



Clinical Science Trumpet

Newsletter of the Association of Clinical Scientists

Charles D. Hawker, PhD, MBA, FACSc, FAACC, Editor

Vol 39, No 2—April 2019

ACS 2019 Annual Meeting: Hershey, PA



The Penn State University College of Medicine, Hershey, PA

Click photo to learn more

139th Annual Meeting May 15-18, 2019

Hotel Hershey, Hershey, PA

The 139th Meeting of the Association of Clinical Scientists will be held in Hershey, Pennsylvania, May 15th through 18th, 2019. It will be sponsored jointly by the Penn State University, College of Medicine, Hershey, PA and the Geisinger Health System and Medical Center, Danville, PA. The meeting has two main themes: “Opioid Stewardship” and “Lab 2.0.” The opioid crisis is currently this nation’s most serious health issue, and Lab 2.0 is a new program to develop the evidence base for the valuation of clinical laboratories in the next era of health care, achieved through innovative programmatic leadership by laboratory professionals.

HIGHLIGHTS

The Abraham J. Gitlitz Memorial Lecture will be presented by **Mr. Raphael M. Barishansky**, Deputy Secretary for Health Preparedness and Community Protection, Pennsylvania Department of Health.

The Annual Banquet will include the presentation of the Association’s awards and our featured speaker will be **Graham S. Hetrick, F.D.**, Coroner of Dauphin County, Pennsylvania, Adjunct Professor of Forensics and Human Anatomy at Harrisburg University School of Science and Technology, and host of the TV program, *The Coroner: I Speak for the Dead*.

The meeting will open on Thursday morning with lectures and tours of Penn State College of Medicine, Penn State Health Automated Testing Laboratory and Penn State Center for Simulation. On Thursday afternoon will be our usual cultural/historic tour for participants and spouses. We will start with a 75-minute tour with the Hershey Trolley Company called the Chocolate and History Tour. After that, participants can choose from the **Hershey Gardens**, the **Hershey Story Museum**, the Antique Automobile Museum of America, or other options. On Thursday evening there will be an opening reception and dinner at the

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Raphael M. Barishansky



Graham S. Hetrick

Click photo to learn more

Hyperlinks

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2019 in Hershey...

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Hershey Conservatory featuring the Gittlitz Memorial Lecture by Mr. Raphael Barishansky, entitled: *Pennsylvania's Response to the Opioid Epidemic*.

Drs. Keri Donaldson and Myra Wilkerson, Program Committee Co-Chairs, and their committee of Drs. Laurence Demers, Magali Fontaine, Amanda Haynes, Jordan Newell, Jennifer O'Brien, and Jordan Olson, cordially invite you to attend this outstanding Association meeting.

ACCOMMODATIONS

Our headquarters for the meeting is the beautiful **Hotel Hershey**, 100 Hotel Road, Hershey, PA 17033 (telephone 855-729-3108).

Built in the early 1930's, this AAA 4-Diamond Awardee has also received the Forbes Four Star Award and accolades from Historic Hotels of America and the Harrisburg Magazine Readers Poll. The Hotel Hershey, an historic landmark, is known for its refined elegance, signature service, and abundant amenities and is a one-of-a-kind destination in Chocolate Town® USA. It is situated high atop the town of Hershey and has 276 guest rooms, including 48 cottages, as well as 25,000 square feet of meeting and function space.

The Association's guaranteed rate for the conference, including additional days before or after the meeting is \$239 plus taxes. This rate will be honored until April 15, 2019. The hotel has established a URL link for attendees of the ACS meeting to make hotel reservations:

<https://book.passkey.com/go/AssnOfClinicalScientists2019>.

You may also use the phone number above and be sure to mention the Association of Clinical Scientists.

TRANSPORTATION

Hotel Hershey offers the following amenities to guests:

- Complimentary valet and self-parking
- Complimentary electric vehicle charging stations
- Complimentary shuttle service to the Hershey Attractions

AIRPORTS:

Harrisburg International Airport – 15 minutes away – website: www.flyhia.com

Philadelphia International Airport – 2 hours away – website: www.phl.org

Baltimore/Washington Airport – 2 ½ hours away – website: www.bwiairport.com

TRAIN:

Amtrak: Harrisburg Train Station is 12 miles from Hershey

GROUND:

Hershey is 90 miles from Baltimore, MD; 175 miles from New York City; 150 miles from Newark, NJ; 140 miles from Washington, DC; 100 miles from Philadelphia; 200 miles from Pittsburgh, PA.

Rental car service is available at the airports or can be arranged through the hotel concierge. Also, through the hotel concierge you can arrange a round trip service to and from the airport for \$30.00. You would need to provide your arrival and return flight information to the concierge when making that reservation. There is local taxi service available as well as Uber.

Details about transportation to Hershey, through Harrisburg International Airport or other routings can be found on the Association's website at:

<http://www.clinicalscience.org/annualmeeting.html#Transportation>.



**Hotel Hershey
front facade**

Click photo
to learn
more

Association of Clinical Scientists 2019 Annual Meeting Final Program*

139th Meeting of the Association of Clinical Scientists, Hershey, Pennsylvania, May 15-18, 2019

Themes: "Opioid Stewardship" and "Lab 2.0"

Headquarters: Hotel Hershey, Hershey, PA

Host: Penn State University, College of Medicine, Hershey, PA
Geisinger Health System and Medical Center, Danville, PA

CME Sponsor: Penn State University College of Medicine

* program subject to
change; exact schedule in
Conference Program

CME Accreditation Statement

This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of Penn State College of Medicine and Association of Clinical Scientists. Penn State College of Medicine is accredited by the ACCME to provide continuing medical education for physicians.

CME

Penn State College of Medicine designates this live activity for a maximum of 16 AMA PRA Category 1 Credit(s)[™]. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Faculty and Planning Committee Disclosure

Faculty and Planning Committee for this activity have been required to disclose all relationships with any proprietary entity producing health care goods or services, with the exemption of non-profit or government organizations and non-health care related companies.

Wednesday, May 15, 2019

- 2:30 – 5:00 p.m. Registration
Outside Overlook Room—left of Fountain Lobby
- 2:30 – 5:00 p.m. Executive Committee Meeting
Overlook Room
- 5:00 – 5:30 p.m. Awards Committee Meeting
Overlook Room
- 5:30 – 6:30 p.m. Opening Welcome Reception
Overlook Room
- 6:30 p.m. Rehearsal for Musicale with Piano
Overlook Room
- Dinner on your own

Thursday, May 16, 2019

- 7:00 a.m. Registration
Desk to left of Front Desk for Hotel
- 8:15 a.m. Hotel Shuttle to Penn State Hershey Medical Center
depart from Hotel Main Lobby
- 9:00 a.m. Welcome and Continental Breakfast
Room C5702 Department of Biochemistry
Hosted by Dr. James Broach, Dr. Melissa George, Dr. Elizabeth Sinz, Dr. Robert Zelis, Dr. Yusheng Zhu, Dr. Laurence Demers
Educational tours of Penn State College of Medicine's Center for Simulation and Automated Testing Laboratory
- 11:30 a.m. Return Shuttle to the Hotel Hershey
Salons A-D
- Lunch on your own
- 1:30 p.m. Tour on the Hershey Trolley Company: *Chocolate and History Tour*
depart from Hotel Hershey Main Lobby
A 75-minute tour of Hershey
Please note: this requires folks to step up two steps. The Trolley holds 44 passengers so please register early

- 3:00 p.m. Choice of Tours on your own:
- The Hershey Gardens
On the Hotel Hershey property, complimentary tickets provided for Hotel guests
 - The Hershey Story Museum
Downtown Hershey - transportation provided, complimentary tickets provided for Hotel guests
 - Antique Automobile Museum of America
 - The Spa at the Hotel Hershey
 - Outlets of Hershey and Downtown area for shopping
- 5:45 – 6:45 p.m. Shuttle to the Conservatory
depart from Hotel Main Lobby
- 6:00 p.m. Tour of the Butterfly Atrium adjacent to the Conservatory
The Milton and Catherine Hershey Conservatory at the Hershey Gardens
- 7:00 p.m. Dinner with **Abraham J. Gitlitz Memorial Lecture: Mr. Raphael M. Barishansky** Deputy Secretary for Health Preparedness and Community Protection, Pennsylvania Department of Health, *Pennsylvania's Response to the Opioid Epidemic*
The Milton and Catherine Hershey Conservatory
- 8:30 – 9:30 p.m. Shuttle return to the Hotel Lobby

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One of several meeting rooms at the Hotel Hershey

Friday, May 17, 2019

- 7:00 a.m. Registration
Starlight Terrace
East and West
- 7:00 a.m. Continental Breakfast
Starlight Terrace
- 7:00 a.m. Posters to be installed by poster presenters
(if inclement weather, held in the Tea Room)
Starlight Veranda
- 8:00 a.m. President's Welcome:
Robert Hardy
Co-Chairs' Welcome:
Keri Donaldson, Myra Wilkinson

Session 1: Opioid Stewardship

- Chair:
Keri J. Donaldson
- 8:15 a.m. **Keri J. Donaldson**, Hershey, PA:
*Overview of Development of a
Polygenetic Risk Source for OUD*
- 8:45 a.m. **Jeanine M. Buchanich**, Pittsburgh, PA:
The Opioid Epidemic: Real-Time Data
- 9:15 a.m. **Patricia Sue Grigson**, Hershey, PA:
*Use of animal models to advance our
understanding of opioid disorder*
- 9:45 a.m. **Erin Deneke**, Wernersville, PA:
*A Nation Addicted: current status of the
opioid crisis in America*
- 10:15 a.m. Refreshment Break
- 10:30 a.m. **Keri J. Donaldson**, Hershey, PA:
*Development of a Novel Diagnostic:
Concept through Commercialization*
- 11:00 a.m. **Kent Vrana**, Hershey, PA:
The Biology of Medical Marijuana
- 12:00 p.m. **Adjournment for Lunch**
Reserved tables for all young investigators
(age ≤ 45)
Castilian Room
- Robert W. Hardy**, Session Chair
Luncheon speaker:
David Sacks, NIH:
*Hemoglobin A1c in diabetes: panacea
or pointless*

Session 2: Opioid Stewardship

- Chair:
Keri J. Donaldson
- 1:15 p.m. **Gregory J. Kuehn**, Barstow, VA:
*Clinical metagenomics—the microbiome
and gut health*
- 2:00 p.m. **David Cardamone**, Hershey, PA:
*Laboratory interferences in the 21st
century laboratory*
- 2:30 p.m. Refreshments/Poster Session
(held in the Tea Room in case of inclement weather)
Starlight Veranda

- 3:35 p.m. Poster Session Adjourns
- 3:40 p.m. **Joseph Garbely**, Wernersville, PA:
The opioid crisis and the patient's perspective
- 4:00 p.m. **Amadeo Pesce**, San Diego, CA:
Fentanyl laced cocaine
- 4:00 p.m. **Keri J. Donaldson**, Hershey, PA:
Q & A/Wrap-up
- 4:45 p.m. Adjournment
Starlight Veranda Posters to be removed from poster boards
- 6:00 p.m. Reception in the Blue Mountain Room
(past the gardens directly behind Hotel)
Blue Mtn. Room
- 7:00 p.m. Annual Banquet, Awards Presentations
and Dinner Speaker
- Toastmaster:
Robert W. Hardy, President
- Introductions of corporate sponsors (if
present) and special guests
- Presentation of Association Fellowships
and Travel Grants
Robert W. Hardy, President
- Presentation of Association Awards
Myra Wilkerson, Awards Chair
- Dinner Speaker:
Mr. Graham Hetrick, M.S., F.D., B.C.F.E.,
D-ABMI, Coroner, Dauphin County, PA:
*Asking the Right Questions: How Modern
Society Impacts Scientific Inquiry*

Saturday, May 18, 2019

- 6:15 a.m. Run for the Lilies
meet **Josh
Bornhorst** in
Main Lobby of
Hotel
- 7:00 a.m. Registration
Starlight Terrace
East and West
- 7:00 a.m. Continental Breakfast
Starlight Terrace
- Session 3: Lab 2.0**
- Chair:
Myra Wilkerson
- 7:45 a.m. **Myra L. Wilkerson**, Danville, PA:
Overview of Clinical Lab 2.0
- 8:00 a.m. **Donna M. Wolk**, Danville, PA:
*SURVIVE: Sepsis Under Review—Value of
Interdisciplinary interVentions and EVIDENCE*
- 8:20 a.m. **Jeffrey Prichard**, Danville, PA:
*Crowdsourcing to create structured data
sets for quality improvement*
- 8:40 a.m. **Michelle L. Grant**, Danville, PA:
*Scrub-a-dub-dub, cleansing automated
anemia algorithm data for quality outcomes*

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Association of Clinical Scientists

Registration for 139th Meeting, Hershey, PA, May 15–18, 2019

ATTENDEE INFORMATION

Last Name	First Name	Initial	Degree(s)
Institution		Street Address	
City	State	Postal/Zip Code	Country
Telephone Number	Fax Number	Email Address	

Please record number of persons for all No Charge (NC) items

	Unit Price	Number of Persons	Amount Charged
Full Meeting Registration, Regular For all Fellows of the Association and non-members attending the full Meeting; includes luncheons, one banquet ticket and continuing education credits, if desired.	\$475	_____	_____
Full Meeting Registration, Emeritus, Assoc. Fellows & Trainees For all Emeritus or Associate Fellows of the Association and all trainees, residents, and Fellows attending the full Meeting; includes luncheons, one banquet ticket and CE credits, if desired.	\$200	_____	_____
Meeting Registration, Complimentary For all speakers only attending the meeting for the day of their lecture; excludes banquet and continuing education	NC	_____	_____
Single Day Registration For either Friday or Saturday; includes luncheon and continuing education credits if desired	\$200	_____	_____
Thursday, May 16			
Tours Penn State Health Automated Testing Lab and Penn State Center for Simulation; Complimentary for all attendees with Full Meeting Registration	NC	_____	_____
Chocolate and History Tour of Hershey Provided by the Hershey Trolley Works	\$50	_____	_____
Welcome Reception, Dinner, and Abraham J. Gitlitz Memorial Lecture Hershey Conservatory and Butterfly Atrium; open to all meeting registrants and accompanying persons	NC	_____	_____
Friday, May 17			
Luncheon, presentation of travel grant awards, reserved seating for all young Scientists, age ≤ 45 Included with full or single day registration	NC	_____	_____
Extra tickets to Awards Banquet and Reception	\$95	_____	_____
Saturday, May 18			
Luncheon in Fountain Lobby with Full Registration Included with full or single day registration	NC	_____	_____
Musicale, with Wine and Cheese Intermission Complimentary for all attendees (please indicate attendance for headcount estimation)	NC	_____	_____
Include Renewal of Dues (Fellows)	\$225	_____	_____
Renewal of Dues (Assoc. Fellows)	\$50	_____	_____
Total Payment Enclosed		_____	_____

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Association of Clinical Scientists

Registration for 139th Meeting, Hershey, PA, May 15–18, 2019

PAYMENT OPTIONS

Cancellation with full refund will be accepted until April 6, 2019.

1. Register securely on-line at <http://www.clinicalscience.org/annualmeeting.html#Registration>.
2. Complete and mail this form (copy/print both sides of form) with a check, payable to Association of Clinical Scientists, or with credit card information, to Association of Clinical Scientists, 6431 Fannin Street, MSB2.292, Houston, TX 77030
3. To charge using American Express, Visa, or MasterCard, call the ACS office at (713) 500-5381, Mon–Fri, 8:00 a.m.–5:00 p.m. Central Time. You may also fax this form with your credit card information to our secure Fax at (713) 500-0732.

CREDIT CARD INFORMATION

Credit card type

(check only one)

Visa

MasterCard

American Express

Card number _____

Security code (CVV) _____

Expiration date (mo/yr) _____

Name on the card _____

Billing Address _____

City _____

State (Province) _____

Country _____

Postal (Zip) Code _____

Signature _____



Announcement: New Logo



Editor's Note:

The Executive Committee of the Association of Clinical Scientists is proud to announce the creation of its new logo. The process took nearly a year of the Executive Committee working with our Graphic Designer, Michael Hawker.

This new logo does not replace the Association's Seal which has been used for the past 70 years, as both will continue to be used. The new logo will appear on letterhead, the website, the newsletter, and other less formal settings. The Seal will be used in more formal settings such as certificates.

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- 9:00 a.m. **Jordan Olson**, Danville, PA:
Implementation and Experience with Novel Methods for Improved Laboratory-provider communication
- 9:20 a.m. **Amanda Haynes**, Danville, PA:
Patient blood management: a triple aim win
- 9:40 a.m. **Hoi Ying (Elsie) E. Yu**, Danville, PA:
How the lab collaborates with pharmacists and clinicians to fight the opioid epidemic
- 10:00 a.m. Refreshment Break
- 10:30 a.m. **Kilmer S. McCully**, Boston, MA:
Cholesterol inhibition of thiorectinaco ozonide loss from mitochondria explains protection against mortality
- 10:50 a.m. **Neda Zarrin-Khameh**, Houston, TX:
Glycogenated squamous cells in cervical PAP test—ignored or not recognized?
- 11:10 a.m. **Thomas P. Nifong**, Hummelstown, PA:
The emerging role of high performance non-invasive molecular diagnostic testing in bladder cancer
- 11:30 a.m. **Charles D. Hawker**, Salt Lake City, UT:
Automation and process re-engineering are required to achieve six sigma quality: a 27-year history of continuous improvement
- 11:55 a.m. Adjournment for Luncheon
- 12:00 p.m. Lunch
Fountain Lobby

Sessions 4 and 5 Split Concurrent Sessions for “Clinical Pathology” and “Anatomic Pathology” tracks:

Session 4: Clinical Pathology track

- Starlight East** Chair:
Jordan Olson
- 1:15 p.m. **Philip R. Foulis**, Tampa, FL
Proficiency testing program: alignment with patient testing, automation, monitoring and error reduction
- 1:35 p.m. **Alexsandra Zuraw**, Montreal, QC, Canada:
Artificial intelligence in pathology practice: how advanced we really are
- 1:55 p.m. **Wallace H. Greene**, Hershey, PA:
The tale of two influenzas
- 2:15 p.m. Refreshment Break
- 2:40 p.m. **Diana Morlote**, Birmingham, AL:
Utility of NGS in cytopenic patients with absent dysplasia on bone marrow biopsy
- 3:00 p.m. **Christopher Crutchfield**, Cincinnati, OH:
90-day clinical laboratory

- 3:20 p.m. **Mustafa Barbhuiya**, Hershey, PA:
Analytical and clinical evaluation of the high sensitivity Troponin T assay
- 3:40 p.m. **Joshua Bornhorst**, Rochester, MN:
Copeptin as a replacement marker for Arginine Vasopression (AVP) for water balance disorders
- 4:00 p.m. **Robert Hardy**, Birmingham, AL:
Validation of high sensitivity cardiac troponin I on Beckman DXI
- 4:20 p.m. Adjournment

Session 5: Anatomic Pathology track

- Starlight West** Chair:
Jordan Newell
- 1:15 p.m. **John Hicks**, Houston, TX:
Infantile spindle cell rhabdomyosarcoma mimicking infantile fibrosarcoma: potential pitfall
- 1:35 p.m. **Robert Brown**, Houston, TX:
Morphoproteomic analysis and biomedical analytics identify therapies to control “hallmarks of cancer”
- 1:55 p.m. **John Hicks**, Houston, TX: :
Pediatric nodular fasciitis involving head and neck region with MYH9-USP6 rearrangement
- 2:15 p.m. Refreshment Break
- 2:40 p.m. **John Hicks**, Houston, TX:
Hair shaft abnormalities: role of scanning electron microscopy
- 3:00 p.m. **Robert Brown**, Houston, TX:
Lowering quality control operations cost through quality control material waste reduction
- 3:20 p.m. **Keith Cheng**, Hershey, PA:
From morphology to math: creation of a 3D computational histopathology
- 3:40 p.m. **Jordan Newell**, Hershey, PA:
HER2 and p95HER2 expression varies in primary versus metastatic uterine serous carcinomas
- 4:00 p.m. **Keri Donaldson**, Hershey, PA:
Automated Intelligence Algorithms for the JAK-2 Testing
- 4:20 p.m. Adjournment

End of all Sessions

- 4:45 p.m. Association Business Meeting
Blue Mtn. Room
- 7:00 p.m. Reception with wine and hors d'oeuvres
Overlook Room Musicale and Art Exhibit

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Posters

(Friday Set up 7:00 am,
and take down after Adjournment at 4:45 pm)

Starlight Veranda

- P1** **Charlotte Myers**, Houston, TX:
Autopsy liver findings in an adult with advanced Glycogen Storage Disease Type Ia
- P2** **Paul Mintz**, Marlborough, MA:
Seven-day platelet storage: Outdate reduction and cost savings
- P3** **Kimberly Robyak**, Hershey, PA:
Accuracy of three total testosterone methods: ECLIA, RIA and LC-MS/MS
- P4** **Christopher Hamilton**, Hershey, PA:
Comparison of five bioavailable testosterone testing methods
- P5** **Nirupama Singh**, Birmingham, AL:
Acute myeloid leukemia case harboring unusual FLT3 variant: Somatic vs germline?
- P6** **Mauli Shah**, Houston, TX:
Detecting Mutations in Cerebrospinal fluid: Liquid Biopsy for Detection of Central Nervous System Metastases
- P7** **Annie N. Koenig**, Houston, TX:
Phylogenomic analysis of the Streptococcus dysgalactiae subspecies equisimilis FCT-locus
- P8** **Ali Al-Habib**, Houston, TX:
Nonsyndromic paucity of interlobular bile ducts associated with trisomy 21



Front Desk and Lobby at the Hotel Hershey



The historic Fountain Lobby of the Hotel Hershey

The Auxiliary

Dear Friends and Auxiliary Members,

We are looking forward to welcoming you in the Spring and taking time to connect with one another. Our host city is Hershey, Pa where we will be staying at the historic Hotel Hershey with its panoramic views. All of our contacts at the hotel have been delightful and accommodating. We are excited about our itinerary and have scheduled the hotel shuttle to transport us to our various tour sites. See you in May for a few fun days. Please check out our proposed schedule knowing that we have some flexibility.

Sincerely,

Dot Brown, Auxiliary President

2019 Program

Wednesday, May 15, 2019

5:30 – 6:30 p.m. Reception/Light Refreshments
location t.b.a.

Thursday, May 16, 2019

9:30 a.m. Guided Tour of Hershey Gardens and Butterfly Atrium
meet in Lobby of Hotel Hershey (tour will begin at 10:00)

11:30 a.m. Lunch at the Trevi 5 Restaurant (Hotel Hershey)

1:30 p.m. Tour on the Hershey Trolley Company: Chocolate and History Tour (a 75-minute tour of Hershey)

6:00 – 7:00 p.m. Welcome and Cocktail Reception at the Milton & Catherine Hershey Conservatory

Friday, May 17, 2019

9:30 a.m. Chocolate World & 4D Movie at Hershey Story Museum & Cafe (optional) (event begins at 10:00)

6:00 – 7:00 p.m. Annual Banquet & Awards at the Blue Mountain Room

Saturday, May 18, 2019

9:30 a.m. Hershey Outlets at Crossroads Antique Mall (event begins at 10:00)

7:00 – 9:00 p.m. Musicale in the Overlook Room
Hotel Hershey



Interview: Dr. Jenó E. Szakacs

The Young Fellows Section arranges interviews between Young Fellows and more senior Fellows. Young Fellows can obtain scientific and career advice from a senior member who may offer valuable guidance. Below is an interview between Penn Muluhngwi, Ph.D. [Clinical Chemistry Fellow, Department of Pathology and Laboratory Medicine, University of Louisville, School of Medicine] and Jenó E. Szakacs, M.D.

Penn Muluhngwi: Please tell me a little bit about yourself. Where did you grow up? Where did you go to school?

Jenó Szakacs: I was born in the Óbuda district of Budapest in 1924. Óbuda was built on the ruins of Aquincum, ancient capital of the Roman Province of Pannonia. About a one square mile is explored and the archeologic gems are housed in a handsome museum in the center of the diggings. Aquincum was built along the West bank (Roman Shores) of the Danube. Between the river and the archeologic site the capital city Budapest established its Gas Works just before the millennium celebrations of the Kingdom of Hungary in 1896. My father was employed at the Gas Works as an operator of heavy equipment of the coking furnaces. Housing for the employees was built in a park abutting the archeologic site. My parents were assigned a comfortable apartment complete with kitchen and flower garden. During spring planting we often found some Roman coins that we children proudly turned in at the Museum.

My parents only had an elementary education, but my mother was an avid reader and with guidance of the director of the library she developed a balanced knowledge of the classical literature. The Gas factory in addition to retirement funds provided many benefits for the employees: health care for the family, medical dispensary on site, kindergarten and elementary school, theater and sports facilities, each of the highest quality. The school, lead by exceptional teachers, had classes of 8 or 10 students. It was a shock when in the Gymnasium I found myself in classes of more than sixty. My mother enrolled me in the Lutheran rather than the local state school. I did well in math and science but disappointingly in Latin and literature. My favorite subject was chemistry, and to my delight my Father arranged for me a student summer rotation in the Gas Work's laboratory. I was introduced to analytical methods of Gas at various steps of its purification.

A crucial event occurred the following year when my professor Dr. Gerendas arranged a summer rotation for me in the Institute of Medical Chemistry. Dr. Gerendas was one of the associates of Prof. Szent-Gyorgyi. The research team was studying muscle proteins and their interaction with ATP. The work led to the discovery of actin. The results of 5 years of detailed studies were published in 1944. On conclusion of my rotation Dr. Gerendas suggested that I should study medicine as it would better prepare me for a research career in biochemistry. But that had to wait. The War engulfed Hungary and in the confusion of moving front lines I was separated from my family. Retreat of the Russian troops after a month of cruel occupation of Székesfehérvár opened a way for me to escape to Austria and eventually to Italy.

Muluhngwi: You attended medical school in Rome, Italy. Tell me about that experience.



Dr. Jenó Szakacs

Szakacs: By the end of June 1944 I made my way to Rome. Together with an architecture student we were granted a room at the Hungarian Academy. With some help of the Hungarian community, the Vatican, and Father G. Denes who provided us with intensive training in Italian, I was ready in October to matriculate in Medicine at the University of Rome (La Sapienza). My first exam in Biology earned me an invitation to enter as intern of the Institute Of General Biology. The Institute became my home away from home. The School Of Cotronei was long engaged in experimental embryology. I was impressed by Dr. Urbani's metabolic studies on developing embryos, and the effect of antimyototics on them. Using the Cartesian Diver micro respirometer he could follow a single egg from fertilization to gastrulation. I studied the antimyototic effect on cellular viscosity, observing the depolymerization of structural proteins. Eventually I was involved with following phosphorylation during embryonal development. All along I continued in the required courses for graduation.

I had my favorite subjects and favorite professors. The best courses were general Pathology, special surgical pathology and internal medicine. I received a scholarship grant from the Italian National Research Council and graduated under the sponsorship of Prof. Cotronei. During Easter break in 1949 vacationing in Florence I met Mirella a Biology major and my companion for life. We married in October 1950 and we both graduated few days apart in 1951. By that time my application for emigration to the U.S. completed its 5 year run and we both were granted permanent residence in the States.

Muluhngwi: Tell me about your career progression. You were a physician in the U.S. and how did you get involved with the Association?

Szakacs: On January 11, 1952 we arrived in New York after a stormy Atlantic crossing and proceeded to South Bend Indiana. Welcomed by the Hungarian-community we were advised to move on to Chicago for an internship because Indiana did not license foreign medical graduates. I applied and was admitted for a rotating internship at the Illinois Masonic Hospital in Chicago. The internship was my introduction to the practice of medicine, after years of lectures and readings finally all that theory found its practical application. During my internship I made the acquaintance of influential physicians; one was Dr. W.C. Bornemaier who supported my licensing application and became my lifelong friend. Another surgeon of Hungarian origin knowing my goal of medical research introduced me to his schoolmate Dr. George Gomori a professor of medicine at the University of Chicago. Gomori was doing groundbreaking research in histochemistry. He strongly discouraged me from the medical research route, and rather encouraged me to go in to practice. For a short period after obtaining my Illinois license I started to build a private practice, but soon I was called to active duty by the US Navy. Commissioned as a medical officer (Lt. jg.) I reported for duty at the Station Hospital of the Pax River Naval Airstation. Assigned to the Female Medicine department for nearly two years, I provided prenatal care and conducted deliveries. The Hospital was well organized with excellent nurses and support personnel.

The base offered many recreational facilities for the family. Also, it was in driving distance from the NIH in Bethesda so I could attend a review course in neuromuscular physiology. To my surprise one of the lecturers was Dr. K. Laki, my old acquaintance from the medical chemistry institute at the University of Szeged. Sometime later a position in the Pathology Residency Program was advertised for officers of the regular Navy. By that time, I was convinced that a career in the naval medical corps trained in Pathology and Laboratory Medicine would be closest to my aspirations. With the support of my senior medical officer I was accepted in the regular Navy and for residency training in Bethesda at the US Naval Medical School, NNMC. At the same time I obtained my US citizenship in the district court in Baltimore MD. We said good bye to our many good friends and were treated to a Maryland style fish and crab special dinner by the nurses.

On the first of Oct 1956 I reported for my residency in Bethesda. The department was in the midst of preparations for the protein workshop presented by the ACS. Capt. Martens, the

“boss,” assigned me to assist Dr. Bradley Copeland in setting up his equipment for demonstration for measuring nitrogen as a primary standard for protein analysis. This experience was what I had dreamt my career could be. Once the ACS opened its membership I joined and became a founding fellow. Since 1956 I participated in almost all of the workshops and meetings of the ACS. This provided stimulus for my professional accomplishments and provided comradery of outstanding leaders in clinical science. My training began in earnest after the interlude with the Hungarian sea lift. I found myself in a congenial group of officers strong on comradery and dedicated to high quality service. My instructors were Dr. Robert M Dimmette and Albert Cannon.

At the end of my training in pathology, I was assigned to be head of the physiological chemistry laboratory of the Bethesda Naval Hospital. All tests were hand processed. It was in my second year there that the first single channel autoanalyzer arrived. I and my staff prepared a training film for the Navy on how to use the autoanalyzer. In 1962, I was selected to be the laboratory director at the Naval Hospital, St Albans, New York. It was quite challenging working there because the chief of surgery (a senior captain), did not accept a surgical pathology report from anybody less than the chief of pathology. Although I had associates who were better informed in surgical pathology than I was, I had to do the job. Quickly, I got back into surgical pathology and became a morphologist again. I had four residents and two other staff pathologist officers. St Albans was the center for thoracic surgery for the Navy. At that time tuberculosis was still rampant and any tuberculosis patient east of the Mississippi was sent to us. The micro group of our hospital excelled in the diagnosis of atypical mycobacteria.

Muluhngwi: I can see your career was blossoming and you were doing very well. How did you find yourself in Florida?

Szakacs: I loved the service and the Navy was very good to me. However, after 4 years, New York was so expensive and the salary was inadequate to maintain a family and send kids to school. I asked to be re-stationed to Bethesda. I was sent to the Armed Forces Institute of Pathology (AFIP) where I spent a year with Dr. Kamal Ishak at the hepatology/gastroenterology section.

Kamal was the pathologist who impressed me the most and I learned more from him than anyone else in my entire career. While at the AFIP, I learned electron microscopy (EM) and through collaborative work I became interested in tumor virology. I started to work on tissue culture infected with virus –specifically the papilloma virus. An opportunity came up in Florida—the new St Joseph’s Hospital needed a pathologist and I became chief of pathology of the hospital in 1967.

At St Joseph Hospital, I was able to apply for and obtained an electron microscope from the NIH. I obtained a contract to study human sarcoma tissues for the possible presence of viruses. While I was screening all the available material from the Tampa bay area for virus, I also collected a nice group of diagnostically important micrographs. I had this contract until 1986. All this time, the ACS continued to have presentations and workshops and I presented EM of the kidney, parathyroid, and in Chicago (1982) I presented a collection of materials for diagnostic EM.

Muluhngwi: Looking at your impressive career, is it right to say that pathology was an unexpected turn in career for you?

Szakacs: Coming to America, the practice here was so different from that of Europe that Clinical Pathology/Clinical Chemistry was closest to what my original intent was. You can have an original dream, but you have to have the circumstances to achieve it. As it turns out, I ended up being a pathologist doing a lot of practical work in tumor pathology.

Muluhngwi: Did you have any instances where mentors influenced your professional career? How did they influence you?

Szakacs: Dr. Albert Cannon, a member of ACS, was my first mentor and I wrote my first papers together with him. Even though I was assigned to autopsy service, when I saw a patient who died of an overdose of norepinephrine, I looked at the pathological changes and wanted to know if in fact norepinephrine was the causative agent. This inspired me to start research into the study of norepinephrine. From that I managed to reproduce myocardial changes in dogs and a number of publications resulted from that study. The first publication, "I-Norepinephrine myocarditis" was published in the AJCP journal. In addition to the routine work which was required to survive, I tried to keep up my interests in new developments in the field. In fact, the ACS meetings helped me. I was able to meet with many of my associates, my residents and my consultants. In the New York meeting I introduced to the association one of my consultants, Dr. Leon Sussman, a hematologist who later became vice president of the association. There was also Dr. Melicow and Dr. Don McKane. In my career here in Florida, I managed to ask for and obtained speakers for the numerous meetings which we hosted for the ACS here in Tampa from my former acquaintances. They are now members of the association.

Muluhngwi: Describe the importance for faculty to be involved in National/International organizations and to have administrative responsibilities outside of your current institution.

Szakacs: I was a member of the ASCP and CAP but I preferred ACS because it was cozier. I met the members and we became good friends. In one of the meetings, I had 175 members attend the spring meeting and that was at the same time as the NY world's fair. Dr. Sunderman and Bob MacFate were invited to turn the lights on at the NY World's fair. We had a banquet the following night and the speaker was Vice Admiral Deutermann who was the Navy representative to the United Nations. He actually arranged for the association to visit the United Nations.

We at St Joseph helped establish the medical school in Tampa which opened in 1972 as the University of South Florida College of Medicine. My department did much of the lecturing in pathology and we provided the practical samples for the school from 1972-86. In 1986 I was invited to join the regular faculty and I am an emeritus professor of USF, retired.

Muluhngwi: In 1966, you were the president of ACS. Was this helpful to your career?

Szakacs: It was nothing special. The important thing that helped me is what happened at the seminars, what I learned and what was brought forth by the members who were so smart- so much smarter than I was. Being associated with a group like ACS, takes you away from the regular work and helps to expand your interest.

Muluhngwi: How did you develop your network of colleagues over the years? How critical has this been towards success in your career?

Szakacs: Dr. Bob MacFate, the secretary of the association, was the person who helped me. He was a kind person, very knowledgeable and a real supporter. I really admired him a lot. Dr. Albert J Dalton was my mentor in EM.

My networking was through the university (University of South Florida College of Medicine). Being a clinical professor from 1972 and then eventually a professor, my network was with the pathologists in the local area like Dr. Henry Azar and Dr. John Balis, who was the chief of pathology of the VA hospital, and the various professions.

Muluhngwi: What advice would you give to someone starting out in their career in clinical chemistry/laboratory medicine?

Szakacs: Whatever you start to work on, and you carry it to a certain point and you stop instead of making the one further step, that is a mistake. I can tell you one big mistake I made like that. When I studied extraskelatal Ewing's disease by EM, when the observations were all correct, I described the intercellular bridges which were markers of an epithelial cell and although the paper was published and well received, I missed the last step. At that point I should have done histochemistry for neural markers to confirm and come up with the correct diagnosis for primitive neuroepithelial cell as the basic cell type for Ewing sarcoma, but this last step I missed. A decade later others identified Ewing's Sarcoma as a PNET. So when you are doing a study and you are at the point that you wonder about it and are not quite sure, take the next step, use another method and complete your study.



Editor's Note:

Dr. Szakacs was a founding member of the Association and served as President in 1966; he received the Association's Clinical Scientist of the Year Award in 1971 and the Gold Headed Cane Award in 2003.

Dr. Szakacs most recently attended the Association's 2010 meeting in Tampa and the 2012 meeting in Mobile and he continues to support the Association, for which we are most grateful.

President's Corner

Greetings, I am looking forward to seeing you all at the 2019 ACS annual meeting. The Executive Committee has been busy as members visited Hershey in early January in addition to our monthly conference calls. The Hotel Hershey is a great venue with beautiful gardens, walking/hiking trails, swimming pools, golf, tennis, kids club and much more. Please check them out <http://www.thehotelhershey.com/recreation/facilities.php>. It is not too late to make plans to attend!



Robert Hardy

Annual Meeting Topics

The meeting topics are very timely focusing on "Opioid Stewardship" and "Lab 2.0." The opioid crisis is currently this nation's most serious health issue, and Lab 2.0 is a new program to develop the evidence base for the valuation of clinical laboratories in the next era of health care, achieved through innovative programmatic leadership by laboratory professionals. In addition Dr. David Sacks, an internationally recognized expert in diabetes who will speak on "Hemoglobin A1c in Diabetes: Panacea or Pointless?" and Dr. Gregory J. Kuehn will speak on "Clinical Metagenomics – The Microbiome and Gut Health," there is a full schedule of interesting talks. The tour of Penn State Hershey Medical Center promises to be both informative and interactive as you can try your hand at surgery for example at their Clinical Simulation Center.

Sweet Tours, Speakers, and Musicale

There will also be a sweet (pun intended) Hershey Trolley Company – Chocolate and History Tour and our Awards Banquet speaker Graham Hetrick will speak on "Asking the Right

Questions: How Modern Society Impacts Scientific Inquiry." At the Friday luncheon seminar by Dr. Sacks, we will have reserved tables for all young attendees of age 45 or younger and, as always, we hope all members will attend the Saturday business meeting. I don't know whether I am allowed to say this but the Musicale is expecting a special guest this year, Yo-Yo Ma's sister. So all in all, it promises to be an outstanding meeting, Kudos to Co-Chairs Drs. Donaldson and Wilkerson and the Program Committee!

Future ACS annual meetings are scheduled for Banff in 2020 and Louisville (tentative) in 2021

ACS News

The Executive Committee has been developing a new logo for the ACS over the past year which we are announcing in this newsletter and will present to the membership at the Annual Meeting this year. Dr. Kyle Kurek continues to restructure Scientific Sections to better align with the Annals of Clinical Science editorial board.

New Members

It is my pleasure to announce one new member since January 1 2019.

Zaeed Ahmed Asiri, Associate Fellow

If you have any comments, concerns or ideas you can contact me at: rohardy@uabmc.edu.

Sincerely,

Robert Hardy, Ph.D., FACS

The Young Fellows Section

The Young Fellows Section aims to foster career growth by providing opportunities to network, build relationships, give presentations and receive awards at our annual meeting; mentorship from more experienced members; and the ability to publish or gain experience reviewing manuscripts through the ACS journal *Annals of Clinical and Laboratory Science*.



Alex Feldman

On Friday, May 17th, during the Annual Meeting, the Young Fellows Section will have reserved tables for the luncheon. During this time, we'll hear some words from the President of our organization, Dr. Hardy, followed by a

presentation by Dr. David Sacks of the NIH entitled *Hemoglobin A1c in Diabetes: Panacea or Pointless?*

This will be also be a good opportunity to meet your peers and learn about ways to get involved with the organization, such as publishing in our journal or serving on committees or in an elected position. I hope to see you there!

Sincerely,

Alex Feldman, MD
Chair, Young Fellows Section, Association of Clinical Scientists

Pediatric Pathology Fellow, Nationwide Children's Hospital

email: Alex.Feldman@nationwidechildrens.org

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Riyadh, Saudi Arabia

Newsletter Trivia Question

Edited by Stephen M. Roper, Ph.D., FACSc

The first person to email the correct answer will have their name mentioned in the following newsletter and the satisfaction of knowing they won. Please respond to, or if you have a *trivia question you would like to submit*, please email to Stephen M. Roper at: smroper@wustl.edu.

PREVIOUS QUESTION

Cocaine was first isolated from the coca plant by Gaedcke in 1855, and an improved purification process was described by Niemann in his PhD thesis, published in 1860. A mere fourteen years later, in 1874, another powerfully addictive drug was first synthesized, and the subsequent widespread abuse of cocaine and this drug helped prompt passage of the Harrison Narcotics Act of 1914. What was the drug?

ANSWER

Kathleen Allen, M.D., FAACC, FCAP, answered correctly: heroin.

CURRENT QUESTION (SUBMITTED BY STEPHEN M. ROPER)

Mass spectrometry is a powerful tool in the clinical lab. These instruments have applications in clinical chemistry, toxicology, microbiology, and newborn screening/inborn errors of metabolism, and their utility is broadening at a rapid rate. While the physics and engineering of these instruments are quite complex, there are three major elements that make up these systems. What are the three major components of a mass spectrometer?

ANSWER

Answer will appear in the next *Clinical Science Trumpet*. Person submitting the first correct answer will have a chance to write the trivia question for the next newsletter.

Submit your answer by email to Stephen M. Roper, Ph.D., FACSc, at: smroper@wustl.edu.



Clinical Science Trumpet

Newsletter of the Association of Clinical Scientists

The Clinical Science Trumpet Newsletter is the official newsletter of the Association of Clinical Scientists and is published three times per year. Back issues may be viewed at <http://clinicalscience.org/news.html>

Announcements, commentaries, and news/photos of members are welcome. Please send to the Editor at: charlie@charlesdhawker.com

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Editor: Charles D. Hawker, PhD, MBA, FACSc, FAACC
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Get 'your fix' in Hershey, PA May 15-18, 2019



Who doesn't like chocolate kisses? Get your fix and attend this year's meeting in Hershey, Pennsylvania, most famous for the chocolate empire established by Milton Hershey. Hershey's Kisses—perhaps its most famous candy—were introduced in 1907 and have maintained their iconic shape since! Milton Hershey named the first two streets in Hershey "Chocolate Avenue" and "Cocoa Avenue" to form the town square. Many other streets in Hershey were named relating to chocolate by Mr. Hershey.

Chocolate Avenue is also known for its Hershey's Kisses-shaped—and unique—street lamps. Manufactured in 1963 using a process called aluminum metal spinning, they were designed by engineers with the Line Material Company. Some of the lamps are designed as wrapped kisses, while others are designed as unwrapped kisses.



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