



Clinical Science Trumpet

Newsletter of the Association of Clinical Scientists

Charles D. Hawker, Ph.D., M.B.A., FACSc, Interim Editor

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ACS Annual Meeting at Mayo Clinic Features Many Outstanding Speakers and Activities

144th Meeting May 3-6, 2023

Rochester Marriott Mayo Clinic,
Rochester, Minnesota

by Joshua A. Bornhorst, Ph.D., FACSc, and
Charles D. Hawker, Ph.D., M.B.A. FACSc

The Program Committee for the next Annual Meeting of the Association of Clinical Scientists (ACS), to be held at the Mayo Clinic in Rochester, Minnesota May 3-6, 2023, has announced the preliminary program which can be found elsewhere in this newsletter.

Under the theme of the first session, on Thursday, May 4, “Advances in Alzheimer’s and Neurological Disorder Diagnostics,” the Claude P. Brown Memorial Lecture will be delivered by **Ronald C. Petersen, M.D., Ph.D.**, Professor of Neurology, Cora Kanow Professor of Alzheimer’s Disease Research, and Director of the Mayo Alzheimer’s Disease Research Center, on *Alzheimer’s Disease Diagnosis in the Era of Biomarkers*. Other Mayo faculty will deliver lectures in keeping with that theme during that session.

A Thursday luncheon seminar offers a most interesting and informative ‘change of pace.’ **Edward Creagan, M.D.**, a past president of the Mayo Clinic staff and recipient of Mayo’s highest honor, the Distinguished Clinician Award, will speak on *The Burnout Pandemic: Proven Insider Tips to Go the Distance*, in which he will include recommendations to



The Mayo Clinic, Rochester, Minnesota

issues suggested by members of the Program Committee. The Thursday afternoon session, with a theme of “Artificial Intelligence in Medicine,” features additional Mayo faculty with very enlightening presentations. Friday morning’s theme, “Innovation in Pathology Initiatives,” is led by **William Morice, M.D., Ph.D.**, Professor of Pathology & Laboratory Medicine, providing an Overview of the Mayo Clinic Department of Laboratory Medicine and Pathology and Mayo Collaborative Services. **Dr. Morice** will be followed by several additional speakers describing some of the programs within the Mayo laboratory enterprise, and tours of several laboratories and Mayo facilities. Friday afternoon’s program includes a luncheon at Mayowood

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Meeting at Mayo... continued from page 1

(<https://www.olmstedhistory.com/mayowood>), the home of **Dr. Charlie and Edith Mayo**, a co-founding brother of the Mayo Clinic, and several additional tours.

Friday evening is the Annual Reception and Awards Banquet to be held at Mayo's Foundation House in Balfour Hall, the scene of many events for Mayo's senior leaders over the past century (<https://history.mayoclinic.org/tours-events/mayo-foundation-house.php>). Located in a southwest Rochester neighborhood, Mayo Foundation House was built between 1916–1918 as the residence of **Dr. and Mrs. William J. Mayo**, the other clinic co-founding brother. At this event, ACS will present four outstanding awards: Young Clinical Scientist to **Muge Sak, B.S.**, the FW Sunderman, Jr., Diploma of Honor to **Christopher Crutchfield, Ph.D.**, the Clinical Scientist of the Year to **Yusheng Zhu, Ph.D.**, and the Gold-Headed Cane Award to **Frederick Kiechle, M.D., Ph.D.** The featured speaker for the banquet will be **W. Bruce Fye, III, M.D., M.A.**, who will speak on *The Origins and Evolution of the Mayo Clinic from 1864 to 1939: A Minnesota Family Practice Becomes an International "Medical Mecca."* **Dr. Fye** is Professor of Medicine and Professor of History of Medicine at the Mayo Clinic and a past president of the American Association for the History of Medicine.

Saturday's sessions will consist of papers presented by both members and non-members of ACS and there will also be the Association's Annual Business Meeting held during a luncheon to which all are invited. And, of course, the entire meeting concludes with the traditional Musicales and Art Show on Saturday evening.

This meeting is being hosted by Program Committee Co-Chairs, **Joshua Bornhorst, Ph.D.**, from Mayo Clinic Rochester, and **Jonathan Hoyne, Ph.D.**, from Mayo Clinic Jacksonville. The other members of the Program Committee include: **Alicia Algeciras-Schimmich, Ph.D.**, Mayo Clinic Rochester, **Melissa R. Snyder, Ph.D.**, Mayo Clinic Rochester, **Christopher Crutchfield, Ph.D.**, Northwestern University, **Christine L. Snozek, Ph.D.**, Mayo Clinic Arizona, and **Charles D. Hawker, Ph.D.** (ex officio).

Mayo Clinic has major campuses in Rochester, MN, Scottsdale and Phoenix, AZ, and Jacksonville, FL. Mayo Clinic's 73,000-person workforce, cares for more than 1.3 million people each year with serious or complex illnesses from all 50 U.S. states and 130 countries. It has more than 190 physicians and doctoral scientists actively practicing in their respective specialties. The Mayo Clinic in Rochester, MN is the original and largest Mayo Clinic campus.

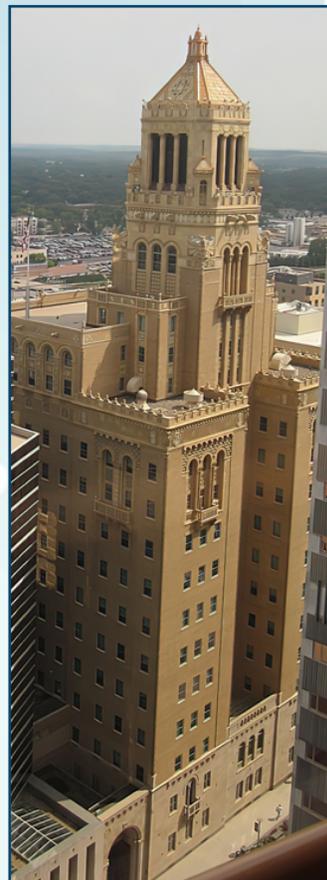
The Department of Laboratory Medicine and Pathology at Mayo Clinic Rochester is staffed by more than 2,350 people who work in numerous specialty laboratories within the department. The department is one of the



Above and right:
Mayowood home



Below: Plummer building,
Rochester, MN



Above: Foundation House, Mayo,
Rochester, MN

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Meeting at Mayo... *continued from page 2*



largest laboratories in the world performing more than 27.7 million lab tests annually.

ACCOMMODATIONS

Accommodations for this annual meeting will be at the Rochester Marriott Mayo Clinic hotel, which is centrally located in Rochester. The hotel is connected to the Mayo Civic Center and Mayo Clinic through the climate-controlled pedestrian skyways and underground walkways. This outstanding hotel features the *Salute Wine Bar and More* which serves breakfast and dinner, a well-equipped fitness center, and an indoor pool and hot tub. The newly renovated spacious guest rooms feature HDTVs and complimentary Wi-Fi, plus other amenities.

Our excellent meeting rates will be \$165 plus state and local taxes, which are currently 15.13%.

The cut-off date to make reservations is Wednesday, May 3, 2023.

The hotel's address is 101 First Avenue, SW, Rochester, MN 55902, telephone (507) 280-6000. To make a reservation on-line, use the following link:

Book your group rate for Association of Clinical Scientists (click here).

TRANSPORTATION

The Rochester Marriott Mayo Clinic Area is ten (10) minutes from the Rochester International Airport (RST). The hotel does not offer a complimentary shuttle. Alternatively, Minneapolis International Airport (MSP) is 70 miles away (90 minutes by shuttle) and there are multiple shuttles to the hotel each day, such as Rochester Shuttle Service for \$44 one way. Reservations are recommended. Hotel parking is \$25 per day, although there is off-site parking at the nearby Kahler Grand Hotel parking garage. Additional information can be found at <https://www.experiencerochestermn.com/planning-tools/getting-here/>

Additional shuttle information:

Groome Transportation offers shuttles to and from Downtown Rochester and MSP:

Rochester Shuttle Service also offers transportation to/from MSP or RST to downtown Rochester. 

Preliminary Program Schedule for May 03-06, 2023

Tentative, subject to change. All events, unless otherwise noted, are held at: Rochester Marriott Mayo Clinic Hotel, Rochester, MN

Thursday, May 04

Session Theme: Advances in Alzheimer's and Neurological Disorder Diagnostics

- 8:00 a.m. Welcome by ACS President and Annual Meeting Program Chair
- 8:15 a.m. Claude P. Brown Honorary Lectureship
Ronald C. Petersen, M.D., Ph.D.
Alzheimer's Disease Diagnosis in the Era of Biomarkers
- 9:00 a.m. **Sean Pittock, M.D.**
Biomarker Discovery in Autoimmune Neurology: From the Dark Room to Near Cure!
- 9:30 a.m. **Maria Willrich, Ph.D.**
Kappa Immunoglobulin Free Light Chains as an Alternative to Oligoclonal Banding for Diagnosis of Multiple Sclerosis
- 10:00 a.m. Break
- 10:30 a.m. **Wolfgang Singer, M.D.**
Towards Laboratory Biomarkers for Multiple System Atrophy and other Synucleinopathies
- 11:00 a.m. **Anne E. Tebo, Ph.D.**
Biomarkers for systemic autoimmune diseases with neurological involvement
- 11:30 a.m. Session adjourns
- 12:00 p.m. Luncheon Seminar
Edward Creagan, M.D.
The Burnout Pandemic: Proven Insider Tips to go the Distance
- 12:45 p.m. Break

Session Theme: Artificial Intelligence in Medicine

- 1:00 p.m. **Jason Hipp, M.D., Ph.D.**
Computational Pathology and Artificial Intelligence

- 1:30 p.m. **David McClintock, M.D.**
Creating Strategies for Artificial Intelligence in Laboratory Medicine
- 2:15 p.m. **Ricky Carter, Ph.D.**
Kidney Stone Spectral ID by Artificial Intelligence
- 3:00 p.m. Break
- 3:30 p.m. **Melissa Murray, Ph.D.**
Transcriptomic Analysis to Identify Genes Associated with Selective Hippocampal Vulnerability in Alzheimer's Disease Mayo Florida
- 4:00 p.m. **Surendra Dasari, Ph.D.**
Faster and More Accurate Amyloid Subtyping Informatics
- 4:30 p.m. **Mark Zarella, Ph.D.**
TBD
- 5:00 p.m. TBD
- 5:30 p.m. Session adjourns

Evening

- 7:00 p.m. — Young Fellows Social Event (open to all young scientists ≤ age 45, regardless of whether a member of ACS and accompanying persons), hosted by Lance Truong, D.O., Chair, Young Fellows Section, and Members of the Executive Committee



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Friday, May 05

Session Theme: Innovation in Pathology Initiatives

- 8:00 a.m. **William Morice, M.D., Ph.D.**
Overview of Mayo Clinic Department of Laboratory Medicine and Pathology and Mayo Collaborative Services
- 8:30 a.m. **Bobbi Pritt, M.D.**
AI Detection of Parasites in Stool Samples
- 9:00 a.m. Break
- 9:15 a.m. **Paola Ramos, Ph.D.**
Advances in Biobanking: Samples Collection, Processing and Storage
- 9:30 a.m. **Stephen Murphy, Ph.D. and Yifei Yang, Ph.D.**
Seeding and Accelerating Diagnostic Innovations at Advanced Diagnostics Laboratory
- 10:00 a.m. **Angela Reese-Davis and Aaron Getchell, M.B.A.**
Overview of Specimen Operations: Team of One Video
- 10:15 a.m. Session adjourns
- 10:30 a.m. Laboratory Tours:
Anatomic Pathology – Hilton 3
Central Clinical Lab/Central Specialty Lab – Hilton Court Level
Clinical Genome Sequencing Lab – Hilton 5
Neuroimmunology – Hilton 3
- 11:45 a.m. Tour:
Plummer Historical Suite Tour (self-guided)
- 12:15 p.m. Tour:
Heritage Hall Tour (self-guided)
- 12:45 p.m. Rochester Trolley transportation
- 1:00 p.m. Lunch and Tour:
Mayowood Tour

- 2:30–4:00 p.m. Tour:
Historic Trolley Tour
- 4:15 p.m. Tour:
Gonda Building Tour (self-guided)
- 6:15–10:00 p.m. Ground transportation to and from Foundation House
- 6:30 p.m. Annual Reception and Awards Banquet
Christopher Crutchfield, Ph.D.,
Master of Ceremonies

Banquet Speaker:
W. Bruce Fye, M.D., M.A.
The Origins and Evolution of the Mayo Clinic from 1864 to 1939: A Minnesota Family Practice Becomes an International “Medical Mecca”
- 10:00 p.m. Banquet adjourns

Saturday, May 06

- 8:00 a.m.–12:00 Submitted Abstracts (program and breaks TBD)
- 12:00–1:30 p.m. Luncheon with Annual Business Meeting (all attendees invited)
- 1:30–4:00 p.m. Submitted Abstracts (program and breaks TBD)
- 7:30–10:00 p.m. Musicale and Art Show

Call for Abstracts

Abstracts are invited from all clinical scientists, whether members of ACS or not. The deadline for submission of abstracts is February 24, 2023. The **abstract submission form** must be used and the instructions must be followed exactly as stated, using the Word document. Abstracts that do not have three learning objectives will be returned.

Note that both the **CAP** and **ACCENT** financial disclosure forms must be completed and signed by each author, saved as pdf files, and included with the abstract in a covering email to Sierra Tollefson (tollefson.sierra@mayo.edu).

Among the Speakers to Present in Rochester

Claude P Brown Honorary Lectureship

“Alzheimer’s Disease Diagnosis in the Era of Biomarkers”

RONALD C. PETERSEN, PH.D., M.D.

Professor of Neurology, Cora Kanow Professor of Alzheimer’s Disease Research
Director, Mayo Alzheimer’s Disease Research Center, Mayo Clinic College of Medicine

Dr. Ronald C. Petersen received a Ph.D. in Experimental Psychology from the University of Minnesota and graduated from Mayo Medical School in 1980. He completed an internship in Medicine at Stanford University Medical Center and returned to the Mayo Clinic to complete a residency in Neurology. That was followed by a fellowship in Behavioral Neurology at Harvard University Medical School/Beth Israel Hospital in Boston, Massachusetts. **Dr. Petersen** joined the staff of the Mayo Clinic in 1986 and became a Professor of Neurology in 1996. In 2000 he was named the Cora Kanow Professor of Alzheimer’s Disease Research and Mayo Clinic Distinguished Investigator in 2011. He is currently the Director of the Mayo Alzheimer’s Disease Research Center and the Mayo Clinic Study of Aging and has authored over 1000 peer-reviewed articles on memory disorders, aging, and Alzheimer’s disease.

Dr. Petersen is one of the recipients of the 2004 MetLife Award for Medical Research in Alzheimer’s Disease and the 2005 Potamkin Prize for Research in Picks, Alzheimer’s and Related Disorders of the American Academy of Neurology. In 2012 he received the Khachaturian Award and the Henry Wisniewski Lifetime Achievement Award in 2013 from the Alzheimer’s Association. In 2011 he was appointed by the Secretary of Health and Human Services to serve as the Chair of the Advisory Committee on Research, Care and Services for the National Alzheimer’s Disease Plan, and in 2014, he was appointed to the World Dementia Council by the UK government. In 2021, he was given the Lifetime Achievement Award for Alzheimer’s Disease Therapeutic Research.



Dr. Ronald Petersen

Luncheon Speaker

“The Burnout Pandemic: Proven Insider Tips to Go the Distance”

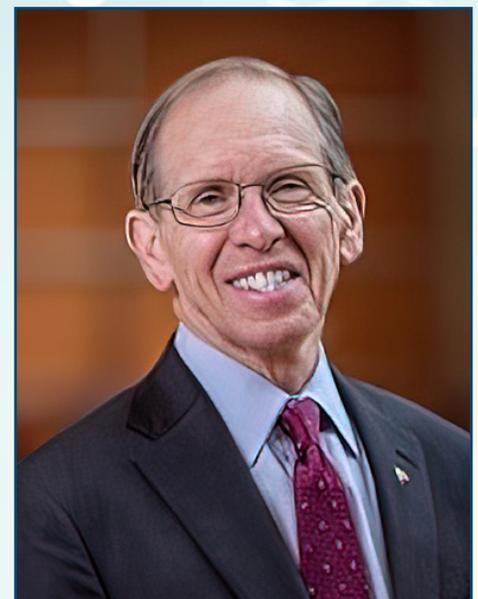
EDWARD CREAGAN, M.D., FAAHPM

Dr. Creagan is a cancer specialist who practiced at the Mayo Clinic for more than forty Minnesota winters until his transition from clinical practice in late 2018. He was the first Mayo Clinic consultant to be board certified in hospice and palliative medicine. Dr. Creagan received the Distinguished Clinician Award, Mayo’s highest honor and has served as president of the Mayo Clinic staff.

As an accomplished speaker, his presentations to both professional and consumer audiences are notoriously funny yet filled with useful lifestyle information. His main topics include survivorship, how to cope with burnout and stress especially in the time of COVID, the healing power of pets, and how to live long enough to cash in your 401(k).

In 2015, he received the Ellis Island Medal of Honor for contributions to descendants of immigrants.

He is the author of the triple award-winning book, *How Not to Be My Patient: A Physician’s Secrets for Staying Healthy and Surviving Any Diagnosis* and the equally award winning: *Farewell*, which provides answers to the vital end-of-life questions patients and families ask. Each of these were best sellers on Amazon.



Dr. Edward Creagan

Speakers in Rochester continued

Banquet Speaker

“The Origins and Evolution of the Mayo Clinic from 1864 to 1939: A

Minnesota Family Practice Becomes an International “Medical Mecca”

W. BRUCE FYE, M.D., M.A.

Dr. Fye received his BA and MD degrees from Johns Hopkins, where he was elected to Phi Beta Kappa and Alpha Omega Alpha. He completed a medical residency at New York Hospital-Cornell Medical Center in Manhattan before returning to Hopkins for his cardiology fellowship. During his tenure as a Robert Wood Johnson Clinical Scholar at Hopkins, he received an MA degree from the Institute of the History of Medicine. He chaired the Cardiology Department at Marshfield Clinic in Wisconsin from 1981 to 1999 and joined the Mayo Clinic in 2000.



Dr. W. Bruce Fye

Mayo's Heritage Hall is both a museum and a welcome center with displays and multimedia presentations



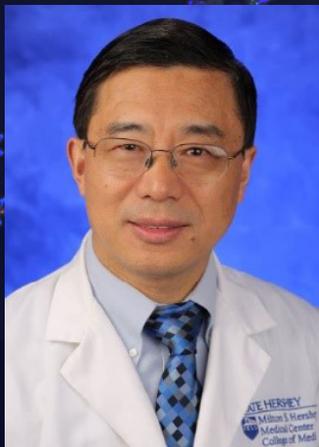
2023 ACS Awardees

Clinical Scientist of the Year

YUSHENG ZHU, PHD, DABCC, FACSc, FAACC

Yusheng Zhu, Ph.D., DABCC, FACSc, FAACC

is a Professor of Pathology & Laboratory Medicine, Adjunct Professor of Pharmacology, Medical Director of Clinical Chemistry and Automated Testing Laboratory, Co-Director of Pathology Core Reference Laboratory, Medical Co-Director of Point-of-Care Testing (POCT) Program, Director of Postdoctoral Clinical Chemistry Fellowship Training Program, and Chair of Laboratory Utilization Committee at the Pennsylvania State University Hershey Medical Center and College of Medicine in Hershey, Pennsylvania. Prior to his current positions, he was a tenured Professor of Pathology and Medical Director of Clinical Chemistry and Toxicology at the Medical University of South Carolina in Charleston, South Carolina.



Dr. Yusheng Zhu

Dr. Zhu is board certified by the American Board of Clinical Chemistry (ABCC) in Clinical Chemistry, Toxicological Chemistry, and Molecular Diagnostics and a Fellow of the American Association for Clinical Chemistry (AACC) Academy (formerly National Academy of Clinical Biochemistry) since 2007.

Currently, he is the President-Elect and Fellow of the Association of Clinical Scientists, President-Elect of AACC Academy, Chair of AACC Academy Council Laboratory Test Utilization Task Force, Chair of AACC Academy Cervical Cancer Detection Guidance Document Working Group, and Chair of AACC Mass Spectrometry & Separation Science Division. Yusheng is on the Editorial Boards of three medical journals and an invited reviewer of fourteen international medical journals.

Dr. Zhu also served as the President of the North American Chinese Clinical Chemists Association in 2012, President of the Commission on Accreditation in Clinical Chemistry (ComACC) in 2015, Chair of AACC Southeast Section in 2015, Chair of Clinical Translational Science Division (2015-2016), Secretary of Proteomics & Metabolomics Division (2013-2015) of AACC, Treasurer of AACC Mass Spectrometry & Separation Science Division (2014-2017), and Vice President of ABCC (2019-2021). He participated in the development of the CLSI document C62: Liquid Chromatography-Mass Spectrometry Methods; Approved Guideline.



F.W. Sunderman, Jr. Diploma of Honor

CHRISTOPHER CRUTCHFIELD, PHD, HCLD (ABB), DABCC

Christopher Crutchfield, Ph.D., HCLD (ABB), DABCC, is an Associate Professor of Pathology at the Northwestern University Feinberg School of Medicine and Associate Medical Director of the Northwestern Memorial Hospital Clinical Laboratory. He earned his PhD in Chemistry from Princeton University in Princeton, NJ. Following his PhD, he was an Intramural Research Fellow at the National Institutes of Health in Bethesda, MD and a Clinical Chemistry Fellow at the Johns Hopkins University School of Medicine in Baltimore, MD. His academic interests include statistical quality control, laboratory informatics, toxicology, and clinical mass spectrometry. He has served the Association of Clinical Scientists Executive Committee since 2019 with his initial year as a Member-at-Large after which he was elected Vice President. His term as President of the Association began at the conclusion of the 2022 Annual Meeting in Louisville, KY.



Dr. Christopher Crutchfield



As a teacher, **Dr. Zhu** has trained 7 post-doctoral clinical chemistry fellows and numerous pathology residents. **Dr. Zhu** has received research support from NIH, in vitro diagnostics industries, Department of Health of Pennsylvania, and local funding agencies. He is interested in clinical and translational research in clinical chemistry, toxicology, hemoglobinopathy, pharmacogenetics, imaging mass spectrometry, and clinical application of mass spectrometry. **Yusheng** has been conducting multiple clinical trials of devices for which data are presented to the FDA under 510(k). He has been invited to give 66 presentations at national and international conferences. Yusheng has over 139 publications including peer-reviewed papers, editorials, book chapters, and abstracts. **Dr. Zhu** has received over 40 awards from AACC, NACB, ACS, and other organizations.



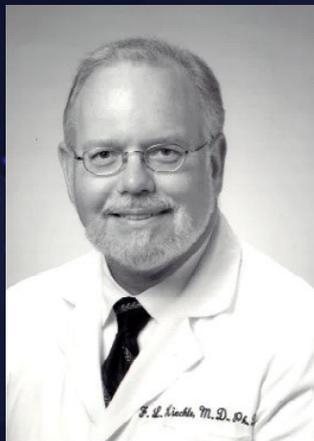
2023 ACS Awardees continued

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Gold-Headed Cane Award

FREDERICK L. KIECHLE, MD, PHD

Frederick L. Kiechle, M.D., Ph.D. was born in Indianapolis, IN on March 26, 1946. He majored in chemistry at Evansville College, Evansville, IN from 1964 – 1968. From 1968 – 1973 he was in the MD, PhD program at Indiana University where he completed his PhD in bacteriophage T4-infected *E. coli* DNA, RNA and protein synthesis in 1973 and MD in 1975. He completed a combined anatomic and clinical pathology residency at William Beaumont Hospital, Royal Oak, MI from 1975 – 1979. He then devoted his career to the field of clinical pathology (1979 – 2022).



Dr. Frederick Kiechle

Dr. Kiechle was a clinical chemistry fellow (1979 – 1980) at Barnes Hospital, St. Louis, MO; Assistant Professor at University of Pennsylvania (1980 – 1983); Chief, Clinical Chemistry (1983 – 1988), Chairman of Clinical Pathology (1988 – 2005) at William Beaumont Hospital; Medical Director of William Beaumont Reference Laboratory (1993 – 2005); Medical Director, Clinical Pathology, Memorial Healthcare System (5 hospitals), Pathology Consultants of South Broward, Hollywood, FL (2006 – 2016); Chief Medical Officer, Boca Biolistics Reference Laboratory, Pompano Beach, FL (2018 – present).

Dr. Kiechle divided his time between committee activities related to professional organizations like CAP, ASCP, ACS and AACCC, basic research including insulin action; intracellular mediators; electrochemistry/detection of nitric oxide, Ni, impedance; fatty acid metabolism; autoimmunity; peroxisomal disorders/leukodystrophies; Hoechst 33342-induced apoptosis; and clinical lab development like initiating a STAT laboratory; selecting new clinical lab software; co-founder of one of the first clinical DNA laboratories, Annual William Beaumont Hospital Symposium, Beaumont Reference Laboratory; Joint Venture Hospital Laboratory, Michigan; BL3 safety microbiology laboratory; flow cytometry lab, toxicology lab; total lab automation, POCT, MALTI-TOF in microbiology. He has published 181 peer-reviewed articles, 24 book chapters, 2 books, 231 abstracts and given 238 presentations. He has received 10 awards from 1967 to 2014 including Hartford Foundation Fellow (1982 – 1983), Clinical Scientist of the Year Award (ACS, 1996), Distinguished Service Award Honoring George F. Stevenson, MD (ASCP, 2001), Diploma of Honor (ACS, 2006), CAP

Young Clinical Scientist Award

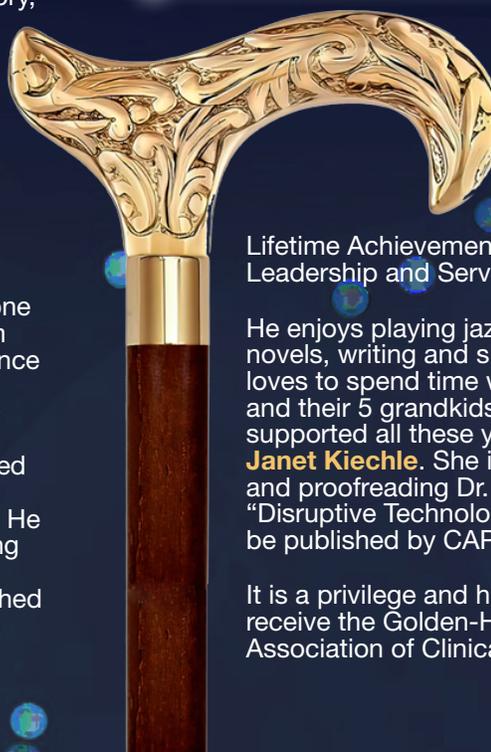
MÜGE SAK, BS

Müge Sak, B.S., graduated from the Middle East Technical University in Ankara, Turkey, with a Bachelor of Science degree in Molecular Biology and Genetics. During her undergraduate years she participated in several projects in different branches of biological science. At the end of her junior year, **Müge** was accepted to an internship position at the Ohio State University Wexner Medical Center in Columbus, Ohio in Dr. Norman Lehman's neuro-oncology laboratory.



Müge Sak

After graduation, she was admitted to the Ph.D. program at the University of Louisville, Department of Biochemistry and Molecular Genetics in Louisville, Kentucky. **Müge** is currently a Ph.D. candidate, working on her dissertation on glioblastoma research with Dr. Norman Lehman in the Department of Pathology and Laboratory Medicine. Their research includes testing the efficacy of combination therapies in glioblastoma cell lines and *in vivo* mouse tumor models and investigating the mechanism of action of these treatments.



Lifetime Achievement Award (CAP, 2008) and Leadership and Service Award (CLSI, 2011).

He enjoys playing jazz piano music, reading novels, writing and sleeping in anytime. Also, he loves to spend time with his 3 grown children and their 5 grandkids (all girls). He has been supported all these years by his lovely wife, **Janet Kiechle**. She is currently typing chapters and proofreading Dr. Kiechle's latest book "Disruptive Technology in Clinical Medicine" to be published by CAP Press.

It is a privilege and honor for **Dr. Kiechle** to receive the Golden-Headed Cane Award from the Association of Clinical Scientists this year.

Association of Clinical Scientists

Registration for 144th Meeting, Rochester, Minnesota May 03–06, 2023

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 (\$ US)	Number of Persons	Amount Charged
Full Meeting Registration, Regular, Member Rate For all Fellows of the Association and non-members attending the full Meeting; includes luncheons, one banquet ticket (subject to availability) and continuing education credits, if desired	\$475	_____	_____
Full Meeting Registration, Regular, Non-Member Rate For non-ACS Members attending the full Meeting; includes luncheons, one banquet ticket (subject to availability) and continuing education credits, if desired	\$575	_____	_____
Full Meeting Registration, Emeritus, Assoc. Fellows & Trainees and Invited Speakers Attending Full Meeting 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 – day of Lecture Speakers only attending the meeting for the day of their lecture — excludes banquet	NC	_____	NC
Single Day Registration – for either Thursday or Saturday Includes luncheon and continuing education credits if desired	\$200	_____	_____
Wednesday, May 03			
Welcome Reception — Open to all meeting registrants and accompanying persons. Indicate attendance for headcount.	NC	_____	NC
Thursday, May 04			
Luncheon Seminar with Dr. Creagan. Indicate attendance for headcount	NC	_____	NC
Young Fellows Social Event. Indicate attendance for headcount. All young scientists (regardless of whether an ACS member) and significant others are invited. Hosted by Lance Truong, D.O. , Chair of the Young Fellows Section, and members of the Executive Committee, this will be a light dinner at a local restaurant within walking distance.	NC	_____	NC
Friday, May 05			
Cultural and Historical Tour — Includes transportation and lunch	\$50	_____	_____
Extra tickets to Awards Banquet and Reception (subject to availability)	\$95	_____	_____
Saturday, May 14			
Luncheon, Annual Business Meeting Reserved seating for all Young Scientists, age 45 and under; included with full or single day registration (please indicate attendance for headcount estimation)	NC	_____	NC
Musicale, with Wine and hors d'oeuvres Intermission Complimentary for all attendees (please indicate attendance for headcount estimation)	NC	_____	NC
Include Renewal of Dues (Fellows)	\$225	_____	_____
Renewal of Dues (Assoc. Fellows)	\$50	_____	_____
Total Payment Enclosed (in USD)			=====

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Association of Clinical Scientists

Registration for 144th Meeting, Rochester, Minnesota May 03–06, 2023

PAYMENT OPTIONS

Cancellation with full refund will be accepted until **April 25, 2023**.

1. Register securely on-line at <http://www.clinicalscience.org/annualmeeting.html#Registration>.
2. Complete and mail this form (**print both pages 10-11 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

Expiration (mo/yr)

Security Code (CVV) No.

Name on the card

Billing Address

City

State (Province)

Country

Postal (Zip) Code

Signature



Interview: Dr. David Bruns

with comments by Charles D. Hawker, Ph.D., Acting Newsletter Editor

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. This interview of David Bruns, MD, PhD was conducted by Henry Oh, Ph.D. Dr. Bruns served the Association as Vice President in 1985, President in 1986, and received the Clinical Scientist of the Year Award in 1987. Many members will recall David as being the Editor-in-Chief of *Clinical Chemistry* for many years, going back to 1989.

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

David Bruns: I grew up in St. Louis, Missouri, and attended Washington University, which was literally down the street from my home. The school offered me a wonderful scholarship in engineering. That led to a bachelor of science in chemical engineering.

When I decided to go to medical school, I needed to learn about biology. (I had not had even a high-school biology class; none had been offered at my school.) So, I returned to Washington U. A former professor of mine (in English) was, by then, a dean; and he suggested that I enroll in a program for an AB in Arts and Sciences with an emphasis on biology. Classes were amazing, often with a small number of students; and they were taught by engaging and brilliant faculty. A course in comparative neurology was taught by Rita Levi-Montalcini who was doing work then that led to her Nobel Prize. Barry Commoner taught another class entitled “molecular biology”. On the first day of class, he asked the class what we wanted to study. Of course, we all said “molecular biology”. He was disappointed; he had hoped that we would be interested in a broader topic, such as

environmental studies. He nonetheless taught a terrific class in molecular biology.

I attended medical school at St. Louis University which provided my first real exposure to biochemistry. Having trained as a chemical engineer, I was amazed by the “chemical plant” inside cells. (I still am.) But the required rote memorization in biochemistry classes was a challenge for me when it came time for exams. Fortunately, a group of young biochemists had arrived on the faculty recently, and they focused their exam questions on problem solving. Those questions accounted for half of the test scores. The average grade on tests was about 50%, so I was fine. Also at St. Louis U, a senior faculty member, Maurice Green, gave a memorable lecture that introduced his work on oncogenic viruses. I had an urge to join his laboratory, but the urge was buried by the need to memorize material for upcoming tests in other courses.

Residency and fellowship training in Laboratory Medicine were at Washington University in St. Louis. This period introduced me to the practice of clinical chemistry and to basic research, although I did not do enough basic research to be “board eligible” in science (if such boards were to exist).

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Dr. David Bruns

Dr. Bruns Interview continued

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Oh: How did you develop an interest in science and medicine?

Bruns: I probably was attracted to science (and math) in high school mostly because I could do it. Memorization, which was important in high-school classes in history or foreign languages, did not come as easily for me. I was more comfortable figuring out problems (I liked physics enough that I created and taught an after-school class at my grade school. Clearly a nerd).

The Soviet Union had launched the Sputnik rocket, and kids who could do math and science were encouraged to do science or engineering. I liked chemistry and could do math, so chemical engineering was deemed to be a good fit (of course, I had no idea what chemical engineers did).

In college, I became interested in chemistry in medicine. In a strange way, this came about because of Wash U's outstanding medical school. A classmate had a job there in a biochemistry research laboratory in the department of psychiatry. We did experiments for a college chemistry class (I don't recall which) in that research laboratory, at night, probably against the rules of the class and of the research lab. I was impressed by the lab, and intrigued by the confluence of chemistry and psychiatry.

Oh: Tell me about your career progression. Did your career progression exceed your expectations?

Bruns: Yes. When I finished residency and fellowship and moved to the University of Virginia as an Assistant Professor, I hoped that I would get a grant and publish a paper independent of my mentors. Both of these things happened and exceeded my expectations. Later, the opportunity to serve as editor of a major journal in our field certainly exceeded my expectations as well.

Oh: How did mentoship influence your professional career? How did you get involved with the Association?

Bruns: I have had important mentors throughout my career.

Important mentors at Washington U. included Leonard Jarrett, Jack Ladenson and Jay McDonald. They taught me, largely by example, how to think (and write) like a scientist and how to deal with technical problems in the laboratory and how to handle tensions with clinicians and laboratory staff.

John Savory, my boss at Virginia, helped me to navigate challenges, both personal and professional. He introduced me to the Association and encouraged me (and others) to submit abstracts to Association meetings. He was generous in introducing me to members of the Association.

To the extent that I have contributed to the profession, each of these mentors was essential, as were many others.

Oh: What unexpected turns did you have in your career?

Bruns: The most important turn in my career, and in my life, was meeting my future wife, Mary Elizabeth Hirst. Liz was working on her Ph.D. in biochemistry at the time. After she finished her Ph.D. and a postdoc (and after my residency and fellowship), we moved to the University of Virginia where the chairman of pathology gave us a small laboratory in which to do research. We were fortunate to get NIH funding quickly,

based on a discovery that Liz had made during her postdoc at Wash U. (additional NIH funding stemmed from observations that Jay McDonald, Leonard Jarrett and I had made.) This led to years of research together in our "mom-and-pop" laboratory. But I am getting ahead of the story.

A second unexpected turn had occurred when I learned that, contrary to what pathology professors had told me at St Louis University, residencies in laboratory medicine existed. In fact, Leonard Jarret had just started one across town. Leonard told me that residents got to do research for a year in any research laboratory at Washington U. I was sold. During my first year of residency, Leonard called me to his office and asked if I had thought about a laboratory in which to do research. I said that I was interested in a research lab in psychiatry (the same one, as it happened, in which I had done experiments at night). Leonard appeared exasperated and said something to the effect that I could work "anywhere, but not in psychiatry!" I spent my research year in Leonard's laboratory, a completely unexpected turn, but a fortuitous one.

A third unexpected turn was the opportunity to serve as Editor of *Clinical Chemistry*. This was a real challenge, as I believed that for clinical chemistry to be recognized as an academic discipline, the field needed a respected journal. Although I had served for several years on the Executive Committee of the journal's Editorial Board, I had a lot to learn. Fortunately, the out-going editor, J. Stanton King, Ph.D., introduced me to the Council of Biology Editors (CBE) and its course for new editors. (Stan had already taught me that editors "must leave a few typos in manuscripts—to breed".) At CBE I learned from real pros at major medical and biology journals. Several of the members also became colleagues and friends over the 18 years that I was editor of the journal.

A fourth unexpected turn was Carl Burtis's invitation to me to be a co-editor of the "Tietz Textbook of Clinical Chemistry," the "bible" of the field. Carl had been a Chair of the Board of Editors, and we had worked together well for several years. The editing of the Tietz Textbook (which is really a reference work) and of its companion books ("Fundamentals") was important work, as I believed that every profession needed at least one reference work that could help to define the field. "Tietz", with over 100 contributors, had served that role for years. So, acting as an editor represented a major responsibility to the field. Burtis called it, aptly, a labor of love.

More unexpected turns occurred—including, notably, collaboration with Patrick Bossuyt on the Standards for Reporting Diagnostic Accuracy (STARD Initiative)—but the pattern is clear from the four examples above. One should expect "unexpected turns."

Oh: How has ACS helped you in your career?

Bruns: ACS helped me in numerous ways. It provided an opportunity to present and defend my work orally at meetings. Submitting papers to the *Annals* provided valuable experience in preparing clinical manuscripts and in responding to reviewers. And attending meetings was a wonderful opportunity to see and interact with role-models informally at the Association's banquets, musicales, lab visits and road races.

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Dr. Bruns Interview continued

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

Bruns: Mentors influenced my career in many obvious ways, some of which are apparent from what I have just said. On the other hand, other influences were unseen, but they influenced the trajectory of my career and linger in memory. Some examples:

When I was starting out as an Assistant Professor, John Savory recognized (as did I) that I was not writing papers at a good rate. One day, he sat down with me to write a paper about work we had done. After a few minutes of writing on a yellow legal pad (“a variety of methods have been used to measure...” were the magic words to start many Savory papers), John said he had to leave and that I should finish the paper. That was just what I needed. I merely had to finish the paper. (It was submitted and accepted).

On other occasions, Liz and I faced deadlines for submission of NIH grant renewal applications, but I had limited time for grant writing. At one of those times, John Savory told me he would watch over my clinical duties for a few days to give me time to think and write. At another such time, Jack Ladenson (who was chair of the Board of Editors of *Clinical Chemistry* at the time) watched over some of my editorial duties while I worked on a different grant.

Another example: Jay McDonald suggested me to several pathology chairs as a candidate for positions as director of laboratories. (Jay even offered me that position when he was a chairman at the University of Alabama). Similarly, Leonard Jarrett promised me, after he had become chair of pathology at Penn, that he would help me if I ever needed it. Such reassuring words and actions helped me to feel a small sense of security that I could probably find a job somewhere if necessary.

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

Bruns: Developing a network of colleagues was a natural outgrowth of getting involved with professional organizations. Colleagues I met through such organizations in pathology and laboratory medicine helped me with everything from choosing methods to use in the clinical laboratory to understanding new concepts and obtaining unique tools for research.

The critical role of colleagues is readily appreciated in considering the work of editing *Clinical Chemistry* and the Tietz books:

As examples, Carl Wittwer (pioneer of rapid-cycle PCR and quantitative real-time PCR and more) and Dennis Lo (who recently won a Lasker Award for his work on circulating, cell-free nucleic acids) became Associate Editors of *Clinical Chemistry* and expanded the scope of the journal, making it a home for papers in molecular diagnostics. Their chapters and advice also made it possible to add the words “and Molecular Diagnostics” to the title of the “Tietz Textbook of Clinical Chemistry.”

Many colleagues from laboratory medicine and from fields in which I had done research (especially endocrine biochemistry)

served as reviewers of papers when I was the editor of *Clinical Chemistry* (and since) and improved the quality of the papers that were published on my watch. Jim Boyd, a colleague since we were residents together in laboratory medicine and an expert on laboratory statistics, reviewed the statistical approaches used in submitted papers before publication; he saved our field from publishing embarrassing errors in the scientific literature (and continued to do this for another 15 years at the journal after I retired from editing). Many other colleagues also contributed authoritative chapters that upheld the standards of “Tietz.”

Colleagues from the Council of Biology Editors helped me with important activities such as developing guidelines for publication ethics (and dealing with violations of the guidelines), defending peer review in court, and forming a search committee for a new editor after my terms at *Clinical Chemistry* ended.

Oh: What advice would you give to someone starting out in their career in clinical chemistry/laboratory medicine? What advice would you give someone at the Associate Professor level in their career?

Bruns: I am reluctant to give advice. My experiences are limited, and times change. But here is some advice that I have received and trusted.

When starting out: 1. Find time to WRITE papers. “If you do not write, people outside your institution will not know if you are doing anything” [Leonard Jarrett]. 2. To support your research, find funding, whether from industry, government (NIH, NSF, DoD etc.) or private funding agencies: “Money is green” [Jack Ladenson]. 3. Show your worth to clinicians and administrators in your institution, and to your superiors. Get involved with their problems and contribute [Fred Apple, paraphrased].

For Associate Professors, time spent in leadership positions is important for promotion and can be enjoyable and satisfying. Try something. If you don’t like it, try something else. I was happy to serve as president of ACS and ACLPS, positions which involve manageable time commitments. But I did not want to be president of a larger society, as these positions would have required me to be away from work in other areas in which I felt I was more likely to be equipped to contribute. By contrast, I was happy to take on the substantial challenges of editing and leading a major journal, where I hoped that I could contribute. “To each his [or her] own.”

For anyone working in our field, I suspect that the most important thing is to be open to new ideas and technologies. During my career, practice was changed dramatically by new approaches that used, for example, mass spectrometry, monoclonal antibodies, the polymerase chain reaction (PCR) and principles of evidence-based medicine. Finding such approaches early requires reading — often outside our field, in sources like Science (PCR) or Nature (monoclonal antibodies) or the medical literature (evidence-based medicine) — or attending national conferences in other fields and talks in other departments. New approaches are not threats; they are opportunities.



President's Corner

I hope that you all had a productive and happy 2022. The ACS Program Committee is eagerly working towards our Annual Meeting in Rochester, MN co-chaired by **Dr. Joshua Bornhorst** of Mayo Clinic Rochester and **Dr. Jonathan Hoyme** of Mayo Clinic Jacksonville. They have already orchestrated what is looking to be a terrific scientific program, including cutting-edge discussions of neurological disorders and artificial intelligence. [Advanced registration is live on our website!](#)



Dr. Christopher Crutchfield

Much of our focus on the executive level has involved organizational discussion around our upcoming meetings and fiscal considerations. After some deliberation, we determined that we would maintain the historical rates for membership renewal & meeting registration rates for members. However, we have introduced a new category of full meeting registration for non-members that will increase the meeting registration to \$575 (an increase of \$100 over ACS member rate) to account for the general increase in costs associated with hosting a scientific meeting. In addition, we have explored some cost-cutting measures and are looking to increase corporate sponsorships.

The focus of the Association for 2023 is to make the most of what will be an outstanding Annual Meeting and grow our membership. I feel this Association is a terrific opportunity to develop new relationships with Clinical Scientists that practice Pathology & Laboratory Medicine. The active membership spans all categories of career advancement: from trainees to faculty emeritus. We pride ourselves with our collegiality and dedication to providing an intimate forum for discussing our science. If you can think of someone who would be a good fit, please sponsor them to apply for membership through our website.

I would also like to acknowledge the excellent contributions by **Dr. Henry Oh** as he has concluded his position as newsletter editor. Over the past year he has made many contributions through his role as newsletter editor, executive committee member, photographer, and musician. Thank you, Henry! In the interim **Charlie Hawker** has stepped in to organize the newsletter. If anyone has an interest in newsletter editing, please let Charlie know (charlie@charlesdhawker.com)!

Finally, the Association has assumed full ownership of its website domain from ARUP and the website is now fully hosted via external servers. We are still making progress on our website revitalization, including a membership directory. Stay tuned!

Christopher Crutchfield,
Ph.D., HCLD (ABB), D(ABCC), FACS
President (2022-2023)



The Young Fellows Section

We are at about the halfway point for the academic year for many of us, which especially brings a ton of questions from the more junior trainees at my institution, including questions about getting involved in research and networking with others in the field. When asked, the Association always comes to my mind and I tell them that it's always a good time to widen one's circle and expose yourself to new perspectives from others in your own field and others in parallel fields of study. I think that's the real strength of this Association—that it brings together clinical scientists from all sorts of different disciplines, near and far! My own first experience at the ACS 2022 143th annual meeting in Louisville was total confirmation of that. Having grown up in rural California, I like to think that the timing of the annual meeting is akin to sowing the fields with some new seeds, and with every passing meeting seeing the roots spread out and grow just like it has for so many others in the Association.



Dr. Lance Truong

As alluded to earlier, the objective of the Young Fellows Section continues to be the fostering of career growth by providing early-career fellows opportunities to network and build relationships with other professionals in the field, give presentations and receive awards at our annual meetings, and receive mentorship from more experienced members. To that end, we advocate for young fellows to submit cases and review articles or original research manuscripts for publication to the *Annals of Clinical and Laboratory Sciences*, the journal of ACS. The editorial board encourages trainees to serve as reviewers for the journal, wherein you can be paired with senior reviewers to receive hands-on guidance in the reviewing process. We are also urging young scientists to submit abstracts for the upcoming ACS 2023 144th meeting, and the instructions to do so may be found on our [Association's website](#).

The details of the upcoming Young Fellows event on Thursday, May 4th during the ACS 2023 Annual Meeting at Mayo Clinic in Rochester, Minnesota are still being finalized but it is planned for 7 PM and I can't wait to share with you the details! There will be plenty of new faces to see, and a very good time to be had by all!

Sincerely,

Lance Van Truong, D.O.

Chair, Young Fellows Section, Association of Clinical Scientists

Associate Chief Resident, Brown University Pathology and Laboratory Medicine



The Grapevine: Member News

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FELLOWS

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Anne E. Tebo, Ph.D.
Dept. of Laboratory Medicine & Pathology
The Mayo Clinic
Rochester, MN



YOU

Fellow or Associate Fellow to volunteer to serve as Newsletter Editor for the *Clinical Science Trumpet*. This is a great way to serve and learn about the Association. It can also open doors to other responsibilities and opportunities in ACS.

Contact Charles D. Hawker, Ph.D., at:
charlie@charlesdhawker.com

Editor's Note: I would like to thank Dr. Henry Oh for his service as Newsletter Editor this past year and for the superb photographs he took at the Louisville Annual Meeting.

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

(submitted by Dr. Stephen Roper)

Type I tyrosinemia is caused by defects in fumarylacetoacetate hydrolase (EC. 3.7.1.2). Severe forms of the disorder are associated with acute liver failure and renal tubular dysfunction, which may require transplant if untreated. What is the name of the diagnostic metabolite that accumulates in tyrosinemia type 1? What is the name of the medication, approved by the FDA in 2002, that has drastically improved outcomes in tyrosinemia type I?

ANSWER

The diagnostic metabolite is Succinylacetone and the medication to treat Type I tyrosinemia is Nitisinone.

(Dr. Roger Bertholf correctly answered the previous trivia question).

CURRENT QUESTION

(submitted by Dr. Stephen Roper)

Lead exposure can cause neurologic, hematological, cardiovascular, and reproductive abnormalities. Although there is no such thing as a "safe" blood lead concentration, the CDC recommends a clinical decision limit to differentiate elevated from non-elevated blood lead concentrations. Before 2010, the threshold was 10 ug/dL and from 2012 to 2021 it was 5 ug/dL. What is the current CDC clinical decision limit for blood lead and why did it change?

ANSWER

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

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

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Clinical Science Trumpet

Newsletter of the Association of Clinical Scientists

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

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