish to refine their skills or learn the newest principles and techniques.

SESSION DESCRIPTIONS

All the following sessions are open to full or daily conference registrants.

PLENARY SESSIONS

Designed for all levels, and featuring visionaries in clinical practice, research, business, and policy.

SCIENTIFIC SESSIONS

These sessions are presented by highly regarded speakers, offering in-depth learning about specific areas of clinical laboratory practice.

MEET THE EXPERT SESSIONS

Attendance limited to 75 participants per session. Admission is first come, first served. These sessions are interactive discussions with plenary speakers.

CHAIR'S INVITED SESSION

The Chair of the 2021 Annual Meeting Organizing Committee created this special session of particular importance to attendees. Details on page 42.

AACC PRESIDENT'S INVITED SESSION

The AACC President has created this special session of particular importance to attendees. Details on page 47.

CSCC PRESIDENT'S INVITED SESSION

The Canadian Society of Clinical Chemists President has created this special session of particular importance to attendees. Details on page 93.

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SESSION RECORDINGS

Sessions at the 2021 AACC Annual Scientific Meeting will be recorded. Access is complimentary to AACC/CSCC members with full conference registration and is available for purchase for others as an 11-month access that will commence November 2, 2021 and close Friday, September 30, 2022. The content is made available for viewing only and is not available for download. The session recordings will include audio and video of presentation slides from most of the Scientific Sessions. Roundtables will not be recorded.

PRICE: $199 with registration or at the meeting/$299 after close of the meeting (September 30, 2021, 1:00 p.m. local time). To purchase, visit www.meeting.aacc.org or go to Conference Registration in the lobby.

AACC REGISTRATION RESOURCE CENTER

Access your handouts and a copy of your receipt.

Open the resource center at
https://www.aacc.org/handouts

Log in using the following criteria:

- **Badge Number:**
  Listed on the left side of the badge
- **Last Name:**
  Exactly as entered when registering

SPECIAL SESSIONS

SUNDAY, SEPTEMBER 26

The Role of Journalism in the Analysis and Dissemination of Pandemic-Related Data Through the Lens of the COVID Tracking Project

Alexis C. Madrigal, The Atlantic

The pandemic forced laboratory medicine into the spotlight and left the media as the mouthpiece to disseminate information. This session illustrates the experience of a journalist whose career pivoted during this crucial time and led to his co-founding The COVID Tracking Project. Details on page 36.

MONDAY, SEPTEMBER 27

Student Research Award Competition

AACC's Student Research Award Competition showcases the research of students, trainees, and postdoctoral fellows who are presenting authors of accepted poster abstracts. The competition includes a Student Oral Presentation Competition of the top four ranked poster abstracts and a Student Poster Competition as a special poster session. Winners of each will announced at the ABCC-SYCL Awards & Recognition Reception held Monday evening. Details on page 23.

Disruptive Technology Award Competition

Sponsored by Pall Life Sciences & LabCorp

AACC's Disruptive Technology Award Competition searches for the next innovative testing solution that will improve patient care through diagnostic performance or access to high-quality testing. Three finalists will present brief lectures showing the detailed data supporting the performance of their novel development. Following each presentation, there will be a Q&A session between the judges and presenters whereby they will be scored, and a winner will be announced at the close of the event. The audience will also be able to vote on their favorite. Details on page 57.

TUESDAY, SEPTEMBER 28

Clinical Biochemistry Hot Topics

Clinical Biochemistry is the official Journal of the Canadian Society of Clinical Chemists (CSCC). In this special session, top original research articles published in Clinical Biochemistry from the recent two years will be presented. Details on page 64.

WEDNESDAY, SEPTEMBER 29

Healthcare Forum: The Changing Regulatory Environment

The healthcare environment is continually changing. The US Department of Health and Human Services is considering possible changes to the CLIA personnel standards. Learn what is under consideration. The US FDA needs to assess how it deals with future pandemics. Learn what the agency learned and possible changes moving forward. Details on page 78.

JALM Hot Topics: The Existence of Health Disparities from the Bench to the Bedside

Health disparities lead to differential access to care and can dramatically impact both clinical management and outcomes. This session will focus on reference interval considerations for transgender individuals, gender affirming hormonal therapies and important considerations regarding drug use and exposure in marginalized populations, including resource-limited settings in the USA. Details on page 80.

BECKMAN COULTER SPECIAL SATELLITE SYMPOSIUM

TUESDAY, SEPTEMBER 28

Managing Infectious Disease Burden by Unlocking the CBC: Role of Quantitative Measures of Monocytes in Response to Infection

Sponsored by Beckman Coulter, Inc.

Sepsis, acute respiratory tract, and urinary tract infections, as well as COVID-19 are the most prevalent reasons for hospitalization of patients with infections. Faculty in this symposium will explore topics including severe infection and sepsis, current understanding of monocyte biology, and laboratory data and role of AI to improve patient outcomes. Details on page 60.

PATHWAYS

These six pathways highlight the different dynamic areas of clinical laboratory medicine. Check out the sessions that support your area of interest and make the most of your educational experience in Atlanta.

PATHWAYS	SESSION NUMBER	DAY
COVID-19: TRANSITIONS, LESSONS, AND DATA		
The Role of Journalism in the Analysis and Dissemination of Pandemic-Related Data Through the Lens of the COVID Tracking Project	11002	Sunday
COVID-19: Vaccines and the Tango of Viral Evolution and Host Immune Responses	12001 62002	Monday
Understanding Adaptive Immune Response to SARS-CoV-2: Applications in Clinical Practice, Public Health, and Vaccine Studies	32227	Monday
Implementation of Serological and Molecular Tools for COVID-19 Patient Management	33108	Tuesday
Curating and Documenting Research During Chaos: Lessons from COVID-19 and Beyond	14001 64001	Wednesday
What COVID-19 Testing Hath Wrought: A Forecast for the Future of Virology Testing	35108	Thursday
DATA ANALYTICS AND AI		
Doing More with R: Create Your Own Automated Reports and Dashboards T TICKET	193009	Sunday
Artificial Intelligence in the Clinic: Strengths, Weaknesses, and Opportunities	11001 62001	Sunday Monday
How Artificial Intelligence and Machine Learning Will Help with Patient Diagnosis: Application to Autoimmune Testing	32226	Monday
Data Aggregation and Integration in Laboratory Medicine: How to Build Prediction Models and Learn from Multi-Institutional Data	33102	Tuesday
Machine Learning Analysis of Laboratory Test Results Supports Clinical Decision-Making and Patient Care	34223	Wednesday
Mind the App: Application Development as a Solution to Unmet Needs in Laboratory Workflows	35104	Thursday
LABORATORY LEADERSHIP AND STEWARDSHIP		
A Look Inside a Clinical Chemist's Tool Box: Managing High Pressure Situations in the Clinical Laboratory T TICKET	192006	Sunday
Navigating Your Lab Through Change: Leadership, Innovation, and Crisis Management (SYCL Workshop) T TICKET	192007	Sunday
Women in Laboratory Medicine: A Panel Discussion on Diversity and Inclusion	32228	Monday
Healthcare Forum: The Changing Regulatory Environment	34106	Wednesday
Providing Value Beyond Values: Leaving the Laboratory to Increase Laboratory Visibility and Enhance Patient Care	34107	Wednesday
Bringing Laboratory Testing Closer to the Patient: The Good, the Bad and the Ugly (CSCC President Invited Session)	35107	Thursday

PATHWAYS

PATHWAYS	SESSION NUMBER	DAY
MOLECULAR MEDICINE		
Next Generation Sequencing for Laboratorians: Understanding the Essentials T TICKET	191003	Sunday
Laboratory Consultations in Genomic Medicine: Case-Based Learning	32448	Monday
Cervical Cancer Screening: What Is New?	33101	Tuesday
Little Molecules that Pack a Big Punch: The Promise of Cell-Free DNA	34104	Wednesday
What's New in Newborn Screening?	34110	Wednesday
Tackling Infectious Disease Testing and Interpretation from the Perspectives of the Core Clinical Laboratory and the Point-of-Care	34224	Wednesday
POPULATION HEALTH AND EQUITY		
Strategies for Enhancement of Laboratory Medicine in Africa	32224	Monday
Connective Tissue Diseases, Lupus, and dsDNA Testing: Updates in Diagnosis and Testing	32442	Monday
The Remarkable Journey from Bench to Bedside Changing Lives for Individuals with Cystic Fibrosis	13001 63001	Tuesday
Exploring Racial and Ethnic Health Disparities through a Laboratory Medicine Lens	33107	Tuesday
Emerging Areas in Therapeutic Drug Monitoring: Antifungals, Direct Oral Anticoagulants, and Psychoactive Drugs	35101	Thursday
Laboratories Ally with Clinicians in Mitigating the Burden of Heart Disease from Childhood	35103	Thursday
EMERGING DIAGNOSTICS		
AACC Disruptive Technology Award Competition	12002	Monday
New Technologies and Innovations to Improve the Clinical Laboratory	32104	Monday
Case Studies in the Use of Emerging Technologies in Pediatric Laboratory Medicine	32221	Monday
Drug Checking: Using Mass Spectrometry and Novel Rapid Mobile Devices to Reduce Opioid Overdoses	32223	Monday
Novel Multiplex Proteomics Technologies for Biofluid Analysis: Looking Beyond Mass Spectrometry	33225	Tuesday
Clinical Translation of Engineered Microsystems: From COVID-19 to Hematology and Hemostasis	15001 65001	Thursday

SCIENTIFIC POSTER SESSIONS

Posters of accepted abstracts can be viewed in the Poster Hall, located on the Expo show floor, Exhibit Hall C in Georgia World Congress Center on Tuesday, September 28 and Wednesday, September 29. Posters will be displayed from 9:30 a.m. until 5:00 p.m. by topic on the days listed below. Presenting authors for all posters will be in attendance from 1:30 p.m. until 2:30 p.m. Please refer to the onsite Abstracts Titles Guide for a complete schedule of posters.

ePoster stations will be located throughout the Poster Hall where attendees will be able to view accepted abstracts where poster presenters were unable to attend the Clinical Lab Expo in-person. In addition to the in-person poster presentations, all ePosters will be available to Atlanta All Access registrants on the online platform following the meeting.

TUESDAY, SEPTEMBER 28

9:30 a.m. – 5:00 p.m.

Analytical Techniques and Applications	A-001 – A-130
General Clinical Chemistry	A-131 – A-221
Hematology/Coagulation	A-222 – A-242
Precision Medicine	A-243 – A-253

WEDNESDAY, SEPTEMBER 29

9:30 a.m. – 5:00 p.m.

Data Analytics and Informatics	B-001 – B-033
Laboratory Management and Leadership	B-034 – B-062
Laboratory Stewardship and Patient Safety	B-063 – B-073
Microbiology and Infectious Diseases	B-074 – B-167
Molecular Diagnostics	B-168 – B-211
Preanalytical and Postanalytical	B-212 – B-234
Special Patient Populations	B-235 – B-262
Toxicology and Therapeutic Drug Monitoring	B-263 – B-298

DIVISION POSTER ACTIVITIES

CRITICAL AND POINT-OF-CARE TESTING POSTER WALK

Led by AACC Division subject matter experts, the walks highlight posters selected by the Division for further discussion. Poster walks are free and have a limited number of participants. Participants must have full or daily conference registration and are asked to meet walk hosts at the Poster Info Desk at 1:30 p.m. Tours will occur at the following time.

WEDNESDAY, SEPTEMBER 29

1:30 p.m. – 2:30 p.m.

ALL POSTERS ARE LOCATED IN THE POSTER HALL ON THE EXPO SHOW FLOOR IN EXHIBIT HALL C.

ORAL ABSTRACT PRESENTATIONS

Top-scoring poster abstracts will be presented as Oral Abstract Presentations on the Laboratory Feud stage, located in the Poster Hall area on the Expo show floor, Exhibit Hall C in Georgia World Congress Center. Please visit meeting.aacc.org/abstracts for a detailed schedule.

ORAL ABSTRACT PRESENTATION SCHEDULE

TUESDAY, SEPTEMBER 28

12:30 p.m. – 1:30 p.m.

WEDNESDAY, SEPTEMBER 29

12:30 p.m. – 1:30 p.m.

STUDENT RESEARCH AWARD COMPETITIONS

The AACC Student Research Awards competitions showcase AACC's finest young scientists and is intended for students, trainees, and postdoctoral fellows who are presenting authors of accepted poster abstracts for the Annual Scientific Meeting. The competition consists of two parts, the Student Oral Competition and Student Poster Competition.

Student Oral Competition consists of four students of top-scoring abstracts invited to present their research to a panel of judges in an oral competition.

Student Poster Competition showcases student posters reviewed by judges. Visit the student posters in the Poster Hall on Tuesday, September 28 and Wednesday, September 29.

MONDAY, SEPTEMBER 27 | GEORGIA WORLD CONGRESS CENTER

ORAL COMPETITION

Room: C110

- 1:30 p.m. – 2:30 p.m.

ORAL COMPETITION PRESENTERS

B-217 **Mary Bohn**
Evidence-Based Harmonization of Adult Reference Intervals Across Canada using Big Data Analytics: A Report of the CSCC Working Group on Reference Interval Harmonization (hRI)

B-245 **Victoria Higgins**
sFlt-1/PlGF Ratio is Superior to Hypertension and Proteinuria for Predicting Preeclampsia

A-181 **Akila Mansour**
Evaluation of the Sampson Equation to Estimate Low-density Lipoprotein-Cholesterol (LDL-C): Comparison With the Friedewald Equation and a Direct Homogenous LDL Assay From Roche

A-065 **Ruhan Wei**
Development of a Simple and Sensitive Method for Accurate and Reproducible Whole Blood Selenium Measurement in the Presence of Gadolinium on a Triple Quad Inductively Coupled Mass Spectrometer

2021 STUDENT POSTER PRESENTATIONS

Student Posters will be available for viewing in the Poster Hall on Tuesday, September 28 and Wednesday, September 29 as indicated below. Poster presenters unable to attend in person are indicated with an icon and can be viewed at one of the ePoster stations located throughout the Poster Hall.

B-014 **Mahesheema Ali**
Need for benchmarks- mitigating false-positives rate by monitoring prenatal screens

B-199 **Jamal Amri**

Design of new non-invasive diagnostic panel based on miRNAs and saliva for early and accurate diagnosis of prostate cancer

B-232 **Kayode Balogun**

The Impact of Therapeutic Concentrations and Dose-Dependent Effects of Hydroxocobalamin Interference on D-Dimer and Anti-Xa Assays

A-244 **Rebecca Bearden**
Analysis of CPTAC Proteomic Data for Stage II Colon Adenocarcinoma Reveals Overexpression of Eosinophile Peroxidase in Tumors with Lymphovascular Invasion

A-166 **Guanmin Chen**
Role of RNase L in Lipid Synthesis and NAFLD Development

B-198 **Zhixin Chen**

Exosome-Based Detection of KCNJ5 Mutations in Plasma from APA Patients

A-167 **Ibrahim Choucair**
Struture Specific Bile Acids Predict Future Cardiometabolic Outcomes

A-051 **Steven Conklin**
Performance Evaluation of LumiraDx SARS-CoV-2 Ag Test for Rapid Point of Care Testing

B-038 **Ashley Di Meo**
Investigation of Macro-Troponin in Patients Receiving Immune Checkpoint Inhibitor Therapy

B-076 **Mohammed Eladli**

Antibiotic-resistant Staphylococcus epidermidis Isolated from Patients & Healthy Students Comparing with Antibiotic-Resistant Bacteria Isolated from Pasteurized Milk

B-107 **Amr Elfert**

Antibody Signature of the Protective and Pathologic Responses to SARS-COV-2 Infection

B-025 **Radwa Ewaisha**

Performance Characteristics of a Novel Theoretical Control Method for the Prostate Health Index (phi) Multi-Analyte Assay

A-147 **Erica Fatica**
Evaluation of the Efficacy of the GALAD Score for Detection of Hepatocellular Carcinoma in an Age-Stratified Clinical Population

B-120 **Briana Fitch**
Clinical Utility of an Automated IL-6 Immunoassay for COVID 19 Prognosis and Follow-Up

B-147 **Kavya Gauba**

Manganese Superoxide Dismutase Ala16Val gene polymorphism (rs4880) and levels in Tuberculosis patients

A-171 **Emily Gill**
Verification of Thyroid Stimulating Hormone Reference Intervals Using Both Retrospective and Prospective Patient Data

A-206 **Adel Gouri**

Study of Soluble fms-Like Tyrosine Kinase-1 and Placental Growth Factor Ratio in Algerian Women With Suspected Preeclampsia

B-294 **Taru Goyal**

Association between miR-221 and immune parameters in workers occupationally exposed to cadmium

A-226 **Rana Zeeshan Haider**
Machine Learning Based Decipherment of Cell Population Data; a Promising Hospital Front-Door Screening Tool for COVID-19

A-082 **Usama Khalid**
Development and Validation of a Liquid Chromatography - Tandem Mass Spectrometry Method for Analysis of Methylmalonic Acid in Serum

B-270 **Nicholas Larkey**
Identification of novel macrovancomycin complexes using laboratory developed methods

B-124 **Cecilia Lekpor**
Identification and characterization of Plasmodium proteins in saliva of malaria patients

B-051 **Cody Lewis**

Plasma versus Serum: Which specimen type is most cost-effective in the community setting?

B-197 **Dongdong Liu**

Photothermal Mediated Rolling Circle Amplification for More Specific and Convenient Direct In Situ mRNA Detection

B-209 **Yang Luo**

Ultrasensitive Determination and Tracing of Cellular MicroRNA In-Situ

A-039 **Shaimaa Maher**
Nitric Oxide Releasing Hydrogel Based on Inducible Nitric Oxide Synthase Embedded in Alginate-Polyethyleneimine as a Platform to study NO-driven Modulation of Carcinogenesis

A-070 **Hind Malaeb**
A Novel Liquid Chromatography Mass Spectrometry Assay for the Quantification of Hydrogen Sulfide and Other Thiols in Biological Samples

B-097 **John Markantonis**
Two dose, or not two dose, that is the question facing many countries implementing mRNA-based COVID-19 vaccination programs

A-163 **Jessica Miller**
Beyond 25(OH)D: Using the Vitamin D Metabolite Ratio to Assess Vitamin D Status

B-264 **Heather Nelson**
Concordance of umbilical cord drug testing in multiple births

B-058 **Ashley Newbigging**

Evaluation of the Roche Elecsys® SARS-CoV-2 S on Cobas® e801 Assay for Quantitative Total Antibody Detection

B-037 **Bremansu Osa-Andrews**
Utility of capillary electrophoresis for hemoglobinopathy screening in anemic adult patients

B-241 **Vrajesh Pandya**
Are amphetamines the new opiates? Evolving trends of drug positivity rates and concentrations in a mega cohort of neonatal meconium specimens

B-246 **Izmarie Poventud-Fuentes**
Comparison of Cystatin C-based Equations with Measured Glomerular Filtration Rate in a Diverse Pediatric Population

B-298 **Dustin Proctor**

Pharmacokinetic properties of melphalan in lymphoma patients receiving conditioning for stem cell transplantation

B-189 **Paola Ramos**
Good from far but far from good, CSF IgG Index performance in Multiple Sclerosis and Central Nervous System Inflammation diagnosis.

B-244 **Alexandria Reinhart**
Pipecolic Acid is an Inconsistent Biomarker of B6-Dependent Epilepsy

A-175 **Kwaku Tawiah**
Circulating biomarkers in triage, prognosis and risk stratification of COVID-19 patients

A-228 **Ann Tran**
Peripartum Reference Intervals for Coagulation Parameters Derived in a Healthy, Multicultural Cohort of Mothers as part of the Pregnancy Reference Intervals for Safe Medicine (PRISM) Study

A-178 **Derek Waggoner**
Investigation of transient monoclonal protein production due to SARS-COV2 infection via serum protein electrophoresis

B-297 **Pasindu Wickramarachchi**

To Report or not to Report: The Clinical Implications of Clozapine Metabolite Reporting

A-234 **Siobhan Wilson**
Continuous reference curves for common hematology markers in the CALIPER cohort of healthy children and adolescents on the Sysmex XN-3000 system.

A-199 **Yi Xiao**

Development and Validation of a Liquid Chromatography Mass Spectrometry Method for Simultaneous Measurement of 25-OH D3, epi-25-OH D3, 25-OH D2, Vitamin A, α-Tocopherol, and γ-Tocopherol

A-031 **Kang Xiong-Hang**
Validation of the Siemens Point of Care Atellica VTLi Cardiac Troponin I Immunoassay as High Sensitivity Including Sex-Specific 99th Percentiles

B-078 **Yu Zhang**
Diagnostic value of Nucleocapsid protein in the blood for SARS-CoV-2 infection

AACC ACADEMY HONORS NEW ACADEMY FELLOWS

AACC Academy is proud to announce its Academy Fellows. As members of AACC Academy sponsored by Siemens Healthineers, these distinguished scientists are all doctorate-level professionals dedicated to enhancing the scholarship and practice of laboratory medicine. New Fellows will be honored during the Academy awards luncheon on Wednesday, September 29, during the AACC Annual Scientific Meeting.

AACC Academy honors the achievements of its members and through an active education and publication program enlists their support and expertise to bring about positive change in the current practice of laboratory Medicine. To learn more about the Academy and its activities, visit https://www.aacc.org/community/aacc-academy.

NEW ACADEMY FELLOWS ACCEPTED SINCE NOVEMBER 2020

FULL FELLOW

Zahir Alshehry , MSc, PhD, FACSc., BSP, FIBMS
Berna Aslan, MD, MSc
Gouri Shankar Bhattacharyya, MD
Darci Block, PhD
Sean Campbell, PhD
Balu Chacko, PhD, MBA
Bridgit Crews, PhD
Matthew Feldhammer, PhD, NRCC
Damien Gruson, PhD
Pankaj Kumar, PhD
Sergei Likhodi, PhD, MSc
Prasenjit Mitra, MD
Robert Nerenz, PhD
Maxwell Omabe, PhD, MSc
Gualberto Ruano, PhD, MD
Lusia Sepiashvili, PhD
Ivan Stevic, PhD, MSc

ASSOCIATE

Salmon Adebayo, DSc
Christopher Farnsworth, PhD
Babatunde Oloyede, MHS, MLS, PhD
Gerardo Ramos, PhD
Imad Tarhoni, PhD, MD
Pawan Vohra, MBA, PhD

ASSOCIATE FELLOWS WHO BECAME ACADEMY FELLOWS

Bodhraj Acharya, MS, PhD
Mirza Asif Baig, MD

AACC Academy Award for Outstanding Contributions to Clinical Chemistry in a Selected Area of Research

Qing H. Meng, MD, PhD, DABCC, FAACC
The University of Texas MD Anderson Cancer Center

Professor Alvin Dubin Award for Outstanding Contributions to the Profession and the Academy

Angela Ferguson, PhD, DABCC, FAACC
Mercy Hospital in Kansas City

George Grannis Award for Excellence in Research and Scientific Publication

Christopher Farnsworth, PhD, DABCC
Washington University in St. Louis

2021 DISTINGUISHED ABSTRACT AWARDS

The AACC Academy is pleased to announce the winners of the 2021 Distinguished Abstracts Awards. A group of Fellows selected these 15 abstracts for their scientific excellence from a pool of more than 550 abstracts accepted for the AACC Annual Scientific Meeting. Posters presenters unable to attend in person are indicated with an icon and can be viewed at one of the ePoster stations located throughout the Poster Hall on Tuesday, September 28 and Wednesday, September 29.

Winning abstracts will display the Academy blue ribbon during the AACC Annual Scientific Meeting poster sessions in Atlanta, GA.

A-006 **Mona Eldeeb, Alexandria, Egypt**
Multiplex Bead Assay of Serum based Biomarkers as a Proposed Panel for Colorectal Cancer Diagnosis.

A-060 **Alan Thomson, Sharnbrook, United Kingdom**
A New Approach to Discovering Surface Epitopes with Potential Antigenic Properties Using Molecular Imprinting

A-076 **Ievgen Motorykin, San Juan Capistrano, CA**
Detection and Identification of Novel IGF-1 Variants in a High-throughput Clinical Reference Laboratory

A-085 **Katleen Van Uytfanghe, Gent, Belgium**
Expanding the Clinical Application Field for Targeted Liquid Chromatography Mass Spectrometry Methods - The Development of a Flexible SARS-CoV2 Detection Method as a Proof-of-Concept

A-167 **Ibrahim Choucair, Westlake, OH**
Struture Specific Bile Acids Predict Future Cardiometabolic Outcomes

A-175 **Kwaku Tawiah, St. Louis, MO**
Circulating Biomarkers in Triage, Prognosis and Risk Stratification of COVID-19 Patients

A-176 **Kimia Sobhani, Los Angeles, CA**
Prediction of Antibody Response Based on Clinical and Demographic Variables Following SARS-CoV-2 Vaccine Administration

A-235 **Qian Wang, Edmonton, AB, Canada**
Ferritin, Iron, TIBC, and Iron Saturation: Big Data Diurnal Variation Graphs Promote Ferritin's Marginal Intraday Variation and Diagnostic Superiority

A-250 **Jinzhao Song, Philadelphia, PA**

Darwin Theory of Survival of the Fittest -Inspired Exponential Enrichment and Point-of-Care Detection of Rare Mutant Alleles

B-011 **Rojeet Shrestha, Zionsville, IN**
Use of Artificial Intelligence for Effective Test Utilization and to Increase Reimbursement

B-101 **Eran Eden, Tirat Carmel, Israel**
Leveraging the Immune Response to Improve Outbreak Management: Derivation of a Rapidly Measurable Host-Protein Signature for Stratifying Severity of COVID-19 Patients

B-197 **Dongdong Liu, Beijing, China**

Photothermal Mediated Rolling Circle Amplification for More Specific and Convenient Direct In Situ mRNA Detection

B-246 **Izmarie Poventud-Fuentes, Houston, TX**
Comparison of Cystatin C-based Equations with Measured Glomerular Filtration Rate in a Diverse Pediatric Population

B-247 **Siobhan Wilson, Toronto, ON, Canada**
Postprandial Inflammation and Metabolic Dysfunction in Adolescents with Obesity and Insulin Resistance

B-270 **Nicholas Larkey, Rochester, MN**
Identification of Novel Macrovancomycin Complexes Using Laboratory Developed Methods

INTERNATIONAL MEMBERSHIP GRANT RECIPIENTS

Membership Grants provide two-year professional memberships to early- and mid-career laboratorians from outside the U.S. Each membership includes a subscription to AACC's flagship journal Clinical Chemistry, online access to The Journal of Applied Laboratory Medicine, registration discounts for the AACC Annual Scientific Meeting & Clinical Lab Expo, full access to the Artery online community, discounts on AACC webinars, and much more. For more information on how to apply, visit www.aacc.org.

CONGRATULATIONS INTERNATIONAL MEMBERSHIP GRANT RECIPIENTS

We welcome our 2020 and 2021 grant recipients to the AACC family.

2020 RECIPIENTS

- Felix Botchway, PhD (Ghana)
- Keyoor Gautam, MD (Nepal)
- Patrick Karugaba, MPH (Uganda)
- Soha Osama Mahmoud, PhD (Egypt)
- RoyRonald Ochieng, MS (Kenya)

2021 RECIPIENTS

- Emmanuel Timmy Donkoh, PhD (Ghana)
- Vatsala Khurana, MBBS (India)
- Christina Nasadyuk, MD, PhD (Ukraine)
- Anthony Pamahoy, RMT, MLS (Philippines)
- Aleksei Tikhonov, MSc (Russia)

PLENARY+ SCIENTIFIC SESSIONS

SUNDAY

SEPTEMBER 26

Vathany Kulasingam, PhD, FCACB
Division Head, Clinical Biochemistry,
University Health Network
Associate Professor and Co-Director, Clinical Chemistry
Post-Doctoral Training Program, University of Toronto

AACC UNIVERSITY SESSIONS

MORNING

8:30 a.m. – 11:30 a.m.

Test Life Phases Model for LDTs and FDA Cleared Clinical Laboratory Tests: Using CLSI Guidelines to Meet FDA, CLIA, and ISO Requirements

Session: 191001
Room: C107

Presentation Level: **Intermediate**

ACCENT® Credits: 3.0
CME Credits: 3.0

MODERATOR
Paula Ladwig, MS, MT (ASCP)
Mayo Clinic,
Rochester, MN

TICKET

This session outlines the required and recommended practices to ensure quality in the development of laboratory developed tests (LDTs) and transfer into the clinical laboratory testing environment. LDT performance specifications will be modeled through design, development, and validation. Similarly, performance specifications will be outlined for implementing FDA-cleared test. Real-life cases will be used to illustrate a test method's establishment and implementation stages. A Test Method Life Phases Model will be detailed. For each of the eight test life phases, speakers will define the FDA, CLIA, and ISO requirements. Specific LDT examples will illustrate how CLSI documents can be used to ensure compliance and avoid pitfalls.

Developed in cooperation with the Clinical and Laboratory Standards Institute.

SPEAKERS

Introduction to the Test Method Life Phases Model, Terminology, and Illustration of How CLSI Guidelines Can Be Used to Meet Requirements
Paula Ladwig, MS, MT (ASCP)
Mayo Clinic, Rochester, MN

FDA QSR Requirements
Marcia Zucker, PhD, FAACC
ZIVD LLC, Plaistow, NH

CLIA Requirements
Lucia Berte, BS, MA, MT (ASCP)SBB, DLM; CQA(ASQ)CMQ/OE
Laboratories Made Better, Broomfield, CO

Requirements of ISO Standards That Affect LDTs
Lucia Berte, BS, MA, MT (ASCP)SBB, DLM; CQA(ASQ)CMQ/OE
Laboratories Made Better, Broomfield, CO

Using CLSI Guidelines to Ensure a Quality LDT Method: A Real-Life Example
Paula Ladwig, MS, MT (ASCP)
Mayo Clinic, Rochester, MN

8:30 a.m. – 11:30 a.m.

Next Generation Sequencing for Laboratorians: Understanding the Essentials

Session: 191003
Room: C208

Presentation Level: **Basic**

ACCENT® Credits: 3.0
CME Credits: 3.0

MODERATOR
Christina Lockwood, PhD, ABMG, DABCC
University of Washington,
Seattle, WA

TICKET

Next-generation sequencing (NGS) has transformed genetic testing and clinical care based on precision and personalized medicine. We have developed an interactive session to introduce and describe key laboratory aspects of NGS, including technology, quality control practices, and bioinformatics. This session will emphasize audience participation with frequent audience response questions to reinforce key points. After describing the foundational concepts associated with NGS assays, we will compare and contrast hereditary applications and oncology/liquid biopsy-based applications for NGS testing. We will use interactive cases to synthesize the principles of NGS testing in these clinical settings, including technology-based limitations and advantages. Different clinical scenarios and appropriate test selection will be introduced, with interactive case studies to emphasize the essential components of each topic.

SPEAKERS

NGS as a Tool for Precision Medicine: How to Choose the Best Test for Your Patient
Christina Lockwood, PhD, ABMG, DABCC
University of Washington, Seattle, WA

NGS Applications for Inherited Testing: Casting an Ever-Widening Net
Linnea Baudhuin, PhD, DABMGG, FACMG
Mayo Clinic, Rochester, MN

Practical Applications for NGS in Oncology
Vera Paulson, MD, MPH
University of Washington, Seattle, WA

8:30 a.m. – 11:30 a.m.

Analytical Interferences in the Clinical Laboratory: Basics and Beyond

Session: 191004
Room: C202

Presentation Level: **Intermediate**

ACCENT® Credits: 3.0
CME Credits: 3.0

MODERATOR
Nikola Baumann, PhD, DABCC
Mayo Clinic,
Rochester, MN

TICKET

Analytical interferences are a challenge in today's clinical laboratory. Both commonly encountered and rare analytical interferences will be described. Interference from hemolysis, icterus and lipemia, or contamination of specimens with intravenous fluids or other additives are commonly encountered in the clinical laboratory. Contemporary solutions utilize serum indices on automated analyzers and middleware/LIS logic to identify and triage affected specimens. Strategies for defining appropriate interference thresholds and triaging affected specimens will be discussed. Some interferences that are encountered in the clinical laboratory are very difficult to identify during routine workflow. In these situations, having a direct line of communication between patient-care providers and laboratorians is critical for detecting the interference. Examples of these types of interferences will be discussed. Practical, in-house strategies for troubleshooting will be explored. Interferences can be technology-specific, analyzer-specific, test-specific and/or patient-specific. Thus, when an interference is suspected and confirmed, the laboratory should implement mitigation and prevention tactics that are systems-based. The session will discuss interference in the context of specific types of testing including chemistry, immunoassay, therapeutic drug monitoring, toxicology and general coagulation. Practical approaches to detect, mitigate and prevent interferences will be discussed and explored. An interactive format will allow attendees to identify and implement best practices in their laboratory.

SPEAKERS

Challenges for the Clinical Laboratory: Dealing with the Interferences That We Can "See"
Nikola Baumann, PhD, DABCC
Mayo Clinic, Rochester, MN

Challenges for the Clinical Laboratory: The Interferences That Are Not "Visible"
Brooke Katzman, PhD
Mayo Clinic, Rochester, MN

Challenges for the Clinical Laboratory: Technology- , Test- and Patient-Specific Interferences
Kamisha Johnson-Davis, PhD, DABCC, FAACC
University of Utah/ARUP Laboratories, Salt Lake City, UT

FULL-DAY

8:30 a.m. – 3:30 p.m.

Doing More with R: Create Your Own Automated Reports and Dashboards

Session: 193009
Room: C108

Presentation Level: **Intermediate**

ACCENT® Credits: 6.0
CME Credits: 6.0

MODERATOR
Shannon Haymond, PhD, DABCC, FAACC
Lurie Children's,
Chicago, IL

TICKET

This session aims to develop skills in the use of R and RStudio for (1) reproducible data analysis and visualization workflows, (2) highly effective, publication-quality graphics, and (3) report and dashboard generation that can be automated and easily shared. The focus will be on analyses and reports commonly used for clinical laboratory operational and quality assurance monitoring activities. Attendees will create a beginning-to-end workflow (i.e., from creation of the RStudio project to generation of a shareable data analysis report or dashboard) using provided templates and example data sets. The flexibility of visualization and report outputs from R makes this session applicable to anyone who wants to enhance their ability to reproducibly create figures and communicate data analyses.

SPEAKERS

Doing More with R: Create Your Own Automated Reports and Dashboards
Shannon Haymond, PhD, DABCC, FAACC
Lurie Children's, Chicago, IL

Dustin Bunch, PhD, DABCC
Nationwide Children's Hospital, Columbus, OH

Daniel Holmes, MD
University of British Columbia, Vancouver, Canada

SUNDAY

SEPTEMBER 26

AACC UNIVERSITY SESSIONS

FULL-DAY

8:30 a.m. – 3:30 p.m.

Ten Hut! Fall in for the Essential Elements of a Point-of-Care Testing Boot Camp

Session: 193010
Room: C211

Presentation Level: **Basic**

ACCENT® Credits:6.0
CME Credits: Not eligible

MODERATOR

Jeanne Mumford, BS, MLS, MT (ASCP)
Johns Hopkins Hospital, Baltimore, MD

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TICKET

This session will focus on current hot topics in point-of-care testing (POCT) and will cover some of the basic elements and components of POCT program management. These include training and competency assessment for POCT testing personnel while differentiating waived and moderate testing competency evaluation requirements, integrating quality management and regulatory compliance into POCT, creating strong multidisciplinary team communications and using data analytics to help address pre-analytical, analytical and post-analytical errors. This session will also outline steps for implementing connectivity and review troubleshooting strategies. Presentations will include response (polls), breakout sessions, table exercises, case studies and peer-to-peer discussion. Quality, Regulatory and Compliance resources will be provided via links.

Developed in cooperation with the Critical and Point-of-Care Testing Division.

SPEAKERS

Are You Competent to Evaluate Operator Competency?
Peggy Mann, MS, MT(ASCP), CPP
University of Texas Medical Branch, Galveston, TX

Integrating Quality and Compliance into Point-of-Care Testing
Kimberly Skala, BA, MT(ASCP)
Instrumentation Laboratory, Oak Lawn, IL

Are You Connected? Saving Your Sanity Using Connectivity for Point-of-Care Testing!
Kerstin Halverson, MS
Werfen North America, Farmington, MN

Working in Multidisciplinary Teams and Strengthening Your Communication Skills
Jeanne Mumford, BS, MLS, MT (ASCP)
Johns Hopkins Hospital, Baltimore, MD

8:30 a.m. – 3:30 p.m.

Trust, But Verify: Getting the Most Out of Method Evaluation Experiments, Including Establishing QC After Accepting the New Method

Session: 193011
Room: C204

Presentation Level: **Intermediate**

ACCENT® Credits: 6.0
CME Credits: 6.0

MODERATOR
David Koch, PhD, DABCC, FAACC
Emory University/Grady Memorial Hospital, Atlanta, GA

TICKET

This course will discuss the process of selecting and evaluating clinical laboratory methods and develop an understanding of the correct approach to this key clinical laboratory task. This course uses a series of clinical laboratory evaluation examples to focus attention on the critical aspects of the method evaluation process. Evaluating a new method in the clinical laboratory is a common and important step that is required before implementing a new method. Verification requires performing a set of experiments and analyzing the data for acceptability according to pre-determined criteria. We will work through these steps in a systematic way. The emphasis in the morning session is on verification protocols that a clinical laboratory professional should accomplish for those methods and instruments that are approved by the FDA. Qualitative methods will be covered briefly. The afternoon session will focus on practical stories from the speakers' own practices, including a few examples of modified methods and LDTs. Finally, after accepting the new method, the observed performance of the new method helps to prescribe the appropriate quality control plan to be implemented. Morning session: FDA Approved Methods, Performance Standards, Basic Experiments. Afternoon session: Adventures in Method Evaluation through Practical Experiences, Lab Developed Tests (LDTs), and Selection of Appropriate Quality Control Procedures.

SPEAKERS

Introduction and Setting Performance Goals
David Koch, PhD, DABCC, FAACC
Emory University/Grady Memorial Hospital, Atlanta, GA

Performance Verification
Janetta Bryksin, PhD, DABCC
Emory University, Atlanta, GA

Laboratory Challenges in Method Evaluation
James Nichols, PhD, DABCC, FAACC
Vanderbilt University Medical Center, Nashville, TN

Establishing QC Parameters for Ongoing Monitoring of Test Performance
Anthony Killeen, MB, BCh, PhD, DABCC, FAACC
University of Minnesota, Minneapolis, MN

8:30 a.m. – 3:30 p.m.

How To Truly "Excel" at Data Analysis and Visualization: An Introduction To the R Programming Language

Session: 193012
Room: C201

Presentation Level: **Basic**

ACCENT® Credits: 6.0
CME Credits: 6.0

MODERATOR
Joseph Rudolf, MD
University of Utah/ARUP Laboratories, Salt Lake City, UT

TICKET

R is a freely available statistical programming language that supports the complex data manipulation and analysis activities needed for efficient clinical laboratory practice. In this session we introduce basic concepts of R programming as well as more generalizable best practices in working with laboratory data. Analyzing data is a key element of effective laboratory practice and quality improvement activities. Outside of simple descriptive statistics and standard plots, data analyses in spreadsheets can be time-consuming and error-prone. Spreadsheets also do not handle large data sets efficiently. Multiple freely available programming languages and environments such as R offer users new analytical capabilities that can improve productivity. However, for a learner who has not previously developed computer programming skills, learning basic principles can be a challenge. By introducing basic tasks such as importing files, performing calculations, and generating plots, attendees will gain comfort with programming concepts and develop tools for lifelong learning. This session is intended for users who perform data analysis activities as part of their job responsibilities and have minimal or no exposure to the R programming language.

SPEAKERS

Basics of R and RStudio and Visualizing Data
Joseph Rudolf, MD
University of Utah/ARUP Laboratories, Salt Lake City, UT

Reporting, Importing, and Transforming Data
Patrick Mathias, MD, PhD
University of Washington, Seattle, WA

Summarizing Data and Statistics
Patrick Mathias, MD, PhD
University of Washington, Seattle, WA

AACC UNIVERSITY SESSIONS

FULL-DAY

8:30 a.m. – 3:30 p.m.

Integrating Chemistry and Hematology in Clinical Practice

Session: 193013
Room: C110

Presentation Level: **Intermediate**

ACCENT® Credits: 6.0
CME Credits: Not eligible

MODERATOR
Sean Campbell, PhD, DABCC, FAACC
Montefiore Medical Center, Bronx, NY

TICKET

This session will cover the diagnosis of hematologic disorders. Using a case-based approach, discussion will include complete blood count (CBC), peripheral blood smear, chemistry, immunology and molecular testing. We will highlight situations where clinical chemistry and hematology testing can be used together to make diagnoses and monitor therapy. Key areas which will be covered include: the classification of anemia and leukemia; clinical chemistry, immunology and genetic tests useful in the diagnosis of hematologic disorders; correlating red blood cell peripheral blood smear findings with associated disease states; and correlating platelet function testing results with associated disease states. Introductory overviews of important technology such as automated hematology for CBC testing and flow cytometry will also be provided.

Developed in cooperation with the Hematology & Coagulation Division.

SPEAKERS

RBC Disorders
Nadia Ayala-Lopez, PhD, MLS(ASCP), DABCC
Johns Hopkins University, Baltimore, MD

WBC and Platelet Disorders
Sean Campbell, PhD, DABCC, FAACC
Montefiore Medical Center, Bronx, NY

8:30 a.m. – 3:30 p.m.

Interpretation of Endocrinology Assays: A Guide for the Clinical Laboratorian to Communicate Method Variation, Reference Intervals, and Dynamic Testing Cut-offs to Endocrinologists and other Clinicians

Session: 193014
Room: C205

Presentation Level: **Basic**

ACCENT® Credits: 6.0
CME Credits: 6.0

MODERATOR
Andrew Don-Wauchope, MBCh, MD, FRCP
LifeLabs, Toronto, Canada

TICKET

While it is important for every assay to have interpretive information, variation in "normal" hormone concentrations in various physiological states, between-method variation, difficulties in sample collection, and increasingly specific and sensitive methods make interpretive information more challenging for endocrine assays. Using representative case examples to promote discussion, this session will delve into some of these issues. Improved measurement methods have a substantial impact on how dynamic tests are interpreted, and published society guidelines may not reference a specific method, or may cite cut-off values determined with outdated methods. We will review recent publications on dynamic testing in primary aldosteronism, acromegaly, growth hormone deficiency, Cushing's syndrome, and adrenal insufficiency and provide examples of dynamic testing results to improve participants' familiarity with interpreting such data. We will also review reference intervals for thyroid function testing, focusing on pregnancy. Participants will learn how monitoring for thyroid cancer recurrence by measuring thyroglobulin is complicated by thyroglobulin antibodies and the possibility of measuring thyroglobulin by immunoassay or mass spectrometry. It is important for laboratory professionals to be able to inform physicians about the advantages and disadvantages of both assays. The session will also involve attendees in a discussion of the appropriate use of ionized versus total calcium, and the many pre-analytical variables that can have a significant impact on plasma metanephrines interpretation. Finally, a workshop on analysis of external quality control data and standardization efforts will assist laboratorians in understanding the importance of these efforts and the need for communication with clinicians.

SPEAKERS

Interpretation of Endocrinology Assays: Clinical Practice Guideline Update on Aldosterone
Andrew Don-Wauchope, MBCh, MD, FRCP
LifeLabs, Toronto, Canada

Interpretation of Endocrinology Assays: Cortisol, Thyroid, and Growth Hormone
Julie Shaw, PhD, FCACB
The Ottawa Hospital University of Ottawa/Eastern Ontario Regional Laboratories Association, Ottawa, Canada

Interpretation of Endocrinology Assays: The Clinician's Viewpoint
Matthew Gilbert, DO, MPH
Larner College of Medicine at The University of Vermont, South Burlington, VT

Interpretation of Endocrinology Assays: Metanephrines, Thyroid, and IGF-1
Grace Kroner, PhD, DABCC
Cleveland Clinic, Cleveland, OH

AFTERNOON

12:30 p.m. – 3:30 p.m.

A Look Inside a Clinical Chemist's Tool Box: Managing High Pressure Situations in the Clinical Laboratory

Session: 192006
Room: C107

Presentation Level: **Basic**

ACCENT® Credits: 3.0
CME Credits: Not eligible

MODERATOR
Khushbu Patel, PhD, DABCC, FAACC
Children's Hospital of Philadelphia, Wynnewood, PA

TICKET

Participants will be presented with cases that will require them to apply their training to multiple scenarios, ranging from daily management to acute and unusual situations. Through facilitated small group discussions, participants will work through each scenario with guidance from the moderators. Attendees will have the opportunity to apply what they have learned to high-pressure situations commonly encountered in the laboratory with an emphasis on scenarios that need to be addressed immediately where the answer is not always evident. Participants will discuss how they would approach these problems in small groups. At the end of each scenario, the moderators will discuss how an early-career medical director and experienced medical director would navigate these conditions. The day will end with an "ask us anything" session where participants will have the opportunity to share their own experiences or ask questions.

SPEAKERS

I Can't Find Anything About This in the Guidelines, but Google Said
Yachana Kataria, PhD, DABCC
Boston Medical Center, Boston, MA

Pressure, Under Pressure: Overcoming High Stress Situations
Mark Kellogg, PhD, DABCC, MT (ASCP), FAACC
Children's Hospital Boston, Boston, MA

A Look Inside a Clinical Chemist's Toolbox: What Does Discretion of the Medical Director?
Zahra Shajani-Yi, PhD, DABCC, NRCC, FAACC
Labcorp San Diego, San Diego, CA

There's Always Two Sides to a Story: Looking Closely at Laboratory Results
Khushbu Patel, PhD, DABCC, FAACC
Children's Hospital of Philadelphia, Wynnewood, PA

12:30 p.m. – 3:30 p.m.

Navigating Your Lab Through Change: Leadership, Innovation, and Crisis Management (SYCL Workshop)

Session: 192007
Room: C208

Presentation Level: **Basic**

ACCENT® Credits: 3.0
CME Credits: 3.0

MODERATOR
Janetta Bryksin, PhD, DABCC
Emory University
Atlanta, GA

TICKET

The SYCL Workshop aims to offer an opportunity for attendees to develop necessary professional skills that are critical for their success as laboratory leaders. One of those skills is change management. Change may be gradual and well-thought out as well as abrupt as we have recently seen with the SARS-CoV-2 pandemic. Being prepared to manage change is an essential leadership skill that when lacking can lead to unnecessary frustration, anxiety, and ineffective leadership that impacts many facets of the laboratory. This workshop will provide attendees with skills and real world examples of how to better position themselves to successfully guide their laboratories through difficult transitions.

SPEAKERS

Leadership Change... Keep Calm and Lead On
Julie Shaw, PhD, FCACB
The Ottawa Hospital University of Ottawa/Eastern Ontario Regional Laboratories Association, Ottawa, Canada

Lab of the Future
Khosrow Adeli, PhD, FCACB, NACB, DABCC
Hospital for Sick Children, Toronto, Canada

The One about Crisis Management and the Pandemic
Chad Neilsen, MPH, CIC, FAPIC
University of Florida Health Jacksonville, Saint Johns, FL

SUNDAY

SEPTEMBER 26

AACC UNIVERSITY SESSION

AFTERNOON

12:30 p.m. – 3:30 p.m.

LC-MS/MS Operations and Quality Assurance: A Primer

Session: 192008
Room: C202

Presentation Level: **Intermediate**

ACCENT® Credits: 3.0
CME Credits: Not eligible

MODERATOR
Brian Rappold
LabCorp,
Raleigh, NC

Significant interest in the technicalities of method development and implementation has persisted within the AACC community. This half-day session will focus on the life of liquid chromatography-tandem mass spectrometry (LC-MS/MS) in an operations environment, specifically addressing cross-laboratory issues related to quality assurance, monitoring of assays, building ruggedness and handling of the day-to-day and week-to-week adventure of LC-MS/MS. Broadly, a condensation of best practices derived from experts around the globe will be provided to participants, including how to execute system suitability analysis for predictive analytics, mechanisms to improve preventative maintenance and post-analytical data reduction techniques to ensure the reporting of only high-quality results. Additionally, practical aspects for the art of LC-MS/MS will be discussed, such as rationalizing multiplexed assay quality control schemes and understanding the role of all the additional data LC-MS/MS provides when compared to other testing platforms.

SPEAKERS

LC-MS/MS Operations: Tips/Tricks and Best Practice
Brian Rappold
LabCorp, Raleigh, NC

Quality Assurance in the Mass Spec Lab
Andrew Hoofnagle, MD, PhD
University of Washington, Seattle, WA

SUNDAY SPECIAL SESSION

THE ROLE OF JOURNALISM IN THE ANALYSIS AND DISSEMINATION OF PANDEMIC-RELATED DATA THROUGH THE LENS OF THE COVID TRACKING PROJECT

3:30 p.m. – 4:30 p.m.

Session: 11002
Room: Georgia Ballroom

Presentation Level: **Basic**

ACCENT® Credits: 1.0
CME Credits: 1.0

MODERATOR
Dina Greene, PhD, DABCC
Kaiser Washington,
Burien, WA

The pandemic forced laboratory medicine into the spotlight unlike any other event in modern history. As such, the media became the mouthpiece for the dissemination of most information, both that which was factual and that which was fiction. This session illustrates the experience of a journalist whose career quickly pivoted to cover timely breakthroughs related to lab allocation, resulting, and testing. Further, his dual role as a journalist and co-founder of The COVID Tracking Project allowed him unique insight into how to communicate big-data to the country. To this day, The COVID Tracking Project is unsurpassed by any other data repository.

SPEAKER

The Role of Journalism in the Analysis and Dissemination of Pandemic-Related Data Through the Lens of the COVID Tracking Project
Alexis Madrigal
The Atlantic, Oakland, CA

PLENARY SESSION

2021 WALLACE H. COULTER LECTURESHIP AWARD

5:00 p.m. – 6:30 p.m.

Artificial Intelligence in the Clinic: Strengths, Weaknesses, and Opportunities

Session: 11001
Room: Georgia Ballroom

Presentation Level: **Intermediate**

ACCENT® Credits: 1.0
CME Credits: 1.0

In this talk, I will introduce the audience to the foundations of artificial intelligence (AI) and its application to clinical sciences. By nature, many of the traditional clinical tasks such as risk assessment, prediction of treatment efficacy, and forecasting patient trajectory can be thought of as prediction problems. Given sufficient amounts of patient data with outcomes, a machine learning model can make predictions which often exceed in accuracy human experts. However, to make these tools more applicable in the clinical setting, we need to augment AI models with the ability to explain their decisions to humans, and assess their uncertainty. In my talk, I will give multiple examples of deployed AI applications, analyzing their strengths and weaknesses.

SPEAKER
Regina Barzilay, PhD
School of Engineering Distinguished Professor for AI and Health, Electrical Engineering and Computer Science Department, MIT Computer Science and Artificial Intelligence
Cambridge, MA

PLENARY+ SCIENTIFIC SESSIONS

MONDAY

SEPTEMBER 27

Kamisha Johnson-Davis
PhD, DABCC (CC, TC), FAACC
Associate Professor of Pathology (Clinical), University of Utah
Medical Director, Clinical Toxicology, ARUP Laboratories

ROUNDTABLE SESSIONS

7:30 A.M. – 8:30 A.M. (40000 SERIES) OR 12:30 P.M. – 1:30 P.M. (50000 SERIES) T TICKET

Room: C301–302 | ACCENT® Credits: 1.0 | CME Credits: Not eligible

Most roundtable sessions are presented twice daily at 7:30 a.m. – 8:30 a.m. (40000 series) and 12:30 p.m. – 1:30 p.m. (50000 series). Attendance is limited to 6 participants per session. Advance registration and session fees are required. AACC does not provide meals for these sessions. Concession stands are available to purchase food.

SESSION TITLE	SESSION # AM	SESSION # PM	SPEAKER	LEVEL
Anion Gap: A Review and Reappraisal	42102	52202	**David Alter,** MD, MPH, DABCC, Emory University School of Medicine, Atlanta, GA	Intermediate
Direct Oral Anticoagulants: Measurands and Interferents in the Clinical Hemostasis Laboratory	42105	52205	**Anna Merrill,** PhD, DABCC, University of Iowa, Iowa City, IA	Basic
Evaluating Proficiency Testing: External Quality Assurance Results and Developing Preventive and Corrective Actions	42107	52207	**Berna Aslan,** MD, MSc, DABCC, FCACB, FAACC, Health Sciences Center, Eastern Health Authority, St. John's, Canada	Intermediate
How to Assess Biological Variation and Facilitate Test Interpretation in Endocrinology	42108	52208	**Damien Gruson,** PhD, Cliniques Universitaires St-Luc, Brussels, Belgium	Intermediate
How to Control Your Competencies: Transitioning from a Paper to an Electronic System	42109	52209	**Van Leung-Pineda,** PhD, DABCC, Children's Healthcare of Atlanta. Atlanta, GA	Basic
Lead Testing: Clinical, Preanalytical, Analytical, and Post-Analytical Concerns	42113	52213	**Amy Pyle-Eilola,** PhD, Nationwide Children's Hospital/The Ohio State University Wexner Medical Center, Columbus, OH	Basic
Lessons Learned and Opportunities Gained from Information System Implementation	42114	52214	**Darci Block,** PhD, DABCC, Mayo Clinic, Rochester, MN	Basic
Lipoprotein Subfractions: How Should Labs Report Low-Density Lipoprotein Size?	42115	52215	**Nicholas Larkey,** PhD, Mayo Clinic, Rochester, MN	Intermediate
New Perspectives on Old Analytes: LDH, eGFR, Serum Proteins, and Immunoglobulins	42117	52217	**Izmarie Poventud-Fuentes,** PhD, Texas Children's Hospital, Houston, TX	Basic
Next Generation Sequencing in Interpreting of Exome and Cancer Gene Panels	42118	52218	**Jude Abadie,** PhD, DABCC(C,T), DABMGG, FAACC, FACMG, Texas Tech University Health Sciences Center, El Paso, TX	Intermediate

MONDAY

SEPTEMBER 27

ROUNDTABLE SESSIONS

7:30 A.M. – 8:30 A.M. (40000 SERIES) OR 12:30 P.M. – 1:30 P.M. (50000 SERIES) T TICKET

SESSION TITLE	SESSION # AM	SESSION # PM	SPEAKER	LEVEL
Reference Intervals: Pitfalls and Considerations	42120	52220	**Dustin Bunch,** PhD, DABCC, Nationwide Children's Hospital, Columbus,OH	Basic
Sample Collection Devices as Source of Pre-analytical Errors: Impact of Collection Tube Components on Clinical Assays	42121	52221	**Raffick Bowen,** BSc (MLS), MHA, PhD, MLT (CSMLS), DABCC, DClChem, FCACB, FAACC, Stanford University, Palo Alto, CA	Basic
The Good, the Bad, and the Unknown of Hemoglobin A1c Testing	42123	52223	**Ruhan Wei,** PhD, Cleveland Clinic, Cleveland, OH	Basic
The Role of Glycosaminoglycan Testing in Mucopolysaccharidosis Diagnosis and Treatment Monitoring	42125	52225	**Stefani Thomas,** PhD, DABCC, NRCC, University of Minnesota, Minneapolis, MN	Intermediate
The Role of Laboratory Medicine in Addressing Health Disparities Among Transgender and Gender Non-Conforming Individuals	42126	52226	**Emily Gill,** PhD, University of Pennsylvania/Children's Hospital of Philadelphia, Philadelphia, PA	Basic
To Quant or Not to Quant? Case Presentations Addressing the Challenges of Protein Electrophoresis	42127	52227	**Katherine Turner,** PhD, DABCC, Spectrum Health, Grand Rapids, MI	Intermediate
Why Not Give Primary Hemostasis a Chance? Learning the Foundation of Platelet Action in Clot Formation	42129	52229	**Maximo Marin,** MD, University of Southern California, Los Angeles, CA	Basic
Implementing a New Test or a New Instrument? A Crash Course on Method Validation	42131	52231	**Kornelia Galior,** PhD, DABCC, University of Wisconsin, Madison Madison, WI	Basic
Drug Screening in Clinical Practice: A Practical Guide to Tackling a Mess	42132	52232	**Alec Saitman,** PhD, DABCC, Providence Regional Laboratories, Portland, OR	Basic
Getting That New Job: A Guide to Applying, Interviewing, and Negotiating	42133	52233	**Khushbu Patel,** PhD, DABCC, FAACC, Children's Hospital of Philadelphia, Wynnewood, PA	Basic
Lab-on-a-Chip: An Adventure for Future Diagnostics?	42134		**Heather Nelson,** PhD, ARUP Laboratories, Salt Lake City, UT	Basic

PLENARY SESSION

8:45 a.m. – 10:15 a.m.

COVID-19: Vaccines and the Tango of Viral Evolution and Host Immune Responses

Session: 12001
Room: Georgia Ballroom

Presentation Level: **Intermediate**

ACCENT® Credits: 1.0
CME Credits: 1.0

SARS-CoV-2 is an RNA virus that easily mutates; mutants that are not suppressed by the immune responses generated from prior infection or vaccination can then become dominant strains. Different types of immune responses have varying efficacy against different strains of a virus. From diseases such as influenza, we know that some antibodies are very strain-specific, while others can neutralize different strains. Vaccines that depend solely on antibody responses either need to be able to neutralize newly arising strains of a virus, or, as is the case with influenza, vaccines need to be remade annually to try to correspond to the current clinical circulating strains. Antibody targets on a virus typically are proteins on the surface of the virus, and antibodies that target different regions of a protein like Spike of SARS-CoV-2 can differ in their neutralization potency and the breadth of viruses that they can neutralize. T cell responses, unlike antibodies, are not directly activated by the virus protein, but rather by epitopes (small peptides from the virus) that are bound to MHC molecules on the surface of cells. This means that T cells can be activated by epitopes from viral proteins regardless of their location or function for the virus; T cells epitopes thus can come from proteins that are conserved even when a virus mutates. This talk will explain how these responses are generated by different types of vaccines, and how the vaccines may be able to control the pandemic even in the face of viral mutation.

SPEAKER
Margaret Liu, MD, DSchc, MDhc, FISV
CEO, PAX Therapeutics
Chairman of the Board, International Society for Vaccines
Lafayette, CA

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MONDAY

SEPTEMBER 27

MEET THE EXPERT

10:30 a.m. – 11:30 a.m.

Artificial Intelligence in the Clinic: Strengths, Weaknesses, and Opportunities

Session: 62001
Room: C102

Presentation Level: **Intermediate**

ACCENT® Credits: 1.0
CME Credits: 1.0

MODERATOR

Dennis Dietzen, PhD, DABCC, FAACC
Washington University School of Medicine, Saint Louis, MO

In her earlier presentation, Dr. Barzilay discussed the foundations of artificial intelligence and its application to clinical sciences. This session is designed to allow interested attendees an opportunity to discuss the issues raised in more detail in a smaller group setting. This session will also provide attendees an opportunity to ask questions not addressed during the presentation.

SPEAKER

Regina Barzilay, PhD
Massachusetts Institute of Technology, Cambridge, MA

10:30 a.m. – 11:30 a.m.

COVID-19: Vaccines and the Tango of Viral Evolution and Host Immune Responses

Session: 62002
Room: C202

Presentation Level: **Intermediate**

ACCENT® Credits: 1.0
CME Credits: 1.0

MODERATOR

Patricia Jones, PhD, DABCC, FAACC
The University of Texas Southwestern Medical Center / Children's Medical Center Dallas, TX

In her earlier presentation, Dr. Liu discussed the COVID-19 vaccine and specific types of immune responses that can address the challenges of the evolving landscape for SARS-CoV-2 mutants. This session is designed to allow interested attendees an opportunity to discuss the issues raised in more detail in a smaller group setting. This session will also provide attendees an opportunity to ask questions not previously addressed during the presentation.

SPEAKER

Margaret Liu, MD, DSchc, MDhc, FISV
Pax Therapeutics, Lafayette, CA

CHAIR'S INVITED SESSION

10:30 a.m. – 12:00 p.m.

New Technologies and Innovations to Improve the Clinical Laboratory (AMOC Chair Invited Session)

Session: 32104
Room: C101

Presentation Level: **Basic**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR

Nathalie Lepage, PhD, FCCMG, FCACB
Newborn Screening Ontario/Children's Hospital of Eastern Ontario, Ottawa, Canada

Laboratory medicine is constantly looking for approaches to improve its efficiency and workflow. Two examples of preanalytical aspects will be taken to illustrate the benefits that new technologies would bring. The first example arises from recent issues with laboratory supplies, among others face shields and swabs. The use of 3D printing was able to alleviate these shortages. This technology has multiple potential developments, ranging from printing replacements parts for laboratory analyzers, creating libraries of interesting cases, and developing functional organs. The second example tackles sample transportation, handling, and processing. The potential usages of drones in laboratory medicine are still in their infancies. Drones could be part of the landscape to facilitate transportation from remote locations and those in high traffic areas, and to coordinate transportation within major organizations that have several locations. Current limitations due to policy and regulatory aspects will be discussed. These two examples will present the benefits that implementation of innovative solutions will have on laboratories and will help them to maintain provision of timely and high quality results.

SPEAKERS

Innovation from 3D Printing and Its Current and Future Impact in Healthcare and the Clinical Laboratories
Danielle LV Maracaja, MD
Wake Forest School of Medicine, Winston Salem, NC

Innovation to Improve Patient Care in Laboratory Medicine with the Use of Drones for Specimen Transportation
Timothy Amukele, PhD, MD
ICON Clinical Research, Farmingdale, MD

SCIENTIFIC SESSIONS
MORNING

10:30 a.m. – 12:00 p.m.

Activation and Inhibition of the Coagulation Cascade: What's New in Diagnostics and Therapeutics?

Session: 32101
Room: C110

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR/SPEAKER

Rita Selby, MD, MSc, FRCP(c)
University Health Network/Sunnybrook Health Sciences Centre, University of Toronto, Toronto, Canada

Viscoelastic testing (including TEG and ROTEM) are global tests of coagulation first described in 1948, but gaining popularity in the last decade for their immediate diagnosis, management of severe bleeding, and several novel clinical indications. These tests and testing platforms may be laboratory-based or point-of-care tests. Using a case-based format, we will explain viscoelastic testing and its clinical application, appraise the evidence supporting these tests, and discuss the implications for laboratory professionals implementing these analyzers and overseeing quality assurance. We will then focus on direct oral anticoagulant use, which has replaced warfarin as first line therapy for conditions requiring short or long-term oral anticoagulant therapy. This includes prevention of stroke in atrial fibrillation and prevention and treatment of venous thromboembolism. Using a case-based format, we will introduce these novel agents, their mechanisms of action, and review evidence supporting clinical indications. We will discuss when laboratory testing to assess anticoagulant effect is needed, how to test, and the impact on routine and specialized coagulation laboratory testing.

This session will be facilitated by a member of the Annual Meeting Organizing Committee and presented live remotely by session faculty.

SPEAKERS

"TEG Talk": Expanding Clinical Roles for Viscoelastic Testing (TEG and ROTEM)
Rita Selby, MD, MSc, FRCP(c)
University Health Network/Sunnybrook Health Sciences Centre, University of Toronto, Toronto, Canada

The New Era of Direct Oral Anticoagulants: Updates from the Clinic and the Coagulation Lab
Jameel Abdulrehman, MD, FRCPC
University of Toronto, Toronto, Canada

MONDAY

SEPTEMBER 27

SCIENTIFIC SESSIONS

MORNING

10:30 a.m. – 12:00 p.m.

Biomarkers of Ethanol Consumption: Clinical Utility and Ethical Considerations for Testing

Session: 32103
Room: C208

Presentation Level: **Basic**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR/SPEAKER
Melissa Budelier, PhD, DABCC
TriCore Reference Laboratories, Saint Louis, MO

The session will be divided into two parts: 1) Using a lecture-based format we will review biomarkers of both acute and chronic ethanol consumption. We will cover the clinical utility of each assay, including optimal cutoff concentration, matrix, length of detection, and sources of false positive and false negative results. The difference between direct and indirect biomarkers will be discussed. Specific biomarkers covered in this session include gamma-glutamyl transferase, mean corpuscular volume, ethyl glucuronide, ethyl sulfate, phosphatidyl ethanols, carbohydrate-deficient transferrin, and fatty acid ethyl esters. 2) Using a case study format and AACC's interactive technology for audience involvement, we will review the basic principles of medical ethics, including patient autonomy, beneficence/non-maleficence, and justice. The audience will practice applying these principles in the context of testing for ethanol consumption.

Developed in cooperation with the Therapeutic Drug Management & Toxicology Division.

SPEAKERS

Updates on Biomarkers of Ethanol Consumption
Stephen Roper, PhD, DABCC
Washington University School of Medicine, Saint Louis, MO

Ethical Considerations in Clinical Laboratory Testing for Ethanol Consumption
Melissa Budelier, PhD, DABCC
TriCore Reference Laboratories, Saint Louis, MO

10:30 a.m. – 12:00 p.m.

Recommendations for Natriuretic Peptides in Heart Failure: Analytics and Clinical Consideration

Session: 32105
Room: C204

Presentation Level: **Basic**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR/SPEAKER
Peter Kavsak, PhD
Juravinski Hospital and Cancer Centre, Hamilton, Canada

The session will provide an analytical and clinical overview on the use of natriuretic peptide (NP) testing, with a focus on heart failure. This session will bring together both the laboratory and clinical perspectives and will be focused on the latest laboratory recommendations on NP testing.

SPEAKERS

Clinical Aspects of Natriuretic Peptides with a Focus on Heart Failure
Allan Jaffe, MD
Mayo Clinic, Rochester, MN

Appropriate Use and Analytical Performance of Natriuretic Peptides Assays
Peter Kavsak, PhD
Juravinski Hospital and Cancer Centre, Hamilton, Canada

10:30 a.m. – 12:00 p.m.

The Promises and Challenges of Cannabinoids and the Impact on Laboratory Medicine

Session: 32109
Room: C201

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR
Paul Jannetto, PhD, DABCC, MT (ASCP), FAACC
Mayo Clinic, Rochester, MN

The endogenous cannabinoid system plays a critical role in maintaining homeostasis, reproductive, endocrine and cardiovascular functions, motor control, analgesia, memory, and executive function. There are more than 100 phytocannabinoids in the cannabis plant, each with their own pharmacological and toxicological profiles. Their chemical structure enables them to activate membrane-bound cannabinoid receptors, ion channels, and PPAR nuclear receptors. Understanding cannabinoid mechanisms of action is leading to development of new therapeutics based on novel approaches to a wide spectrum of health issues (e.g. treatment resistant epilepsy, AIDS wasting disease, potentially cancer, and autoimmune diseases). These new therapies have an enhanced therapeutic index compared to existing medications. However, some of the cannabinoids (e.g. delta-9-tetrahydrocannabinol) have side effects including performance and memory impairment and substantial effects on the developing brain. Clinical laboratories will play an essential role in monitoring and establishing therapeutic cannabinoid ranges, identifying cannabis intake, and contributing to the advancement of cannabinoid research. Dr. Huestis will share her fifty years of cannabinoid research conducted at the National Institute of Drug Abuse/National Institutes of Health on the pharmacology and toxicology of cannabinoids.

SPEAKER

The Promises and Challenges of Cannabinoids and the Impact on Laboratory Medicine
Marilyn Huestis, AB, MS, PhD, Honoris causa
Institute of Emerging Health Professions, Severna Park, MD

10:45 a.m. – 12:15 p.m.

Conventional and Modern Approaches To Assessing Pediatric Growth Hormone Deficiency

Session: 32106
Room: C107

Presentation Level: **Basic**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR
Amy Karger, MD, PhD, DABCC
University of Minnesota, Minneapolis, MN

Growth hormone is a determinant of metabolism in adults and linear growth in children either directly, or in conjunction with the signaling of IGF-1. Accurate measurement and interpretation of growth hormone and IGF-1 is critical for the diagnosis of growth hormone deficiency. This session will review 1) the clinical aspects of growth hormone and its deficiency; 2) pre-analytical and post-analytical considerations; and 3) the current and future state of assays for the hormones.

Developed in cooperation with the Pediatric and Maternal-Fetal Division.

SPEAKERS

Analytical Considerations in Assessing Growth Hormone
Amy Pyle-Eilola, PhD
Nationwide Children's Hospital/The Ohio State University Wexner Medical Center, Columbus, OH

Pediatric Growth Hormone Deficiency: A Clinician's Perspective
Rohan Henry, MS, MD
Nationwide Children's Hospital, Columbus, OH

New Approaches to Measuring Growth Hormone and IGF1
Dustin Bunch, PhD, DABCC
Nationwide Children's Hospital, Columbus, OH

SCIENTIFIC SESSIONS
MORNING

10:45 a.m. – 12:15 p.m.

Guidelines for Laboratory Analysis in the Diagnosis and Management of Diabetes Mellitus: 2021 Revision

Session: 32107
Room: C211

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR/SPEAKER
David Sacks, MB ChB, FACP, FRCPath
National Institutes of Health, Bethesda, MD

The clinical laboratory has a fundamental role in the diagnosis and management of patients with diabetes. Multiple assays are used in the evaluation of these patients and new assays and technologies continue to emerge. Published data validate the clinical value of new assays. In order to optimize the use of laboratory analysis in diabetes care, an expert committee compiled evidence-based recommendations for the use of these analytes. Initially published in 2002 in both Clin Chem and Diabetes Care (Clin Chem 2002; 48:436-72; Diabetes Care 2002; 25:750-786), the guidelines were revised and updated in 2011(Clin Chem. 2011 Jun;57(6):e1-e47; Diabetes Care. 2011 Jun;34(6):e61-99), and have recently undergone another update. The session will provide a general overview of the updated guidelines, then focus on the two areas that have undergone the most substantial changes over the preceding 10 years. The different methods of continuous glucose monitoring and their current roles in diabetes management will be discussed. The second topic will be the current clinical roles of genetic analysis and the measurement of autoimmune markers in the diagnosis of diabetes.

This session will be facilitated by a member of the Annual Meeting Organizing Committee and presented live remotely by session faculty.

Developed in cooperation with the AACC Academy, AACC Clinical Societies Collaboration Committee, and American Diabetes Association.

SPEAKERS

Highlights of Updated Laboratory Medicine Guidelines for Diabetes
David Sacks, MB ChB, FACP, FRCPath
National Institutes of Health, Bethesda, MD

Continuous Glucose Monitoring: State of the Art in 2021
M. Sue Kirkman, MD
University of North Carolina, Chapel Hill, NC

Autoimmune Markers
Ake Lernmark, MD
University of Washington, Seattle, WA

IMMEDIATE PAST PRESIDENT'S INVITED SESSION

12:30 p.m. – 2:00 p.m.

Measurably Better Healthcare: Elite Winners from the UNIVANTS of Healthcare Excellence Awards Share Their Collaborative, Practice-Based Efforts that Transformed Healthcare Delivery

Session: 32444
Room: C101

Presentation Level: **Basic**

ACCENT® Credits: 1.5
CME Credits: Not eligible

MODERATOR
David Grenache, PhD, DABCC, MT(ASCP), FAACC
Tricore Reference Laboratories, Albuquerque, NM

Cardiac disease, kidney disease and diabetes are global health problems that have a profound impact on patients and population health. Finding new and innovative ways to deliver better care is paramount to ensuring optimal patient outcomes, particularly in resource-constrained environments. Unique opportunities exist to transform the delivery of care for patients at risk with these debilitating diseases. From automated-IT alerts for diabetes, to outcome based cut-offs for acute coronary syndrome (ACS) and community-based point-of-care testing, the best practices shared within this session will highlight the power of teamwork while maximizing data-driven insights to change the paradigm in which healthcare is delivered.

SPEAKERS

Kidney Check: The Next Generation of Surveillance for Hypertension, Diabetes and Chronic Kidney Disease
Paul Komenda, MD, MHA
University of Manitoba, Winnipeng, Canada

Reducing Patient Risk and Enhancing Care through the Development and Implementation of a New Chest Pain Pathway, Expedited by and for the COVID-19 Era
Martin Than, MD
Christchurch Hospital, Canterbury, New Zealand

Early Diagnosis and Improved Management of Patients with Diabetes through Strategic and Automated Test Algorithms via Primary Care
Maria Salinas, PhD
Hospital Universitario de San Juan, Alicante Spain

SCIENTIFIC SESSIONS
MID-DAY

12:30 p.m. – 2:00 p.m.

Clinical Problems in Oxygenation, Hemoglobin, and Dyshemoglobinemias

Session: 32441
Room: C204

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR/SPEAKER
William Winter, MD, DABCC, FAACC
University of Florida, Gainesville, FL

Infection with SARS-CoV-19 has focused clinicians throughout the world on the problem of oxygen delivery to the tissues. This session will examine the clinical problem of hypoxemia brought on by hypoventilation, V/Q mismatch, right-to-left shunts, diffusion limitation and/or reduced FiO2. In order to understand oxygen delivery, we must understand pulmonary function and hemoglobin's constituents including oxy-hemoglobin, deoxy-hemoglobin, carbonyl-hemoglobin, carboxyhemoglobin, and methemoglobin. As well, abnormal and intrinsically dysfunctional hemoglobins should be examined for their impact on tissue oxygen delivery. Therefore, this session will emphasize the pathophysiology and laboratory monitoring of arterial blood gases, the O2 content of blood, and O2 delivery to the tissues through the examination of authentic, timely and critical clinical cases. Highlights will include studies of COVID-19 infection, carbon monoxide poisoning, methemoglobinemia and hemoglobins with increased affinity for oxygen.

SPEAKERS

Causes and Pathophysiology of Hypoxemia including SARS-CoV-2 Pneumonia, Carboxyhemoglobinemia, and Methemoglobinemia
William Winter, MD, DABCC, FAACC
University of Florida, Gainesville, FL

Dyshemoglobinemias and Polycythemias
Neil Harris, MBCh, MD, FAACC
University of Florida, Gainesville, FL

MONDAY

SEPTEMBER 27

SCIENTIFIC SESSIONS

MID-DAY

12:30 p.m. – 2:00 p.m.

Connective Tissue Diseases, Lupus, and dsDNA Testing: Updates in Diagnosis and Testing

Session: 32442
Room: C208

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR/SPEAKER
Sarah Wheeler, PhD
University of Pittsburgh Medical Center, Pittsburgh, PA

Connective tissue diseases (CTDs) comprise systemic lupus erythematosus (SLE), systemic sclerosis, Sjögren's syndrome, inflammatory muscle diseases, and CTD overlap syndromes. The CTDs share clinical features such as sustained inflammation, detectable specific autoantibodies, and a systemic presentation impacting multiple organ systems which makes laboratory and clinical diagnosis complex. We will use a case based approach to review vignettes of the current spectrum of laboratory testing and clinical presentation to diagnose CTDs with an emphasis on SLE. The challenges associated with these diagnoses clinically and in the laboratory will be highlighted. We will review limitations and challenges with current laboratory testing and highlight differences across laboratories. We will incorporate diagnostic guidelines into the interactive case discussions. We will also use an interactive format and will share the results of the first multi-center, multi-method evaluation of dsDNA antibody test performance, that includes both classical and recently-developed techniques with correlation of methodologic findings to clinical disease status.

Developed in cooperation with the Clinical & Diagnostic Immunology Division.

SPEAKERS

Making the Case for Standardization of ANA Sub-Serology Testing – Multicenter dsDNA Correlation Study of Five Methods
Sarah Wheeler, PhD
University of Pittsburgh Medical Center, Pittsburgh, PA

Case Studies in Connective Tissue Diseases
Danyel Tacker, PhD, DABCC, FAACC
West Virginia University, Morgantown, WV

The Pivotal Role of Laboratory Testing in Diagnosing Systemic Lupus Erythematosus
Rajeevan Selvaratnam, PhD, DABCC, NRCC, FAACC
University Health Network/Toronto General Hospital, Toronto, Canada

12:30 p.m. – 2:00 p.m.

Rapid HIV Testing for High-Risk Groups Across a Health System's Emergency Departments

Session: 32445
Room: C201

Presentation Level: **Basic**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR/SPEAKER
Adam McShane, PhD, DABCC (CC, TC), FAACC
Cleveland Clinic, Cleveland, OH

Human immunodeficiency virus (HIV) is a chronic, life threatening, infectious disease. Early diagnosis and treatment for HIV can extend life and decrease transmission, making it a cost-effective public health intervention. Unfortunately, HIV underdiagnosis persists. To mitigate, one institution implemented rapid HIV testing throughout 12 emergency departments. This session aims to provide the audience with a holistic understanding of HIV diagnosis, first by reviewing current commercially available HIV screens and confirmatory testing and second by outlining the presenters' experience with strategically implementing rapid HIV screening. The content will highlight current data and metrics of their HIV screening program. Perspectives by 2 members of the multi-faceted team are provided: laboratory medicine and emergency services.

SPEAKERS

Implementing Rapid HIV Testing for the Emergency Department: Challenges and Perspective from the Lab
Adam McShane, PhD, DABCC (CC, TC), FAACC
Cleveland Clinic, Cleveland, OH

Early Results and Opportunities from Rapid HIV Screening of High-Risk Patients in the Emergency Department
Michael Phelan, MD
Cleveland Clinic, Cleveland, OH

12:45 p.m. – 2:15 p.m.

Innovative Approaches to the Design, Building, and Renovating of a Clinical Laboratory

Session: 32443
Room: C202

Presentation Level: **Basic**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR
Jennifer Baccon, PhD, MD, MHCM
Akron Children's Hospital, Akron, OH

Designing, building, and renovating a clinical laboratory is a Herculean effort. From lines of sight, to power supply, to ventilation, every detail matters. This session will explore innovative ways that institutions have applied to ensure that the design of a laboratory is perfected, even before the construction begins. In this session, we will present how to mockup a space in cardboard to see the design functions in real life and not just on paper. With the lean techniques that will be presented, the attendees will learn how to complete projects under budget and on time. The presenters will discuss laboratory design and construction incorporating the laboratorian's viewpoint while also discussing architectural, engineering, financial, and operational angles. Perspectives from two laboratories of different sizes will be shared in focused presentations followed by a moderated question and answer period.

SPEAKERS

Eliminating Wastes in Lab Design and Encouraging Divergent Thinking Through Lean Principles
Andrew Rearick, MLS, ASCP
Akron Children's Hospital, Akron, OH

Optimizing Design and Construction in Complex Laboratory Settings
Jonathan Genzen, MD, PhD
University of Utah/ARUP Laboratories, Salt Lake City, UT

12:45 p.m. – 2:15 p.m.

Acute and Chronic Cardiovascular Disease Complications in Patients With Viral Infections

Session: 32446
Room: C102

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR/SPEAKER
Alan Wu, PhD
University of California, San Francisco, San Francisco, CA

Cardiovascular disease is a common sequelae to patients suffering from viral infections. Imaging techniques (CT angiography and MRI) are mainstays for detecting structural damage. Cardiac biomarkers such as troponin (cTn)and the natriuretic peptides are important for detection of myocardial damage and remodeling, respectively. hs-CRP has been used for many years to detect low level inflammation that contributes to plaque instability. Interleukin-6 is becoming a key marker to characterize damage due to inflammatory reaction from acute viral infections. D-dimer is a key test to indicate coagulation dysfunction. There are also novel markers of heart failure such as galectin-3, soluble ST-2 and miRNAs. Understanding the pathophysiology of myocarditis is important for the interpretation of results of existing laboratory tests, discovery of blood-based biomarkers, assessment of a patient's future adverse cardiovascular risk, and identification of targets for novel therapeutics. The etiology of myocarditis varies depending on the infectious agents. Viruses can directly induce an inflammatory cardiomyopathy, which include the adenoviruses, enteroviruses, vasculotropic and lymphotropic viruses that have lifelong persistence, such as Epstein-Barr and herpes, and those that will activate the immune system, such as HIV and the coronaviruses. This session will integrate virology, cardiology, and laboratory medicine so that the audience is well equipped to understand the relation between infectious disease and cardiac pathology.

This session will be facilitated by a member of the Annual Meeting Organizing Committee and presented live remotely by session faculty.

SPEAKERS

Pathophysiologic Mechanisms of Inflammatory Cardiomyopathy Induced by Viral Infections
Alan Wu, PhD
University of California, San Francisco, San Francisco, CA

Clinical and Radiographic Aspects of Chronic Cardiovascular Complications from Viral Infections Such as HIV and COVID-19
Priscilla Hsue, MD
University of California, San Francisco, San Francisco, CA

High-Sensitivity Troponin, the Natriuretic Peptides, and Other Existing and Novel Biomarkers of Viral Myocarditis
Jieli Shirley Li, MD, PhD, DABCC, NRCC, FAACC
Ohio State University Wexner Medical Center, Columbus, OH

SCIENTIFIC SESSIONS

MID-DAY

12:45 p.m. – 2:15 p.m.

Advancing Effective Test Utilization in North America

Session: 32447
Room: C107

Presentation Level: **Basic**

ACCENT® Credits: 1.5
CME Credits: Not eligible

MODERATOR/SPEAKER
Lee Hilborne, MD, MPH, DLM(ASCP)CM
University of California, Los Angeles Healthcare,
Beverly Hills, CA

This session will focus on effective test utilization, a key component of delivering quality patient care. Most clinical decisions depend on laboratory results, however not all laboratory requests are necessary. Laboratorians have a responsibility to be good stewards of the services provided while curbing unintended overuse, underuse, and misuse. This program will discuss effective test utilization, review the history of the United States and Canada "Choosing Wisely" initiatives and present existing challenges and opportunities for effective test utilization in those two countries. Specific examples from actual laboratory initiatives will be presented with a discussion to help attendees to integrate recommendations within their own laboratory stewardship programs. The session will close with an interactive discussion with the audience to solicit feedback on how the clinical laboratory community can collectively work together to better guide effective test utilization throughout North America.

Developed in cooperation with the American Society for Clinical Pathology and Canadian Society of Clinical Chemists.

SPEAKERS

The Canadian Experience: Challenges and Opportunities
Daniel Beriault, PhD, FCACB
St Michael's Hospital, Toronto, Canada

The U.S. Experience: Challenges and Opportunities
Lee Hilborne, MD, MPH, DLM(ASCP)CM
University of California, Los Angeles Healthcare, BEVERLY HILLS, CA

12:45 p.m. – 2:15 p.m.

Laboratory Consultations in Genomic Medicine: Case-Based Learning

Session: 32448
Room: C211

Presentation Level: **Basic**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR/SPEAKER
Jason Park, MD, PhD, DABCC
University of Texas Southwestern and Children's Medical Center,
Dallas, TX

This session is designed for laboratory professionals who are responsible for the performance, interpretation, and/or outsourcing of genomic tests. Laboratory professionals have increasing roles as consultants in genomic test selection and interpretation. Attendees will learn how to address common genomic testing questions from ordering providers such as "When should a genetic test be repeated?" and "This test result doesn't make clinical sense; is it a false positive, false negative, or artifact?" and "Which lab should I use to perform this test?" In addition, emerging genomic testing issues such as cell-free DNA and re-interpretation of existing test results, which will impact both clinical specialists and primary care providers, will be discussed. This session will be a case-based format presented by a medical geneticist and a laboratory director to discuss common and emerging genomic test consultation issues.

SPEAKERS

Answers to Common Genomic Testing Questions
Jason Park, MD, PhD, DABCC
University of Texas Southwestern and Children's Medical Center, Dallas, TX

Emerging Clinical Genomic Testing Issues
Garrett Gotway, MD, PhD
University of Texas Southwestern Medical Center, Dallas, TX

12:45 p.m. – 2:15 p.m.

The State of Interoperability and External Laboratory Results

Session: 32449
Room: C205

Presentation Level: **Basic**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR/SPEAKER
Thomas Durant, MD
Yale School of Medicine, Wallingford, CT

The 21st Century Cures Act of 2016 has put forth new requirements, for healthcare providers and covered entities, to minimize barriers in sharing electronic health information (EHI) between disparate organizations. Further, it requires patients to easily and reliably access their EHI without added cost. Collectively, these efforts are designed to prevent 'information blocking'. The exchange of laboratory data is central to these efforts. Accordingly, the proposed session will present interoperability technologies, the implications of their implementation for laboratory professionals, and the rules and regulations that govern these changes so directors can ensure successful implementation and compliance from a regulatory standpoint.

SPEAKERS

The State of Interoperability and External Laboratory Results
Thomas Durant, MD
Yale School of Medicine, Wallingford, CT

The State of Interoperability and External Laboratory Results
David McClintock, MD
Michigan Medicine, Ann Arbor, MI

AFTERNOON

2:30 p.m. – 4:00 p.m.

Case Studies in the Use of Emerging Technologies in Pediatric Laboratory Medicine

Session: 32221
Room: C101

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR
Joely Straseski, PhD, MT(ASCP), DABCC, FAACC
University of Utah/ARUP Laboratories, Salt Lake City, UT

Emerging and developing technologies such as next generation sequencing, whole exome sequencing, mass spectrometry, metabolomics, and machine learning/AI are being utilized to assist the laboratorian in the investigation of pediatric related diseases. In this session cases will be presented highlighting the use of some of these novel techniques and processes that can streamline investigations in different areas of pediatric laboratory medicine with the potential to shorten diagnostic pathways.

Developed in cooperation with the Pediatric and Maternal-Fetal Division and the IFCC Committee on Emerging Technologies in Pediatric Laboratory Medicine.

SPEAKERS

The Use of Untargeted Metabolomics for the Investigation of Inborn Errors of Metabolism
Roy Peake, PhD, DABCC
Boston Children's Hospital, Boston, MA

Identification of Congenital or Acquired Pseudohypoaldosteronism Using Mass Spectrometry
Daniel Holmes, MD
University of British Columbia, Vancouver, Canada

Optimizing Workflows for Low-Volume, Clinically Urgent Testing: Automated Reports for Serum HVA/VMA Orders
Jane Dickerson, PhD, DABCC
Seattle Children's Hospital, Seattle, WA

SCIENTIFIC SESSIONS
AFTERNOON

2:30 p.m. – 4:00 p.m.

Current Use of Thyroid Function Tests and Work to Improve Their Comparability and Reliability

Session: 32222
Room: C201

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR
Uliana Danilenko, PhD
Centers for Disease Control and Prevention, Atlanta, GA

This interactive session will review current clinical practice guidelines for treating thyroid diseases and will examine the current state, developments and challenges of thyroid function tests. Thyroid function tests are the most frequently ordered tests in the U.S. This is reflected in several clinical practice guidelines issued by the American Thyroid Association for hypo- and hyper-thyroidism that will be discussed during the session. Additional recommendations for specific groups, such as during pregnancy, elderly, and thyroid cancer patients will be also presented. The session will provide relevant case studies from clinical practice. Reliable laboratory measurements are essential for properly diagnosing and treating thyroid diseases. Although free thyroxine (FT4) and thyroid stimulating hormone (TSH) measurements are used extensively in clinical practice, the lack of accuracy and reliability of current methods negatively impact correct detection, treatment, and prevention of thyroid disorders in patient care, making standardization of thyroid function tests a priority. Examples of analytical and pre-analytical factors such as reagent variability, binding protein concentration, specimen collection and storage conditions that can affect thyroid function tests will be presented during this session. A reference system created by the International Federation for Clinical Chemistry and Laboratory Medicine Committee on Standardization of Thyroid Function Tests (C-STFT) for standardizing FT4 and TSH will be discussed. This reference system is now used to implement standardization of these tests. In support to IFCC effort, the newly established CDC Hormone Standardization (HoSt) program for fT4 to assist with manufacturer standardization to improve test comparability and reliability will be presented.

Developed in cooperation with the Endocrinology Division and IFCC.

SPEAKERS

Clinical Practice Guidelines for Treating Patients with Thyroid Diseases: A Lab Perspective
Gregory Brent, MD
University of California-San Francisco David Geffen School of Medicine, Tarzana, CA

Preanalytical and Analytical Challenges of Thyroid Function Biomarkers Testing
Alicia Algeciras-Schimnich, PhD, DABCC
Mayo Clinic, Rochester, MN

Implementation of National and International Standardization of Thyroid Function Test
Hubert Vesper, PhD
Centers for Disease Control and Prevention, Atlanta, GA

2:30 p.m. – 4:00 p.m.

What's New in Acute Kidney Injury? Biomarker, Artificial Intelligence, Onco-Nephrology and Cases

Session: 32225
Room: C204

Presentation Level: **Basic**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR/SPEAKER
KT Jerry Yeo, PhD, DABCC, FAACC
The University of Chicago, Chicago, IL

Acute Kidney Injury (AKI) is a common syndrome in hospitalized patients and is associated with increased morbidity, mortality, length of stay and cost of care. While AKI has traditionally been defined by changes in serum creatinine and urine output, these tests are not good clinical predictors of the severity or course of impending AKI. The past several years have seen intense investigations into novel methods to detect AKI and the assessment of AKI risk through biochemical biomarkers and electronic risk scores. Implementation of these tools has led to improved AKI care. In this session, we will discuss the current evidence for detecting AKI with novel biomarkers of AKI as well as the utility of artificial intelligence (AI) in the care of patients at risk for AKI. Additionally, we will discuss several cases from emerging sources of AKI.

This session will be facilitated by a member of the Annual Meeting Organizing Committee and presented live remotely by session faculty.

Developed in cooperation with the Clinical Translational Science Division.

SPEAKERS

Laboratory Perspective of Acute Kidney Injury Biomarkers
KT Jerry Yeo, PhD, DABCC, FAACC
The University of Chicago, Chicago, IL

Identifying Acute Kidney Injury Risk through Biomarkers and Artificial Intelligence
Jay Koyner, MD
University of Chicago Medicine, Chicago, IL

Emerging Sources of Hospitalized Acute Kidney Injury
Anitha Vijayan, MD
Washington University School of Medicine, St Louis, MO

2:30 p.m. – 4:00 p.m.

Advances in Tuberculosis Screening and Testing

Session: 32230
Room: C208

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR/SPEAKER
L.V. Rao, PhD, FAACC
Quest Diagnostics, North Region/ University of Massachusetts Medical School, Marlborough, MA

Tuberculosis (TB) is one of the top 10 causes of death and the leading cause of a single infectious agent in the world. Multidrug-resistant TB remains a public health threat. Without treatment, approximately 5%–10% of persons with latent TB infection (LTBI) progress to active TB disease during their lifetime. Progression from untreated LTBI accounts for about 80% of active TB cases in the USA. Accurate diagnosis and treatment are essential for optimal patient outcomes and reduce transmission in the community and healthcare facilities. There are currently tuberculin skin tests and two different Interferon-γ release assays with variable utility in inpatient care settings. The landscape of TB diagnosis is changing due to the availability of rapid molecular tests for detection and drug susceptibility. In this session, we hope to engage in a lively discussion on the advantages and disadvantages of TB diagnostic technologies in the context of TB management guidelines.

Developed in cooperation with the Clinical & Diagnostic Immunology Division.

SPEAKERS

Challenges in Clinical Diagnosis and Treatment of Active and Latent Tuberculosis
Charles Horsburgh, MD
Boston University School of Public Health, Boston, MA

Laboratory Diagnosis of Latent Tuberculosis Infection and Its Clinical Utility
L.V. Rao, PhD, FAACC
Quest Diagnostics, North Region/University of Massachusetts Medical School, Marlborough, MA

SCIENTIFIC SESSIONS
AFTERNOON

2:45 p.m. – 4:15 p.m.

Drug Checking: Using Mass Spectrometry and Novel Rapid Mobile Devices to Reduce Opioid Overdoses

Session: 32223
Room: C202

Presentation Level: **Basic**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR/SPEAKER
Daniel Beriault, PhD, FCACB
St Michael's Hospital, Toronto, Canada

The increasing incidence of fatal overdose remains a primary public health concern in North America. A key contributor to the rise in overdose is the emergence of highly potent opioids, such as fentanyl, in the unregulated drug supply. Experts have identified drug checking as an important tool within a comprehensive approach to prevent overdose fatalities. Drug checking provides people who use drugs information on the composition of their drugs. This reduces associated risks by allowing educated choices about their drug use. It also provides valuable drug market monitoring data that can be triangulated with other data sources to rapidly identify local drug trends. In October 2019, a network Drug Checking Service (DCS) was implemented for the first time in Toronto, with participation of two academic hospital laboratories: St Michael's Hospital and the Centre for Addiction and Mental Health. Samples for drug analysis are collected at harm reduction agencies offering supervised consumption services. In this session, we will discuss the overdose crisis, present the legislative requirements to implement the DCS, and present data obtained to date with in-house mass spectrometry protocols. We will also describe the development of a novel, portable technology for rapid drug checking. Lastly, we will discuss the impact and limitations of DCS in overdose prevention, with emphasis on its capacity to reduce overdose risk in isolation and as part of a comprehensive public health-oriented response to the overdose crisis.

SPEAKERS

The Overdose Crisis and Harm Reduction Strategies
Dan Werb, PhD
St Michael's Hospital, Toronto, Canada

Drug Checking: Using Mass Spectrometry to Reduce Opioid Overdoses
Cristiana Stefan Bodea, PhD, DABCC, FAACC
Centre for Addiction and Mental Health, Clinical Laboratory, Toronto, Canada

Drug Checking: Novel Portable Device to Help Reduce Opioid Overdoses
Daniel Beriault, PhD, FCACB
St Michael's Hospital, Toronto, Canada

2:45 p.m. – 4:15 p.m.

Strategies for Enhancement of Laboratory Medicine in Africa

Session: 32224
Room: C205

Presentation Level: **Basic**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR/SPEAKER
Anthony Okorodudu, PhD, MBA, SC(ASCP), DABCC, NRCC, FAACC
The University of Texas Medical Branch, Galveston, TX

This session will be presented by the Africa Working Group of the AACC Global Lab Quality Initiative. There is a broad range of laboratory services in Sub-Saharan Africa. Facilities range from laboratories that are CAP and ISO certified to very low quality labs, especially in the more rural areas. This issue impacts healthcare of the population negatively, from incorrect diagnosis and therefore wrong treatments to unnecessary interventions and total lack of trust from clinicians. The lack of adequate resources plays a major role in the quality of laboratory tests. Proper education of the laboratory personnel is also a major contributor to the quality of laboratory tests. The speakers (who are all members of the committee) will highlight the challenges to laboratory medicine in Africa and discuss the options available for training and good laboratory practice. Dr. Okorodudu will give preliminary reports on a proficiency testing initiative he has been involved with in Nigeria, while Dr. Tebo will delve into competency and training resources in Cameroon. Dr. Guarner will discuss several methods that have been designed at the WHO level for laboratory personnel in developing countries.

Developed in cooperation with the AACC Academy.

SPEAKERS

Laboratory Medicine in Cameroon: A Proposal to Improve Training and Competency Assessments
Anne Tebo, PhD, ABMLI
Mayo Clinic, Rochester, MN

Designing Training Methods for Laboratory Medicine in Developing Countries
Jeannette Guarner, MD
Emory University, Atlanta, GA

Nigerian Proficiency Training Initiative: A Preliminary Report
Anthony Okorodudu, PhD, MBA, SC(ASCP), DABCC, NRCC, FAACC
The University of Texas Medical Branch, Galveston, TX

2:45 p.m. – 4:15 p.m.

How Artificial Intelligence and Machine Learning Will Help with Patient Diagnosis: Application to Autoimmune Testing

Session: 32226
Room: C107

Presentation Level: **Basic**

ACCENT® Credits: 1.5
CME Credits: Not eligible

MODERATOR/SPEAKER
Vincent Ricchiuti, PhD, ABB
Laboratory Corporation of America, Dublin, OH

In the clinical laboratories, the Chemistry and Hematology departments have been the earliest adopters of robotics and algorithms into their workflow. In the 1980's, a knowledge-based Artificial Intelligence (AI) program was developed at Rutgers University for enabling sequential laboratory testing and interpretation. The pathologist's knowledge augmented with AI and Machine Learning (ML) is the future of laboratory medicine. AI/ML will help leverage human knowledge, wisdom, and experience. Findings suggest that instead of replacing doctors, AI/ML algorithms might work best alongside them in healthcare. AI/ML software are beginning to integrate themselves as tools for efficiency and accuracy within pathology. This session will review some of the major breakthroughs in AI/ML and provide example applications.

SPEAKERS

Artificial Intelligence and Machine Learning
Vincent Ricchiuti, PhD, ABB
Laboratory Corporation of America, Dublin, OH

Artificial Intelligence in Diagnostics: Data Science, Regulatory Aspects, and Applications
Michael Mahler, PhD
Inova Diagnostics, San Diego, CA

2:45 p.m. – 4:15 p.m.

Understanding Adaptive Immune Response to SARS-CoV-2: Applications in Clinical Practice, Public Health, and Vaccine Studies

Session: 32227
Room: C102

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR/SPEAKER
Danijela Konforte, PhD, FCACB
Lifelabs, Toronto, Canada

Through this session, we will review the understanding of the adaptive immune response to SARS-CoV-2 and how this has shaped clinical practice, public health decisions, and vaccine studies. Three presentations will explore basic immunology, clinical assessment, and serological and functional assays. The first presentation will provide an overview of what is currently known about B-cell and T-cell response to SARS-CoV-2, including kinetics and dynamics of the response in different populations, associations with disease severity, and contribution to protective immunity. Investigations into relevance of pre-existing immunity will also be discussed. The second presentation will outline a large Canadian study, 'Stop the Spread Ottawa', led by a multidisciplinary team of clinical, research and laboratory medicine professionals. The study aims to follow 500 previously infected patients and 500 high-risk community individuals over a 10-month period. Monthly assessments of binding and neutralization antibody titers and T-cell function will be performed. Development, operationalization and preliminary results from the study will be presented. The third presentation will highlight the importance of cross-functional collaboration in advancing our understanding of the role of adaptive immune response to the virus. Since early 2020, laboratories worldwide have validated various commercial and clinical laboratory-developed serology and functional assays, as well as research assays which have greatly contributed to the existing body of knowledge of their performance and utility in clinical, public health (e.g. seroprevalence), and therapeutic contexts (e.g. convalescent plasma and vaccine studies). Key guidance documents for selection, validation, and implementation of SARS-CoV-2 serology and antigen assays will be discussed.

This session will be facilitated by a member of the Annual Meeting Organizing Committee and presented live remotely by session faculty.

SPEAKERS

Overview of Adaptive Immune Response to SARS-CoV-2: Kinetics, Associations with Disease Severity, Roles in Protective Immunity
Danijela Konforte, PhD, FCACB
Lifelabs, Toronto, Canada

"Stop the Spread Ottawa": A 10-month Longitudinal Analysis of Antibody Neutralization Efficiency and Cellular Immunity in SARS-CoV-2 Individuals
Ronald Booth, PhD, FCACB, FAACC
The Ottawa Hospital, Ottawa, Canada

SARS-CoV-2 Serology/Antibody, Antigen, and Functional Assays: Review of Guidance Documents for Clinical Practice, Public Health, and Clinical Laboratories
Dana Bailey, PhD
Dynacare, Brampton, Canada

MONDAY

SEPTEMBER 27

SCIENTIFIC SESSIONS

AFTERNOON

2:45 p.m. – 4:15 p.m.

Women in Laboratory Medicine: A Panel Discussion on Diversity and Inclusion

Session: 32228
Room: C211

Presentation Level: **Basic**

ACCENT® Credits: 1.5
CME Credits: Not eligible

MODERATORS

Zahra Shajani-Yi, PhD, DABCC, NRCC, FAACC
Labcorp San Diego, San Diego, CA

Nadia Ayala-Lopez, PhD, MLS(ASCP), DABCC
Johns Hopkins University, Baltimore, MD

This session will encompass three diverse perspectives on self-identity, self-promotion, and the scientific community as it pertains to race, ethnicity, and gender. The speakers will share their personal narratives specific to succeeding along distinct scientific career paths using lightening talks and a moderated panel discussion. The session will also include audience participation to highlight experiences, discuss current understanding of bias, and understand each person's role in creating inclusive environments. The session content is intended to inspire people in the medical and scientific communities, regardless of demographic, by highlighting stories of disappointments, failures, triumphs, and successes with an underlying theme of emboldening the careers of women in laboratory medicine.

PANELISTS

M. Laura Parnas, PhD, DABCC
Roche Diagnostics Corporation, Danville, CA

Octavia Peck Palmer, PhD, FAACC
University of Pittsburgh Medical Center, Pittsburgh, PA

Lakshmi Ramanathan, PhD
Memorial Sloan-Kettering Cancer Center, New York, NY

MONDAY SPECIAL SESSION

2021 AACC DISRUPTIVE TECHNOLOGY AWARD COMPETITION

4:30 p.m. – 6:00 p.m.

Session: 12002
Room: Georgia Ballroom

Sponsored by
Pall Life Sciences & LabCorp

AACC's Disruptive Technology Award Competition recognizes innovative testing and disruptive technology solutions that improve patient care through diagnostic performance or access to high quality testing. It provides an opportunity for early to mid-stage start-ups in the medical device, diagnostic, or digital health/health IT spaces to showcase their technology to a large audience and a panel of judges. This year, the award will highlight developers of artificial intelligence (AI) and machine learning (ML) technologies that are advancing medicine and pathology. The three finalists will deliver lectures explaining their technology and showing detailed data supporting the performance of their novel development. Each presentation will be followed by a brief Q&A with an expert three panel of judges. The finalists will be judged based on disruptiveness, innovations, and impact among other factors. A winner will be announced at the close of the event. The audience will also have the opportunity to vote on their favorite finalist during the session.

FINALISTS

Jong Lee, MBA
Day Zero Diagnostics, Inc
Boston, MA

Janice Chen, PhD
Mammoth Biosciences
Brisbane, California

Eran Eden, PhD
MeMed
Haifa, Israel

PLENARY+ SCIENTIFIC SESSIONS

TUESDAY

SEPTEMBER 28

Steven Cotten PhD DABCC
Assistant Professor
Pathology and Laboratory Medicine
University of North Carolina at Chapel Hill

ROUNDTABLE SESSIONS

7:30 A.M. – 8:30 A.M. (40000 SERIES) OR 12:30 P.M. – 1:30 P.M. (50000 SERIES) T TICKET

Room: C301–302 | ACCENT® Credits: 1.0 | CME Credits: Not eligible

Roundtable sessions are presented twice daily at 7:30 a.m. – 8:30 a.m. (40000 series) and 12:30 p.m. – 1:30 p.m. (50000 series). Attendance is limited to 6 participants per session. Advance registration and session fees are required. AACC does not provide meals for these sessions. Concession stands are available to purchase food.

SESSION TITLE	SESSION # AM	SESSION # PM	SPEAKER	LEVEL
Biochemical Genetics 101: Laboratory Testing for Inborn Errors of Metabolism - A Case-Based Discussion	43101	53201	**Irene De Biase,** MD, PhD, ABMG, University of Utah/ARUP Laboratories, Salt Lake City, UT	Intermediate
Challenges and Solutions in Body Fluid Testing	43102	53202	**Darci Block,** PhD, DABCC, Mayo Clinic, Rochester, MN	Intermediate
COVID-19 Antibody Testing in the Pandemic: Lessons Learned	43106	53206	**Robert Fitzgerald,** PhD, DABCC, NRCC, FAACC, University of California, San Diego, San Diego, CA	Basic
Does the Breakfast Sandwich Matter? Fasting versus Non-Fasting Lipids	43107	53207	**Paola Ramos,** PhD, Mayo Clinic, Rochester, MN	Basic
Drug Screening in Clinical Practice: A Practical Guide to Tackling a Mess	43108	53208	**Alec Saitman,** PhD, DABCC, Providence Regional Laboratories, Portland, OR	Basic
Harmonizing Pediatric and Adult Lipid Reporting: The Canadian Society of Clinical Chemists (CSCC) Harmonized Reference Interval (hRI) Working Group	43110	53210	**Victoria Higgins,** PhD, DynaLIFE, Toronto, Canada	Basic
Hemoglobinopathies and Thalassemias: Techniques and Interpretation *Developed in cooperation with the Hematology & Coagulation Division.*	43111	53211	**Sean Campbell,** PhD, DABCC, FAACC, Montefiore Medical Center, Bronx, NY	Intermediate
HIV Diagnostics: Present and Future	43112	53212	**Vincent Ricchiuti,** PhD, ABB, Laboratory Corporation of America, Dublin, OH	Basic
Lab-on-a-Chip: An Avenue for Future Diagnostics?	43116	53216	**Heather Nelson,** PhD, ARUP Laboratories, Salt Lake City, UT	Basic
Phosphatidylethanol: Clinical Application and Challenges as a Biomarker for Alcohol Consumption	43119	53219	**Nkemakonam Okoye,** PhD, University of Utah, Salt Lake City, UT	Basic
Preanalytical, Analytical, and Post-Analytical Challenges of Chronic Kidney Disease Patient Samples	43120	53220	**John Ogunbileje,** PhD, MSc, NRCC, University of Texas Medical Branch, League City, TX	Intermediate
Prediabetes y Diabetes en la Medicina de Laboratorio: La Importancia de un Diagnóstico Analítico Correcto (presentado en Español)	43121	53221	**Luis Figueroa Montes,** MD, Essalud, Lima, Peru	Intermediate

TUESDAY

SEPTEMBER 28

ROUNDTABLE SESSIONS

7:30 A.M. – 8:30 A.M. (40000 SERIES) OR 12:30 P.M. – 1:30 P.M. (50000 SERIES) T TICKET

SESSION TITLE	SESSION # AM	SESSION # PM	SPEAKER	LEVEL
The Effect of Binding Proteins on Immunoassay Measurements of Thyroid Hormones and Cortisol	43124	53224	**Anastasia Gant,** PhD, National Institutes of Health, Bethesda, MD	Basic
The Expanding Landscape of Serum Free Light Chain Testing	43125	53225	**Derek Waggoner,** PhD, University of North Carolina Healthcare, Chapel Hill, NC	Intermediate
Total Allowable Error (TEa): how much error can your laboratory allow?	43126	53226	**Kornelia Galior,** PhD, DABCC, University of Wisconsin, Madison, Madison, WI	Intermediate
Pearls and Pitfalls of Estradiol and Testosterone Testing	43131	53231	**Amy Pyle-Eilola,** PhD Nationwide Children's Hospital/ The Ohio State University Wexner Medical Center, Columbus, OH	Basic

SPECIAL SATELLITE SYMPOSIUM

MANAGING INFECTIOUS DISEASE BURDEN BY UNLOCKING THE CBC: ROLE OF QUANTITATIVE MEASURES OF MONOCYTES IN RESPONSE TO INFECTION

7:00 a.m. – 8:30 a.m.

Hyatt Regency Atlanta,
Centennial Ballroom 3

A satellite symposium sponsored by Beckman Coulter, Inc.

ACCENT® Credits: 1.5
CME Credits: Not eligible

Continuing education credits are independent of 2021 AACC Annual Scientific Meeting & Clinical Lab Expo.

MODERATOR

Anagh Vora, MD
Chief Medical Officer, Beckman Coulter

Sepsis, acute respiratory tract, and urinary tract infections, as well as COVID-19 are the most prevalent reasons for hospitalization of patients with infections. These conditions represent significant diagnostic and management challenges in the Emergency Department and may result in inappropriate use of antimicrobial agents, leading to poor patient outcomes. Collaboration between emergency medicine clinicians and laboratory professionals is key for the development of institutional protocols and practices incorporating both early identification and management of high-acuity infections. Faculty in this symposium will explore topics including severe infection and sepsis, current understanding of monocyte biology, and laboratory data and role of AI to improve patient outcomes.

SPEAKERS

Scott Levin, PhD, MS
Associate Professor and Associate Director for Research, Emergency Medicine, Johns Hopkins Medicine

Lael Yonker, MD
Pediatric Pulmonology, Director, Massachusetts General Hospital Cystic Fibrosis Center, Principal Investigator, Pediatric COVID biorepository, Mucosal Immunology and Biology Research Center, Massachusetts General Hospital

PLENARY SESSION

8:45 a.m. – 10:15 a.m.

The Remarkable Journey from Bench to Bedside: Changing Lives for Individuals with Cystic Fibrosis

Session: 13001
Room: Georgia Ballroom

Presentation Level: **Intermediate**

ACCENT® Credits: 1.0
CME Credits: 1.0

Over the past 30 years. There has been a remarkable expansion in understanding of the genetic basis, molecular biology and pathophysiology of Cystic Fibrosis (CF) resulting from loss of Cystic Fibrosis Transmembrane Regulator (CFTR) protein function. The most extraordinary accomplishment has been the international effort of patients, families, clinicians, scientists and non-profit foundations to translate this scientific knowledge into approved therapies, termed CFTR modulators, that are transforming the lives of individuals with CF. This session will include the perspective of a clinician scientist who participated in the clinical development of this class of drugs and a person with CF who will describe the impact of this therapy on daily life. The CF story should serve as a model for any rare genetic disease group in developing novel therapeutic approaches.

SPEAKER
Bonnie Ramsey, MD
Endowed Chair in Cystic Fibrosis Research,
Vice Chair for Research, Department of Pediatrics,
University of Washington School of Medicine
Seattle, WA

Living with Cystic Fibrosis: The Positive Impact of CFTR Modulator Therapy

SPEAKER
Caley Mauch
Cystic Fibrosis Patient and Cystic Fibrosis Foundation
Public Speaker

MEET THE EXPERT

10:30 a.m. – 11:30 a.m.

The Remarkable Journey from Bench to Bedside: Changing Lives of Individuals with Cystic Fibrosis

Session: 63001
Room: C202

Presentation Level: **Intermediate**

ACCENT® Credits: 1.0
CME Credits: 1.0

MODERATOR
Dennis Dietzen, PhD, DABCC, FAACC
Washington University School of Medicine,
Saint Louis, MO

In her earlier presentation, Dr. Ramsey discussed the challenges and steps to develop a small molecule based drug therapy in a genetic disease like Cystic Fibrosis. This session is designed to allow interested attendees an opportunity to discuss the issues raised in more detail in a smaller group setting. This session will also provide attendees an opportunity to ask questions not addressed during the presentation.

SPEAKER
Bonnie Ramsey, MD
Seattle Children's, Seattle, WA

TUESDAY

SEPTEMBER 28

SCIENTIFIC SESSIONS

MORNING

10:30 a.m. – 12:00 p.m.

Cervical Cancer Screening: What Is New?

Session: 33101
Room: C201

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR/SPEAKER
Yusheng Zhu, PhD, DABCC
Pennsylvania State University Hershey Medical Center, Hershey, PA

This session will introduce recently published 2019 ASCCP "Risk-Based Management Consensus Guidelines for Abnormal Cervical Cancer Screening Tests and Cancer Precursors" and "Cervical Cancer Screening for Individuals at Average Risk: 2020 Guideline Update" from the American Cancer Society and discuss how to implement these new guidelines. Based on these new consensus guidelines, we will present contemporary research and recommendations for the use of human papillomavirus (HPV) testing.

Developed in cooperation with the AACC Global Laboratory Quality Initiative Africa Working Group.

SPEAKERS

Advances in Molecular Biology, Pathogenesis, and Epidemiology of Human Papillomavirus Research
Yusheng Zhu, PhD, DABCC
Pennsylvania State University Hershey Medical Center, Hershey, PA

Implementing risk-based cervical cancer screening guidelines in practice
Annie Leung, MD
McGill University Health Centre, Boston, MA

Applying Risk-Based Guidelines: Screening, Surveillance, and Diagnosis
Sarah Feldman, MD, MPH
Harvard Medical School, Boston, MA

10:30 a.m. – 12:00 p.m.

Data Aggregation and Integration in Laboratory Medicine: How to Build Prediction Models and Learn from Multi-Institutional Data

Session: 33102
Room: C101

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR/SPEAKER
Daniel Herman, MD, PhD
University of Pennsylvania, Philadelphia, PA

As laboratorians, we are well aware of the richness of the data we report and of challenges of sharing and harmonizing laboratory testing data across practices. Broad sharing of laboratory data could catalyze secondary uses of these data that lead to improvements in quality, such as real-time proficiency testing and more accurate reference intervals, and the development of new diagnostic and prognostic uses, such as multivariable diagnostic tests trained by machine learning. There are several challenges to achieve these goals, including sharing of sufficient meta information to describe the testing context (e.g. universal device identifier), adoption and implementation of rich communication standards, privacy concerns, and necessary cost and effort. In this session, we will review the current landscape of data sharing and ongoing efforts to advance these practices. We will highlight lessons learned from rapid efforts to share and learn from multi-institutional SARS-CoV-2 testing data, including the National COVID Cohort Collaborative (N3C). Finally, we will demonstrate novel approaches and methods for building prediction models and learning from multi-institutional data.

SPEAKERS

A Path to Sharing and Integrating Traceable, Clinical Laboratory Data
Thomas Durant, MD
Yale School of Medicine, Wallingford, CT

How to Harmonize Multi-Site Clinical Laboratory Data: Lessons From the National COVID Cohort Collaborative (N3C)
Patrick Mathias, MD, PhD
University of Washington, Seattle, WA

Building Prediction Models That That Can Be Transferred Across Clinical Practices
Daniel Herman, MD, PhD
University of Pennsylvania, Philadelphia, PA

10:30 a.m. – 12:00 p.m.

The Right Tools for the Job: The Diagnosis, Treatment, and Complications of Hemoglobinopathies

Session: 33104
Room: C110

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: Not eligible

MODERATOR
Sean Campbell, PhD, DABCC, FAACC
Montefiore Medical Center, Bronx, NY

Sickle cell disease (SCD) is one of the most common genetic disorders in the world and accounts for 0.3 to 25 per 1000 live births. Complications of sickle cell disease include vaso-occlusive crises (pain crises), splenomegaly, autosplenectomy, retinopathy and stroke. During this session, attendees will hear from experts in laboratory medicine and hematology who help diagnose, treat and manage patients with hemoglobinopathies. This session will begin by a review of various methods used to diagnose hemoglobinopathies, a recognition of the most common variants and look into our discovery that voxelotor interferes with the accurate quantification of HbS, HbA, HbA2, HbC, HbD, HbE and HbF by the most commonly used chromatographic methods. This session will inform attendees of how to recognize this interference and explore potential methods for reporting sickling hemoglobins in these patients. In the second presentation, attendees will hear the clinician perspective on these disorders, and the current treatment options for SCD, including hydroxyurea, red-blood cell transfusion, stem cell transplant, and voxelotor. Effectiveness of these treatments will be presented. The session will conclude with a panel discussion, where the speakers will describe what populations are likely to see treatment with voxelotor; implications of this drug for managing SCD patients and challenges that laboratorians currently face when trying to report hemoglobin fractions. Attendees will come away with a greater understanding of the testing methods, treatment modalities and new therapies for managing patients with SCD.

Developed in cooperation with the Hematology & Coagulation Division.

SPEAKERS

Clinical and Hematological Effects of Sickle Cell Disease
Susanna Curtis, MD, PhD
Montefiore Medical Center, Bronx, NY

Laboratory Methods for Diagnosing Hemoglobinopathies and the Discovery and Characterization of Voxelotor Interference
Zahra Shajani-Yi, PhD, DABCC, NRCC, FAACC
Labcorp San Diego, San Diego, CA

10:30 a.m. – 12:00 p.m.

Unique Matrices That Integrated Themselves Into the Clinical Laboratory During the COVID-19 Pandemic

Session: 33105
Room: C204

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR/SPEAKER
Hedyeh Shafi, MD
Kaiser Permanente, Los Angeles, CA

The COVID-19 pandemic provided the medical community with many challenges including supply chain management and experimental therapeutics. These two aspects are seemingly unrelated, but both were applicable to the clinical laboratory. With supply chains, many consumables such as swabs and other collection media were limited, encouraging us to pursue saliva for viral detection. For therapeutics the medical community first turned to historic methods to control severe infection like common antivirals and convalescent plasma from recovered individuals. This session will describe how a large integrated healthcare network in Southern California harnessed patient care by implementing high throughput saliva screening and by integrating the clinical laboratory into strategic decision making for convalescent plasma collection and use.

This session will be facilitated by a member of the Annual Meeting Organizing Committee and presented live remotely by session faculty.

SPEAKERS

COVID-19 Convalescent Plasma From Donor To Recipient
Hedyeh Shafi, MD
Kaiser Permanente, Los Angeles, CA

High-Throughput Saliva Testing for SARS-CoV-2
Jonathan Gullett, MD, MT (ASCP)
Kaiser Permanente, Chino Hills, CA

TUESDAY

SEPTEMBER 28

SCIENTIFIC SESSIONS

MORNING

10:30 a.m. – 12:00 p.m.

Implementation of Serological and Molecular Tools for COVID-19 Patient Management

Session: 33108
Room: C107

Presentation Level: **Basic**

ACCENT® Credits: 1.5
CME Credits: Not eligible

MODERATOR/SPEAKER
Jennifer Taher, PhD, FCACB
Mount Sinai Hospital, T oronto, Canada

Severe acute respiratory syndrome coronavirus (SARS-CoV-2) is a novel virus that causes COVID-19 and has considerable variability in symptom severity and outcomes among infected patients. In early studies, both host and viral genetic factors have identified genetic markers that could explain mechanisms of SARS-CoV2 infection and severity and also help to identify new targets for vaccine development, therapeutics and patient management. The GENCOV study links serological, genomic, viral and patient characteristics (sex, age, ancestry, symptom severity, comorbidities) to provide a comprehensive understanding of factors that contribute to variability in clinical symptoms and outcomes among COVID-19 patients. This session will discuss the findings of the GENCOV study including the immune repertoire diversity and HLA-type associated with severity of COVID-19 symptoms, as well as SARS-CoV-2 genetic factors related to susceptibility to SARS-CoV-2 infection, disease severity or negative outcomes.

This session will be facilitated by a member of the Annual Meeting Organizing Committee and presented live remotely by session faculty.

SPEAKERS

Implementation of Serological Tools for COVID-19 Patient Management: A GENCOV Study
Jennifer Taher, PhD, FCACB
Mount Sinai Hospital, Toronto, Canada

Implementation of Molecular Tools for COVID-19 Patient Management: A GENCOV Study
Jordan Lerner-Ellis, PhD, FACMG
Mount Sinai Hospital, Toronto, Canada

Understanding Immune Repertoire Diversity Through T/B Cell Receptor Signaling
Trevor Pugh, PhD, FACMG
University of Toronto, Toronto, Canada

10:45 a.m. – 12:15 p.m.

Clinical Biochemistry Hot Topics

Session: 33106
Room: C205

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: Not eligible

MODERATOR
Khushbu Patel, PhD, DABCC, FAACC
Children's Hospital of Philadelphia, Wynnewood, PA

Topics/presentations will be selected from the articles published in Clinical Biochemistry. Three papers will be presented at 30 minutes each. The criteria used to make the selection(s) may include: The first or senior author will be from Canada or a member of the CSCC/CACB. Original research articles published within the last two years. The number of citations and/or downloads At least two papers will be chosen using the above noted criteria. At the Editor-in-Chief's discretion, an Editor's Choice paper may be selected.

Developed in cooperation with the Clinical Biochemistry journal.

SPEAKERS

Paper Spray Mass Spectrometry for the Direct, Semi-quantitative Measurement of Fentanyl and Norfentanyl in Complex Matrices
Chris Gill, PhD
Vancouver Island University, Nanaimo,, Canada

Pre-operative and Post-operative Changes in CRP and Other Biomarkers Sensitive to Inflammatory Status in Patients with Severe Obesity Undergoing Laparoscopic Sleeve Gastrectomy
Edward Randell, PhD
Eastern Health, St. Johns, Canada

10:45 a.m. – 12:15 p.m.

Exploring Racial and Ethnic Health Disparities through a Laboratory Medicine Lens

Session: 33107
Room: C211

Presentation Level: **Basic**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR
Christina Pierre, PhD
Lancaster General Hospital, Lancaster, VA

In this session, data highlighting racial and ethnic healthcare disparities around topics pertinent to laboratory medicine will be presented. Race as a social rather than a biological construct will be discussed. The session will focus, in part, on the ongoing national conversation around the use of race-specific modifiers in estimated GFR equations for patients of African descent and their contribution to racial disparities in kidney disease classification and consequently, transplant eligibility. Further, data will be presented from a multi-center study examining racial and ethnic disparities in testing access during the early stages of the COVID-19 pandemic, which is believed to have partly contributed to increased morbidity and mortality in these groups. Finally, the session will discuss opportunities for laboratory professionals to improve our clinical practices with the goal of better identifying and mitigating healthcare disparities.

SPEAKERS

Reconsidering Race-Based Adjustments in Estimating GFR
Melanie Hoenig, MD
BIDMC, Boston, MA

Testing Access and the Impact on COVID-19 Outcomes in Minority Populations: How Laboratory Data can be Harnessed to Mitigate Healthcare Disparities
Henrietta Fasanya, PhD
University of Florida, Tallahassee, FL

10:45 a.m. – 12:15 p.m.

Validación de Métodos 101: De Aspectos Regulatorios a Mejoras de Calidad (presentado en Español)

Session: 33109
Room: C102

Presentation Level: **Basic**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR/SPEAKER
Alejandro Molinelli, PhD, NRCC
St. Jude Children's Research Hospital, Memphis, TN

Esta sesión ofrecerá una visión general sobre la validación de métodos analíticos. Se proporcionará a la audiencia un resumen de las regulaciones de laboratorio pertinentes incluyendo información para distinguir la diferencia entre validación de método y verificación de método, y los elementos y procedimientos requeridos para cumplir cada uno, incluyendo exactitud, precisión, sensibilidad analítica, especificidad analítica, rango de resultados reportables e intervalos de referencia. Analizaremos cómo establecer metas de desempeño y proveeremos fuentes de información, incluidas las regulaciones gubernamentales, guías de asociaciones profesionales, documentos de buenas prácticas y las especificaciones proporcionadas por el fabricante. Explicaremos qué tipo de experimentos debe realizar el laboratorio para cumplir con las regulaciones y discutiremos la importancia de un diseño experimental adecuado, incluidos los tipos de muestras requeridas para cada experimento, la cantidad de muestras a usarse y el manejo adecuado de las muestras. Discutiremos análisis estadísticos relevantes que incluyen estadísticas descriptivas, regresión lineal y de Deming, diagramas de Bland-Altman y distribución de frecuencias. Se proporcionará información sobre cómo interpretar los resultados del análisis estadístico para verificar o establecer las especificaciones de desempeño del método. Se utilizarán ejemplos prácticos para ilustrar los conceptos discutidos y se ofrecerán sugerencias para la resolución de problemas. También brindaremos sugerencias sobre cómo resumir los resultados experimentales y discutiremos la importancia de la mejora continua de calidad analítica.

Developed in cooperation with the AACC Global Laboratory Quality Initiative Latin American Working Group.

SPEAKERS

Requisitos Regulatorios y Establecimiento de Especificaciones de Desempeño
Alejandro Molinelli, PhD, NRCC
St. Jude Children's Research Hospital, Memphis, TN

Diseño de Experimentos de Validación de Métodos
Nadia Ayala-Lopez, PhD, MLS(ASCP), DABCC
Johns Hopkins University, Baltimore, MD

Análisis Estadístico y Mejoras de Calidad
Steven Conklin, PhD
Tufts Medical Center, Baltimore, MD

SCIENTIFIC SESSIONS
MORNING

10:45 a.m. – 12:15 p.m.

The Benefits of a Laboratory Formulary Committee From Patient Care To Training Programs and a Hospital's Bottom Line

Session: 33110
Room: C108

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR/SPEAKER
Alison Woodworth, PhD, DABCC, FAACC
University of Kentucky, Lexington, KY

Inappropriate utilization of laboratory testing puts patients at increased risk for harms such as unnecessary blood draws, false positive test results, incorrect or missed diagnoses, unnecessary follow up testing, and morbidity and/or mortality related to delay in diagnosis. Unnecessary laboratory testing can also be costly to patients and hospital systems. Laboratory stewardship is challenging and multi-factorial. Considerations include determination of: what tests to order in which patients/clinical scenario by which provider/specialist, when and how often should a test be ordered, where to perform as test, who should pay for a given lab test, and many other considerations. One way to ensure a standardized approach to and execution of laboratory stewardship initiatives, is to develop a multidisciplinary laboratory formulary committee supported by hospital leadership. In this session, we will discuss the process of building a laboratory formulary committee, identify examples of high yield projects for this multidisciplinary team, and demonstrate the power of harnessing various databases and data analytic tools associated to directly benefit patient care and the hospital system. We will give examples of collaborations both within and outside of the pathology department to show the power utilizing benchmarking, billing and EHR data to help guide laboratory stewardship efforts. We will also discuss a number of trainee led projects that optimized laboratory utilization and supplemented institutional educational initiatives. With all examples we will share data demonstrating the significant benefits of laboratory formulary committees to patient care and the hospital bottom line.

SPEAKERS

Standardizing Laboratory Stewardship Efforts through Development of a Multidisciplinary Laboratory Formulary Committee
Alison Woodworth, PhD, DABCC, FAACC
University of Kentucky, Lexington, KY

Harnessing Laboratory Formulary Data Tools to Improve Patient Care and the Hospital's Bottom Line
Thai Osborne, MHA
University of Kentucky, Lexington, KY

The Benefits of a Developing a Laboratory Formulary for Training Purposes
Erin Schuler, PhD
University of Kentucky, Lexington, KY

SCIENTIFIC SESSIONS
AFTERNOON

2:30 p.m. – 4:00 p.m.

Serologic Testing for SARS-CoV-2: We Implemented the Assay(s), Now What?

Session: 33227
Room: C110

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR/SPEAKER
Elitza Theel, PhD, DABMM
Mayo Clinic,
Rochester, MN

Clinical laboratories worked rapidly during the height of the pandemic to implement SARS-CoV-2 serologic assays, despite relatively undefined clinical use case scenario(s). Nearly two years later, the clinical role of SARS-CoV-2 antibody testing is clearer, albeit limited primarily to investigation of COVID-19 sequelae, vaccine break-through infections, and research. A correlate of immunity against SARS-CoV-2 has yet be established or agreed upon, although it is evident that antibodies, and specifically neutralizing antibodies, are an essential component. During this session, speakers will summarize the most recent data on humoral immunity following natural infection with or vaccination against SARS-CoV-2. Specific topics that will be covered include natural or vaccine-induced immunity against emerging SARS-CoV-2 variants, antibody development in immunocompromised patients, and antibody durability as assessed by commercially available assays and correlation with neutralizing activity, among other current topics. Finally, an outlook for the future of SARS-CoV-2 serologic tests in the clinical laboratory will be provided.

SPEAKERS

Serologic Testing for SARS-CoV-2
Elitza Theel, PhD, DABMM
Mayo Clinic, Rochester, MN

Serologic Testing for SARS-CoV-2
Christopher Farnsworth, PhD, DABCC
Washington University, St. Louis, Saint Louis, MO

2:30 p.m. – 4:00 p.m.

Food Allergy Testing: Navigating the Clinical Allergy and IgE Antibody Connection

Session: 33231
Room: C208

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR
Alicia Algeciras-Schimnich, PhD, DABCC
Mayo Clinic
Rochester, MN

The incidence of immunoglobulin E-mediated food allergy is increasing and currently affects approximately 10% of adults and 8% of children in the United States. Some food groups responsible for a significant proportion of allergic reactions include peanuts, milk, eggs, and other nuts. Appropriate diagnosis and treatment of allergy requires a clinical history consistent with an immune-mediated reaction after ingestion of a food and can be supported by skin prick tests and/or serum IgE (sIgE) antibody levels to specific allergen extracts. Additionally, tests for sIgE antibodies to recombinant or native purified allergen components found within specific extracts now enable enhanced prediction of clinical outcome. Laboratory testing may provide useful information about the probability of reactions occurring following challenge with an allergen, and the likely type of reaction. During this session, the laboratory role in food allergy testing (specific and component) as well as selected clinical case studies will be presented. Strategies utilized for the evaluation of common allergies such as peanut, as well as tick-borne red meat allergy (galactose-alpha-1,3-galactose sensitivity) will be discussed. This will be an interactive session with chances for audience to engage and respond.

SPEAKERS

The Relationship Between IgE Antibody Testing and Evaluation of Clinical Food Allergy: It's Complicated
Joshua Bornhorst, PhD, DABCC
Mayo Clinic, Rochester, MN

Food Allergy: To Test or Not To Test, That is the Question
Miguel Park, MD
Mayo Clinic, Rochester, MN

TUESDAY

SEPTEMBER 28

SCIENTIFIC SESSIONS

AFTERNOON

2:30 p.m. – 5:00 p.m.

Manejo de Riesgos en el Laboratorio Clínico: Herramientas para Asegurar Resultados de Alta Calidad (presentado en Español

Session: 33221
Room: C102

Presentation Level: **Intermediate**

ACCENT® Credits: 2.5
CME Credits: 2.5

MODERATOR

Veronica Luzzi, PhD, DABCC
Tricore Research Institute, Albuquerque, NM

Los análisis de laboratorio están sujetos a errores en la fase preanalítica, analítica y post analítica, errores que en algunas situaciones podrían causar daño al paciente. En años recientes la seguridad del paciente ha sido considerada un problema global de salud pública. Un estudio de la Organización Mundial de la Salud sobre seguridad del paciente en América Latina identificó a los "errores de diagnóstico" como una de las causas principales de daño al paciente en diversas instalaciones clínicas en América Latina." La información suministrada por los análisis de laboratorio juega un papel importante en los resultados de los pacientes ya que de 60-70% de las decisiones de diagnóstico médico se basan en la información de laboratorio. Para asegurar resultados correctos en los análisis se requiere un conocimiento detallado de los pasos involucrados en el proceso total de los análisis para identificar y abordar los riesgos y desafíos que puedan comprometer los análisis de laboratorio. No existe un esquema único de aseguramiento y control de calidad para mitigar los riesgos de los análisis de laboratorio. Por ello, el diseñar un plan de aseguramiento y control de calidad en base a manejo de riesgos para minimizar estos errores y mitigar los riesgos, es un elemento clave para mantener y mejorar las buenas prácticas de laboratorio.

Developed in cooperation with the AACC Global Laboratory Quality Initiative Latin American Working Group.

SPEAKERS

Seguridad del Paciente y Errores en el Laboratorio Clínico
Eugenio Zabaleta, PhD
OhioHealth Mansfield Hospital, Mansfield, OH

Como se Define el Riesgo y el Manejo del Riesgo en un Laboratorio Clínico?
Jessica Colon-Franco, PhD, DABCC
Cleveland Clinic, Cleveland, OH

Análisis de Riesgo: Estimación y Evaluación
Jose Jara-Aguirre, MD
Mayo Clinic, Washington DC, WA

FOLLOW AACC

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2:30 p.m. – 5:00 p.m.

Updates on Diagnostics and Therapeutics for Lipid Management of Cardiovascular Disease

Session: 33222
Room: C101

Presentation Level: **Intermediate**

ACCENT® Credits: 2.5
CME Credits: 2.5

MODERATOR/SPEAKER
Alan Remaley, PhD
NIH,
Bethesda, MD

This session will cover the key aspects in lipid management for patients with cardiovascular disease, a major worldwide cause of morbidity and mortality. The 2018-ACC/AHA/Multisociety guidelines used in the US will be presented and compared with the European guidelines. Updates on cardiovascular risk markers, such as small dense LDL and the new equations for calculating LDL will be reviewed. The analytical aspects and biology of Lp(a), a now well recognized cardiovascular biomarker will be discussed. The last part of the session will describe the existing lipid-lowering therapies, including PCSK9-inhibitors, bempedoic acid, and EPA, and will examine several potential new therapies that are in late stage of clinical trials.

This session will be facilitated by a member of the Annual Meeting Organizing Committee and presented live remotely by session faculty.

SPEAKERS

Overview of 2018 Mutisociety Guidelines on Lipid Management and Comparison to Other Cardiovascular Guidelines
Jeff Meeusen, PhD, DABCC
Mayo Clinic, Rochester, MN

Advanced Cardiovascular Disease Risk Detection Using Your Automated Chemistry Analyzer
Leslie Donato, PhD, DABCC
Mayo Clinic, Rochester, MN

Measurement and Use of Lp(a) as a Cardiovascular Biomarker
Alicia Lyle, PhD
Centers for Disease Control and Prevention, Atlanta, GA

Review of Current and New Lipid-Lowering Therapies for Cardiovascular Disease Reduction
Alan Remaley, PhD
NIH, Bethesda, MD

2:30 p.m. – 5:00 p.m.

Guiding and Expediting Clinical Decisions with Direct Mass Spectrometry Technologies

Session: 33228
Room: C204

Presentation Level: **Intermediate**

ACCENT® Credits: 2.5
CME Credits: Not eligible

MODERATOR/SPEAKER
Livia Schiavinato Eberlin, PhD
The University of Texas at Austin,
Austin, TX

Mass spectrometry techniques that allow direct and fast molecular analysis of clinical samples offer the exciting opportunity to incorporate molecular data into clinical practice to expedite clinical decisions, improve disease diagnosis, and optimize treatment strategies for patients. In this session, we will discuss applications of mass spectrometry techniques for clinical use in microbiology labs, clinical pathology labs, and in the operating room to improve analysis of small molecules and disease diagnosis. Key operating principles of the techniques and their analytical and diagnostic performance metrics will be presented to provide the attendees with a measurable assessment of their capabilities and potential uses within the context of clinical practice. Presentations will focus on three mass spectrometry techniques and examples of their application in the clinic, including 1)MasSpec Pen technology for in vivo tissue analysis and surgical margin evaluation in the operating room; 2) lipidomics and metabolomics using electrospray ionization for diagnosis of Fabry Disease and Meningioma in clinical pathology; and 3) use of paper spray ionization for rapid quantification of drugs. Challenges and opportunities in adapting and implementing mass spectrometry techniques into clinical workflows will also be discussed.

SPEAKERS

Clinical Translation of the MasSpec Pen to Guide Cancer Diagnosis and Surgical Margin Evaluation
Livia Schiavinato Eberlin, PhD
The University of Texas at Austin, Austin, TX

Use of Lipidomics and Metabolomics in Clinical Pathology in the Diagnosis of Fabry Disease and Meningioma
Timothy Garrett, PhD
University of Florida, Gainesville, FL

Current Challenges in Drug Quantitation from a Clinician's View: Can Direct Mass Spectrometry Techniques Fill the Gap?
Lindsey Kirkpatrick, DO, PhD
Indiana University School of Medicine/Riley Hospital for Children, Indianapolis, IN

SCIENTIFIC SESSIONS
AFTERNOON

2:45 p.m. – 4:15 p.m.

Paraneoplastic Neurological Syndromes: New Diagnostic Criteria with the Specialist Laboratory in the Center

Session: 33229
Room: C201

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR/SPEAKER
Hans Frykman, MD, PhD, FRCPC
University of British Columbia, Vancouver, Canada

In July 2021, updated Worldwide diagnostic criteria for Paraneoplastic Neurological Syndromes (PNS) were released, replacing the 2004 criteria. These updated criteria will be presented. A discussion on the role of the highly specialized neuroimmunology laboratory plays will be provided. The phenotypes of PNS, associated antibodies, and analytical techniques will also be reviewed. Important new developments in the PNS field will be presented, such as the characterization of new intraneuronal proteins and antibodies that can target these proteins and the observation that pathogenic antibodies can develop even without the presence of cancer. The new classification of phenotypes into High-risk neurological phenotypes and Intermediate risk phenotypes will be reviewed with their associated antibodies. The term onconeural antibodies have been retired as it does not indicate the fact that many of these pathogenic antibodies can erupt due to other stimuli than cancer. The various antibody detection techniques will be reviewed as well as what to look for when selecting a lab for send-out testing. The use of orthogonal testing and the reasons for using this approach will be explained.

SPEAKERS

Paraneoplastic Neurological Syndromes: New Diagnostic Criteria and the Laboratory - An Overview
Hans Frykman, MD, PhD, FRCPC
University of British Columbia, Vancouver, Canada

Paraneoplastic Neurological Syndromes: Practical Cases
Neil Harris, MBCh, MD, FAACC
University of Florida, Gainesville FL

2:45 p.m. – 05:15 p.m.

Clinical and Laboratory Implications of Monoclonal Antibody Therapeutics

Session: 33223
Room: C205

Presentation Level: **Intermediate**

ACCENT® Credits: 2.5
CME Credits: Not eligible

MODERATOR/SPEAKER
Julio Delgado, MS, MD
University of Utah/ARUP Laboratories, Salt Lake City, UT

The use of monoclonal antibody therapeutics has revolutionized the treatment of various diseases. This session will provide an overview of monoclonal antibodies approved for clinical use, and methodologies for drug monitoring and immunogenicity testing. Interference of monoclonal antibodies with laboratory testing as well as ancillary tests used to monitor toxicities associated with the use of these agents will also be reviewed.

Developed in cooperation with the Clinical & Diagnostic Immunology Division.

SPEAKERS

Introduction of Monoclonal Antibodies as Therapeutic Agents
Julio Delgado, MS, MD
University of Utah/ARUP Laboratories, Salt Lake City, UT

Cancer Immunotherapies for Multiple Myeloma: Successes, Pitfalls and Challenges for the Laboratory
Angela Dispenzieri, MD
Mayo Clinic College of Medicine, Rochester, MN

Methods for Drug Monitoring, Immunogenicity Testing and Identification of Therapeutic Monoclonal Antibodies
Maria Alice Willrich, PhD, DABCC, FAACC
Mayo Clinic, Rochester, MN

Using Routine and Ancillary Laboratory Testing for Monitoring Immunotherapy
Qing Meng, MD, PhD, DABCC, FAACC
University of Texas/MD Anderson Cancer Center, Houston, TX

2:45 p.m. – 5:15 p.m.

Novel Multiplex Proteomics Technologies for Biofluid Analysis: Looking Beyond Mass Spectrometry

Session: 33225
Room: C211

Presentation Level: **Basic**

ACCENT® Credits: 2.5
CME Credits: Not eligible

MODERATOR/SPEAKER
Annie Ren, MSc, PhD
Mount Sinai Hospital, Toronto, Canada

Novel proteomics technologies, which use nanofluidics to bridge multiplexing with immunoassays, may complement mass spectrometry (MS) for improving the sensitivity and specificity of biofluid analysis. These techniques can measure up to thousands of proteins simultaneously in less than 1mL of serum with ultra sensitivity (down to sub fg/mL) and remarkable dynamic range (up to 10-log), making them an increasingly popular choice for supplementing MS methods for proteomic research. As the future integration of multiplex proteomics technologies in the clinical laboratory may be imminent, it is crucial to understand these new tools in terms of technical maturity, reproducibility, resolution, bias, and throughput. In this session, we will introduce the innovative inner workings behind several new multiplex proteomics technologies and provide orthogonal technical comparisons to discuss their technical reliability and readiness for the clinical laboratory. The session will also present recent, cutting-edge translational research that leveraged the tools to identify novel drug targets and biomarkers for various disorders, including cancer and cardiovascular disease. We finally provide a current example as well as future perspectives on the application of multiplex proteomics technologies for complementing MS in the clinical laboratory, to improve throughput, turn-around time, and sensitivity for multi-analyte quantification in biofluids.

This session will be facilitated by a member of the Annual Meeting Organizing Committee and presented live remotely by session faculty.

Developed in cooperation with the Proteomics & Metabolomics Division.

SPEAKERS

Multiplex Proteomics Technologies and Their Promise for a New Era of Personalized Medicine
Annie Ren, MSc, PhD
Mount Sinai Hospital, Toronto, Canada

Plasma Aptamer-Based Proteomics in Human Heart Failure
Julio Chirinos, MD, PhD
University of Pennsylvania, Philadelphia, PA

Digging Deep for Translational Gold: Integrated Proteomics and Genomics Approaches to Biobank Data
Guillaume Paré, MD, MSc, FRCPC
McMaster University, Hamilton, Canada

Multiplex Proteomic Technologies for Clinical Investigation of Cytokine Profiles
Lusia Sepiashvili, PhD, DABCC, FCACB, FAACC
Hospital for Sick Children; University of Toronto, Toronto, Canada

2:45 p.m. – 5:15 p.m.

The Little Known Formula That will Change the Way You Teach Clinical Chemistry

Session: 33226
Room: C108

Presentation Level: **Basic**

ACCENT® Credits: 2.5
CME Credits: 2.5

MODERATOR/SPEAKER
Joe Wiencek, PhD, DABCC, FAACC
Vanderbilt University School of Medicine, Nashville, TN

This interactive session will consist of three presentations that will discuss the strategies and current challenges (in-person and virtual) to teach clinical chemistry. Introductory and advanced frameworks as a means of teaching clinical chemistry will be presented. We will highlight how learner-centered education can change the dynamic of teaching clinical chemistry. During each talk, the audience will participate in numerous poll questions aimed at assessing their current practice and opinions about improving practices of teaching clinical chemistry. The session will conclude with a breakout discussion on current teaching strategies used by participants in the audience and the importance to committing to excellence in teaching.

Developed in cooperation with the Society for Young Clinical Laboratorians.

SPEAKERS

So, You Think You can Teach Clinical Chemistry?
Joe Wiencek, PhD, DABCC, FAACC
Vanderbilt University School of Medicine, Nashville, TN

Engaging the Un-Engageable on the Clinical Chemistry Rotation: A Work in Process
David Alter, MD, MPH, DABCC
Emory University School of Medicine, Atlanta, GA

Four-Year Clinical Chemistry Rotation for Pathology Residents
Gurmukh Singh, MD, PhD, MBA
Augusta University Medical Center Inc., Augusta, GA

PLENARY+ SCIENTIFIC SESSIONS

WEDNESDAY

SEPTEMBER 29

Victoria Zhang, PhD, MBA, DABCC
Vice Chair for Clinical Enterprise Strategy
Director of Clinical Chemistry Division
University of Rochester Medical Center

ROUNDTABLE SESSIONS

7:30 A.M. – 8:30 A.M. (40000 SERIES) OR 12:30 P.M. – 1:30 P.M. (50000 SERIES) T TICKET

Room: C301–302 | ACCENT® Credits: 1.0 | CME Credits: Not eligible

Roundtable sessions are presented twice daily at 7:30 a.m. – 8:30 a.m. (40000 series) and 12:30 p.m. – 1:30 p.m. (50000 series). Attendance is limited to 6 participants per session. Advance registration and session fees are required. AACC does not provide meals for these sessions. Concession stands are available to purchase food.

SESSION TITLE	SESSION # AM	SESSION # PM	SPEAKER	LEVEL
ANA Testing: The Renaissance of Indirect Immunofluorescence Assay	44103	54203	**Vincent Ricchiuti,** PhD, ABB, Laboratory Corporation of America, Dublin, OH	Basic
Biomarkers in Dementia: Emerging Opportunities for Mainstream Testing	44106	54206	**Erin Schuler,** PhD, University of Kentucky, Lexington, KY	Intermediate
Development of PCR-Based SNP Genotyping Assays to Identify SARS-CoV-2 Strains	44110	54210	**Yu Zhang,** MD, PhD, San Francisco General Hospital, San Francisco, CA	Intermediate
Digitization of the Clinical Chemistry Rotation for Pathology Residents in the Era of COVID-19 and Beyond	44111	54211	**Allison Chambliss,** PhD, DABCC, FAACC, University of Southern California, Los Angeles, CA	Intermediate
Ethanol Biomarkers: Myth Busting and Behavior Medicine	44113	54213	**Jacqueline Hubbard,** PhD, DABCC, Dartmouth-Hitchcock Medical Center, Lebanon, NH	Basic
False Cardiac Troponin Results: Laboratory Strategies for Capturing and Resolving Outliers	44114	54214	**Janetta Bryksin,** PhD, DABCC, Emory University, Atlanta, GA	Basic
Getting That New Job: A Guide to Applying, Interviewing, and Negotiating	44115	54215	**Khushbu Patel,** PhD, DABCC, FAACC, Children's Hospital of Philadelphia, Wynnewood, PA	Basic
Harnessing the Power of Big Data Analytics to Achieve Reference Interval Harmonization in Clinical Laboratories: A Focus on Implementation	44117	54217	**Mary Kathryn Bohn,** The Hospital for Sick Children, Toronto Canada	Basic
Hepcidin Measurement and Variation in Various Clinical States	44118	54218	**Michael Chen,** MSc, MD, FRCP(c), University of British Columbia, Victoria, Canada	Advanced
Incorporating Six Sigma into Our Lab Quality Management System: The Trip From Here to There	44119	54219	**Laura Smy,** PhD, DABCC, Medical College of Wisconsin, Milwaukee, WI	Basic
Lab Remodeling/Building of New Lab Space: What I Wish I Knew on Day One	44121	54221	**Reid Rosehill,** MS, MT (ASCP), University of California, San Francisco Health, San Francisco, CA	Basic

WEDNESDAY

SEPTEMBER 29

ROUNDTABLE SESSIONS

7:30 A.M. – 8:30 A.M. (40000 SERIES) OR 12:30 P.M. – 1:30 P.M. (50000 SERIES) T TICKET

SESSION TITLE	SESSION # AM	SESSION # PM	SPEAKER	LEVEL
New Generation Thyroid Stimulating Hormone Receptor Assays	44122	54222	**Vishakantha Murthy,** PhD, MBA, University of Minnesota, Minneapolis, MN	Intermediate
Next Generation QC: Patient-Based Real-Time Quality Control	44123	54223	**Grace Kroner,** PhD, DABCC, Cleveland Clinic, Cleveland, OH	Basic
Optimizing Serum Index Thresholds on Clinical Chemistry Analyzers	44124	54224	**Adam McShane,** PhD, DABCC (CC, TC), FAACC, Cleveland Clinic, Cleveland, OH	Basic
Oral Fluid Drug Testing: Utility and Method Development	44125	54225	**Adina Badea,** PhD, DABCC, Lifespan Health/Rhode Island Hospital/Brown University, Providence, RI	Basic
Overused and Often Abused: the Clinical Utility of Autoimmune Antibody Panels in the Diagnosis of Paraneoplastic Neurologic Syndromes	44126	54226	**Bradley Poore,** PhD, NRCC, Dartmouth-Hitchcock Medical Center, Lebanon, NH	Basic
Thyroid Function Tests Revisited: Discordant Results or Inappropriate Reference Intervals?	44128	54228	**Rongrong Huang,** PhD, DABCC, Baylor St. Luke's Medical Center, Houston, TX	Basic
Umbilical Cord and Meconium Testing Strategies to Assess in Utero Drug Exposure	44129	54229	**Kamisha Johnson-Davis,** PhD, DABCC, FAACC, University of Utah/ARUP Laboratories, Salt Lake City, UT	Intermediate
Utility of Advanced CBC Parameters	44130	54230	**Megan Nakashima,** MD, Cleveland Clinic, Cleveland, OH	Basic
Implementing a New Test or a New Instrument? A Crash Course on Method Validation	44131	54231	**Kornelia Galior,** PhD, DABCC, University of Wisconsin, Madison, Madison, WI	Basic

PLENARY SESSION

8:45 a.m. – 10:15 a.m.

Curating and Documenting Research During Chaos: Lessons from COVID-19 and Beyond

Session: 14001
Room: Georgia Ballroom

Presentation Level: **Intermediate**

ACCENT® Credits: 1.0
CME Credits: 1.0

The COVID-19 pandemic led to enormous scientific progress in a short time. The development of the vaccines and the understanding of the virus happened at unprecedented rates and with great success. However, the effects of the pandemic have been dramatic on the scientific workforce, on the speed with which publishing has occurred, and on the ability to build public trust in science. The Editor-in-Chief of the Science family of journals has an unusual perspective on this since outstanding research flows through the journals but also because the news and commentary sections of Science deal with the communications and policy arena. The scientific community needs to come together to face the enormous challenges posed the need for greater trust in science in the public in the US and beyond.

SPEAKER
Holden Thorp, PhD
Editor-in-Chief, Science Family of Journals
American Association for the Advancement of Science
Washington, DC

MEET THE EXPERT

10:30 a.m. – 11:30 a.m.

Curating and Documenting Research During Chaos: Lessons from COVID-19 and Beyond

Session: 64001
Room: C202

Presentation Level: **Intermediate**

ACCENT® Credits: 1.0
CME Credits: 1.0

MODERATOR
Dennis Dietzen, PhD, DABCC, FAACC
Washington University School of Medicine, Saint Louis, MO

In his earlier presentation, Dr. Thorp discussed the changes in patterns in scientific publishing and in communicating science during the public brought about by the COVID-19 pandemic and the implications of these changes in the future. This session is designed to allow interested attendees an opportunity to discuss the issues raised in more detail in a smaller group setting. This session will also provide attendees an opportunity to ask questions not addressed during the presentation.

SPEAKER
Holden Thorp, PhD
American Association for the Advancement of Science, Washington, DC

WEDNESDAY

SEPTEMBER 29

SCIENTIFIC SESSIONS

MORNING

10:30 a.m. – 12:00 p.m.

Advances in Proteomics-Based Diagnostics for Plasma Cell Disorders

Session: 34101
Room: C201

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR

Surendra Dasari, PhD
Mayo Clinic, Rochester, MN

This session will provide evidence that mass spectrometry-based proteomics methods improve clinical care in myeloma patients. Current laboratory standards for detecting M-protein in multiple myeloma use serum/urine immunochemical methods. These methods have sensitivity and specificity issues that directly affect patient care. In this session, we will provide a comprehensive overview of laboratory practices for M-protein detection and their shortcomings. We will then present mass spectrometry-based proteomics methods for enhanced detection of M-proteins. Insights into laboratory automation and clinical benefits of enhancing the sensitivity and specificity of M-protein detection will be provided. Next, we will illustrate the potential of blood-based mass spectrometry in detecting minimal residual disease (MRD) in multiple myeloma, discuss pros and cons of mass spectrometry compared to marrow-based MRD-diagnostics and discuss the path towards clinical implementation. Insights into the benefits of more sensitive MRD methods will be provided. The session will be also have interactive learning with the audience to discuss the challenges and solutions for widely implementing the mass spectrometry-based methods for plasma cell dyscrasias.

Developed in cooperation with the Proteomics & Metabolomics Division.

SPEAKERS

Going Off the Gold Standard: Replacing Gel Electrophoresis with MALDI-TOF MS
David Murray, MD, PhD
Mayo Clinic, Rochester, MN

The Role of Mass Spectrometry in Detection of Minimal Residual Disease in the Blood of Myeloma Patients
Joannes Jacobs, MD, PhD
Radboud University Medical Center, Nijmegen, Netherlands

10:30 a.m. – 12:00 p.m.

Approaches for the Detection and Mitigation of Pre-analytic Errors

Session: 34102
Room: C208

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR/SPEAKER

Christopher Farnsworth, PhD, DABCC
Washington University, St. Louis, Saint Louis, MO

Errors in laboratory testing can occur at any phase during the pre-analytic, analytic, and post-analytic phases. The causes of pre-analytical errors are often difficult to identify and mitigate. Furthermore, while laboratories often have sophisticated methods for distinguishing analytical errors, limited technological systems are in place to assist with the prevention, identification, and management of pre-analytical errors. As a result, pre-analytical errors occur frequently in clinical laboratories and may persist undetected for months or years. This scientific session will provide an overview of common causes of pre-analytical error in both adult and pediatric populations. Potential solutions for detecting common errors during the pre-analytic phase of testing will be proposed and discussed.

Developed in cooperation with the Management Sciences and Patient Safety Division.

SPEAKERS

Effect of Seasonal Temperatures on Analyte Stability in Lockboxes
Joe Wiencek, PhD, DABCC, FAACC
Vanderbilt University School of Medicine, Nashville, TN

Evaluation of Pneumatic Tube System Performance
Christopher Farnsworth, PhD, DABCC
Washington University, St. Louis, Saint Louis, MO

Pediatric Considerations for Preanalytical Variation
Brenda Suh-Lailam, PhD, DABCC, FAACC
Ann & Robert H. Lurie Children's Hospital of Chicago, Chicago, IL

10:30 a.m. – 12:00 p.m.

At-Home Self-Collection: Opportunities, Advantages, and Limitations for Laboratory Medicine

Session: 34103
Room: C204

Presentation Level: **Basic**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR/SPEAKER
Paul Jannetto, PhD, DABCC, MT (ASCP), FAACC
Mayo Clinic, Rochester, MN

This session will cover several clinical opportunities and matrices that can be collected at home or in nonclinical environments and shipped back to the clinical lab for analysis. These convenient alternative collection strategies provide broader access for patients and reduce the need for healthcare provider collections while still providing accurate and high quality results. In this session, various matrices from dried whole blood, liquid blood/serum, oral fluid, nasal swabs, and genitourinary sampling will be discussed. Specifically, the session will focus on the advantages and limitations of these self-collection options in toxicology, therapeutic drug monitoring, serology, and microbiology applications.

SPEAKERS

Blood, Spit, and Tears: Will These Alternative Matrices for Therapeutic Drug Monitoring and Toxicology Make You Cry?
Paul Jannetto, PhD, DABCC, MT (ASCP), FAACC
Mayo Clinic, Rochester, MN

Mid-Turbinate/Nasal Swabs and Genitourinary Sampling for Microbiology: Applications and Challenges
Bobbi Pritt, MD
Mayo Clinic, Rochester, MN

10:30 a.m. – 12:00 p.m.

Little Molecules that Pack a Big Punch: The Promise of Cell-Free DNA

Session: 34104
Room: C101

Presentation Level: **Basic**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR/SPEAKER
Christina Lockwood, PhD, ABMG, DABCC
University of Washington, Seattle, WA

There is much hope surrounding the clinical application of circulating or cell-free DNA, which are short pieces of DNA that are freely floating in everyone's bloodstream. In the past decade, cell-free DNA testing has emerged as a valuable tool for generating patient-specific genetic information for clinical diagnostics and optimal selection of targeted therapies. This session will describe cell-free DNA as an analyte, including key pre-analytical factors that affect test performance, as well as discuss analytical methods used in cell-free DNA tests. The session includes two outstanding clinicians who will focus on patient settings where cell-free DNA testing has been adopted: prenatal cell-free DNA screening and circulating tumor DNA testing in patients with cancer. These clinical applications highlight common themes in cell-free DNA testing, such as analytical considerations and bioinformatics challenges, as well as factors unique to a patient population. This session will be of broad appeal to a wide variety of individuals interested in: 1) understanding foundational considerations of cell-free DNA testing, including analytical methodologies; 2) understanding how prenatal cell-free DNA screening has been incorporated into obstetric care; and 3) recognizing the promises and pitfalls of circulating tumor DNA tests in molecular oncology.

SPEAKERS

The Promise and Pitfalls of Cell-Free DNA for Personalized Medicine
Christina Lockwood, PhD, ABMG, DABCC
University of Washington, Seattle, WA

A Paradigm Shift: Considerations in Prenatal Cell-Free DNA Screening
Edith Cheng, MD, MS
University of Washington, Seattle, WA

Transitioning Cell-Free Tumor DNA Testing from the Bench to the Clinic
Kalyan Banda, MD
University of Washington, Seattle, WA

WEDNESDAY

SEPTEMBER 29

SCIENTIFIC SESSIONS

MORNING

10:30 a.m. – 12:00 p.m.

The Persistent Opioid Epidemic during the COVID-19 Pandemic

Session: 34105
Room: C110

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: Not eligible

MODERATOR

Kamisha Johnson-Davis, PhD, DABCC, FAACC
University of Utah/ARUP Laboratories, Salt Lake City, UT

The opioid epidemic is an on-going struggle for the United States. It emerged during a time of relative civil and economic stability. With increased awareness and education, the tide appears to be turning. According to the CDC, from 2017 to 2018, opioid-involved death rates decreased 2%. Deaths involving prescription opioids decreased 13.5% and those involving heroin decreased 4%.With the COVID-19 pandemic, many people have been thrown into a state of economic, food and housing insecurity they may have never faced. As medical practitioners, we will see the diverse effects of this new stress on patient populations. We propose to examine the effects the pandemic has on results of urine drug testing to determine if laboratory data reveals patterns of altered drug use on a broad scale. This will be accomplished by comparing urine drug testing results from a year prior to the pandemic, during the pandemic, and post-pandemic should we reach that stage. We will investigate changes in frequency of discrepant test results, in illicit drug positivity rates, and in drug levels from pre-COVID-19 to those during COVID-19. We will examine how this data can help guide clinicians to recognize problematic behavior. These can include medication substitution or rationing, diversion, or increased use of illicit or non-prescribed substances. Understanding how patients' drug taking behaviors change in response to major stress events can help physicians be better prepared for dealing with potential shifts in their patients' drug testing results and provide better support to their most vulnerable patients.

SPEAKERS

Trends in Urine Drug Testing Results During the COVID-19 Pandemic: How Did Drug Use Change Versus Pre-Pandemic?
Sarah Shugarts, PhD, DABCC
Kaiser Permanente, San Francisco, CA

Clinical Perspectives on Trends in Drug Screening Results Before and During COVID-19
Nathaniel West, MD, ABEM
University of California, San Francisco, San Francisco, CA

10:45 a.m. – 12:15 p.m.

Healthcare Forum: The Changing Regulatory Environment

Session: 34106
Room: C107

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR

Vince Stine, PhD
AACC, Washington, DC

It has been more than 25 years since the regulations implementing the Clinical Laboratory Improvement Amendments (CLIA) took effect. The federal panel that advises the US Department of Health and Human Services on these laboratory standards is developing recommendations that would update the personnel standards to reflect advances in technology and changes in practice. These changes in the CLIA requirements will create new opportunities and challenges for laboratory personnel, while creating new operational issues for medical laboratory directors and laboratory supervisors. Participants will learn about these recommendations and other CLIA-related issues and the impact they may have on laboratory operations. In 2020, the Food and Drug Administration modified its medical device review process to expedite the introduction of new COVID-19 diagnostic devices and increase the nation's testing capacity. After the pandemic, the FDA must transition to assessment and approval of devices that were authorized for emergency use, and also spell out a pathway for addressing future health crises. Participants will learn about the challenges the US FDA encountered, the approach to address them, the approach the agency is preparing for future pandemics, and other issues on the FDA's policy agenda.

Developed in cooperation with the AACC Policy & External Affairs Core Committee.

SPEAKERS

Updating CLIA: What the Future Holds
Reynolds Salerno, PhD
Centers for Disease Control and Prevention, Atlanta, GA

The FDA Response to COVID-19 and its Path Moving Forward
Timothy Stenzel, MD, PhD
U.S. Food & Drug Administration, Silver Spring, MD

10:45 a.m. – 12:15 p.m.

Providing Value Beyond Values: Leaving the Laboratory to Increase Laboratory Visibility and Enhance Patient Care

Session: 34107
Room: C205

Presentation Level: **Basic**

ACCENT® Credits: 1.5
CME Credits: Not eligible

MODERATOR
Zahra Shajani-Yi, PhD, DABCC, NRCC, FAACC
Labcorp San Diego, San Diego, CA

In addition to ensuring timely and accurate reporting of laboratory results, clinical chemists and pathologists support patient care as expert clinical laboratory consultants, who upon request, aid clinicians in interpreting test results, answering assay-related questions, and providing guidance on follow-up testing/test utility. The challenge of the "consultations by request" model, is that only clinicians who are aware of our consultative abilities benefit from our expertise; consequently, there is a need to develop sustainable models that promote the opportunity for meaningful consultation for all clinicians ordering clinical laboratory testing. In this session, speakers from an academic medical center and a pediatric cancer hospital will detail their efforts to improve patient care through concerted interventions that support their unique patient populations, including ways to improve visibility of the clinical laboratory. Specific interventions that will be discussed include (1) proactive review of results from specific assays known to have complex interpretations or interferences with the aim of notifying clinicians as needed, (2) formation of a formal electronic consult through the EMR, (3) provision of patient specific interpretive reports based on a patient's history and clinical context and (4) attendance of weekly rounding and coordination of specialty testing to support complex cancer patients.

SPEAKERS

Small Actions: Big Impact, Low Stress Options that Enhance Patient Care
Mark Cervinski, PhD, DABCC, FAACC
Dartmouth-Hitchcock Medical Center, Lebanon, NH

Supporting a Pharmacist-Managed Clinical Pharmacokinetics Service
Alejandro Molinelli, PhD, NRCC
St. Jude Children's Research Hospital, Memphis, TN

10:45 a.m. – 12:15 p.m.

Sepsis: Laboratory Medicine's Collaborative Role in Risk Stratification, Early Detection, and Positive Patient Outcomes

Session: 34108
Room: C211

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: Not eligible

MODERATOR
Sarah Wheeler, PhD
University of Pittsburgh Medical Center, Pittsburgh, PA

Sepsis is a global health dilemma, accounting for up to 11 million annual deaths worldwide and a significant financial burden on the healthcare systems. Since no cure exists, early detection and accurate prognosis of sepsis are critical for positive patient outcomes. This session will use an interactive, case-based approach to define and describe sepsis presentation in adult and pediatric populations. The speakers will review current and emerging biomarkers of sepsis and present strategies that clinical laboratories can employ to accurately detect sepsis, including designing lab-generated sepsis alerts and aligning standardized sepsis protocols and testing algorithms with current sepsis guidelines.

SPEAKERS

Laboratory Medicine's Fight Against Sepsis: Current and New Sepsis Biomarkers and Algorithms in Adults
Octavia Peck Palmer, PhD, FAACC
University of Pittsburgh Medical Center, Pittsburgh, PA

Where Are We? Organism and Antimicrobial Resistance Marker Identification and the Impact on Antimicrobial Therapy and Patient Outcomes
Stephanie Mitchell, PhD, D(ABMM)
Cepheid, Pittsburgh, PA

WEDNESDAY

SEPTEMBER 29

SCIENTIFIC SESSIONS

MORNING

10:45 a.m. – 12:15 p.m.

The Existence of Health Disparities from the Bench to the Bedside: Journal of Applied Laboratory Medicine Special Session

Session: 34109
Room: C108

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR
Robert Christenson, PhD, DABCC, FAACC, FACC
University of Maryland School of Medicine, Baltimore, MD

Health disparities lead to differential access to care and can dramatically impact both clinical management and outcomes. Further, such disparities promote marginalization and oppression of affected populations. A cornerstone of clinical laboratory medicine is to treat each specimen as a patient; while this foundational tenet promotes impartiality, disparities still exist within our community. In order to highlight the occurrence and ramifications of health disparities as related to clinical laboratory medicine, The Journal of Applied Laboratory Medicine dedicated its January 2021 special issue on disparities based on race, ethnicity, sex, gender and socioeconomic status. This session, led by the editors of the issue, will focus on key publications, with particular attention to reference interval considerations for transgender individuals on gender affirming hormonal therapies and important considerations regarding drug use/exposure in marginalized populations, including those in resource-limited settings in the United States. Case based examples will be used to illustrate the core topics.

SPEAKERS

An Overview of Disparities in Healthcare: A Provider Perspective
Zil Goldstein, FNP-BC
Callen-Lorde, New York, NY

There Is No Right Box to Check: Reference Intervals in Transgender Individuals on Gender Affirming Hormonal Therapies
Gabrielle Winston-McPherson, PhD, DABCC
Henry Ford Hospital, Detroit, MI

Considerations in the Identification of Drug Use Prevalence in Marginalized Populations
Mark Marzinke, PhD, DABCC, FAACC
Johns Hopkins University, Baltimore, MD

10:45 a.m. – 12:15 p.m.

What's New in Newborn Screening?

Session: 34110
Room: C102

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR
Van Leung-Pineda, PhD, DABCC
Children's Healthcare of Atlanta, Atlanta, GA

Fifty years ago, Wilson and Jungner described the basic criteria for screening large populations of newborns for disease. Since then, better understanding of pathology and improved diagnostic technology (e.g., tandem MS) have contributed to rapidly expand the scope of disorders detectable in the newborn period. X-linked adrenoleukodystrophy is a recent addition to the newborn screening panel in many states. Made famous by "Lorenzo's Oil," adrenoleukodystrophy is a disorder of peroxisomal long chain fatty acid metabolism that presents with adrenal insufficiency and myeloneuropathy. Guanidinoacetate methyltransferase (GAMT) deficiency manifests with developmental delays, hypotonia, seizures, and abnormal movements. In this session the biochemistry, natural history, screening, diagnosis, and treatment of these disorders will be discussed.

SPEAKERS

GAMT Deficiency: Creatine – More than a Source of Creatinine
Marzia Pasquali, PhD
University of Utah, Salt Lake City, UT

X-linked Adrenoleukodystrophy: From Lorenzo's Oil to the Recommended Uniform Screening Panel
Debra Freedenberg, MD
Texas Homeland Security, Austin, TX

SCIENTIFIC SESSIONS
AFTERNOON

2:30 p.m. – 5:00 p.m.

Free Light Chains: Past, Present, and Future

Session: 34222
Room: C208

Presentation Level: **Intermediate**

ACCENT® Credits: 2.5
CME Credits: Not eligible

MODERATOR/SPEAKER
Maria Alice Willrich, PhD, DABCC, FAACC
Mayo Clinic, Rochester, MN

This session will review how Immunoglobulins Free Light Chains (FLC) measurement became included in the 2014 diagnostic criteria of multiple myeloma. Since only one assay had enough historical data to be included in the criteria, guidelines include only that one assay. Presently, multiple companies are working to bring to market alternative FLC assays. Given the heterogeneity of the FLC as an analytical target, the new assays are producing different numerical results at a time when the reference assay is experiencing calibration drifts, resulting in shifts in reference intervals. All this is adding to the challenges for labs wanting to either implement in-house testing or switch vendors of the FLC assay. The impact of these challenges in interpreting patient results will be discussed with examples based on large comparison cohorts from Europe and the US. Mass spectrometry measurements of immunoglobulins have become clinically available. The impact of these methods on free light chains measurement will be discussed. An audience interactive panel discussion on future challenges and solutions for improvement in FLC measurement will wrap up this session.

Developed in cooperation with the Clinical & Diagnostic Immunology Division.

SPEAKERS

The Past of Free Light Chains: Assay Development and Critical Studies
Maria Alice Willrich, PhD, DABCC, FAACC
Mayo Clinic, Rochester, MN

The Many Different Flavors of Current FLC Assays
Joannes Jacobs, MD, PhD
Radboud University Medical Center, Nijmegen, Netherlands

A Slow Fade with Clinical Impact: The Need for Standardization
David Murray, MD, PhD
Mayo Clinic, Rochester, MN

2:30 p.m. – 5:00 p.m.

Machine Learning Analysis of Laboratory Test Results Supports Clinical Decision-Making and Patient Care

Session: 34223
Room: C204

Presentation Level: **Intermediate**

ACCENT® Credits: 2.5
CME Credits: Not eligible

MODERATOR/SPEAKER
He Yang, PhD, DABCC, FAACC
Weill Cornell Medicine, New York, NY

Machine learning provides a powerful tool for integrating clinical laboratory data, developing novel clinical insight and driving intelligent clinical decision support. This scientific session will use an interactive, case-based approach to provide an intuitive overview of machine learning and its applications to laboratory medicine. The first talk will offer an overview of the value of using machine learning to support laboratorians and clinicians in patient and context-specific laboratory test result interpretation. This talk will also discuss strategies and barriers to the implementation of machine learning-based clinical decision support. The second talk will provide a practical explanation of commonly used machine learning algorithms and approaches. The third talk will offer an in-depth case study, using a project from the speakers' research to illustrate how to undertake a machine learning based analysis from start to finish.

SPEAKERS

Using Machine Learning to Personalize Laboratory Medicine: Opportunities and Challenges
Jason Baron, MD
Massachusetts General Hospital, Boston, MA

Recent Advances of Machine Learning in Clinical Medicine
Fei Wang, PhD
Weill Cornell Medicine, New York, NY

How is Machine Learning Using Laboratory Test Results Helping to Fight Against COVID-19?
He Yang, PhD, DABCC, FAACC
Weill Cornell Medicine, New York, NY

SCIENTIFIC SESSIONS
AFTERNOON

2:30 p.m. – 5:00 p.m.

Tackling Infectious Disease Testing and Interpretation from the Perspectives of the Core Clinical Laboratory and the Point-of-Care

Session: 34224
Room: C101

Presentation Level: **Intermediate**

ACCENT® Credits: 2.5
CME Credits: 2.5

MODERATOR/SPEAKER
Nicole Tolan, PhD, DABCC
Brigham and Women's Hospital, Boston, MA

This workshop-style, interactive session will use practical, case-based scenarios along with audience participation techniques to help attendees identify best practices in infectious disease testing and interpretation. For each infectious disease covered (HIV, HCV, CDiff, Syphilis, and COVID-19), speakers will briefly present the relevant analytical and clinical considerations for evaluating testing methods, determining necessary reflex confirmations, and demonstrating the value of personalized reporting and interpretation of results. Breakout sessions will then include roundtable discussions of case examples for attendees to determine how to best optimize workflows, reduce unnecessary costs, and ultimately, support quality patient care.

SPEAKERS

Tackling Infectious Disease Testing and Interpretation
Nicole Tolan, PhD, DABCC
Brigham and Women's Hospital, Boston, MA

Tackling Infectious Disease Testing and Interpretation
Gary Horowitz, MD
Tufts Medical Center, Boston, MA

2:30 p.m. – 4:00 p.m.

Updates in SARS-CoV-2 Sequence Surveillance

Session: 34231
Room: C110

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR/SPEAKER
Alex Greninger, MD, PhD, MS, MPhil
University of Washington, Seattle, WA

Pathogen genomic surveillance has grown considerably during the SARS-CoV-2 pandemic. To wit, there are fewer than 400 genome sequences available for the four seasonal human coronaviruses, but more than 1.3M available for SARS-CoV-2 as of April 2021, and this number is rapidly increasing. Pathogen genomic surveillance informs therapeutic approaches and vaccine design and can help adjudicate transmission linkages, but is there a role for pathogen sequencing for patient management? How much sequencing is enough? How actionable can sequence information be? And how can clinical laboratories get involved? This session brings together clinical lab and public health perspectives to discuss these issues.

SPEAKERS

SARS-CoV-2 Sequencing in the Clinical Lab
Alex Greninger, MD, PhD, MS, MPhil
University of Washington, Seattle, WA

Genomic Surveillance for SARS-CoV-2 in the United States
Duncan MacCannell, PhD
Centers for Disease Control and Prevention, Atlanta, GA

2:45 p.m. – 5:15 p.m.

Best Practices for Improving Quality Control and Quality Assurance

Session: 34225
Room: C108

Presentation Level: **Intermediate**

ACCENT® Credits: 2.5
CME Credits: Not eligible

MODERATOR/SPEAKER
Kornelia Galior, PhD, DABCC
University of Wisconsin, Madison, Madison, WI

The first part of this session will review the importance of the concept of Total Allowable Error (TEa) and its use during the selection of appropriate QC rules for several laboratory tests. The second part of this session will explain the basic concepts and current understanding of Moving Average, and the approach to successfully implement and optimize this tool in the laboratory. The last part of this session will present case studies of some frequently experienced challenges causing discordant Proficiency Testing or External Quality Assessment (PT/EQA) discordant findings and will discuss appropriate actions to address them.

SPEAKERS

Defining Total Allowable Error for Individualized QC strategy
Kornelia Galior, PhD, DABCC
University of Wisconsin, Madison, Madison, WI

Development, Implementation and Validation of Moving Averages in a Hospital Based Laboratory
Mark Cervinski, PhD, DABCC, FAACC
Dartmouth-Hitchcock Medical Center, Lebanon, NH

Evaluation of Proficiency Testing/External Quality Assessment Results and Developing Preventive and Corrective Actions
Berna Aslan, MD, MSc, DABCC, FCACB, FAACC
Health Sciences Center, Eastern Health Authority, St. John's, Canada

SCIENTIFIC SESSIONS
AFTERNOON

2:45 p.m. – 5:15 p.m.

Congenital and Acquired Bleeding Disorders: Properly Interpreting Coagulation Assays for Accurate Coagulopathy Diagnosis

Session: 34226
Room: C107

Presentation Level: **Intermediate**

ACCENT® Credits: 2.5
CME Credits: 2.5

MODERATOR/SPEAKER
Morayma Reyes-Gil, MD, PhD
Montefiore,
New Rochelle, NY

Coagulopathies are hereditary or acquired conditions that cause hemostasis imbalances which are predisposing to bleeding or thrombosis or are more commonly associated with bleeding problems. Some are first identified based on laboratory test abnormalities rather than clinical manifestations. In the clinical laboratory, coagulopathies may be detected by abnormal coagulation tests, such as a prolonged prothrombin time or partial thromboplastin time or decreased fibrinogen levels. However, there are many interferences and pre-analytical errors that can lead to abnormal coagulation test results. Herein we will discuss our approaches to differentiate clinically significant coagulopathies from those that are not clinically significant or represent artifactual coagulation test abnormalities. We will discuss common interferences followed by an in-depth discussion of hereditary vs. acquired coagulopathies and proper test utilization to diagnose and monitor these conditions. We will end the session with a discussion about a new type of coagulopathy seen in a subset of COVID-19 patients. COVID-19 coagulopathy is now recognized as a major cause of comorbidity and mortality in COVID-19 patients. Early recognition of COVID-19 coagulopathy is crucial in triaging patients that may benefit from anticoagulation and/or more aggressive treatment.

SPEAKERS

Abnormal Coagulation Tests: Artifacts, Interferences or True Coagulopathies
Morayma Reyes-Gil, MD, PhD
Montefiore, New Rochelle, NY

Hereditary versus Acquired Coagulopathies
Catherine Hayward, MD, PhD, FRCP
McMaster University, Hamilton, Canada

COVID-19 Coagulopathy
Geoffrey Wool, MD, PhD
University of Chicago, Chicago, IL

2:45 p.m. – 5:15 p.m.

Metal Goes Alternative: Charting Progression in Heavy Metal Analysis

Session: 34227
Room: C205

Presentation Level: **Intermediate**

ACCENT® Credits: 2.5
CME Credits: 2.5

MODERATOR/SPEAKER
Jessica Colon-Franco, PhD, DABCC
Cleveland Clinic,
Cleveland, OH

Heavy metal poisoning is commonly caused by environmental and occupational exposure, and to a lesser extent by other sources such as medicines and metal implants. Minimizing the risk of poisoning consists of identifying the source and eliminating exposure. This session consists of three talks that will cover 1) fundamental aspects of heavy metal testing with a focus on lead, cadmium, mercury, and arsenic, 2) the use of alternative matrices for heavy metal testing and the value of novel technologies such as triple quadrupole inductively-coupled plasma mass spectrometry (ICP-QQQ-MS) in clinical testing to reduce analytical interferences, and 3) the utility of chromium and cobalt testing in synovial fluid to predict metal-on-metal hip arthroplasties failure and local tissue destruction.

Developed in cooperation with the Therapeutic Drug Management & Toxicology Division.

SPEAKERS

Alternative Matrices and Remastering Metal Analysis with ICP-QQQ-MS
Jessica Colon-Franco, PhD, DABCC
Cleveland Clinic, Cleveland, OH

Progressing Beyond Lead: Elemental Toxicity of the Alternative Heavy Metals Cadmium, Mercury, and Arsenic
Joshua Bornhorst, PhD, DABCC
Mayo Clinic, Rochester, MN

Easy Listening: An Alternative Approach to Detecting Adverse Reactions to Metal Debris in Metal-on-Metal Implants
Paul Jannetto, PhD, DABCC, MT (ASCP), FAACC
Mayo Clinic, Rochester, MN

2:45 p.m. – 5:15 p.m.

What We Have Learned Post Implementation of High Sensitivity Cardiac Troponin Into Clinical Practice: Experience of Three Different Medical Centers Using Three Different Assays

Session: 34228
Room: C211

Presentation Level: **Advanced**

ACCENT® Credits: 2.5
CME Credits: Not eligible

MODERATOR/SPEAKER
Fred Apple, PhD, DABCC
Hennepin Healthcare/Hennepin County Medical Center, Minneapolis, MN

Medical staff members from laboratory medicine, cardiology and emergency medicine, from three different hospitals, using three different high sensitivity (hs) cardiac troponin assays (2 hs-cTnI and 1 hs-cTnT) will present data on their experiences post-implementation of hs-cTn assays into practice. They will discuss the changes made moving from contemporary to hs-assays, including point of care (POC) testing. The following topics will be addressed during this session: a) the AACC/IFCC clinical laboratory practice guidelines for defining quality control, normality and using sex specific 99th percentile upper reference limits, b) the role of utilizing the Fourth Universal Definition of Myocardial Infarction guidelines for diagnosis of type 1, type 2, and myocardial injury, and c) the impact on clinical practice following implementation of algorithms for early rule-out/rule-in of myocardial infarction, risk assessment, and primary prevention in clinical practice. Case studies, with audience participation encouraged, will be presented.

SPEAKERS

Abbott High Sensitivity Cardiac Troponin I: Laboratory and Clinical Experience
Fred Apple, PhD, DABCC
Hennepin Healthcare/Hennepin County Medical Center, Minneapolis, MN

Beckman Coulter High Sensitivity Cardiac Troponin I: Laboratory Medicine Experience
Stacy Beal, MD
University of Florida Health, Shands, Gainesville, FL

Beckman Coulter High Sensitivity Cardiac Troponin I: Emergency Medicine Experience
Brandon Allen, MD
University of Florida, Gainesville, FL

Roche High Sensitivity Cardiac Troponin T: Laboratory and Clinical Experience
Allan Jaffe, MD
Mayo Clinic, Rochester, MN

2:45 p.m. – 4:15 p.m.

The Role of the Clinical Laboratory in the Diagnosis, Management, and Understanding of MIS-C: An Update

Session: 34230
Room: C102

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR/SPEAKER
Sridevi Devaraj, PhD, DABCC, FAACC, FRSC
Texas Childrens Hospital and Baylor College of Medicine, Houston, TX

While prevalence of symptomatic COVID-19 cases has been lower in the youth and children appear to experience less severe acute COVID-19 infection than adults, children exposed to the SARS-CoV-2 virus are at risk for developing MIS-C, or Multisystem Inflammatory Syndrome in Children, a novel pediatric disease entity temporally linked to COVID-19 exposure. MIS-C is a severe, complex, and dangerous disease entity and presents both a diagnostic and patient management challenge. Owing to its novelty and relative rarity, case presentations may not always be obvious. Diagnostic criteria have been outlined in the United States and around the world to help with identification and prompt management of MIS-C. Case definitions rely heavily on laboratory testing and include markers of recent or past COVID-19 exposure, inflammation, coagulopathy, and cardiac damage. In this session, attendees will learn about the clinical entity that is MIS-C, including its incidence, presentation, case definition/diagnosis, and management from the perspective of a pediatric rheumatologist who has been caring for MIS-C patients during the current COVID-19 pandemic. The integral role of laboratory testing in diagnosis and prognosis as well as prediction of risk and managing therapeutic decisions in MIS-C patient will be discussed by a pediatric clinical chemist supporting MIS-C investigations at Texas Children's Hospital.

SPEAKERS

Clinical Presentation of MIS-C: An Update
Tiphanie Vogel, MD, PhD
Texas Children's Hospital/Baylor College of Medicine, Houston, TX

Role of the Clinical Laboratory in the Diagnosis and Management of MIS-C
Sridevi Devaraj, PhD, DABCC, FAACC, FRSC
Texas Childrens Hospital and Baylor College of Medicine, Houston, TX

WEDNESDAY SPECIAL EVENT

2021 LABORATORY FEUD: EAST VERSUS WEST AACC

4:00 p.m. – 5:00 p.m.

Poster Hall

AACC is hosting the annual Laboratory Feud – a special gameshow style event. Two teams with AACC members from the East and West Coast of the United States will compete in a Family Feud style game format. This year's feud will cover various areas of laboratory medicine including history, nutrition, preanalytical errors, testing methods, immunology, point-of-care testing, TDM and toxicology, and more. Join us in this exciting and fun special event and play along in the Laboratory Feud.

MODERATOR

Joe Wiencek, PhD, DABCC, FAACC
Vanderbilt University School of Medicine
Nashville, TN

EAST COAST TEAM

TEAM CAPTAIN

Brenda Suh-Lailam, PhD, DABCC, FAACC
Ann & Robert H. Lurie Children's Hospital of Chicago
Chicago, IL

TEAM MEMBERS

Janetta Bryksin, PhD, DABCC
Emory University
Atlanta, GA

Sean Campbell, PhD, DABCC, FAACC
Montefiore Medical Center
Bronx, NY

Octavia Peck Palmer, PhD, FAACC
University of Pittsburgh Medical Center
Pittsburgh, PA

Christina Pierre, PhD
Lancaster General Hospital
Lancaster, VA

WEST COAST TEAM

TEAM CAPTAIN

Alec Saitman, PhD, DABCC
Providence Regional Laboratories
Portland, OR

TEAM MEMBERS

Allison Chambliss, PhD, DABCC, FAACC
University of Southern California
Los Angeles, CA

Robert Fitzgerald, PhD, DABCC, NRCC, FAACC
University of California, San Diego, San Diego, CA

Veronica Luzzi, PhD, DABCC
Tricore Research Institute
Albuquerque, NM

M. Laura Parnas, PhD, DABCC
Roche Diagnostics Corporation
Danville, CA

PLENARY+ SCIENTIFIC SESSIONS

THURSDAY

SEPTEMBER 30

Dina N Greene, PhD, DABCC
Technical Director Laboratories
Clinical Associate Professor

PLENARY SESSION

8:45 a.m. – 10:15 a.m.

Clinical Translation of Engineered Microsystems: From COVID-19 to Hematology and Hemostasis

Session: 15001
Room: Georgia Ballroom

Presentation Level: **Intermediate**

ACCENT® Credits: 1.0
CME Credits: 1.0

Dr. Lam's unique interdisciplinary approach to studying hematologic processes involves the development and application of microsystems technologies, microfluidics, and cellular mechanics to advance diagnostics and treatment. In this session, Dr. Lam will focus on updates in microsystems-based COVID-19 diagnostics and his own lab's recent advances in miniaturization of diagnostic platforms, with a focus on hematology and hemostasis/thrombosis.

SPEAKER
Wilbur Lam, MD, PhD
W. Paul Bowers Research Chair, Aflac Cancer and Blood Disorders Center of Children's Healthcare of Atlanta, Chief Innovation Officer, Pediatric Technology Center, Emory University/Georgia Institute of Technology
Atlanta, GA

MEET THE EXPERT

10:30 a.m. – 11:30 a.m.

Clinical Translation of Engineered Microsystems: From COVID-19 to Hematology and Hemostasis

Session: 65001
Room: C202

Presentation Level: **Basic**

ACCENT® Credits: 1.0
CME Credits: 1.0

MODERATOR
Dennis Dietzen, PhD, DABCC, FAACC
Washington University School of Medicine, Saint Louis, MO

In his earlier presentation, Dr. Lam discussed the updates in microsystems-based COVID-19 diagnostics and his own lab's recent advances in miniaturization of diagnostic platforms. This session is designed to allow interested attendees an opportunity to discuss the issues raised in more detail in a smaller group setting. This session will also provide attendees an opportunity to ask questions not previously addressed during the presentation.

SPEAKER
Wilbur Lam, MD, PhD
Emory University/Georgia Institute of Technology, Atlanta, GA

SCIENTIFIC SESSIONS
MORNING

10:30 a.m. – 12:00 p.m.

Emerging Areas in Therapeutic Drug Monitoring: Antifungals, Direct Oral Anticoagulants, and Psychoactive Drugs

Session: 35101
Room: C204

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR/SPEAKER
William Clarke, MBA, PhD, DABCC, FAACC
Johns Hopkins University School of Medicine, Baltimore, MD

Therapeutic drug monitoring is useful for drugs with narrow therapeutic ranges. Currently around 50-60 drugs are monitored in large academic medical centers and reference laboratories. However, each year there is a growing list of additional drugs that may benefit from monitoring, but immunoassays are not available. This scientific session will focus on these emerging opportunities for TDM to be used to improve patient care. For instance, in critically ill patients TDM is very challenging not only due to altered pharmacokinetics but also because immunoassays are not available for monitoring specific anti-infective agents including antifungal agents when necessary. In addition, for certain patients with venous-thrombo-embolism treated with direct oral anticoagulants agents, TDM is useful. In psychiatry, it can be difficult to distinguish a lack of response to psychoactive drugs due to non-compliance, altered pharmacokinetics, or patient condition that would lead to refractory treatment with a particular drug. There are recently published guidelines for monitoring of drugs used in psychiatry, which will also be discussed. Last, we will discuss methodological challenges by LC-MSMS for measurement of drugs in these applications.

SPEAKERS

TDM for Psychoactive Drugs: Guidelines for Optimal Utilization
William Clarke, MBA, PhD, DABCC, FAACC
Johns Hopkins University School of Medicine, Baltimore, MD

Special Issues of TDM of Antifungals and Direct Oral Anticoagulants in Critically Ill Patients and Special Populations
Amitava Dasgupta, PhD, DABCC
University of Texas-Houston Medical School, Houston, TX

10:30 a.m. – 12:00 p.m.

Essential Diagnostics for Universal Health Coverage

Session: 35102
Room: C201

Presentation Level: **Basic**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR
Sue Horton, PhD
University of Waterloo, Waterloo, Canada

This session will address developments in global health diagnostics, with a specific emphasis on the WHO Essential Diagnostics List and The Lancet Commission on Diagnostics. We will describe current diagnostic capacity in low- and middle-income countries as well highlight diagnostic gaps in the care-cascade. The economic case for investment in diagnostics will be made. We will present strategies for defining an essential package of diagnostics, for discussing rational design of diagnostics networks, and for developing diagnostics policies that will promote success, with its multiple aspects including improved visibility and advocacy of diagnostics, affordability, rational use, quality, and regulation.

SPEAKERS

Diagnostics: The Greatest Gap in the Cascade of Care
Mike Wilson, MD
Denver Health, Denver, CO

The World Health Organization's Essential Diagnostics List and Policies Needed to Strengthen Diagnostic Capacity Globally
Lee Schroeder, MD, PhD
University of Michigan, Ann Arbor, MI

THURSDAY

SEPTEMBER 30

SCIENTIFIC SESSIONS

MORNING

10:30 a.m. – 12:00 p.m.

Laboratories Ally with Clinicians in Mitigating the Burden of Heart Disease from Childhood

Session: 35103
Room: C110

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR

Jing Cao, PhD, DABCC, FAACC
University of Texas Southwestern Medical Center, Dallas, TX

The increased recognition that cardiovascular disease (CVD) originates from youth has led to more efforts to mitigate CVD burden starting from childhood. In 2019 the American Heart Association (AHA) issued the newest statement on CVD risk reduction in high risk children, recommending more aggressive screening and intervention (both lifestyle and pharmaceutical) from childhood. This session will discuss the recommendations, present potential approaches to their implementation and discuss the utility of cardiac biomarkers in children. The first presentation will be an overview of recommendations from the AHA statement on clinical management regarding the assessment and risk reduction of select pediatric populations at high risk for premature arteriosclerotic or atherosclerotic CVD. The evidence for accelerated acquired coronary artery disease and stroke in childhood and adolescence and the evidence for the benefit of interventions in youth will be reviewed. Additionally, the first presentation will discuss laboratory's role in allying with clinicians with effective and efficient test plans. Laboratory tests panel or algorithms that help identify patients at higher risk will be introduced in the format of case studies. Patients with vulnerable hearts were separately listed in the AHA statement with screening and treatment guidelines. In the past, diagnostic aid from the lab for cardiac injury was limited due to analytical challenges of cardiac markers in the pediatric setting. The second presentation updates the audience on utility of cardiac biomarkers in pediatric patients with recent advances in newer generation assays.

Developed in cooperation with the Lipoproteins and Vascular Diseases Division.

SPEAKERS

Salient Features of AHA Statement on CVD Risk Reduction in High Risk Children and Strategies of Laboratory Testing for Risk Management
Sridevi Devaraj, PhD, DABCC, FAACC, FRSC
Texas Childrens Hospital and Baylor College of Medicine, Houston, TX

Utility of Newer Generation Cardiac Marker Assays on the Management of Children with Vulnerable Heart Conditions
Stephen Roper, PhD, DABCC
Washington University School of Medicine, Saint Louis, MO

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10:30 a.m. – 12:00 p.m.

Mind the App: Application Development as a Solution to Unmet Needs in Laboratory Workflows

Session: 35104
Room: C101

Presentation Level: **Basic**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR
Amrom Obstfeld, MD, PhD
Children's Hospital of Philadelphia, Philadelphia, PA

This session will demonstrate the value of investing resources in producing in-house developed software applications ("lab apps") to support laboratory workflows as well as discuss the important factors which need to be considered before adopting this approach. Virtually all modern clinical laboratories depend on a laboratory information system (LIS) for workflow management. LIS functionality has matured to the point where best-of-breed systems handle functional requirements in both routine and reference laboratory settings. Nevertheless, laboratory workflows vary across laboratory medical disciplines, hospital environments, and municipal boundaries. This results in gaps between what a generic LIS can provide and what is operationally required. While several approaches to this problem exist, lab app development is emerging as an attractive and tenable approach. Many workflow bottlenecks can be readily addressed with relatively simple tailor-made lab apps, strongly favoring the return on investment of this approach. Furthermore, decreasing cost of hardware as well as increasing availability of open-source frameworks such as R/Shiny and Python Dash make this a sensible low-cost option. Through the use of lecture material as well as live demonstrations of actual lab apps that are in current use at various institutions, attendees will gain an appreciation for how simple purpose built applications can augment workflows, while also recognizing the important factors which require consideration prior to selecting this approach, including regulatory requirements, documentation and validation, and handling operational issues such as downtime, bug fixes, and enhancements.

SPEAKERS

Why Use R and What Kinds of Apps Can I Make?
Daniel Holmes, MD
University of British Columbia, Vancouver, Canada

Making Reliable Lab Apps: Demystifying Good Software Engineering Practices
Stephan Kadauke, MD, PhD
Children's Hospital of Philadelphia, Philadelphia, PA

10:30 a.m. – 12:00 p.m.

Novel Applications of High Sensitivity Cardiac Troponin Assays: Risk Stratification in Patients with Atherosclerotic Cardiovascular Disease and Monitoring of Cardiac Health

Session: 35105
Room: C208

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: Not eligible

MODERATOR/SPEAKER
Petr Jarolim, MD, PhD
Brigham and Women's Hospital, Boston, MA

Cardiac troponin assays are the standard tool for diagnosing acute coronary syndrome. In addition to acute myocardial infarction, abnormally high cardiac troponin concentrations are seen in a multitude of other acute and chronic conditions of both cardiac and non-cardiac etiology. During the last decade, high sensitivity cardiac troponin assays have enabled implementation of faster, one and two-hour rule-in and rule-out algorithms. Moreover, these assays identified a significant gradient of risk of adverse outcomes within the range of troponin concentrations that were previously considered normal. In this session, we will address several questions associated with increasing clinical acceptance of high sensitivity cardiac troponin assays. We will discuss reasons for the existence of the gradient of risk of adverse events below the 99th percentile cutoff that is used for the diagnosis of acute myocardial infarction. We will ask whether different cutoff values should be adopted when the high sensitivity cardiac troponin assays are used for risk prediction in patients with stable atherosclerotic cardiovascular disease and whether higher troponin concentrations should trigger more aggressive treatment. We will review the role of high sensitivity cardiac troponin assays in the monitoring of cancer patients receiving cardiotoxic and immune therapy. Finally, we will propose preoperative troponin concentration that may signal increased risk of perioperative myocardial injury and troponin concentrations that are diagnostic of myocardial injury after non-cardiac surgery.

SPEAKERS

High Sensitivity Cardiac Troponin Assays
Petr Jarolim, MD, PhD
Brigham and Women's Hospital, Boston, MA

High-Sensitivity Cardiac Troponin Testing in Stable Atherosclerotic Cardiovascular Disease and Its Use for Identification of Patients Who May Benefit from More Intense Therapy
David Morrow, MD, MPH
Brigham and Women's Hospital, Boston, MA

High Sensitivity Cardiac Troponin Assays for Monitoring and Diagnosing Myocardial Injury During Cardiotoxic Chemotherapy, Cancer Immunotherapy and Non-Cardiac Surgery
Petr Jarolim, MD, PhD
Brigham and Women's Hospital, Boston, MA

SCIENTIFIC SESSIONS

MORNING

10:45 a.m. – 12:15 p.m.

Albumin Measurement: Harmonization and Body Fluid Testing

Session: 35106
Room: C107

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR/SPEAKER
Darci Block, PhD, DABCC
Mayo Clinic,
Rochester, MN

Albumin is the most abundant plasma protein serving two critical biologic functions which include maintenance of osmotic colloidal pressures and transportation of a multitude of biological substances. Most clinical laboratories measure albumin in plasma, serum, urine, and body fluid samples by dye-binding methods utilizing bromocresol green (BCG) or purple (BCP). While these dyes do bind albumin with greater affinity, they can also bind other proteins in circulation. The ability to measure albumin concentration accurately in any of these sample types is influenced by sample protein composition and other factors. The status of serum and plasma albumin measurement procedure harmonization has been assessed recently. BCG measurement procedures were found to exhibit larger biases Vs BCP methods when compared to an isotope dilution mass spectrometry (IDMS) candidate reference measurement procedure. Furthermore, bias of BCG methods varied with concentration of albumin, but bias for BCP methods did not. Differences were also observed between specific manufacturers within a given measurement procedure type, suggesting single decision thresholds for albumin concentration are likely inappropriate for patient-care decisions. Albumin is also measured in urine to assess risk of developing impaired kidney function or to monitor progression of kidney disease and in peritoneal fluid to evaluate the cause of ascites. The comparability among measurement procedures for albumin in these sample types will be reviewed and the potential impact of a lack of harmonization on clinical decision making will be discussed.

SPEAKERS

Harmonization of Albumin Measurement Procedures Used for Serum and Urine
Lorin Bachmann, PhD, MT (ASCP), DABCC
Virginia Commonwealth University Health System, Richmond, VA

Albumin Measurement in Body Fluids: Analytical and Clinical Considerations
Darci Block, PhD, DABCC
Mayo Clinic, Rochester, MN

10:45 a.m. – 12:15 p.m.

What COVID-19 Testing Hath Wrought: A Forecast for the Future of Virology Testing

Session: 35108
Room: C205

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: Not eligible

MODERATOR/SPEAKER
Alex Greninger, MD, PhD, MS, MPhil
University of Washington,
Seattle, WA

At the time of writing, the United States performed more than 1 million tests a day for COVID-19. Overnight a >$30B industry sprouted. No other laboratory test has followed such a trajectory in our lifetime and molecular workflows have now been chemistry'ized in order to streamline receipt, accessioning, analysis, and reporting. Hundreds of millions of dollars of new capital, molecular analyzers, and automation equipment were invested globally and put to a singular use. How will these investments and adaptations be used after COIVD-19? What will testing approaches and algorithms look like when COVID-19 is gone? This session will review how two clinical laboratories (University of Washington and Stanford University) adapted to the incredible challenge of scaling COVID-19 testing in 2020-2021 and will project how we think this incredible shock to the clinical laboratory will affect the future of the clinical laboratory, from regulatory to workflows to reimbursement.

SPEAKERS

SARS-CoV-2 Testing and the Future: The Stanford University Medical Center Experience
Benjamin Pinsky, MD, PhD
Stanford University, Palo Alto, CA

SARS-CoV-2 Testing and the Future: The University of Washington Medical Center Experience
Alex Greninger, MD, PhD, MS, MPhil
University of Washington, Seattle, WA

CSCC'S PRESIDENT INVITED SESSION

10:45 a.m. – 12:15 p.m.

Bringing Laboratory Testing Closer to the Patient: The Good, the Bad and the Ugly

Session: 35107
Room: C211

Presentation Level: **Intermediate**

ACCENT® Credits: 1.5
CME Credits: 1.5

MODERATOR

Edward Dunn, PhD, FCACB
Dynacare,
Brampton, Canada

Over the past three decades, there has been significant consolidation of clinical laboratories and a growth of high volume laboratories. This has led to significant laboratory cost savings, through economies of scale, improvements in automation and decreased labor costs. Consolidation is not without clinical impact though. The collection of specimens, for example, remains dispersed among the geographic area being serviced by the hospital and/or community laboratory. This results in a requirement for an extensive transportation network for proper sample delivery. In a country such as Canada, these transportation requirements can lead to substantial delays in testing, i.e. turn-around-times measured in days. Demand from patients for instant and convenient service has heightened the limitations of centralization. As such, there is great interest in decentralized testing through Point of Care Testing (POCT). This has been within hospital and mobile settings, as well as a wide range of local urban, rural and remote community sites. The COVID-19 pandemic magnified the desire and need for testing across different sites, including outbreak settings, continuing care facilities, community shelters and pharmacies. How can lab testing, an essential service, safely occur outside the large central laboratory, and what testing can be decentralized to improve patient care and the patient experience? This session will discuss how decentralized testing creates new opportunities and challenges for clinical laboratorians in the management of decentralized testing. It will examine the provision of healthcare through non-traditional routes, such as virtual consultations and Point of Need Testing, and discuss the future of decentralized testing.

This session will be facilitated by a member of the Annual Meeting Organizing Committee and presented live remotely by session faculty.

SPEAKERS

From Glucose to COVID-19 Testing: Can We Build Unified POCT Programs for Patients in Alberta?
Allison Venner, PhD, FCACB
Alberta Precision Laboratories, Calgary, Canada

Point-of-Care Testing as a Tool for Equitable Access to Quality Healthcare: The Case of Kidney Screening in Remote Communities
AbdulRazaq Sokoro, PhD, FAACC
Shared Health Inc., Winnipeg, Canada

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