Clinical Science Trumpet

Newsletter of the Association of Clinical Scientists

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

Vol. 41, No. 2—May 2021

Free Registration Now Open for the First Virtual Annual Meeting

Thursday and Friday, May 13 and 14, 2021 1:00 p.m. CDT

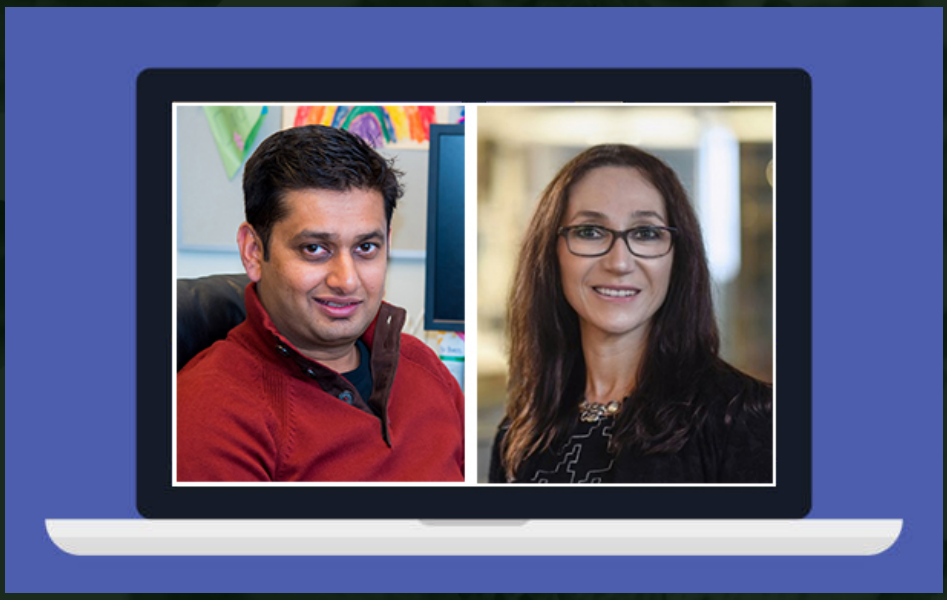
by Charles D. Hawker, Ph.D., M.B.A.

Registration is now open for the Association of Clinical Scientists' first ever virtual Annual Meeting and, like the outstanding virtual symposium held in November, this event will be free to all registrants. The impressive program for the two half days appears elsewhere in this newsletter.

On Thursday, May 13, the program theme of "Emerging Technologies in Clinical Laboratory Medicine" features three invited speakers including the **Claude P. Brown Memorial Lecture**. That session will be followed by a session of short presentations by young scientists. On Friday, May 14, the program theme of "COVID-19 Surveillance in Public Health" also features three invited speakers including the **Abraham J. Gitlitz Memorial Lecture**. This session will be followed by the annual Business Meetings which both members and non-members may attend. Each day's program will begin at 1:00 p.m. CDT and tentatively conclude at 5:00 pm.

COVID-19 source image credit:
CDC/ Alissa Eckert, MS; Dan Higgins, MAM - https://phil.cdc.gov/Details.aspx?pid=23312

COVID-19 Composition credit: Michael C. Hawker, MArch, MS



Above: Dr. Faisal Khan (left) and Dr. Maria Elena Bottazzi (right) will present at the 2021 Virtual Annual Meeting

The Program Committee, chaired by **Jonathan B. Hoyne, Ph.D.**, is to be congratulated on the excellent program for the two half days.

Information regarding the program, how to register for the virtual meeting, the plans for ACCENT CE accreditation—which will also be free—and the procedure for submission of abstracts by young scientists for the Thursday program can be found on the website at:

http://www.clinicalscience.org/meetings.html#Introduction.

ANNUAL AWARDS

The Association's Annual Awards, which had previously been selected by the Awards Committee, but were not presented in Banff due to the cancellation of the 2020 meeting, will be presented virtually over the two days. On Thursday, the Young Clinical Scientist Award will be presented to **Amanda Haynes, D.O.**, Division Director for Clinical Pathology Professional Services and Operations at Geisinger Medical Center. On Friday, the Clinical Scientist of the Year Award will be presented to **Keri J. Donaldson, M.D., MSCE**, Assistant Professor of Biochemistry and Molecular Biology and Assistant Professor of Public Health Sciences (Joint Appointment) as well as the Director of the CLIA Laboratory and the

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Virtual Meeting...

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Institute of Personalized Medicine and Clinical Processing Specimen Laboratory at the Penn State Hershey College of Medicine. Also, on Friday, the F.W. Sunderman, Jr. Diploma of Honor will be presented to **Robert W. Hardy, Ph.D.**, Professor in the Department of Pathology, Division of Laboratory Medicine, at the University of Alabama at Birmingham (UAB).

The other members of the Program Committee for the 2021 Annual Meeting include **Joshua A. Bornhorst, Ph.D., Chris Crutchfield, Ph.D., Keri J. Donaldson, M.D., MSCE, Alexander Feldman, M.D., Shuko Harada, M.D., Robert Hardy, Ph.D., Charles D. Hawker, Ph.D., M.B.A., M. John Hicks, M.D., Ph.D., D.D.S., Stephen M. Roper, Ph.D., Consolato M. Sergi, M.D., Ph.D., and Roland Valdes, Jr., Ph.D.**

Final Program for 2021 ACS Virtual Annual Meeting

all times CDT

https://www.clinicalscience.org/meetings.html#Program

Thursday, May 13, 2021

Session Theme: Emerging Technologies in Clinical Laboratory Medicine

1:00 p.m.	Claude P. Brown Memorial Lecture: **Faisal M. Khan, Ph.D.,** University of Calgary *Towards Improved Outcomes of Hematological Malignancies: Three Approaches of Precision Medicine.*
1:40 p.m.	Q & A
1:50 p.m.	**David Murray, M.D., Ph.D.,** Mayo Clinic *The journey to replace immunofixation with mass spectroscopy for plasma cell disorders.*
2:30 p.m.	Q & A
2:40 p.m.	**James Broach, Ph.D.,** Penn State Cancer Institute *Comprehensive identification of structural variants, the dark matter of cancer genomics.*
3:20 p.m.	Q & A
3:30 p.m.	Presentation of: Young Clinical Scientist Award by **Myra Wilkerson, M.D.,** Awards Chair to **Amanda Haynes, D.O.**
3:40 p.m.	Short presentations—see website for details (abstracts submitted by young scientists)
5:40 p.m. (approx.)	Program concludes

Friday, May 14, 2021

Session Theme: COVID-19 Surveillance in Public Health

1:00 p.m.	Abraham J. Gitlitz Memorial Lecture: **Maria Elena Bottazzi, Ph.D.,** Baylor College of Medicine *International Efforts in Combatting COVID19: Behind the Scenes of How to Develop a COVID-19 Vaccine Suitable for Global Access.*
1:50 p.m.	Q & A
2:00 p.m.	Presentation of: F.W. Sunderman, Jr. Diploma of Honor by **Myra Wilkerson, M.D.,** Awards Chair to **Robert W. Hardy, Ph.D.**
2:10 p.m.	**Michael Pentella, Ph.D., D(ABMM)** University of Iowa, College of Public Health *The Collaboration of Clinical and Public Health Laboratories to Provide COVID Testing Services.*
2:50 p.m.	Q & A
3:00 p.m.	Presentation of: Clinical Scientist of the Year Award by **Myra Wilkerson, M.D.,** Awards Chair to **Keri J. Donaldson, M.D., MSCE**
3:10 p.m.	**Kelly Oakeson Ph.D.,** Utah Public Health Laboratory, Salt Lake City, UT *Surveillance of SARS-CoV-2 Variants.*
3:50 p.m.	Q & A
4:00 p.m.	ACS 2021 Annual Business Meeting (all members and non-members cordially invited) **Keri J. Donaldson, MD, MSCE,** ACS President, presiding
5:00 p.m. (approx.)	Program concludes

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Speaker Profiles and Abstracts

Thursday, May 13, 2021
Session Theme: Emerging Technologies in Clinical Laboratory Medicine

FAISAL M. KHAN, PH.D.

UNIVERSITY OF CALGARY

CLAUDE P. BROWN MEMORIAL LECTURE

Dr. Faisal Khan

Dr. Khan is an Associate Professor at the University of Calgary. In his clinical role, Dr. Khan works as Clinical Director of Hematology Translational Lab and as Associate Clinical Director of Histocompatibility and Immunogenetic Lab (HIL) and as Scientific Lead of Molecular Pathology Program in Alberta Precision Labs. He obtained his PhD in Human Molecular Genetics in India in 2006. He completed his postdoctoral training and clinical fellowship at the University of Calgary. Dr. Khan is a certified Diplomat of American Board of Histocompatibility and Immunogenetics (ABHI). Dr. Khan has more than 21 years of experience in Transplant Immunology, Cancer Genomics and Histocompatibility and Immunogenetics. Based on his research, Dr. Khan has published 87 research articles in scientific journals like Science, Blood, and Blood Advances. His research has been recognized by several awards including American Society of Hematology (ASH) Achievement Awards in 2013, 2015 and 2018.

TOWARDS IMPROVED OUTCOMES OF HEMATOLOGICAL MALIGNANCIES: THREE APPROACHES OF PRECISION MEDICINE.

Prognosis of hematological malignancies like Acute Myeloid Leukemia (AML) and B cell Non-Hodgkin's Lymphoma (NHL) is far from ideal, primarily due to frequent relapse and/or failure of treatment. Management of relapse is ineffective, whereas preemptive treatment of impending relapse is effective. However, existing approaches for early and reliable detection of impending relapse of malignancy are not successful. Building upon the research of several years, our team at University of Calgary is studying three synchronized approaches to identify most effective treatment strategy for AML/B-cell NHL and provide early and accurate prediction of leukemia relapse.

Approach-1 is focused on 'precision'. In this approach, we have established next generation sequencing based somatic variant landscape for AML in Alberta; and have identified key immunogenetic determinants (Killer Ig like receptors and CD16a gene variants) that influences rituximab-based therapy of B cell-NHL. These findings are critical in deciding the precise treatment strategy for these hematological malignancies.

Approach-2 is focused on 'prevention'. In this approach, we have studied over 500 allogeneic Hematopoietic Cell Transplant (HCT) donor-recipient pairs to identify key

Faisal Khan Abstract continued on page 4

DAVID MURRAY, M.D., PH.D.

MAYO CLINIC

Dr. David Murray

Dr. Murray is a physician scientist who oversees the clinical protein immunology laboratory at The Mayo Clinic, Rochester. Before attending medical school, he spent 10 years performing research related to macromolecules for Dow Corning and Eastman Chemical Company. He is also a board certified anatomical and clinical pathologist. His research goals center on the adoption of proteomics into the clinical lab. His work had resulted in over 60 peer reviewed articles, 38 patents and a novel mass spectroscopic proteomic assays adapted into the clinical laboratory. Dr. Murray is Consultant, Division of Clinical Biochemistry and Immunology, Department of Laboratory Medicine and Pathology and an Assistant Professor of Laboratory Medicine and Pathology. He holds a PhD in polymer chemistry from the University of Akron and an MD from East Tennessee State University. He completed a residency in anatomic and clinical pathology at the Mayo School of Graduate Medical Education in the Mayo Clinic College of Medicine.

THE JOURNEY TO REPLACE IMMUNOFIXATION WITH MASS SPECTROSCOPY FOR PLASMA CELL DISORDERS.

This presentation will focus on the development, validation and implementation of a MALDI-TOF MS method as a replacement for traditional immunofixation electrophoreses for isotyping monoclonal proteins. The journey began in 2014 with studies involving high resolution LC-Q-TOF MS of tryptic peptides and intact immunoglobulin light chains with a goal of a serum based minimum residual disease detection in multiple myeloma patients. Subsequently, the method was adapted to a MALDI-TOF MS platform and coupled to IgG, IgA, IgM and kappa and lambda immunoenrichment termed Mass-Fix at Mayo Clinic. This was a key step which afforded the ideas of using the method in all aspects of multiple myeloma. Several studies involving both clinical and analytical performance of the assay demonstrated improvement over traditional electrophoretic analysis. Several patient cases will be presented to demonstrate these improvements which include increased specificity, improved sensitivity and the detection of M-proteins with light chain glysoylation. The detection of light chain glycosylation was found to be a risk factor for the development of plasma cell disorders. Several challenges and hurdles were experienced during the automation and implementation of the assay. Currently, our lab has performed more than 50,000 assays by the Mass-Fix method.

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Speaker Profiles and Abstracts continued...

FAISAL M. KHAN, PH.D.

ABSTRACT CONTINUED

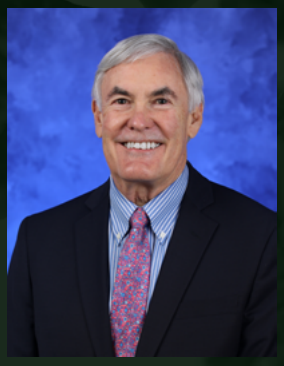
immunogenetic determinants (Killer Ig like receptors and IL-10 gene variants) that influences post-transplant recovery of immune system and confers strong protection from adverse outcomes like relapse of underlying malignancy and graft versus host disease (GVHD).

Approach-3 is focused on 'prediction'. In this approach, we have identified that (1) presence of recipient specific DNA signals (chimerism) in CD34+ cells obtained from the blood specimens of HCT recipients is strongly predictive of post-transplant relapse; and (2) a unique pattern of immune system recovery based on transcriptome analysis of 600 immunity related gene is strongly predictive of a strong graft-versus-leukemia effect after HCT.

Success of these approaches will/have led to establishment of advanced diagnostic tests in Alberta that will provide deciding effective treatment strategy for patients of different hematological malignancies and an early and accurate detection of leukemia relapse. This will also lead to identification of patients at high risk of developing relapse and will allow timely intervention. Ultimately, clinical implementation of these approaches will lead to significant reduction in the incidence of leukemia relapse, improved survival, and quality of life of patients, and a substantial financial savings to our health care system.

JAMES BROACH, PH.D.

PENN STATE CANCER INSTITUTE



Dr. James Broach

Dr. Broach is Distinguished Professor and Chair of the Department of Biochemistry and Molecular Biology at Penn State College of Medicine and Director of the Institute for Personalized Medicine. Dr. Broach was Professor of Molecular Biology at Princeton University from 1984-2012, where he served as Associate Director of the Lewis Sigler Institute for Integrative Genomics and Co-Director of the Center for Computational Biology. Dr. Broach has served as Chair of the Genomics, Computational Biology and Technology Study Section at NIH as well as chair of numerous special emphasis genomics panels. He was Co-Founder and Director of Research for Cadus Pharmaceuticals from 1992 to 2000. Dr. Broach is a Fellow of the American Academy of Microbiology and of the American Association for the Advancement of Science. Dr. Broach has published more than 175 articles in the area of molecular biology and genomics and holds a number of patents in drug discovery technologies.

COMPREHENSIVE IDENTIFICATION OF STRUCTURAL VARIANTS, THE DARK MATTER OF CANCER GENOMICS

Genomic analysis of tumors has stimulated major advances in cancer diagnosis, prognosis and treatment, shifting the focus from morphological and histochemical characterization to consideration of the landscape of driver mutations in the tumor. To date such consideration has focused on somatic mutations comprising single nucleotide changes or small insertions or deletions. We have recently applied optical genomic imaging (OGM) to a variety of human tumors and showed that OGM can detect structural variants (SVs), including deletions, insertions, duplications, inversions and translocations, that are not easily detectable using standard methods of whole genome analysis. Our studies of more than 100 cases of Acute Myeloid Leukemia indicated that OGM identified all the clinically relevant SVs and copy number variants reported by standard cytogenetic methods, such as cytological karyotyping, fluorescent in situ hybridization and microarrays. Importantly, OGM identified clinically relevant SVs in a number of cases that had been missed by the routine methods and refined the underlying genomic structure reported by traditional cytogenomic testing in many other cases. We also applied OGM to Human Papilloma Virus (HPV) associated head and neck cancers, predominantly oropharyngeal carcinomas. We found the virus had integrated into the host genome in two thirds of the tumors examined but resided solely extrachromosomally in the other third. Focal amplification of the virus and the genomics sequences surrounding it often occurred subsequent to integration. In all cases, viral integration correlated with pervasive genome-wide somatic alterations, including multiple insertions, deletions, translocations, inversions and point mutations. Few or no somatic structural variants were present in tumors with only episomal HPV. In sum, our studies have shown that OGM identifies numerous somatic mutations that current genomic analysis methods fail to reveal and this capability can improve diagnostic and prognostic efforts when applied to a variety of cancers.

ASSOCIATION OF CLINICAL SCIENTISTS

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Speaker Profiles and Abstracts continued...

Friday, May 14, 2021
Session Theme: COVID-19 Surveillance in Public Health

MARIA ELENA BOTTAZZI, PH.D., FASTMH

BAYLOR COLLEGE OF MEDICINE

ABRAHAM J. GITLITZ MEMORIAL LECTURE

Dr. Maria Bottazzi

Dr. Bottazzi is Associate Dean of the National School of Tropical Medicine, Professor of Pediatrics and Co-director of Texas Children's Center for Vaccine Development at Baylor College of Medicine in Houston, Texas. She is an internationally recognized tropical infectious disease vaccinologist and global health advocate with two decades pioneering and leading the advancement of a vaccine portfolio from discovery to clinical trials for diseases, such as coronavirus, hookworm, schistosomiasis, and Chagas, all neglected diseases that affect disproportionally the world's poorest populations. She also has established innovative partnerships in Latin America, Middle East and South East Asia, making significant contributions to innovative educational/research programs and catalyze policies and disseminate science information to reach a diverse set of audiences. As global thought-leader she has received national and international highly regarded awards, has more than 150 scientific papers and participated in more than 250 conferences worldwide. She is Member of the National Academy of Science of Honduras and Emerging Leader in Health and Medicine of the National Academy of Medicine in the US. Dr. Bottazzi currently serves as Co-chair of the Vaccines and Therapeutics Taskforce of the Lancet Commission on COVID-19).

INTERNATIONAL EFFORTS IN COMBATTING COVID19: BEHIND THE SCENES OF HOW TO DEVELOP A COVID-19 VACCINE SUITABLE FOR GLOBAL ACCESS.

For the last two decades, the National School of Tropical Medicine and its Center for Vaccine Development in Houston, Texas has operated with the mission to develop and test new low-cost and effective vaccines against emerging and neglected tropical diseases, build capacity for vaccine development locally and with foreign nations and guide and influence vaccine policy and advocacy. This approach relies on the need for international diplomacy, solidarity, and cooperation. This presentation will provide a behind the scenes vignette and an overview of the vaccine development process as well as a review of the coronavirus vaccine development landscape. Finally, it will highlight a case study of how a COVID-19 vaccine, suitable for global access, was developed and is currently advancing towards achieving emergency use authorization for distribution and access this summer.

MICHAEL A. PENTELLA, PH.D., M.S., SM(ASCP), CIC, DABMM

UNIVERSITY OF IOWA, COLLEGE OF PUBLIC HEALTH

Dr. Michael Pentella

Dr. Pentella is a Clinical Professor at the University of Iowa, College of Public Health and Director of the Iowa State Hygienic Laboratory. His experience spans over forty years in clinical microbiology and public health laboratories. He is certified as an American Board of Medical Microbiology Diplomate, a specialist in microbiology through the American Society for Clinical Pathology, and certified in infection control through the Association of Professionals in Infection Control. Dr. Pentella is a member of the Association of Public Health Laboratories (APHL) Antibiotic Resistance Lab Workgroup, the APHL Biosafety and Biosecurity Committee (chair), and the APHL Influenza Committee. He has made several contributions that have improved the practice of clinical microbiology. He has written over 50 articles and fifteen book chapters.

THE COLLABORATION OF CLINICAL AND PUBLIC HEALTH LABORATORIES TO PROVIDE COVID TESTING SERVICES

The risk of an emerging pathogen evolving into a pandemic is always present but, fortunately, it is a very rare event. The experience of COVID-19 is unprecedented and has reinforced to us the importance of preparedness for the rare event to prevent the devastation that the pandemic can cause. In considering COVID-19, never before has laboratory testing played such a vital role nor been in such high demand. As in past pandemics, there are several phases from the occurrence of a few human infections through widespread human infection, to the post peak phase, and eventual post pandemic phase. These phases must be considered when determining the need for laboratory testing. During past emerging infections, public health and clinical laboratories have worked in unison for effective care of the patient and prevention of further cases. For SARS-CoV-2 to make testing available to everyone who needed to be tested has taken the collaboration of clinical and public health laboratories to provide life-saving testing services. This was most critical at the start of the COVID-19 pandemic when few tests were available. Later, in the post peak phase, public health laboratories are dependent on clinical laboratories for samples to perform sequencing needed to track emergence of variants. Building statewide laboratory networks is a key factor in emergency preparedness efforts to respond to all phases of the pandemic, as well as outbreaks and epidemics. Leadership from public health laboratories is essential to build and maintain the network. Clinical laboratories must recognize their role in the network. The ongoing collaboration of clinical and public health laboratories to form a network best serves the patients and the population.

Speaker Profiles and Abstracts continued...

KELLY OAKESON, PH.D.

UTAH PUBLIC HEALTH LABORATORY, SALT LAKE CITY, UT

Dr. Kelly Oakeson

Dr. Oakeson is the Utah Public Health Laboratory chief scientist for next-generation sequencing and bioinformatics. He received both his bachelor's and Ph.D. from the University of Utah. He joined the Utah Public Health lab in 2016. Under his leadership, Utah PHL has become a leader in public health in the utilization of next-generation sequencing for disease surveillance and detection. Utah PHL is the CDC Mountain Region's Bioinformatics regional resource. He is part of the APHL Infectious Disease and Food Safety Committee.

SURVEILLANCE OF SARS-COV-2 VARIANTS

With the COVID-19 Pandemic continuing, the SARS-CoV-2 is spreading and replicating and, as expected, mutating, evolving, and adapting. These variants lead to the rise of new lineages of SARS-CoV-2 that are more transmissible, can be resistant to medical interventions, and cause more severe illness. These new lineages or variants of concern pose new challenges for public health laboratories as they race to increase the genomic sequence of SARS-CoV-2 to detect variants of concern. The Utah Public Health Laboratory has been sequencing SARS-CoV-2 since the Pandemic started and is taking on the challenges of detecting variants of concern, including the issues of developing and validating whole-genome sequencing for SARS-CoV-2.

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President's Corner

A Farewell

Dr. Keri Donaldson

As my tenure as President of the Association of Clinical Scientists concludes, many changes have taken place within our organization, our professions, and our personal lives due to COVID-19. My warmest thanks to all the Association members who have served on the front lines during the pandemic. Events that all of us were looking forward to attending and meeting in person were not allowed to take place.

In light of these restrictions, The Association of Clinical Scientists has scheduled its first ever virtual Annual Meeting for Thursday, May 13, and Friday, May 14, 2021, with each day's program beginning at 1:00 p.m. CDT. This meeting is open to all-members and non-members alike. The theme of Thursday's meeting is "Emerging Technologies in Clinical Laboratory Medicine". The program begins with the Claude P. Brown Memorial Lecture presented by **Faisal Khan, Ph.D.**, University of Calgary, on *Towards Improved Outcomes of Hematological Malignancies: Three Approaches of Precision Medicine*. The program continues with presentations by **Dr. David Murray** from the Mayo Clinic and **Dr. James Broach** of the Penn State Cancer Institute followed by a Q & A session. An award presentation and Fellows/Student short talks will conclude the day's program.

Friday, May 14th, the meeting continues at 1:00 PM CDT with the theme "COVID-19 Surveillance in Public Health". **Dr. Maria Elena Bottazzi** from Baylor College of Medicine will present the Abraham J. Gitlitz Memorial Lecture entitled *International Efforts in Combatting COVID19: Behind the Scenes of How to Develop a COVID-19 Vaccine Suitable for Global Access*. **Dr. Michael Pentella** from the University of Iowa will present *The Collaboration of Clinical and Public Health Laboratories to Provide COVID Testing Services*. **Dr. Kelly Oakeson**, Utah Public Health Laboratory, Salt Lake City, UT, will present *Surveillance of SARS-CoV-2 Variants*. There will be time for Q & A, two award presentations, and an Association Business meeting will conclude the day.

Please go to the website for all the actual program at: https://www.clinicalscience.org/meetings.html#Program

We are grateful to the entire program committee chaired by **Jonathan Hoyne, Ph.D.** and the committee members: **Joshua A. Bornhorst, Ph.D.**, **Chris Crutchfield, Ph.D.**, **Alexander Feldman, M.D.**, **Shuko Harada, M.D.**, **Robert Hardy, Ph.D.**, **Charles D. Hawker, Ph.D., M.B.A.**, **M. John Hicks, M.D., Ph.D., D.D.S.**, **Stephen M. Roper, Ph.D.**, **Consolato M. Sergi, M.D., Ph.D.**, and **Roland Valdes, Jr., Ph.D.** We hope you will be able to join us for this important, timely educational event.

One of the hallmarks of the Association is to provide educational presentations on timely and topical themes. Due to the pandemic and elimination of face-to-face meetings, the Executive Committee and a task force chaired by **Drs. Tito Sergi** and **Rob Hardy** decided to hold a half-day virtual

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President's Corner

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meeting on November 13, 2020. This proved to be a successful event with many participants from both the United States and several foreign counties. Registration for the event far outpaced the expectations of the Program Committee as did attendance at the live event. We are grateful to the list of speakers who presented timely topics: **Dr. M. John Hicks**, who presented *Epidemics and Pandemics Through the Centuries: A Historical Perspective*, **Dr. James Dunn**, who presented *Development of Molecular Testing for SARS-CoV-2: Challenges with Implementation during a Pandemic*, **Dr. Salika M. Shakir** who presented *Saliva Testing for SARS-CoV-2: A Game Changer and the Challenges That Come with It*, and **Dr. Elitza S. Theel** who presented *SARS-CoV-2 Serologic Testing: Much Ado About… Antibodies?* The archived presentations, which continue to have current content, can still be found online at:

http://clinicalscience.org/meetings.html#Past.

Annual Meeting for May, 2022

We had originally planned to meet in Louisville, Kentucky, for the 140th Annual Meeting. **Dr. Valdes** and his committee comprised of **Drs. Mark Linder**, **Tiffany Roberts**, **Chris Crutchfield**, **Philip Foulis**, and **Jonathan Hoyne** had a full program of educational and informative presentations scheduled. Since the meeting could not be held at the Embassy Suites as planned, the hotel was going to charge the Association a cancellation penalty. Through the intercedence and efforts of **Dr. Roland Valdes** and **Dr. Charles Hawker**, we were able to re-negotiate with the hotel to hold the meeting for May 11-14, 2022, with a much smaller financial penalty. This meeting is tentatively planned to be a hybrid virtual and in-person meeting, offering a virtual attendance option for participants unable to travel to Louisville, but retaining the usual in-person features of a typical ACS meeting—the receptions, Annual Awards Banquet, and the Musicale. The Embassy Suites Louisville Downtown Hotel is next to Fourth Street Live! and steps from Museum Row, and the Muhammad Ali Center. It is blocks from Whiskey Row and four miles from Churchill Downs, home of the Kentucky Derby. The hotel features an indoor pool and fitness center, daily free cooked-to-order breakfast, and a complimentary evening reception. Every stay includes nonsmoking rooms, complimentary safes, and free Wi-Fi. We hope you will join us either in- person or virtually. Please check the website for all the upcoming registration and meeting information.

The Association

It has been my pleasure to serve with the following officers during this past year: **Dr. Joshua Bornhorst**, President Elect; **Dr. Chris Crutchfield**, Vice President; **Dr. Jonathan Hoyne**, Secretary 2020-23; **Dr. Shuko Harada**, Executive Committee Member 2020-22; and **Dr. Yusheng Zhu**, Executive Committee Member 2020-21. Additionally, other members of the Executive Committee including Past President, **M. John Hicks**, Treasurer, **Stephen Roper**, Chair of Young Fellows Section Oversight Committee, **Alexander Feldman**, Director of Scientific Sections, **Robert Hunter**, Journal Editor-in-Chief, **Nina Tatevian**, and Executive Director, **Charles Hawker** have all contributed immeasurably to the success of the organization. We are also grateful to the Chairs and members of the following Committees: Cell & Tissue Pathology, Clinical Chemistry & Biotechnology, Clinical Immunology & Microbiology, Clinical Infomatics, Clinical Science in Practice, Clinical Molecular Biology & Genetics, Hematology & Transfusion Medicine, Medical Error Reduction, Therapeutics and Toxicology.

As you can see, our members cover a wide range of services and would welcome your participation in what area would be of interest of you. Their service and dedication have been an invaluable resource for the Association and to me personally during my tenure. I would like to acknowledge and thank **Dr. John Hicks** who is completing his term as Past President and welcome **Dr. Yusheng Zhu** as the next Vice President.

In Memoriam

As part of the Association's Annual Meeting in Hershey in 2019, we were honored to include a special presentation made by **Dr. Hawker** to **Dr. Jeno Szakacs** via Skype from his home in Tampa, Florida. **Dr. Szakacs** was a founding member and President of the Association in 1966 and continued to be a strong supporter of the Association. All attendees were delighted to hear his remarks. **Dr. Szakacs**, unfortunately, passed away on March 1, 2021. He is survived by his wife, **Mirella** and two children **Juliana** and **Gabor**. The Association is indeed grateful to **Dr. Szakacs** for his leadership and mentorship all these years. The members of the Association send our deepest condolences to his family.

Become a Member

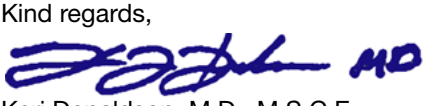
The Association of Clinical Scientists publishes the *Annals of Clinical & Laboratory Science*. The Journal publishes six issues per year with articles spanning across the full spectrum of laboratory medicine and anatomic pathology, and includes basic, translational and clinical science research. We invite you to not only review the Journal but to submit articles as well. The Journal is edited by **Drs. Nina Tatevian** and **Kyle Kurek** with the editorial assistance of **Ms. Anara Baimetova** and is a wonderful benefit of becoming a member of the ACS. The website is: http://www.annclinlabsci.org.

If you are not already a member of the Association, we invite you to join. There are three levels of membership: Fellows, Associate Fellows, and Members. Applications are available on the website: http://www.clinicalscience.org/pdf/2019%20ACS%20Brochure.pdf. Through its meetings, workshops, publications, and professional interactions, the Association fosters scientific inquiry, education, and collegiality. An atmosphere not found in larger meetings promotes discussion, learning, and mentoring.

Since joining the Association as a young investigator, I have been privileged to interact with both senior members and other investigators like myself who are in various stages of our careers. My personal thanks to all the members of the Association past and current as well as the Auxiliary members who have contributed to the success of the Association's Annual Meetings

Wishing everyone continued success and good health.

Kind regards,



Keri Donaldson, M.D., M.S.C.E.

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The Young Fellows Section

Alex Feldman

The Young Fellows Section, which serves scientists age 45 or younger, aims to foster career growth by providing opportunities to network and build relationships with other professionals in the field, give presentations and receive awards at our annual meeting and receive mentorship from more experienced members. If you are interested in establishing a mentor from within our organization, please contact me via email.

Our 2021 Annual Meeting is scheduled Thursday, May 13th and Friday, May 14th and promises to be an exciting program! The afternoon of May 13th will feature abstracts submitted by many of our young fellows. I hope you will be able to join us for this engaging meeting. Registration details can be found at:

http://www.clinicalscience.org/meetings/html.

Additionally, we encourage young fellows to submit a case report, review article or original research manuscript for publication to the *Annals of Clinical and Laboratory Science*, the ACS journal. The instructions for authors can be found at:

www.annclinlabsci.org.

It would be great to see a young fellow or trainee submit an article each quarter for publication. The editorial board also 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. If you are interested in serving as a reviewer, please contact me via email.

Sincerely,

Alex Feldman, M.D.
Chair, Young Fellows Section - Association of Clinical Scientists
Neuropathology Fellow, Northwestern Memorial Hospital

YOUNG FELLOWS SECTION CHAIR:
Alex Feldman, M.D.
email: alexander.feldman@northwestern.edu

Wanted

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

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

Cystic fibrosis is a disorder characterized by pancreatic insufficiency, chronic respiratory infections, and elevated concentration of chloride in the sweat; all secondary to defects in CFTR function. Definitive diagnosis of cystic fibrosis typically requires demonstration of elevated chloride concentration (> 60mmol/L) in sweat via the sweat test. What is the name of the two individuals who first described pilocarpine ionotophoresis for sweat stimulation in 1959?

ANSWER
Lewis E. Gibson and Robert E. Cooke (submitted by **David E. Bruns, M.D.**).

CURRENT QUESTION
(SUBMITTED BY DAVID E. BRUNS, M.D.)

Which former president of the Association of Clinical Scientists performed the autopsy on President John F. Kennedy and later became Director of Laboratories at Bethesda Naval Hospital?

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.

2022 Annual Meeting in Louisville, Kentucky

The Association of Clinical Scientists was successfully able to negotiate a cancellation of its contract with the Embassy Suites Louisville Hotel planned for May 2021 with a new contract for May 11-14, 2022. This meeting is tentatively planned to be a **hybrid** virtual and in-person meeting, offering a virtual attendance option for participants unable to travel to Louisville, but retaining the usual in-person features of a typical ACS meeting – the receptions, Annual Awards Banquet, and the Musicale. **Dr. Roland Valdes**, Program Chair, and his committee of **Mark Linder, Ph.D.**, **Tiffany Roberts, Ph.D.**, **Chris Crutchfield, Ph.D.**, **Philip J. Foulis, M.D., M.P.H.**, and **Jonathan Hoyne, Ph.D.** will tell us more about this exciting meeting as we get closer to 2022.

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In Memoriam: Jeno E. Szakacs, M.D.

Editor's Note: An official memorial statement was just published in the *Annals of Clinical and Laboratory Science*, in the April issue, No. 51-2.

Jeno E. Szakacs

Dr. Jeno E. Szakacs, a founding Fellow of the Association of Clinical Scientists and a past President, passed away on March 1, 2021. He was 96 years of age. In 2019 at the Annual Meeting in Hershey, PA the Association connected via Skype with **Dr. Szakacs** at his home in Tampa, FL, His daughter, **Juliana**, also an Association Fellow, was there along with the rest of the Szakacs family to celebrate the birthday of **Dr. Szakacs** wife, **Mirella**. We presented **Dr. Szakacs** with a special certificate honoring his many years of support for the Association and the audience assembled for the Annual Banquet was able to enjoy seeing and hearing from **Dr. Szakacs** on a large screen.

Dr. Szakacs served the Association for many years, participating in the many meetings and workshops, including conducting demonstrations of laboratory techniques. He served ACS as President in 1966. In 1971, the Association acknowledged **Dr. Szakacs** as the recipient of the Clinical Scientist of the Year Award and, in 2003, he was presented with the Association's highest award, the Gold Headed Cane. Over all the years, **Dr. Szakacs** consistently supported the Association with annual contributions to our programs. The Association offers our deepest condolences to his family.

Clinical Science Trumpet

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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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