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International Federation of Clinical Chemistry and Laboratory Medicine





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EDITORIAL

Message from the eNews Editor

by Katherina Psarra

eNews Editor

Dear colleagues,

Here we are with this double issue of the eNews, when one month of the new year is already gone. We hope you had a great holiday. The news we are receiving from all over the world, show that everybody is back to work.

We are also back to work getting ready for the next World Congress, to be held in May in Seoul. Meanwhile, national congresses and events take place, young and old colleagues are awarded for really valuable studies and work. IFCC is present through the officers, the visiting lecturers, the scholarships, the continuous education in all these events, described in the eNews. We hope that you will enjoy the multicolor and joyful photos coming from so different countries and events.

The article in memory of Carl Burtis is really inspiring for us and for the young scientists, who keep always their position in the news and whose reports of their participation in IFCC educational activities are also inspiring and promising. I take the opportunity to remind you of the board decision, that care will be taken in order all the committees to have at least one young member. In this way we ensure that IFCC's future is built.

Read about the past, read about the present and build the future!

Katherina Psarra



News from the IFCC Website

IFCC Genomics Survey

The purpose of this survey is to better understand the current practices as well as needs of pathologists and clinicians in oncology. The goal is to determine resources that would be most useful for those currently using genomics in oncology patient care, as well as those considering utilizing genomics in the care of their patients. We are also very interested in responses from those in academic medical centers, as those with extensive experience may provide insights into their understanding of best practices for those moving into this space.

Next

IFCC WG GCP Survey for Genomics in Oncology

The ETD Working Group for Guidance for the Implementation of Custom-made Genomic Panels (WG-GCP) invites you and your colleagues to complete the IFCC Genomics in Oncology Survey. The purpose of the survey is to better understand the current practices and needs of both pathologists and clinicians working in oncology. We are especially interested in responses from those institutions with limited experience who are considering moving into genomic testing in oncology. We are also seeking responses from those with genetics experience, to build a guide of best practices for those moving into this space.

[Read more](#)

Complete the survey clicking of following link: <https://forms.gle/E6rocHtwcnW965rQ6>.

VLP Report – Dr. K. Adeli – Turkish Biochemical Society and Balkan Federation



Prof. Khosrow Adeli

As an invited speaker, I gave one plenary presentation (50 min) and 2 symposia talks (30 min each). The conference had over 1000 attendees, mostly medical laboratory professionals including lab scientists/physicians, lab technologists, university faculty, as well as graduate/undergraduate students. Attendees were from Turkey, as well as several Balkan countries.

➲ My first symposium presentation was:
Electronic apps and medical diagnostic data management.

I reviewed recent developments in mobile and web based medical and diagnostic apps and tools to facilitate patient management and communication, introduced

by **Khosrow Adeli, PhD, FCACB, DABCC**

Head and Professor

Clinical Biochemistry, Paediatric Laboratory Medicine

Senior Scientist

Molecular Medicine, Research Institute

The Hospital for Sick Children/

University of Toronto, Canada

the potential applications of medical diagnostics data management and big data analysis using electronic tools, and discussed the benefits of new mobile and web based tools to improve communications links between medical staff, clinical laboratories, and ultimately patients. I reviewed the increasing number of web-based and mobile applications that has been developed to improve access to laboratory test information and test result interpretation – Increasingly powered by Artificial Intelligence.

➲ My plenary presentation was entitled:
Value and impact of laboratory medicine in healthcare delivery.

I reviewed the evidence supporting the importance of lab medicine in healthcare delivery, discussing the impact of lab medicine in the key decisions in the clinical process, either in specific care pathways (using published guidelines for specific conditions) or in specific settings. I also discussed the work of the special IFCC Taskforce published in Clinical Chemistry in 2015 investigating the evidence for the 70% claim and the proposed roadmap by the Taskforce on the changing role of laboratory specialists from specimen-centred clinical testing to patient-focused clinical decision making.

➲ My third presentation was entitled:
Lipid guidelines: emerging evidence on the importance of non-fasting and postprandial lipids.

I participated in another symposium on fasting versus non-fasting lipid testing for cardiovascular risk stratification. I reviewed the advantages of non-fasting lipid

measurements including: Non-fasting lipids are more representative of the normal state, increase convenience for patients, improve patient compliance, eliminates testing difficulty for patients who have trouble with prolonged fasting (such as children and elderly), and samples can be collected and received in lab

throughout the day. Also, triglycerides, cholesterol and lipids minimally change with fasting vs. non-fasting in adults and children; non-fasting lipid profiles can also predict CVD events as well as fasting. However, non-fasting lipid profile testing is NOT recommended for patients with hypertriglyceridemia.

The IFCC VLP Program in a memorable Congress of the Colegio Nacional de Bacteriología

The XIX International Congress of Bacteriology CNB – Colombia

by Andreas Rothstein

National Representative of Colombia to the IFCC

The XIX International Congress of the Colegio Nacional de Bacteriología was held with the attendance of about 1500 participants from all regions of Colombia and some Central American countries, at the Agora Convention Center in Bogotá, on November 1-4, 2019 under IFCC auspices.

As a pre-congress activity, a conversation on the careers of clinical laboratory sciences was organized between Prof. Bernard Gouget and students, during which enthusiastic attendants could ask Prof. Gouget everything they wanted to know about the possibilities for development offered by IFCC. Likewise, the students learned about the existence of the Task Force of Young Scientists, within IFCC, where participation opens many doors for them.



Student attendees of the conversation with Bernard Gouget

During the opening ceremony, after the welcome speeches of the president of the Colegio Nacional de Bacteriología, Dr. Marlene Vélez De La Vega and the president of the Congress, Dr. Luis Guillermo Deaza, the Minister of Health and Social Protection, Dr. Juan Pablo Uribe spoke about Colombia's progress in public health matters.

Awards to distinguished scientists in Colombia and to the founders of the Colegio Nacional de Bacteriología 20 years ago followed and the opening ceremony culminated with the lecture of Dr. Eduardo Freggiaro (Arg), entitled "How the IFCC Communicates, Informs and Educates".

After the conference, the attendees went over to a cocktail party with which the commercial exhibition



Professor Eduardo Freggiaro (VLP Professor) presenting during the opening conference: "How the IFCC communicates, informs and educates"

Article continued on next page

with more than 40 companies present in Colombia, exhibiting their latest products in order to improve the quality of the Colombian laboratories, was officially inaugurated

The scientific program included a wide range of high quality and innovative topics, through conferences, symposia and posters. There were also a series of workshops prior to the main Congress.

The plenary conferences were presented by leading scientists such as, Professor Bernard Gouget (Fr), Prof. Ellis Jacobs (USA), Prof. Eduardo Freggiaro (Arg) (the first ones thanks to the sponsorship of Abbott and its VLP program), Professor Diana Bonilla (USA), Professor Piet Mejer (NL) and Professor Sandra Quijano (Colombia).

The topics of the plenary conferences concerned emerging areas of laboratory medicine, such as communication through electronic means and POCT; the

immune system, atherosclerosis and autoimmune reactions; labor legislation in Colombia, antimicrobial resistance, molecular diagnosis of diseases and emerging diseases, in addition to a session dedicated to success stories of people who in Colombia made their achievements in clinical laboratories, stories which allowed us to visualize a very promising future.

Three general sessions were held simultaneously in three rooms throughout the Congress. The symposia provided a platform to discuss the latest technological advances regarding hematology, vascular markers, autoimmunity and neurodegenerative diseases, as well as practice guidelines, decision making, patient-focused laboratory medicine, ISO 15189, legislation on orphan diseases; additionally, there was a special day in immunohematology for attendees interested only in this topic. Also, current laboratory practices related to obesity, infectious diseases, bleeding and coagulation, immunological deficiencies, tumor markers,



L-R: Luis Guillermo Deaza (President of the Congress); Hedilka Jimenez (Academic Coordinator); Adriana Martinez (Member of the Organizing Committee); Liliana Pito (Secretary of the Congress); Liliana Rodriguez (Member of the Organizing Committee); Dr. Ellis Jacobs (VLP Professor); Marlene Vélez De La Vega (President of the National College of Bacteriology); Stella Paez de Bolívar (Member of the Organizing Committee); Dr. Bernard Gouget (VLP Professor); Sonia Rojas (Academic Coordinator of the Congress); Andreas Rothstein (National Representative to the IFCC); Eva Blanco (Research Coordinator of the Colegio Nacional de Bacteriología)

bone metabolism and hematological diseases were discussed.

Poster sessions were an integral part of the congress and the best research papers were recognized in two categories:

1. Junior category: Evaluation of the Microbiological Quality of Drinking Water for Human Consumption in the Municipality of Calamar, Colombia.
2. Senior category: RNA aptamers for the Control of *Entamoeba histolytica*.

The attendees considered the XIX International Congress of the Colegio Nacional de Bacteriología a great success, for which I want to thank the entire Organizing Committee, the IFCC and, finally, all those who contributed to make it happen.

Many thanks to Dr. Nader Rifai, Chair of the VLP Programme - IFCC Education and Management Division, for supporting the congress.

The XX congress will be held in Bucaramanga, Colombia, from October 30 to November 2, 2020.

Symposium “Micronutrients and vitamins – what is the evidence” 20th November 2019 – Jaipur, India

Organized by the IFCC Committees for Evidence-based Laboratory Medicine (C-EBLM) and on Public Relations (C-PR)

by Prof. Annalise E. Zemlin

Head of Chemical Pathology Division
Faculty of Medicine and Health Sciences
Stellenbosch University and NHLS Tygerberg Hospital
Tygerberg, Cape Town, South Africa

Members of the IFCC C-EBLM and C-PR (Public Relations Committee) held a joint symposium titled “Micronutrients and vitamins – what is the evidence?” on Wednesday 20th November at the 15th Asia-Pacific Federation for Clinical Biochemistry and Laboratory Medicine (APFCB) Congress which was held from 17th – 20th November 2019 in Jaipur, India.

The following talks were presented:

- ⇒ Prevalence of micronutrient deficiencies – do we need food fortification? (*Seema Bhargava - member of IFCC C-EBLM*)
- ⇒ Folic acid supplementation – is there enough evidence to justify it? (*Annalise Zemlin - chair IFCC C-EBLM*)
- ⇒ Vitamin D – is there enough evidence? (*Rajiv Erasmus – chair IFCC C-PR*)

These talks were well received and led to interesting discussion which continued after the session as well. Hopefully there will be future collaboration between these 2 committees.



Joint C-EBLM and C-PR Symposium
L-R: Prof. R. Erasmus (Chair C-PR), A. Zemlin (Chair C-EBLM), Prof. S. Bhargava (member C-EBLM)

After the congress, Annalise Zemlin (Chair, IFCC C-EBLM) visited the Sir Ganga Ram Hospital in New Delhi, India, where she gave a talk on behalf of the committee on “**Personalised Medicine and Evidence-based Laboratory Medicine: Friend or Foe?**”



Visit at the Sir Ganga Ram Hospital

L-R: Dr. M Kankra (senior consultant Department of Biochemistry, Sir Ganga Ram Hospital), Dr. J. Sood (Chairperson and Senior consultant, Department of Anaesthesiology, Sir Ganga Ram Hospital), Prof. S. Bhargava, Prof. A. Zemlin, Dr. K. Verma (Chairperson and senior consultant, Department of Cytopathology, Sir Ganga Ram Hospital), Dr. A. Manocha (Senior consultant Department of Biochemistry, Sir Ganga Ram Hospital)

Report: 15th Asia-Pacific Federation of Clinical Biochemistry and Laboratory Medicine (APFCB) Congress

17-20 November 2019 – Jaipur, India

by Praveen Sharma

APFCB Congress President

Head, Department of Biochemistry and Dean (Research)

Controller of Examinations

All India Institute of Medical Sciences, Jodhpur (India)

The 15th Asia-Pacific Federation of Clinical Biochemistry and Laboratory Medicine (APFCB) Congress was held at Jaipur Exhibition and Convention Centre (JECC), Rajasthan, India, between 17-20 November 2019.

It was organised by the Association of Clinical Biochemists of India (ACBI), along with the support of the

Association of Medical Biochemist of India (AMBI). The theme of the congress was “**Laboratory Medicine – Innovation & Integration**”

Six pre-congress workshops were held in two sessions on 17 November 2019 at Marriot Hotel, Jaipur. The workshops were:

Article continued on next page

- AACC Global Lab Quality Initiative: Adding value to patient care using quality control (AACC)
- Alzheimer's Workshop (IFCC - ETD)
- Mass Spectrometry in the clinical laboratory (AACB)
- Building Tomorrow's leaders by the young generation (IFCC-CCLM / IFCC-TFYS)
- Requirement for High Quality liquid profiling for cancer diagnostics in clinical laboratory practice (IFCC - EB)
- Multi-dimensional perspectives of Laboratory (ACBI - Roche)

The Congress began on November 17, with the inaugural plenary by Prof. Subrat Kumar Acharya. He delivered a talk on '*Ammonia in Acute Liver Failure: Its influence on pathogenesis, Prognosis and Management*'.

There were three plenary lectures scheduled on different days of the Congress by Prof. Maurizio Ferrari (*Expanding space for Next Generation Sequencing diagnostics applications*), Prof. Sampath Parthasarathy

(*Alzheimer's a cerebrovascular disease?*) and Prof. David Kinniburgh (*The Opioid Crisis in North America*).

ACBI conferred oration awards to the four plenary speakers. Prof. Subrat K. Acarya was given *Awadesh Saran Memorial Oration award*, Prof. Maurizio Ferrari received *Seth G.S. Medical College & K.E.M. Hospital Oration Award*, Prof. Sampath Parthasarathy received *Mrs. and Dr. G. P Talwar Oration Award* and Prof. David Kinniburgh was given the *Prof. T. N. Pattabhiraman Oration Award*.

The scientific program of the Congress had 40 symposia containing 134 lectures presented on emerging topics of clinical biochemistry and laboratory medicine by various member societies of APFCB, IFCC, AACC, COLABIOCLI, WasPalm etc.

Additionally, 40 oral papers and 366 scientific posters were presented in the Congress. During the sessions a survey was also conducted by means of feedback forms for speaker feedback, congress programme, presentation content and services. Participants feedback showed the grand success of the congress.



Inauguration of APFCB Congress 2019

Prof. Leslie Lai was awarded the *Lifetime Achievement Award for his outstanding contribution to APFCB and scientific excellence*.

There were three IFCC – Visiting Lecture Fellows at the Congress: Prof. Sampath Parthasarathy, Prof. Sedef Yenice and Prof. Ed Randell. The Congress also offered a total of 47 awards and scholarships to support the participation of young fellows and scientists. The awards with the number of awardees were:

- APFCB young scientist travel scholarship - 3
- IFCC Roche travel scholarship - 8
- IFCC TFYS Snibe travel grant - 3
- APFCB-RCPAQAP award - 1
- APFCB organising committee travel award - 5.
- Best poster award from organising committee - 8.

A total number of 662 participants and 308 exhibitors from all over the world participated in this Congress. A total of 28 companies exhibited their products in

the Congress. Four academic societies (APFCB Congress, IFCC Worldlab 2020, IFCC and ACBI) also joined the exhibition.

Societies meetings were hosted during the Congress. APFCB had its council meeting on November 17, 2019. IFCC ETD and CPD also had their meeting on the same day. IFCC TFYS meeting was on November 19 and IFCC Board meeting was on November 20-22, 2019.

The 15th Congress also hosted a variety of social programmes. The opening ceremony and inaugural dinner were held on November 17, at JECC. The opening ceremony for the Exhibition was held on November 18. On November 19, a cultural programme and the gala dinner were organised.

The Valedictory ceremony was held on November 20, where successful completion of the congress was celebrated and the flag was handed over to Prof. Helen Martin, AACB for the next Congress, the 16th APFCB Congress to be held in Australia in 2022.



Prof. Helen Martin waving the APFCB flag



www.seoul2020.org

IFCC WorldLab SEOUL 2020

24th INTERNATIONAL CONGRESS OF
CLINICAL CHEMISTRY AND LABORATORY MEDICINE

May 24-28, 2020
Coex, Seoul, Korea





XV ICPLM

Emerging Technologies in
Pediatric Laboratory Medicine

22-24 May 2020
SKY31 CONVENTION
SEOUL - KOREA

www.icplm2020.org

Abstract submission
deadline
15 JANUARY 2020

Abstract acceptance
notification
28 FEBRUARY 2020

Early-bird/Presenter re-
gistration deadline
31 MARCH 2020

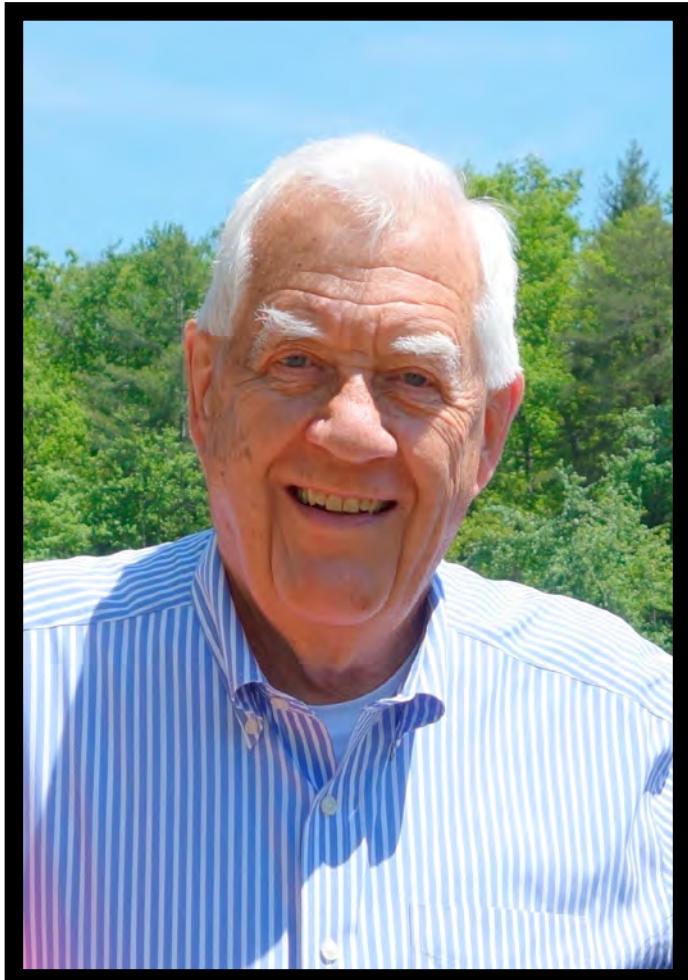


IFCC: THE PEOPLE

In memory of Carl A. Burtis, PhD

by Prof. David E. Bruns

Department of Pathology
University of Virginia Medical School
Charlottesville, Virginia, USA



Carl A. Burtis

Carl A. Burtis, a former vice president of IFCC and a leader in clinical and analytical chemistry, died on November 15, 2019, after a battle with glioblastoma. He was 82.

Carl was a pioneering chemist, a legendary author and editor, an insightful association leader, and a trusted and admired mentor, colleague and friend.

Carl grew up in Montrose, Colorado. According to his family¹, “his favorite stories were of his small-town exploits ... Fireworks played heavily in his tales.” Having a birthday on July 3, he felt that the July 4 U.S. Independence Day holiday, which features fireworks, really was for him. Montrose High School, he said², was “where I really learned to love chemistry, especially sodium and potassium and things that blow up.”

Carl earned his bachelor’s degree (nutrition) at Colorado State University where he met his future wife, Marvel, whom many clinical chemists have had the pleasure of meeting over the next 60 years. Carl then excelled at Purdue University, earning Masters and Ph.D. degrees in Biochemistry.

Excellent accounts^{2,3} of Carl’s career path after Purdue have been published. In summary, with the exception of 3 years at the CDC and a year in industry, Carl had a 40-year career at the Oak Ridge National Laboratory, rising from postdoc to leadership.

Carl earned an international reputation as a chemist, editor, association leader and, finally, a mentor, colleague and friend.

Analytical and Clinical Chemistry

In the 1970s, Carl published more than 20 key papers on centrifugal analyzers. One described a multipurpose optical system and another described a miniature version of “one cubic foot” (28 L)! Other publications and patents described multiple applications of the analyzer for clinical laboratories. Carl made important contributions in other areas, including reference methods, especially for enzymes, and liquid chromatography.

Article continued on next page

Carl was conferred a prestigious Honorary Doctorate Degree by Purdue University, giving significant recognition to his contributions to chemistry.

Tietz Textbook and Tietz Essentials of Clinical Chemistry

In the early 1990s, Norbert Tietz selected Carl as an editor of the Textbook of Clinical Chemistry.

Carl brought to the task broad and deep knowledge of clinical and analytical chemistry, along with superb organizational skills.

He played a leading role in recruiting teams of authors, which ultimately numbered over 100, for each edition of each book. Many a tardy author received an email featuring a sketch of a kneeling human skeleton, partially covered with cobwebs, pleading with the author to send the overdue manuscript.

The 2014 IFCC Education Award recognized his contribution to clinical chemistry through his editing of the Tietz books, a task he viewed as a service to the profession that had given him opportunities.

Association Leadership

Carl had numerous leadership roles in IFCC (Vice President, 1990-2005) and AACC (President, 1989).

He chaired the Oak Ridge Conference from 1981-1986.

He was Co-Chair of the Organizing Committee for the 1990 International Congress in Clinical Chemistry in San Francisco.

As chair of the Editorial Board of *Clinical Chemistry*, Carl led annual meetings of the Board, a task he described as herding “a room full of full professors”.

In 1986 and 1991 he received AACC'S highest honors, the National Lectureship Award, and the Award for Outstanding Contributions to Clinical Chemistry. The latter award recognized his contributions in research, education and service. He was truly an academic triple treat.

Colleague and Mentor

When word spread of Carl’s final illness, messages poured in. Colleagues and friends around the world expressed their immense regard for him. Others said he was a mentor and a role model. They wrote of his generosity and kindness. Of his sense of humor. His honesty and humility. One said simply, “The world is a better place for his having been here.”

In a phone call near the end of his life, Carl reminisced about the editing of the Tietz books — the challenges of getting chapters from authors on time, etc. At some point he stopped and said, “It’s really all about people.” And that is what Carl Burtis was all about: a humble chemist, editor, and leader, who was all about people.

When next I see fireworks, I will remember and be thankful that fireworks sparked Carl’s interest in chemistry and that we had the good fortune to know him.

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Open positions within IFCC



The following calls for nominations are currently open within the:

EDUCATION AND MANAGEMENT DIVISION (EMD)

- **Committee on Evidence-Based Laboratory Management (C-EBLM):** one member position as of year 2020. Deadline to receive nominations and supporting documents is 18th February 2020.
- **Committee on Kidney Disease (C-KD):** one member position. Deadline to receive nominations and supporting documents is 12th February 2020.
- **Committee on Point of Care Testing (C-POCT):** one corporate member position as of year 2020. Deadline to receive nominations and supporting documents is 19th February 2020.
- **Committee on Proficiency Testing (C-PT):** three members positions. Deadline to receive nominations and supporting documents is 26th February 2020.

EMD Nominations should be sent to Silvia Cardinale at the IFCC office (cardinale@ifcc.org).

TASK FORCES (TF)

- **Task Force on Ethics (TF-E):** one member position as of March 2020. Deadline to receive nominations and supporting documents is 15th February 2020.

TF Nominations should be sent to Silvia Colli Lanzi at the IFCC office (colli-lanzi@ifcc.org)

IFCC EXECUTIVE BOARD 2021-2023 NOMINATIONS

Please refer to the Nominations Committee's page at:

<https://www.ifcc.org/executive-board-and-council/eb-committees/nominationcommittee/>.

If you are interested, please refer to your National Representative or Corporate Representative for information on procedures for nominations.

Find your representative [here](#).



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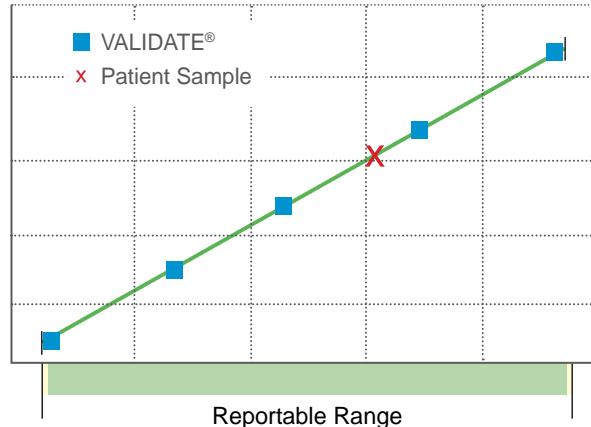


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IFCC: THE YOUNG SCIENTISTS

IFCC Professional Scientific Exchange Programme (PSEP)

My internship at the Center for Preventive Doping Research at the Institute of Biochemistry of German Sport University, Cologne



by Ana Rubio Alaejos

Resident in Clinical Biochemistry
Hospital Universitario Son Espases
Palma, Balearic Islands, Spain

DESCRIPTION

The Center for Preventive Doping Research is part of the Institute of Biochemistry of German Sport University Cologne. It is one of the two WADA-accredited laboratories (WADA: World Anti-Doping Agency) in Germany for the Doping Analysis.

It mostly consists of two areas: one focused on routine sample analysis and the other focused on research and development of new methods and assays with routine applicability.

At routine area, samples from athletes or even horses which participate in some competition are analyzed daily, as well as nutritional supplements ingested by them, in order to ensure a fair and clean sports competition.

Regarding the research area, projects and studies are mainly carried out in vitro and in vivo. They work with some specific compounds (which are commonly used in Doping) in order to understand their metabolism. In addition, new assays are also developed and validated in order to include them into the routine area.



The Center for Preventive Doping Research
(Institute of Biochemistry of German Sport University Cologne)

PARTICIPATION

My work was focused on the research area.

Initially, I participated in a project related to metabolism of Ostarin (S-22) which is one of many SARMs (Selective Androgen Receptor Modulators) used in Doping.

We analyze urine samples from nine healthy volunteers. Two different studies were performed: single-dose and multidose at different concentrations. The parent compound as

Article continued on next page

well as its main metabolites were analyzed: glucuronon conjugates (M3 and M4), its hydroxy-metabolites (M1a and M1b) and dephenylated compounds (M2).

ThermoScientist LC-MS/MS high resolution (Q Exactive mass) and Xcalibur software were used for the analysis of these samples. TraceFinder was used for data analysis.

In addition, I have participated in the development and validation of an assay for the analysis of steroids in urine samples with GC/C/IRMS (Gas Chromatography/Combustion/Isotope Ratio Mass Spectrometry) technology.

Both projects are still in progress.

PROFESSIONAL DEVELOPMENT

I have worked with liquid and gas chromatography coupled to mass spectrometry (LC-MS/MS and GC/C/IRMS), which are also used in certain areas of Clinical Biochemistry: toxicology, hormones analysis or newborn screening. Therefore, this Internship has been a period of greater expertise in this technology, which is complex and also requires the management of different softwares for data acquisition and data analysis.

KNOWLEDGE APPLICATION

As the same systems are used in both centers, sharing knowledge between them could be interesting. I think that both institutions could benefit because they work with different aims and perspectives and it could be a great enriching exchange of information in terms of sample preparation or new assays development.

I would sum up my Internship as a great and fulfilling experience. The team I have worked with is absolutely professional, they explained everything I needed and they also allowed me to work with much autonomy. Even the language was not a problem at all (we had to communicate in English because I have not studied German).

The most outstanding aspects were: this great autonomy, the possibility of working with them, their kindness, their high professionalism, their constant motivation and the possibility that I had to participate in some of their projects.

CONCLUSIONS

In my opinion it is very important to know other ways of working in order to have a more complete and realistic view about one's professional area. I would highly recommend an Internship like this because it allows you to specialize more in an area of interest for you or your center of origin. Besides, if it takes place in a foreign country, it is also interesting in terms of practicing a different language.



Ana Rubio Alaejos on the river Rhine, during her internship

ACKNOWLEDGEMENTS

I would like to thank IFCC, SEQC and FJLC-SEQC for giving me the chance to enjoy this experience. I think they do a great job promoting these Internships for young professionals who are still in training. Thank you very much.

IFCC and IFCC-Roche Travel Scholarship Awardees for 2019

IFCC and Roche are pleased to present the IFCC Travel Scholarship Awardees that attended the **XXIV COLABIOCLI Congress 2019, that was held in Panama, from 11 to 13 September 2019.**

Congratulations to: Alvaro Paul Justiniano Cortez (BO), Harlem Róterdan de León Natareno (GT), Patricia Elizabeth Osorio Pozo (EC), Carmen Maria Castro Ruiz (CO), Jorge Hernández-Bello (MX), Aurora Amarilla (PY).

IFCC is pleased to present the IFCC Travel Scholarship Awardees that attended the **AFCC Congress that was held in Marrakech, Morocco, from 25 to 28 September 2019**

Congratulations to: Eliane Zgheib (LB), Idris Yahaya Mohammed (NG), Lucius Chidiebere Imoh (NG), Dineo Valencia Mabuza (ZA), Mutale Mubanga (ZM).

IFCC and Roche are pleased to present the IFCC-Roche Travel Scholarship Awardees that attended the **15th Asia-Pacific Federation for Clinical Biochemistry and Laboratory Medicine APFBC Congress 2019, that was held in Jaipur, India from 17th to 20th November 2019.**

Congratulations to: Yati Sumiyati (ID), Joseph Dian Bondu (IN Full), Ray Lopamudra (IN Aff), David Enoch Kawalya (KE), Nada Yousfi (TN), Itua Akhabue Igene (NG), Sangita Gimire (NP Full).

You can find [here](#) all their reports.



COLABIOCLI Scholarships Reception with Awardees and (L-R): EB COLABIOCLI Representative, Dr. R. Sierra Amor; IFCC President, Prof. M. Ferrari; IFCC Treasurer, Prof. T. Ozben

Article continued on next page



AFCC Scholarship Awardees with IFCC authorities



APFCB Scholarship Awardees with IFCC authorities: IFCC President, Prof. M. Ferrari, APFCB Congress President, Prof. P. Sharma, and representatives of the IFCC task Force for Young Scientists among them.



UNIFY FOR SOMETHING GREATER



The **UNIVANTS** of Healthcare Excellence Award program celebrates teams who have achieved measurably better outcomes in healthcare.

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Integrated clinical care team at The Royal Wolverhampton NHS Trust recognized for healthcare excellence

Distinction awarded to team members at The Royal Wolverhampton NHS Trust, United Kingdom

The UNIVANTS of Healthcare Excellence award is a global, prestigious honor for teams who have worked across disciplines to achieve measurably better outcomes for patients, clinicians, payors and entire health systems.

The program, whose name is derived from the combination of unity and avant-garde (meaning new or unusual), was initiated in 2018 with the intended goal

of inspiring healthcare teams to unify for improved outcomes.

Four founding teams with measurable examples of healthcare excellence were awarded the honorary title of Principle Winners.

Those winning care initiatives spanned multiple continents and set the foundation for many future best practices in clinical practice or guidelines today.



L-R: Clare Ford, PhD, Consultant Clinical Biochemist and Head of Clinical Chemistry;
Katherine Willmer, MD, Consultant Acute Physician; Simon Whitehead, PhD, Principle Clinical Scientist;
Andy Morgan, MD, Clinical Director of Emergency Services

Article continued on next page

The four teams with the honorary titles of principal winner include projects from The Royal Wolverhampton National Health Service (NHS) Trust, Wolverhampton, United Kingdom; Swedish Covenant Hospital, Chicago, Illinois, United States; Canterbury and the New Zealand Healthcare System, Canterbury, New Zealand; and University Hospital Tübingen, Tübingen, Germany.

One of the most notable best practices involved improved emergency patient flow at the Royal Wolverhampton NHS Trust. Their team comprised of stakeholders from cardiology, emergency medicine, acute medicine and pathology, which highlights the powerful connection across disciplines.

Key stakeholders who led the project with excellence included Clare Ford, PhD, Consultant Clinical Biochemist and Head of Clinical Chemistry, Katherine Willmer, MD, Consultant Acute Physician, Simon Whitehead, PhD, Principle Clinical Scientist, and Andy Morgan, MD, Consultant Emergency Physician.

This cross-functional team collaborated to implement a novel chest pain clinical pathway for patients with suspected acute coronary syndromes (ACS) for fast rule-out or rule-in of AMI.

Their new clinical pathway included an innovative triage strategy using a newly formed clinical decision unit (CDU) and a new clinical algorithm with results from Highly Sensitive Cardiac Troponin I (hsTnI) testing and clinical assessment. The clinical pathway allows patients to be triaged into three categories based on their clinical assessment and hsTnI results using the new clinical algorithm.

The first category is patients who have a low-risk of AMI according to clinical assessment but have an initial hsTnI level above the limit of detection (LoD). These patients are transferred to the newly formed CDU and receive additional testing including a serial hsTnI at three hours, to determine if there is a rise (delta) in the TnI level.

The second category is for patients who were able to be safely ruled-out of AMI based on the determination of a low clinical risk assessment coupled with a hsTnI result below LoD.

The final category is patients who are ruled-in for AMI based on a higher clinical risk assessment, elevated hsTnI results (>99th percentile of a normal reference population), and a delta in serial (three hour) hsTnI measurements. Their process enables accelerated decision making compared to their previous clinical pathway which required serial measurements of cardiac troponin levels with an initial and a twelve-hour measurement using contemporary troponin.

Implementation of their clinical pathway enabled impressive results. One such example is the reduction in total length of stay for patients from arrival to discharge from 23 hours to 9.6 hours.

Another was reduced healthcare costs due to unnecessary admissions from the ED to hospital wards being reduced from 60.9% to 38.4%.

With the adoption of the new clinical care pathway, rule-out times for some low-risk patients were reduced from 12 to 2 hours, and rule-in times for high-risk patients were reduced by an average of 8 hours.

The new ACS patient clinical pathway safely enhanced the patient flow through the Emergency Department with reduced admissions and fast high-quality care.

The measurable improvement to healthcare enabled by this care initiative at the Royal Wolverhampton NHS Trust led to their team being recognized as a principle winner of the UNIVANTS of Healthcare Excellence award.

THREE KEY TAKEAWAYS:

1. High sensitivity cardiac troponin is the preferred biomarker for the diagnosis of myocardial injury.
2. Rapid rule-out strategies for low-risk patients with suspected ACS can be safe, timely and highly effective.
3. Key performance outcomes from their care initiative include improved patient experience, improved clinician confidence, high degree of patient safety, reduced length of stay and admission, and reduced healthcare costs.

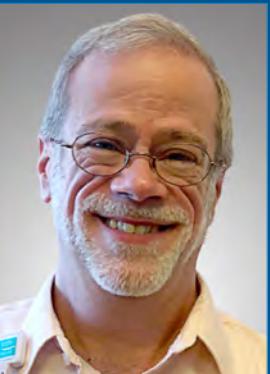
Leading best practices in integrated clinical care for antibiotic stewardship



Eric Gluck
MD, JD, FCCP, FCCM



Kathryn Rataj
PharmD, BCPS



Mark Richardson
MSN, RN, CCRN



Susan Dawson
MBA, MT-ASCP



Steve Kalish
MD, FACP, FSHEA

Distinction awarded to team members at Swedish Covenant Hospital, Chicago, Illinois, United States of America

Substantial progress has been made in the treatment of infections, largely due to the discovery and use of antibiotics. However, until recently, the diagnosis of infection and subsequent determination of antibiotic treatment was predominantly based on clinical judgement. While some laboratory information, such as elevation of white blood cells and the presence of bands, can be used to support diagnosis following clinical presentation, they are not very specific for bacterial infection. More recently, procalcitonin (PCT) levels were found to be a source of objective information that could reliably be used to quickly determine when to initiate or withhold antibiotic therapy. However, it is crucial for the information to be interpreted and acted upon correctly for effective treatment decisions.

Dr. Erik Gluck, MD, JD, FCCP, FCCM, Director of Critical Care Services, has been an early leader in utilizing PCT guided antibiotic protocols to maximize clinical care. Under his leadership, an innovative integrated care team at Swedish Covenant Hospital in Chicago, Illinois have led best practices in antibiotic stewardship including the development and implementation of PCT guided protocols.

Their program included interactive peer-to-peer discussions, activation of project champions, as well as

functional reviews of emerging data to drive forward various stakeholders' alignment and enable implementation of their care initiative into clinical practice. A stepwise implementation, beginning with select activation of the algorithm within the intensive care unit (ICU), was used to activate the initiative into clinical practice. Success in the ICU setting led to adoption of the algorithm in the Emergency Department (ED), and from there, across their entire health system. Eventually, their success ensured the recommendations were also incorporated into their Rapid Response Team (RRT) protocol for sepsis. The implementation of their care initiative has achieved extraordinary results. These results include a reduction in antibiotic exposure from 12 days to 8 days (on average) for hospital inpatients admitted for infection or sepsis.

Pharmacist Kathryn Rataj (PharmD, BCPS, Clinical Pharmacy Specialist Critical Care) states that, "In my ICU patient population having procalcitonin available has been a vital tool in my antimicrobial stewardship practice." Activation of their protocol has also reduced average length of stay from 12.8 days to 10.5, reducing costs and care burden, particularly in acute care settings. The total hospital costs per ICU patient with sepsis was reduced by almost \$3,000 as well.

Article continued on next page

Clinicians' confidence increased using the PCT guided algorithm to inform their care decisions. Dr. Eric Gluck (MD, JD, FCCP, FCCM, Director of Critical Care Services) notes, "Introduction of procalcitonin into clinical care has significantly reduced the angst associated with stopping antibiotics in the ICU." Collaborative effort across many disciplines was required for the initial and continued success of their antibiotic stewardship program.

In honor of their team's achievements, Eric Gluck MD, JD, FCCP, FCCM, Director of Critical Care Services, Kathryn Rataj PharmD, BCPS, Clinical Pharmacy Specialist Critical Care, Susan Dawson, MBA, MT-ASCP, Laboratory Manager, Steven Kalish, MD, FACP, FSHEA, Chair Section of Infectious Disease & Chair Pharmacy and Therapeutics Committee and Mark Richardson, MSN, RN, CCRN, ICU Nurse Educator were recognized in 2018 for measurable healthcare

excellence in association with the UNIVANTS of Healthcare Excellence Award.

THREE KEY TAKEAWAYS:

1. Procalcitonin is a proven biomarker for antibiotic stewardship in a variety of settings including the ED, ICU, and NICU.
2. Interdisciplinary, cross-functional teams are essential in ensuring activation of evidence-based pathways for appropriate antibiotic therapy and the betterment of health in patients with infection and sepsis.
3. Implementation of procalcitonin guided algorithms have positively impacted Key Performance Indicators (KPIs) including length of stay, increased clinician confidence, reduced costs and increased patient wellness.

Interdisciplinary team recognized for outstanding acute cardiac care using novel accelerated diagnostics pathway



Martin Than
MD



Peter George
MBBS, FRCPA



Sally Aldous
MD, MBChB, MRCP,
FRACP



Gerard Devlin
MD, FRACP, FEASC



Greg Hamilton
PhD

Distinction awarded to team members at Canterbury and the New Zealand Healthcare System, Canterbury, New Zealand

Chest pain and other symptoms of a heart attack are often chief complaints of patients presenting to the Emergency Department. Traditionally a very large portion of these patients would be admitted to the Emergency Department and undergo additional invasive testing, which in some cases carries unnecessary risks

to the patient and represents a significant burden to the health system.

An integrated health team in the Canterbury District Health Board recognized an opportunity to develop and implement an Accelerated Diagnostic Pathway (ADP) which enables safe early rule-out of Acute

Myocardial Infarction (AMI) by reliably identifying high-risk patients who are appropriate for escalation of care and mitigating unnecessary admissions of patients who are at low risk for AMI. The team initiated an iterative and evidence-based initiative to collect and translate evidence into a validated diagnostic pathway that was able to rule-out AMI in a greater percentage of patients faster and less invasively than traditional diagnostic pathways. Randomized clinical trials across diagnostic testing strategies were used to evaluate risk profiles compared to major adverse cardiac events (MACE) to determine effectiveness and safety. Their initiative found that non-elevated results of point of care testing of cardiac markers when combined with Thrombolysis In Myocardial Infarction (TIMI) risk score of 0 could enable determination of safe discharge in approximately 10% of patients presenting with suspicion of AMI. They further found that use of the lab-based contemporary cardiac troponin with results < the 99th percentile with a TIMI score of 0, enabled the safe discharge of almost 20% of patients, and the use of the lab-based high-sensitivity cardiac troponin assay with results below the 99th percentile, coupled with a TIMI score of ≤ 1 approximately 40% of patients could be safely discharged. They implemented their novel ADP into clinical practice beginning in Christchurch Hospital and eventually expanded the use of the algorithm across New Zealand and internationally. Their recommendation for ADP was so successful and well-endorsed that it eventually became included in guidelines for the Cardiac Society of Australia and New Zealand (CSANZ) in 2016.

Their care initiative has generated remarkable results. They have achieved a 2.5-fold reduction in the overall length of stay (LOS) for patients without ACS. This reduction in stay reduces the unnecessary burden on staff, costs for payors, and improves both the safety and experience of the patient. Martin Than, MD (Senior Medical Officer Emergency Department Christchurch Hospital and University of Otago) states “People who come the emergency department are anxious as many fears that they are having a heart attack. It is really meaningful to be able to say to them much quicker that we don’t think they are.”

With 100% adherence to the ADP at Christchurch Hospital and widespread adoption across New Zealand

and internationally, the clinicians demonstrate confidence in their ability to utilize this ADP for triaging patients to the appropriate setting safely. Significantly more patients were able to be safely discharged without further testing as indicated by a 30% reduction in hospital admissions for patients with suspected acute coronary syndrome (ACS) after implementation of the ADP. The LOS and transport savings have been associated with 9.5 million NZD savings across New Zealand following the implementation of their ADP. Their project also has led to a national guideline (ICARE-ACS) for Emergency Departments to implement this or comparable programs of ADP for ACS care.

The success of their ADP care initiative was driven by collaborative effort across many disciplines with five cross-discipline leaders who were recognized as principle winners of the UNIVANTS of Healthcare Excellence Award: Martin Than, MD, Senior Medical Officer Emergency Department Christchurch Hospital and University of Otago, Peter George, MBBS, FRCPA, Clinical Pathologist, Medlab Pathology Sydney NSW Australia, Sally Aldous, MBChB, MRCP, FRACP, MD, Cardiologist, Christchurch Hospital, Gerry Devlin, MD, FRACP, FEASC, Cardiologist, Medical Director of the National Heart Foundation, Associate Professor of Medicine, University of Auckland, and Greg Hamilton, PhD., Team Leader Planning and Funding, Canterbury District Health Board.

THREE KEY TAKEAWAYS:

1. Accelerated diagnostics pathways for patients suspected with ACS can safely rule-out AMI.
2. The highest percent of patients safely ruled-out for AMI leveraged accelerated diagnostic pathways (ADPs) with high sensitivity troponin, however, safe discharge is also possible using ADPs with point of care troponin testing.
3. The implementation of these ADP pathways have positively impacted Key Performance Indicators (KPIs) throughout the Canterbury Health System including median length of stay, number of patients transported to central hospitals, cost of prolonged stays and cost of transports, patient satisfaction, and increased clinician confidence.

Leading best practices for the recognition and treatment of hospitalized patients with diabetes

Distinction awarded to team members at University Hospital Tübingen, Germany

Diabetes can have a significant impact on a patient's wellbeing, daily routine and lifestyle. Patients that are admitted to the hospital with diabetic-related complications are not always recognized as having diabetes and therefore, they may not receive optimized treatment. This is especially true since diabetes frequently does not exist in isolation.

Comorbidities often include obesity, hypertension, cardiovascular disease, sleep apnea, chronic kidney disease and depression.

Because of its chronic nature and the severity of its complications, diabetes is a costly disease, not only

for affected individuals and their families, but also for health systems and payors.

An integrated clinical care team at University Hospital Tübingen led a best practice for effective inpatient detection and treatment for diabetes.

The multi-disciplinary team, in partnership and with support from the German Center for Diabetes Research (DZD), worked collaboratively to develop and to implement a screening pathway. They used HbA1c as a biomarker for determination of the diabetic status of patients aged 50 and higher, in the hospital setting.



L-R: Isolde Riedlinger (Head of Technical Team Laboratory Medicine, University Hospital Tübingen)

Susanne Faix (Technical Team Laboratory Medicine, University Hospital Tübingen)

Baptiste Gallwitz (Professor, Internal Medicine Endocrinology, University Hospital Tübingen)

Andreas Peter (Professor of Clinical Chemistry and Laboratory Medicine; Head of Central Laboratory, University Hospital Tübingen)

Andreas Fritzsche (Professor of Internal Medicine, University Hospital Tübingen)

Marjo Graf (Leading Diabetes Nurse, University Hospital Tübingen)

Ewald Eipper (IT Officer Laboratory Medicine, University Hospital Tübingen)

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Their screening pathway led to an increased detection of diabetes and enabled optimization of care for the previously unknown diabetic patients and known diabetic patients with poor glycemic control.

Before the implementation of the clinical care initiative, only 34% of the patients with known diabetes had an active request for their glycosylated (HbA1c) value during their hospital stay.

Their care project assessed and implemented in-hospital screening across departments with a potential incidence rates for diabetes above 20%. This included the internal and anesthesiology Intensive Care Units (ICU), the emergency department (ED), the thoracic, orthopedic and cardiovascular surgery units, internal medicine, radiation, ophthalmology and neurology. Survey findings post-implementation of the care project at the University Hospital revealed that 87% of clinicians surveyed felt knowing the HbA1c value increased their confidence in treatment decisions.

For patients who have unknown diabetes, the results of an HbA1C allows for detection of diabetes, and the implementation of diabetes-specific care during their hospital stay.

Thus, their program had a valued impact on reducing incident complications experienced by patients during their hospital stay, and significant diabetic disease sequelae and progression.

As stated by Dr. Andrea Fritzsche MD (Diabetology, Professor Internal Medicine, University Hospital Tübingen), "Early recognition of patients with diabetes not only improves patient outcomes, but with tight

continuous control it can prevent long-term complications and improve quality of life."

This expert team with program leads that included Andreas Fritzsche, MD, Diabetology, Professor of Internal Medicine University Hospital Tübingen, German Center for Diabetes Research, Andreas Peter, MD, Professor of Clinical Chemistry and Laboratory Medicine, Head of Central Laboratory University Hospital Tübingen, German Center for Diabetes Research, and Hans-Ulrich Haring, MD, Emeritus Professor of Internal Medicine, University Hospital Tübingen, Director of the IDM (Institute for Diabetes Research and Metabolic Diseases) were recognized in 2018 for measurable healthcare excellence in association with the UNIVANTS of Healthcare Excellence Award.

THREE KEY TAKEAWAYS:

1. Nationwide diabetes screening opportunities in a hospital setting can standardize care and improve patient outcomes by leveraging the use of HbA1C as a biomarker for detecting patients who are at risk.
2. Cross disciplinary involvement with diabetes screening provides targeted therapy and specialty consultations for patients with risk of other comorbidities.
3. Implementing evidence-based optimal treatment plans have positively impacted Key performance Indicators (KPIs) including reduced costs, improved patient wellness, and improved clinician confidence and satisfaction.



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For more details on the UNIVANTS
of Healthcare Excellence Award program,
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IFCC Foundation of Emerging Nations (FEN) - SNIBE 'Support a Professional' program partnership, 2019

Scholarship Report: Dr. Sibtain Ahmed (Pakistan)

by Dr. Sibtain Ahmed

Department of Pathology and Laboratory Medicine
The Aga Khan University, Karachi, Pakistan

IFCC's Foundation of Emerging Nations (FEN) is devoted to fund raising and to supporting programs that help to improve the quality and delivery of laboratory medicine services, particularly in emerging nations. With this objective in perspective, I was selected for a scholarship award from the FEN in partnership with SNIBE Diagnostics under the 'Support a Professional' program, 2019.

This scholarship enabled me to undertake training from 1st September to 15th November 2019, at a high-quality clinical laboratory at Akdeniz University Hospital, Antalya Turkey, a tertiary level hospital with more than 1050 bed capacity, 33 specialized clinical departments making it one of the leading medical centers in Turkey.



Dr. Sibtain Ahmed in the laboratory with Dr. Tomris Ozben

The IFCC treasurer and executive board member of the FEN, Prof. Dr. Tomris Ozben supervised my training. The time spent under a visionary mentor and leader like her not only nurtured me academically, but also professionally.

In a nutshell, I worked as a visiting fellow at the Central Laboratory, headed by Prof. Dr. S. Gultekin Yucel, along with his team of expert clinical biochemists, including Prof. Dr. Tomris Ozben, Prof. Dr. S. Halide Akbas, Prof. Dr. Sebahat Ozdem, Dr. Ikbal Ozen Kucukcetin and many other experts and laboratory technologists.

The focus of my training was to attain knowledge regarding Newborn Screening (NBS), the diagnosis of



Dr. Sibtain Ahmed speaking at the 27th Balkan Clinical Laboratory Federation (BCLF) and Turkish Biochemistry Society (TBS) joint Congress, 2019

Article continued on next page

Inherited Metabolic Disorders and the applications of Liquid Chromatography-Mass Spectrometry (LC-MS/MS).

The structured training program began with the NBS, covering all the aspects from screening, follow-up of abnormal test results, diagnosis, and evaluation of periodic outcome and efficiency. Furthermore, I learnt analysis and reporting of expanded NBS, specifically the amino acids and acylcarnitine analysis. In the subsequent days, I worked on analysis and reporting of very long chain fatty acids for peroxisomal disorders, enzyme analysis for LSDs, biotinidase enzyme activity and organic acid analysis in urine using GC/MS. I also learnt various other applications of LC-MS/MS particularly therapeutic drug monitoring of immunosuppressants for transplant patients alongside area under the curve monitoring.

Moreover, I also had the opportunity to observe various molecular diagnostic platforms, particularly the Next-Generation Sequencing (NGS), high performance liquid chromatography for neurotransmitters and polyacrylamide gel electrophoresis for lipoprotein sub-fractionation.

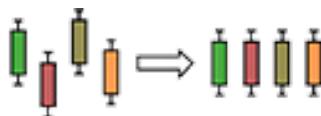
As far as scholarly activities are concerned, I was able to join the 27th Balkan Clinical Laboratory Federation (BCLF) and Turkish Biochemistry Society (TBS) joint Congress. I delivered an oral presentation and had a chance to meet eminent local and international scholars, including the President-Elect of the IFCC, Prof. Dr. Khosrow Adeli.

I would like to express my sincere gratitude to Dr. Graham Beastall, Prof. Dr. Tomris Ozben, IFCC-FEN, SNIBE Diagnostics, Pakistan Society of Chemical Pathology (PSCP), the Aga Khan University, Karachi Pakistan and senior faculty and colleagues from my department for extending their full support, specially Dr. Lena Jaffri for the guidance which enabled me to grasp this opportunity.

Apart from academics and laboratory training, this program led me to build liaisons and collaborations for future projects and working relationships with the clinical biochemistry consultants. The skills acquired during this short training will be implemented in my laboratory. Furthermore, I will work for the dissemination of information to peers back home under the ever-flourishing umbrella of the PSCP.



With the Akdeniz University Biochemical Genetics laboratory team



**International Consortium
for Harmonization of Clinical Laboratory Results**



Workshop Announcement

Barriers to global standardization of clinical laboratory testing: reference materials and regulations

29-30 May, 2020 - SEOUL, KOREA



Immediately following IFCC WorldLab 2020 - <http://www.seoul2020.org/2020/home>

This workshop will address the barriers to implementing global metrological traceability of clinical laboratory methods. Differences in country or region specific reference materials and regulatory requirements are barriers to standardization. ISO standards with JCTLM certified reference materials, reference measurement procedures and protocols provide tools for global standardization. Workshop topics will address technical and regulatory issues, impact of new biomarkers and technologies, approaches to prioritization of tests for standardization, and conclude with issuing recommendations for improved approaches to achieve globally standardized patient test results.

Information and registration: seoul@ifcc2020.org

Presented under the auspices of



IFCC POC7 Satellite Meeting 2020



IFCC WorldLab
SEOUL 2020

24th International Congress of

Clinical Chemistry and Laboratory Medicine

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NEWS FROM REGIONAL FEDERATIONS AND MEMBER SOCIETIES



News from the Japan Society of Clinical Chemistry (JSCC)

JSCC's 2019 Outstanding Young Investigator Award

by Dr. Hideo Sakamoto

International Exchange Committee of JSCC

The 2019 Outstanding Young Investigator Award of the Japan Society of Clinical Chemistry (JSCC) is given to persons who have made outstanding academic research in clinical chemistry.

In 2019, Kazuhito Gotoh M.D., Ph.D. and Moriya Iwazumi M.D., Ph.D. are the winners of the Outstanding Young Investigator Award.

The award presentation was held at the 59th Annual Meeting of JSCC in Sendai, Japan between September 27-29, 2019. At the award presentation, award winners were congratulated by Dr. Masato Maekawa, president of JSCC for their outstanding work in clinical chemistry.

In this issue, we would like to introduce the winners of the Outstanding Young Investigator Award, to present their outstanding work.

the metabolic requirements that support citrate production remain poorly defined.

His group generated p32-deficient DCs ($p32^{-/-}$ DCs) and showed that the lack of p32 decreased mitochondrial respiratory chain proteins in DCs.



Kazuhito Gotoh

Kazuhito Gotoh M.D., Ph.D.

(Department of Clinical Chemistry and Laboratory Medicine, Graduate School of Medical Sciences, Kyushu University) is the winner of the 2019 JSCC Outstanding Young Investigator Award, entitled "*Mitochondrial p32/C1qbp is a critical regulator of dendritic cell metabolism and maturation*"

Dendritic cell (DC) maturation induced by Toll-like receptor (TLR) agonists requires activation of downstream signal transduction and metabolic changes. The endogenous metabolite citrate has recently emerged as a modulator of DC activation. However,

Article continued on next page

He also found that loss of p32 in DCs induced metabolic reprogramming characterized by increased glycolysis and impaired OXPHOS. In addition, TLR-induced DC maturation was selectively impaired in p32^{-/-} DCs.

To explore the mechanism by which p32 controls TLR-dependent DC maturation, his group compared intracellular metabolites between WT and p32^{-/-} DCs at 12 hours after lipopolysaccharide (LPS) activation.

He identified nine metabolites that showed differential abundance in mature p32^{-/-} DCs. In particular, citrate and isocitrate were the only two metabolites exhibiting significant decreases in mature p32^{-/-} DCs.

His group also showed that p32 interacts with dihydrolipoamide S-acetyltransferase (E2 component of pyruvate dehydrogenase [PDH] complex) and positively regulates PDH activity in DCs. Collectively, DC maturation is regulated by citrate production via p32-dependent PDH activity.

Several clinical studies and experimental models have implicated DCs in the pathogenesis of autoimmune diseases including multiple sclerosis, psoriasis, type 1 diabetes, and systemic lupus erythematosus.

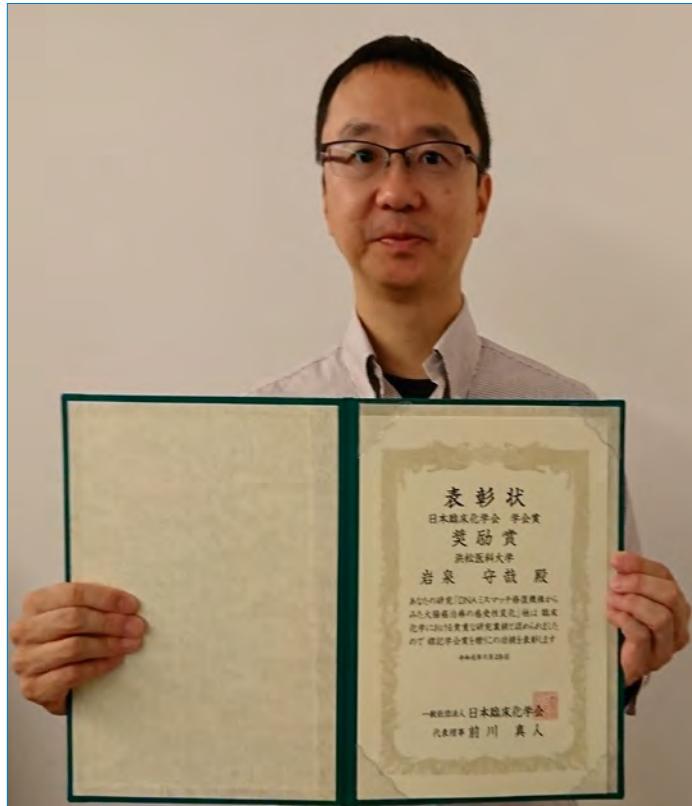
His group also showed that p32 and PDH activity supported DC maturation and anti-ovalbumin antibody production *in vivo*. Therefore, p32 and PDH could be targets in the treatment of autoimmune diseases associated with DCs.

In experimental studies, others have demonstrated biochemically that MMR protein recognizes and binds 5-FU incorporated in DNA.

However, it is not known if specific MMR recognition of 5-FU drives cytotoxicity within CRC cells. To determine the consequence of DNA MMR upon 5-FU incorporated in DNA, Dr. Iwaizumi constructed 5FdU:G heteroduplex plasmids and SW480 (MMR proficient), HCT116 (hMLH1^{-/-}, hMSH3^{-/-}) and DLD1 (hMSH6^{-/-}) cells were transfected with plasmids and cell morphology was observed by microscopy and cell growth analyzed by MTS and clonogenic assays.

Dr. Iwaizumi found that MMR proficient cells containing 5FdU plasmid demonstrated reduced cellular proliferation, suggesting that 5-FU incorporated in DNA triggers cytotoxicity in an MMR-dependent manner, which is independent of both 5FU incorporation in RNA and TS inhibition by 5FU.

Dr. Iwaizumi's work will bridge the gap between prior clinical and biochemical evidence and indicates that cellular MMR recognition of 5-FU and subsequent cell death is a key mechanism that extends survival for CRC patients with MMR-intact tumors.



Moriya Iwaizumi

Moriya Iwaizumi M.D., Ph.D.
(Hamamatsu University School of Medicine)
is the winner of the 2019 JSCC Outstanding Young Investigator, entitled “DNA mismatch repair system and chemosensitivity in colorectal cancer”

5-fluorouracil (5-FU) based chemotherapy is the standard care for advanced stage colorectal cancer (CRC) patients.

Several groups including ours have reported that stage II-III colorectal cancer patients whose tumors retain DNA Mismatch repair (MMR) function derive a benefit from 5-FU based chemotherapy, but patients with tumors that lost MMR function do not.



News from Pakistan (PSCP & AKU)

Flipped style certificate course on fundamentals of quality control to improve patient safety

by Dr. Lena Jafri

Assistant Professor, Section of Chemical Pathology

Department of Pathology and Laboratory Medicine

Aga Khan University, Karachi, Pakistan



Group photo of Course organizers, facilitators and participants at Aga Khan University, Karachi Pakistan

Since its foundation, Section of Chemical Pathology, Department of Pathology & Laboratory Medicine, Aga Khan University (AKU) has been a leader in taking quality initiatives for patients' safety. This time we hosted a three-half day course from 4-6, December 2019 at AKU in Karachi Pakistan. The team of Chemical Pathologists behind the designing and delivery of this course aimed at advancing understanding and application of issues related to internal and external quality control (QC) in clinical laboratories. The course was conducted under the auspices of International

Federation of clinical Chemistry (IFCC) and Pakistan Society of Chemical Pathologists (PSCP).

The course, "Fundamentals of quality control to improve patient safety" brought together a diverse group of participants ranging from medical technologists, lab managers, research associates, residents and consultant pathologists from the various departments of AKU, National Medical Centre, Indus Hospital, Tabba Heart Institute, Sindh Institute of Urology and Transplantation, Dow Medical University Hospital, Essa Laboratory, National Institute of Blood

Disease, Farah Essa Academy and Ziauddin University Hospital Karachi. All participants were awarded 09 AACME credit hours on completion of the course.

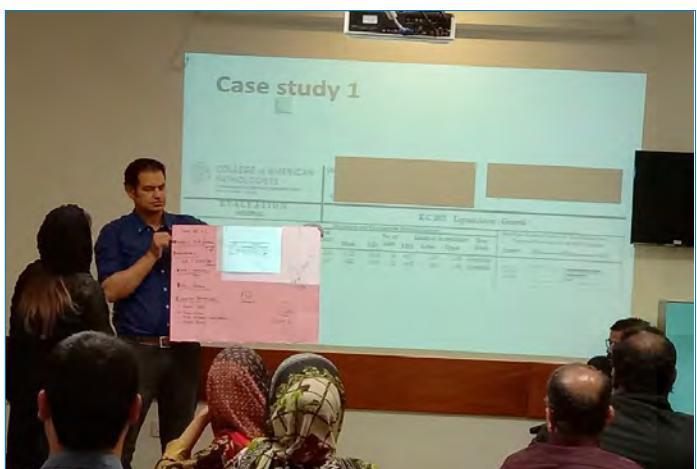
The course was taught in a flipped style and instructions (written and video) of the gravimetric method of pipette calibration were sent to the participants via email. They had to perform the gravimetric method of pipette calibration at their respective laboratories, apply statistics and bring the results to the course.

Day one of the course started with pretest in the form of Kahoot game. An invited speaker from Ziauddin University Hospital, Professor Dr. Adnan Zuberi gave a comprehensive talk on 'Quality Management in Clinical Laboratory'. Basic statistics of quality control were taught by Dr. Hafsa Majid, Senior Instructor in the Section of Chemical Pathology at AKU on day one with lots of interactive exercises. A talk on 'New Insights on QC Using Patient Data' was the next one, where Dr. Aysha Habib Khan, Associate Professor & Section Head of Chemical Pathology AKU, explained the advantages of real time system monitoring.

On the second day of the course, the facilitators focused on understanding of internal quality control (IQC), interpretation of Levey Jennings Charts, identification



Course participants engaged in case-based group activity



Course participants presenting root cause analysis of a PT case study



Course participants engaged in individual QC activity

of errors and root cause analysis (RCA) to identify the cause of error. The day started with Dr. Sibtain Ahmed Consultant Chemical Pathologist at AKU, who, through an interactive lecture, explained Levey Jennings Charts and discussed application of Westgard rules to identify errors and causes of these errors.

Then Professor Dr. Imran Siddiqui from Section of Chemical Pathology AKU discussed a few 'Case Studies with Westgard Rules Application' with the participants. This was followed by a group activity facilitated by an invited facilitator Dr. Sahar Iqbal Associate Professor from Dow International Medical College. Dr. Sahar discussed interpretation of Levey Jennings Charts in detail.

On day 3 of the course a Commentary on CAP Accreditation was delivered by Dr. Lena Jafri, Course Director and Assistant Professor in Chemical Pathology at AKU. The last day of the course was dedicated to evaluation of proficiency testing (PT) reports and laboratory accreditation. Framing this part was a talk on basic statistics of evaluating PT surveys, appreciating

different patterns consistent with errors, identified in PT reports and root cause analysis to reach the cause by Dr. Sibtain Ahmed. This was followed by another group activity in which participants were given different case studies to assess their understanding which was presented by the course director.

Throughout the course the facilitators involved the participants, actively engaging them through online game quiz, discussions, problem solving, case studies, flip chart activity, reflective writing and gallery walk. This placed a greater degree of responsibility on the participants with higher level of learning and critical thinking.

Invited speakers and participants praised AKU's commitment to quality and patient safety. Many encouraged AKU to do more. They recognized that being the only CAP accredited clinical laboratory in Pakistan by aligning with international standards and global best practices, AKU makes a positive impact not only with its faculty, technologists and students, but more widely in the whole society.



News from the Society of Medical Biochemists of Serbia

XXII Annual Scientific Conference Prof. Ivan Berkeš

by Dr. Snežana Jovičić

Liaison Member of the IFCC eNewsletter Working Group



Dean of the Faculty of Pharmacy, Prof. Dr. Slađana Šobajić, and prof. Nada Majkić-Singh

The Society of Medical Biochemists of Serbia (SMBS) and the Scientific Foundation „Professor Ivan Berkeš“ organized for the twenty second time the annual Scientific Conference, dedicated to the life and work of the esteemed Prof. Dr. Ivan Berkeš, one of the founders of medical biochemistry in former Yugoslavia. The Conference is the occasion where the best graduate students of the Faculty of Pharmacy, University of Belgrade are awarded by the Scientific Foundation “Professor Ivan Berkeš”.

The 2019 Annual Scientific Conference “Professor Ivan Berkeš” was co-organized and hosted by the Faculty of Pharmacy, University of Belgrade. It gathered

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Laureate of the award Teodora Bolog, Master of Pharmacy, with Prof. Nada Majkić-Singh

over 200 participants –students, older colleagues who were Professor Berkeš' students, young graduated medical biochemists, and teachers of the Faculty of Pharmacy. Traditional guests were the family members of Professor Berkeš – his son and grandson, with their families.

This traditional meeting of students and professors of the Faculty of Pharmacy, honoring the legacy of one of its most distinguished professors, was held on 28 November 2019.

Prof. Nada Majkić-Singh, traditionally the organizer, with her opening words greeted the participants and reminded us of the history, the idea of foundation, and the significance of the Conference, as well as of the life and work of Professor Ivan Berkeš, whom it honors.

Following the welcoming address of the Dean of the Faculty of Pharmacy, Prof. Dr. Slađana Šobajić, Prof. Majkić-Singh presented awards of the Foundation.

This year's recipients were Tijana Vučković, Master of Pharmacy-Medical Biochemist, and Teodora Bolog, Master of Pharmacy. During the scientific part of the program, chaired by Prof. Dr. Svetlana Ignatović and Prof. Dr. Vesna Spasojević-Kalimanovska, this year's defended doctoral theses at the Departments of Medical Biochemistry and Toxicology of the Faculty of Pharmacy, University of Belgrade, were presented.



Laureate of the award Tijana Vučković, Master of Pharmacy-Medical Biochemist, with Prof. Nada Majkić-Singh

This year, the colleagues from the Departments of Biochemistry of the Faculty of Medicine, University of Niš and of the Faculty of Medicine, University of Novi Sad also presented their doctoral theses.

The first speaker was Dr. Tamara Gojković, with her thesis on the importance of the influence of cholesterol synthesis and absorption markers determination in healthy subjects and patients with ischemic heart disease.

Dr. Danijela Ristovski Kornic's thesis was about the determination of myeloperoxidase and lipoprotein subclasses distribution in children and adolescents with chronic kidney disease.

Antidotal efficacy of newly synthesized oximes K203 and K027 in rats acutely exposed to dichlorvos was the topic of the lecture by Dr. Evica Antonijević.

The lecture by Dr. Branka Djordjević on the effect of melatonin on parameters of oxidative damage, inflammation and neoangiogenesis in the retina of rats with streptozotocin/nicotinamide induced type 2 diabetes mellitus followed.

The conference closed the doctorate thesis by Dr. Dragana Milošević on the connection between selected parameters of complete blood count, glycoregulation and the presence of degenerative complications in type 2 diabetes mellitus.



Laureates, lecturers and chairs of the Conference

L-R: Tijana Vučković, Teodora Bulog, Prof. Svetlana Ignjatović, Prof. Vesna Spasojević-Kalimanovska, Dr. Danijela Ristovski-Kornic, Prof. Nada Majkić-Singh, Dr. Evica Antonijević, Dr. Dragana Milošević, Dr. Branka Djordjević, and Dr. Tamara Gojković



XXIV Latin American Congress of Clinical Biochemistry

2019 – Panama City, Panamá

by Jovanna Borace

President, Congress Organizing Committee

Prof. Stella Raymondo

President COLABIOCLI

The XXIV Latin American Congress of Clinical Biochemistry was held at the Megapolis Convention Center (MCC) in Panama City last September. The MCC is connected through a beautiful gallery to the Hard Rock Hotel Megapolis, a very comfortable and appropriate environment to promote the interaction of all the event attendees.

The congress was held in compliance with the COLABIOCLI Congress Regulations and under the auspices of IFCC.

The Pan American Society of Clinical Virology (PASVC) hosted by the Panama society held a Pre-congress in conjunction with CONALAC members, and a symposium of Clinical Virology.

The PASVC and COLABIOCLI are looking forward to signing an agreement that will promote important projects of mutual interest for future joint activities.

The COLABIOCLI NATIONAL ORGANIZING COMMITTEE 2019 was chaired by Mgter. Jovanna Borace. President of the Congress, with the participation of

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COLABIOCLI



National authorities of XXIV COLABIOCLI – PANAMÁ Congress 2019

Mgter. Inés Reyes. General Secretary, Mgter. Ariel Vásquez, Legal Secretary, Mgter. Maura Ballesteros, Finance Secretary, Lic. José Carreiro, Finance and Communication Secretary, and as Logistical Secretaries Lic. Ottma Ibargüen and Lic. Mario Batista, and Mgter Lizbeth Campillo, President CONALAC and Member, COLABIOCLI EB.

The CONALAC SCIENTIFIC COMMITTEE consisted by Mgter. Jovanna Borace, Mgter. Inés Reyes, Mgter. Ariel

Vásquez, Mgter. Evelyn Navarro, Lic. Bertrand Palma, Mgter. José Moreno and Lic. Michelle Facey.

Many important scientists from all over Latin America represented The COLABIOCLI AUTHORITIES.

The main thematic axes were: Immunohematology, Blood Bank, Bacteriology, Genetics, Postgraduate Education in clinical laboratory, Hematology, Coagulation, Diabetes, POCT, Immunotherapy and Cancer, Quality, Laboratory and pregnancy, Neonatal screening and



COLABIOCLI President Stella Raymondo and Organizing Committee President Jovanna Boracce
inaugurating the XXIV Congress of COLABIOCLI Panama 2019



IFCC-COLABIOCLI Agreement signature

Sitting (L-R): Regional Representative of COLABIOCLI at IFCC Dr. Rosa Sierra-Amor, President of IFCC Dr. Maurizio Ferrari, President of COLABIOCLI Dr. Stella Raymondo and COLABIOCLI Secretary Dr. Ana Lena Rodriguez
Standing (L-R): Mgter Lizbeth Campillo, 1st Member, Dr. Alvaro Justiniano, Vice-President, Dr. Graciela Queiruga, Past President, Dr. Juana Ortellado, 2nd Member, Lic. Antonia Suriel, 3rd Member, and as Treasurer BC Natalia Amor

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General Assembly in XXIV COLABIOCLI- PANAMÁ Congress 2019

Pediatrics, Endocrinology, Molecular Biology, Fertility, Virology, Mycology, Alternative Medicine and laboratory. Taking advantage of the great assistance from Latin American, another meeting of the IFCC WG-IANT took place.

An App, known as VICKY, permitted all participants to access the agenda and a brief review of the various speakers at the Congress.

The Congress had 3 plenary conferences, 11 symposia, 5 round tables and 69 conferences.

There were numerous national and international lecturers, coming from Mexico, Brazil, Argentine, Colombia, Equator, Chile, Uruguay, Paraguay, Venezuela, Honduras, Costa Rica, Bolivia, Spain, France, Italy, R, Czech Republic, Turkey, Netherlands, UK, Africa, USA, Canada etc.

The COLABIOCLI had a face-to-face meeting of its Executive Committee and held the General Ordinary Assembly with the election of its new authorities for the next two years holding the Presidency, Secretariat and Treasury positions from Bolivia, the Vice Presidency from Brazil, the first elected Member from Panama, the second from Chile and a third one from Uruguay.

Wiener Award. Six research papers were received for the Wiener Lab- COLABIOCLI 2019, for the "Best Research Work in Clinical Biochemistry". The research paper identified with the pseudonym of ROMARI was selected as the winner. The main author of the award was Dr. Isabel Rodríguez Martín, with the collaboration of Dr. Catalina Sánchez Mora and Prof. Victor Sanchez Margalet. The title was "Health Results After the Implantation of Rotational Thromboelastometry (ROTEM®) in Patients Subjected To cardiovascular surgery". A symbolic award ceremony was granted by Mr. Gabriel Sivina, Wiener Manager Area representative.

Sponsors and Laboratory Exhibition area.

The Organizing Congress Committee through the National College of Clinical Laboratories of Panama prepared a beautiful CONALAC-COLABIOCLI stand that honored the National Societies, COLABIOCLI and IFCC representatives. The CONALAC-COLABIOCLI stand served to promote its scientific events, as well as the next congress of COLABIOCLI in 2021.

IFCC activities:

As part of the collaboration between COLABIOCLI and IFCC, a Symposium on HbA1c and on Molecular Diagnostics was presented, allowing both chairs and committee members to lecture at the regional



PAHO and COLABIOCLI Meeting. With the Latin American representatives of the Societies
who were elected at the General Assembly in Panama and PAHO authorities.

L-R: Dr. Juan Pablo Grammatico (AR), Dra. Juana Ortellado (PY), Lic. Leverton Ortiz (Chile),
Dr. Amadeo Saenz (BR), Dr. Alvaron Justiniano (BO), Dr. Jean Marc Gabastou (PAHO), Dra. Ana Piana (UY),
Magter. Lizbeth Campillo (PANAMA), QF. Fernando Antúnez (UY).



Colabiocli, COC and IFCC officers with IFCC and IFCC-Roche scholars

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congress. IFCC-Abbott VLPs were Prof. Maurizio Ferrari, IFCC President, Prof. Tomris Ozben, IFCC Treasurer, and Dr. Tahir Pillay, IFCC CPD Chair. Dr. Thomas Zima from the IFCC Committee on Congress and Conferences participated as well. Once again, we would like to express our gratitude to the IFCC-Abbott Program for contributing to the continuous improvement of knowledge in the area of laboratory sciences.

Scholarships were: one IFCC-Roche granted to Bolivia and five IFCC scholarships given to young scientists

from Colombia, Guatemala, Ecuador, Mexico, and Paraguay.

In Panama, the COLABIOCLI-IFCC agreement was signed for the next three years, which is a great success for the region.

In summary, we are pleased to have hosted the XXIV COLABIOCLI Congress 2019 in Panama, which according to the comments received in the applied survey was characterized as a very successful organization, with appropriate selection of the topics and finally the best headquarters in Panama city, PANAMA.



Dr. Alvaro Justiniano Grosz, current President of the COLABIOCLI, designated by the Bolivian National Entity, elected by the Ordinary General Assembly of Panama to host the COLABIOCLI for the next two years



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News from Mexico (CMCLabC)

3rd Symposium on Diabesity: “Clinical and Diagnostic aspects”



Colegio Mexicano de Ciencias
de Laboratorio Clínico, A.C.

The 3rd Symposium on Diabesity: “Clinical and Diagnostic aspects” was organized by the Mexico City Chapter of the Mexican Association of Clinical Laboratory Sciences (Colegio Mexicano de Ciencias de Laboratorio Clínico (CMCLabC) in Mexico City last November 23rd, 2019.

The CMCLC symposium was chaired by Xochilt Mauricio-Villegas, MSc. President, Mexico City Chapter; it was held at Children’s Hospital (Hospital Infantil de México “Federico Gómez”). Participants from different health centers and medical laboratories from Mexico City, Hidalgo, Veracruz, Tlaxcala States registered for the symposium.

The symposium objective was to create a space of dissemination and knowledge exchange of the clinical characteristics and the current recommendations for the prevention, the diagnosis, and the treatment strategies of the persons that deal with diabetes and obesity. The welcome message was addressed by Jezabel Vite-Casanova, ME, President CMCLabC.

The Mexico City Chapter was aware of the importance of the declaration of the Minister of Health regarding the epidemiological alert pronounced since November 2016. That report included information about metabolic alterations, such as the *double epidemic*: obesity and type 2 diabetes.

Therefore, and under the frame of the World Diabetes Day on November 14th, the 3rd Symposium on the diagnostic and clinical aspects of Diabesity was organized under the auspices of the International

by Rosa Sierra-Amor, PhD
Member of WG eNews and IFCC EB Regional Representative



L-R: Speakers of the 3rd Symposium of Diabesity
Julio Lara-Riegos, PhD, Ariana Vargas-Castillo, MSc,
and Eder Mendez-Salazar, PhD.
Hall of the Hospital Infantil de Mexico
“Federico Gómez” in Mexico City.
Diego Rivera’s painting: *La Piñata*.

Federation of Clinical Chemistry (IFCC) and the Latin-American Confederation of Clinical Biochemistry (COLABIOCLI).

In the area of Biochemistry and Genetics, José Peralta-Romero, MD, from the Hospital Siglo XXI, IMSS described clinical, genetic, biochemical and molecular

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aspects of obesity, type 2 diabetes and metabolic syndrome in the Mexican population. Julio Lara-Riegos, PhD from the Faculty of Chemistry, Autonomous University of Yucatan described the neologism diabesity and related biochemical and genetic abnormalities.

In the context of Obesity, Ariana Vargas-Castillo, MSc from the INCMN "Salvador Zubiran" talked about pathophysiological aspects of adipose tissue during obesity. Eder Méndez-Salazar, MSc from the INR, "Luis Guillermo Ibarra" presented his research study on the extrarenal excretion of uric acid: intestinal microbiome as an underestimated factor in the development of gout and obesity.

Angélica Borja-Magno, MSc, who is also from the INCMN "Salvador Zubiran", explained the obesity as an

inflammatory process and component of the diet: inducers and regulators.

In the area of clinical and diagnosis, Agustín Mata Chapol, MD from the Hospital General Zona 48, IMSS introduced the clinical aspects of diabetes. Xochitl Mauricio Villegas, Biochemist discussed the usefulness of the oral glucose tolerance test and Julio Pérez Martínez, Biochemist, also emphasized the importance of pharmacovigilance in the drugs used in the treatment of diabetes.

The presentations were followed by an interactive session allowing the audience to ask questions. The symposium included eight conferences, covering a very broad-ranging topics, with many other themes emerging throughout the day.



News from France (SFBC)

Digitalization and integration of AI in lab medicine

**Delphine Collin-Chavagnac^{1,2}, Mazhoura AitMebarek³,
Bernard Gouget^{1,4}, Katell Peoc'h^{1, 5}**

¹ Société Française de Biologie Clinique (SFBC), France

² Service de Biochimie et Biologie Moléculaire,
CHU Lyon Sud, Hospices Civils de Lyon, France

³ Medicen Paris Région, Pôle de compétitivité
français en santé

⁴ Chair-IFCC Committee on Mobile Health and
Bioengineering in Lab Med

⁵ Université de Paris, UFR de Médecine Xavier Bichat
et APHP, HUPNVS

On October 18, 2019, the SFBC (French Society of Clinical Biology) and Medicen Competitiveness Cluster co-organized in Paris, the first conference on digitalization and AI in lab medicine.

The goal was to give a broad overview of AI in lab medicine, dealing with the terms and concepts, the current and future applications of AI, and the developing knowledge and familiarity of AI among the specialists in lab medicine.

Digitalization is becoming an integral part of the medical biologist activities since years, as through the delivery of biological results, the analysis of data validation support, and, more recently, through the study of "Big data" generated by "omics."

Globally, Artificial Intelligence (AI) is a computer science that uses algorithms, pattern matching, rules, deep learning, and cognitive computing to approximate conclusions without direct human input.

By using AI, the medical biologist can deal with complex problems that would be difficult, or almost impossible, for humans to solve. Because AI can identify meaningful relationships in raw data, it can be used to support diagnosing, treating, and predicting outcomes in many medical situations.

AI has the potential to be applied in almost every field of lab medicine, including patient monitoring and personalized patient treatment plans. De facto, AI is already implemented in the medical laboratories.

The French Health Law project "Ma santé 2022," including the creation of the Health Data Hub and

the “Espace Numérique de Santé” (ENS), personal e-health space, has been recently adopted. At the same time, the first call to projects of the Health Data Hub have been performed, which represents a strategic tool to serve innovation and promote Artificial Intelligence in the global health sector.

France is already home to much talents. Artificial intelligence often sounds not only as a promise for the future, but we must not fool ourselves, this revolution is happening here and now. This radical transformation is both an unprecedented opportunity and an immense responsibility. The medical biologists community has to fully seize the opportunities offered by artificial intelligence now while designing the framework to regulate it.

After a brief introduction by Medicen and SFBC representatives, David GRUSON, Strategic Health Programs Manager- JOUVE and Ethic IA President, examined the current and potential applications of AI in healthcare, its limits, and the ethical issues arising from its use as well as the essential requirements that AI systems should meet to be deemed trustworthy.

The ethics of artificial intelligence represent a hot topic for governments, for the European Union, and individual companies: He strongly encouraged the medical biologists to be involved in this evolution because the complexity and rise of data in healthcare means that artificial intelligence will increasingly be applied within the field.

AI applications will enable medical biologists to conduct research more effectively and to find quickly the most relevant diagnostics that correlate with their patient's medical situation.

Jean-François POMEROL, TRIBVN, described applications based on the use of artificial intelligence allowing the sensitive reading of pathology slides.

Benjamin AUBIER, Sophia Genetics, presented different AI applications in the field of the integration of medical imaging results.

Antonin LAMAZIERE, APHP-INSERM Paris 6, illustrated an academic approach of the use of “machine learning” in the treatment of metabolomic data in rare metabolic diseases, congenital hyperplasias of

adrenal glands, aimed at answering a question with a high clinical impact: can AI prevent dynamic tests with ACTH?

Igor KOVAL, INRIA, showed the results obtained in the personalized simulation of the progression of Alzheimer's disease to precisely identifying endophenotypes.

Géry PRUVOST, Medicus AI, presented a recent study, focusing on “the Augmented Biologist,” and a solution that automates the interpretations of the biological reports to propose a clinical decision support, personalized health advice, and recommendations practice. Jelle WILLEMS, Ugentec, presented the Fast-finder solution, an AI solution for the interpretation of quantitative PCR data, allowing the automation of the analysis of merge curves, as well as the technical verification of the results.

Arnaud LECLEVE, from Biologbook, described decision-support solutions for physicians and researchers based on automated interpretation of biological measurements.

Fanny SOCKEEL from RIMAA introduced its software for reading and analyzing anatomy-pathology slides.

The SIL-LAB, a connected application between nurses and medical laboratories for the management of home sampling, was illustrated by Serge PAYEUR.

The last start-ups session presentation by Nathael MENRAS, Roche Diagnostics, was dedicated to the Navify solution, a digital platform for decision support in oncology. This platform can be useful in the organization of multidisciplinary consultation meetings. The software integrates the latest advances for the analysis of variants and is a first step towards the establishment of personalized medicine.

Dr. Philippe Piet, President Section G- National Order of the Pharmacists, emphasized that, if AI is hard at work crunching health data to improve diagnostics and help medical biologists to make better decisions for their patients, the furious pace of growth in the development of machine-learning tools and AI calls for medical professionals to carefully examine the deontological and ethical risks of incorporating them into decision-making. According to the French

law, the medical biologist is solely responsible for validating the results.

Before the lunch break, Sébastien DURAND, BENGS, was questioning how artificial intelligence is redefining the role of the specialist in lab medicine. From detection to diagnosis, digitization is widely being accepted

as the new approach to lab medicine. The deployment of AI and robotics in health is irreversible.

Health care practitioners and patients are quickly embracing digital apps and advanced technology to get to the bottom of an ailment. The impact on careers for lab and medical professionals will be very significant.



The auditorium and some speakers: David Gruson (top) on the right, and Isabelle Aimone-Gastin (bottom)

Medical professionals who are open to using technology but who hold a healthy skepticism about its limitations will be best positioned to add value.

Lab specialists must be careful to include all the relevant data regarding a case to achieve the most accurate results. Biologists who tap artificial intelligence systems for updating their professional knowledge will, therefore, have an advantage.

At the beginning of the afternoon session, Dr. Claire HASSEN-KHODJA (AP-HP) described the Assitance Publique—Hopitaux de Paris Health Data Warehouse.

Maîtres LAIGNEAU and ROQUELLE, from Jasper avocats, analyzed the legal and regulatory aspects of AI in medical biology.

Isabelle AIMONE-GASTIN, Vice-President-National Professional College of Biology / SFBC, illustrated the 6P lab medicine (Predictive, Preventive, Participatory, Precision, Proven, Pathways) which must be based on the evidence of a service rendered to patients within a #Connected care pathway.

The potential of artificial intelligence is difficult to ignore. The number of successful case studies and examples will continue to grow as we look toward the future, for the integration of AI in healthcare.

AI promises to make sense of complex medical data, gain insights, and better recognize patterns in behavior. AI is a “decision engine” that can exponentially increase the effectiveness and efficiencies of laboratories organizations.

There is an opportunity to build a connected collective intelligence and to integrate AI and digital biology into the initial and ongoing training of all biologists.

The afternoon session ended by a Round Table chaired by Prof Vincent SAPIN, President SFBC, with Drs. Isabelle AIMONE-GASTIN, and Dr. Katell PEOC'H, co-chair SD SFBC, Nathael MENRAS, Roche Diagnosis, Géry PRUVOST, Medicus AI, and Prof Alexandre MEBAZAA, ESC, APHP, University of Paris.

After a general discussion of recent medical AI innovations, and a more analytic look at related ethical issues such as data privacy, physician dependency on

poorly understood AI helpware, bias in data used to create algorithms post-GDPR, and changes to the patient–physician relationship, the speakers underlined the creation and the funding of a chair of excellence AI at the University of Paris to stimulate and support the creation of innovative and high-impact ideas that will advance the applications in the field of medicine.

The discussion also focused on potential harms emerging from interactions between humans and AI systems, informed consent and responsibility, and how liability should be distributed among professionals, In Vitro Diagnosis companies, and other stakeholders for uses of AI in health care were discussed.

In summary, no doubt, the fight between humans and robots is becoming more serious, intense, and fascinating. AI can enhance lab and clinical productivities due to its ability to handle a large capacity of tasks that are well suited for automation.

It's also a long on-going debate where supporters, believers, and experts are in the power of one form over the other and one replacing the other. The movement towards AI and robotics is evolving very quickly. It is a big scientific, medical, and sociological leap. The technology may be ready, but we are not at least not yet.

The potential benefits of Artificial Intelligence are huge, so are the dangers. We will use AI, big data, and data science to solve real-world problems in healthcare and related fields, but they can never replace the human touch of medical biologists. With AI, there is a lack of human sensitivity that still requires human expertise in the interpretation of data and recommendations.

The effectiveness of lab medicine is highly dependent on the use of the most advanced cutting-edge solutions. So AI, augmented (AR) and virtual reality (VR) offer numerous diverse opportunities of its implementations in various areas such as lab diagnostics and lab medical training.

Let's hope that shortly we all will be dazzled by the technological breakthroughs made possible by the development of AR /VR/ AI. It is a new challenge for the specialist in lab medicine of the 21st century.



News from the Spanish Society of Laboratory Medicine (SEQC^{ML})

The SEQC^{ML} attends the “Technology and Health 2019”
Awards ceremony

SEQC^{ML}

Once again, the **Technology and Health Foundation (FTyS)**, with the collaboration of the **Spanish Federation of Health Technology Companies (Fenin)**, has presented its “*Technology and Health 2019*” awards, at an event chaired by **María Luisa Carcedo, Minister of Health, Consumer Affairs, and Social Welfare**, which spotlighted the importance of health technology.

The SEQC^{ML}, represented by Dr. Francisco A. Bernabeu Andreu, was present at this event as a **patron of the Foundation**, an entity that has established itself as a strategic partner for professionals and for the healthcare system, useful for patients, and always with the firm vocation to listen and provide solutions, according to the words of its president, José Luis Gómez.

During the awards ceremony, Margarita Alfonsel, Secretary of the Board of Trustees of the Technology and Health Foundation and Secretary General of Fenin, explained that the Foundation dedicates great efforts to recognizing and rewarding those who, with their daily work, contribute to bring healthcare technology closer to all patients, “so that wherever there is a medical need, there is also a healthcare technology to respond”.

THIS YEAR'S WINNERS WERE:

⌚ **Fenin Prize for “Health Technology Innovation 2019”**, to Professor Luis Fernández-Vega Sanz, Professor of Ophthalmology at the University of Oviedo, head of the Ophthalmology Service

of the General Hospital of Asturias, and medical director of the Fernández-Vega Ophthalmological Institute.

⌚ **“Foundation Recognition 2019”**, to the Institute for Validation of Clinical Efficiency (IVEc) of HM Hospitals, for the creation of an innovative platform for the analysis of real clinical data that allows for evaluation of the cost-effectiveness of health technologies and provides professionals with the necessary information to make the best possible clinical decisions.

⌚ **Award for the “Best Patient Support Organization 2019”**, to the Spanish Breast Cancer Federation (FECMA), which represents more than 45,300 women affected by this pathology.

⌚ **Award for the “Best Chronics Program Promoted by an Autonomous Community 2019”** for the “Strategy for the care of chronic patients”, of the Ministry of Universal Health and Public Health of the Valencian Community.

⌚ **Award for the “Best Education and Prevention Program Promoted by an Autonomous Community 2019”** to the Ministry of Health of the Xunta de Galicia for its “Escola Galega de Saúde for Ciudadáns”, an initiative whose mission is to promote a health system oriented towards efficiency and proper use of resources, and towards innovation.

⌚ **Award for the “Technological Innovation in Health Promoted by an Autonomous Community 2019”** for the “Neurodegeneration, brain damage, and healthy aging project”, of the Basque Center On Cognition, Brain, and Language, promoted by the Basque Department of Health.

⌚ **“Fenin Prize for Entrepreneurship in Health Technology 2019”**, to the Spanish Social Diabetes brand for its platform for diabetes self-management.

The event has had a significant impact in the media, both in the health sector and in general information, as well as in all fields.

The SEQC^{ML} has been a patron of the FTyS since 2007 and we are very proud to have had the opportunity to participate in a forum of this nature, which put the focus on the value of health technology and the work and performance of professionals for people's well-being.

About the Spanish Society of Laboratory Medicine (SEQC^{ML})

The Spanish Society of Laboratory Medicine (SEQC^{ML}) -founded in 1976- is an active member of IFCC and

EFLM. The SEQC^{ML} currently encompasses more than 2,500 professionals, and its main objectives are to bring together all scientists interested in the field of Laboratory Medicine, promote the dissemination of scientific and technical publications, organize meetings, courses and congresses of national and international character, cooperate with other Scientific Societies, and defend and promote the specialties of the field of Laboratory Medicine as well as those of its members. Likewise, the Society wishes to contribute to studying and recommending methods and guides, and to establishing guidelines and recommendations for training in the field of Laboratory Medicine.

More information at: www.seqc.es.



Snapshot of the "Technology and Health 2019" awards ceremony



News from Australia (AACB)

Australasian Association for Clinical Biochemistry and Laboratory Medicine

Following a membership survey held in early 2019, the Australian Association of Clinical Biochemists developed their strategic plan for 2019-22 which included revisions to the constitution of the association to change the name to Australasian Association for Clinical Biochemistry and Laboratory Medicine.

The changes were put to a vote of the membership and passed with an overwhelming majority.

The new name was formally adopted on 1st January 2020.



Over the next couple of years we will seek to extend our education and professional development opportunities to all clinical laboratory staff.

Whilst recognising the existing partnerships in place, we will seek to expand our membership to include pathologists, scientists and technical staff in related disciplines.



News from the European Federation of Laboratory Medicine (EFLM)

Consensus-based recommendations on laboratory testing for dyslipidemia produced by the EAS and EFLM



Michel Langlois

*by Michel Langlois
Chair of EFLM Working Group Guidelines (WG-G)*

An important prerequisite to address present and future challenges of cardiovascular risk prediction is the harmonisation of serum lipid and lipoprotein profiles produced by laboratory tests and techniques. To that end, the multidisciplinary Joint Consensus Panel of the European Atherosclerosis Society (EAS) and EFLM published recommendations on the quantification of atherogenic lipoproteins in nonfasting and fasting blood samples (1). This document aims to provide appropriate guidance on the pre-analytical, analytical, and post-analytical phases of laboratory testing of atherogenic lipoproteins. The key recommendations are summarized in the table.

This guideline is the product of successful collaboration between clinical and laboratory medicine specialists represented by two European Societies. The Consensus Panel members were nominated in 2014 by EAS and EFLM to represent worldwide expertise across clinical and laboratory

Article continued on next page

management of dyslipidemia. This guideline embodies the consensus-based recommendations previously produced by the Panel (2,3) and was critically reviewed by independent experts of the EFLM Task Group on Cardiac Markers (TG-CM), chaired by Päivi Laitinen, who were not involved in the initial publications by the Panel. A first version of the guideline document underwent public consultation by the EFLM National Societies in 2019. Comments were received

from 11 Societies and have been considered during the revision of this document. The revised version has been sent for final voting to all 40 National Societies and was positively voted by 29 Societies (1 negative vote was received, and 10 Societies did not vote). This means that this document should be considered an official EFLM statement. We greatly appreciate the comments and suggestions received from EFLM National Societies and their appointed reviewers.

Table

Key EAS-EFLM recommendations published for quantifying atherogenic lipoproteins

Pre-preanalytical phase (test ordering)

Comprehensive testing of atherogenic lipoproteins should include tests to assess the risk conferred by LDL particles, remnant particles and, at least once, Lp(a).

Preanalytical phase (test sampling)

Fasting is not routinely required for assessing the lipid profile; it may be considered when nonfasting triglycerides are ≥ 4.5 mmol/L (400 mg/dL).

Analytical phase (test measurement)

On-treatment follow-up of measured or calculated LDL-cholesterol should be performed with the same method.

The Martin-Hopkins equation may be preferable for calculation of LDL-cholesterol in patients with low LDL concentration < 1.8 mmol/L (70 mg/dL) and in nonfasting samples.

Lp(a)-corrected LDL-cholesterol should be assessed in patients with suspected high Lp(a), including in those who respond poorly to LDL-lowering therapy.

Apolipoprotein B assays most accurately measure the overall burden of atherogenic particles in the fasting and nonfasting state.

Postanalytical phase (test reporting)

Laboratories should automatically calculate and report non-HDL-cholesterol on all lipid profiles.

Flagging of abnormal concentrations should be based on decision thresholds.

Extremely high concentrations beyond the reference interval should alert clinicians with interpretative commenting, including to screen for Familial Hypercholesterolemia (FH).

Post-postanalytical phase (test interpretation and use)

LDL-cholesterol is the primary target of lipid-lowering therapy.

When LDL goal is achieved, non-HDL cholesterol or apolipoprotein B should be preferred as secondary treatment targets to reduce residual risk.

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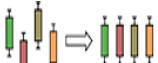
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IFCC'S CALENDAR OF CONGRESSES, CONFERENCES & EVENTS

Calendar of IFCC Congresses/Conferences and Regional Federations' Congresses

| | | | |
|-------------------|---|--|------------|
| Mar 9 - 13, 2020 |  | <i>Winter School on Cell Analysis in Immunology</i> | Geneva, CH |
| May 22 - 24, 2020 |  | <i>International Congress of Pediatric Laboratory Medicine - WorldLab Seoul 2020</i> | Seoul, KR |
| May 23 - 24, 2020 |  | <i>IFCC Young Scientists Forum</i> | Seoul, KR |

Calendar continued on next page

| | | | |
|-------------------|---|--|------------|
| May 24, 2020 |  International Federation of Clinical Chemistry and Laboratory Medicine | IFCC C-POCT Satellite Meeting - WorldLab Seoul 2020 | Seoul, KR |
| May 24 - 28, 2020 |  | XXIV IFCC WorldLab Seoul 2020 | Seoul, KR |
| May 29 - 30, 2020 |  International Consortium for Harmonization of Clinical Laboratory Results | IFCC - ICHCLR Workshop - Barriers to global standardization of clinical laboratory testing: reference materials and regulations | Seoul, KR |
| May 16 - 20, 2021 |  | XXIV IFCC - EFLM EuroMedLab Munich 2021 | Munich, DE |
| Oct 15 - 18, 2022 |  | 16th APFCB Congress 2022 | Sydney, AU |
| May 21 - 25, 2023 |  | XXV IFCC - EFLM WorldLab EuroMedLab - Rome 2023 | Rome, IT |

Calendar continued on page 58

Winter school of Cell Analysis in Immunology

Geneva
Switzerland
9th-13th March 2020

Organizers :

Thomas MATTHES (Geneva)

Claude LAMBERT (Saint-Etienne)

Typing & counting

Lymphocytes, monocytes & dendritic cells
Maturation pathways, compartments
Recent Thymic Emigrants and ILCs

Functional tests

Activation, Proliferation
Intracellular Cytokines
Cytotoxicity, apoptosis
Phagocytosis, ROS production
Degranulation

Quantitative cytometry

ImageStream; Mass Cytometry
Multidimensional data - analysis

Monitoring diseases

Immunodeficiencies
Allergy, Sepsis
Lupus, arthritis

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Contact: tomas.matthes@hcuge.ch
claude.lambert@chu-st-etienne.fr

Registration: www.cytometryschool.ch

Calendar of events with IFCC auspices

| | | |
|-----------------------|---|----------------------|
| Feb 6 - 7, 2020 | <i>International Congress on Quality in Laboratory Medicine</i> | Helsinki, FI |
| Feb 13 - 15, 2020 | <i>5th Annual Academic sessions of CCPSL – CCPSL AAS 2020</i> | Colombo, LK |
| Feb 19 - 21, 2020 | <i>V. Turkish in vitro Diagnostic (IVD) Symposium "Health Biotechnology"</i> | Izmir, TR |
| Feb 20, 2020 | <i>Pediatric Laboratory Medicine 2nd SSCC Seminar</i> | Riyadh, SA |
| Mar 5 - 7, 2020 | <i>Multidisciplinary Conference on rare genetic diseases in Pakistan</i> | Karachi, PK |
| Mar 14 - 16, 2020 | <i>XXIII Congreso Nacional para el Análisis de la Garantía de la Calidad en el Laboratorio Clínico</i> | Tuxtla Gutierrez, MX |
| Mar 25, 2020 | <i>42th Conference LABAC "First International Conference on in vitro hemolysis"</i> | Paris, FR |
| Apr 15 - 18, 2020 | <i>The 13th International & 18th National Congress on Quality Improvement in Clinical Laboratories</i> | Tehran, IR |
| Apr 23 - 25, 2020 | <i>VI Jornadas Bioquímicas de Cuyo 2020</i> | San Luis, AR |
| Apr 27, 2020 | <i>LabMed Next</i> | Rome, IT |
| Apr 30 - May 3, 2020 | <i>LXVI Congreso Estatal de Química Clínica y Expoquim 2020</i> | Ciudad Obregón, MX |
| May 6 - 8, 2020 | <i>4th Conference of the Romanian Association of Laboratory Medicine</i> | Târgu-Mureş, RO |
| May 28 - 30, 2020 | <i>II National Meeting Conquilab and Technological</i> | Mazatlan, MX |
| Jun 9 - 12, 2020 | <i>XXXVII Nordic Congress in Medical Biochemistry</i> | Trondheim, NO |
| Jul 4 - 7, 2020 | <i>24th International Conference on Laboratory Medicine and Pathobiology - An Expert Forum on Innovation in Clinical and Laboratory Medical Sciences</i> | Samos, GR |
| Sep 3 - 25, 2020 | <i>The innovations and trends that are shaping the future of laboratory medicine and Neighbouring Countries: the Same Professional Aim in Laboratory Medicine</i> | Belgrade, SRB |
| Sept 28 - Oct 1, 2020 | <i>10th Santorini Conference "Systems medicine and personalized health and therapy" – "The odyssey from hope to practice: Patient first – Keeps Ithaca always in your mind"</i> | Santorini, GR |
| Nov 27 - 28, 2020 | <i>3rd EFLM Strategic Conference on Demand Management</i> | Zagreb, HR |
| June 10 - 11, 2021 | <i>8th International Symposium on Critical Care Testing and Blood Gases</i> | Biarritz, FR |

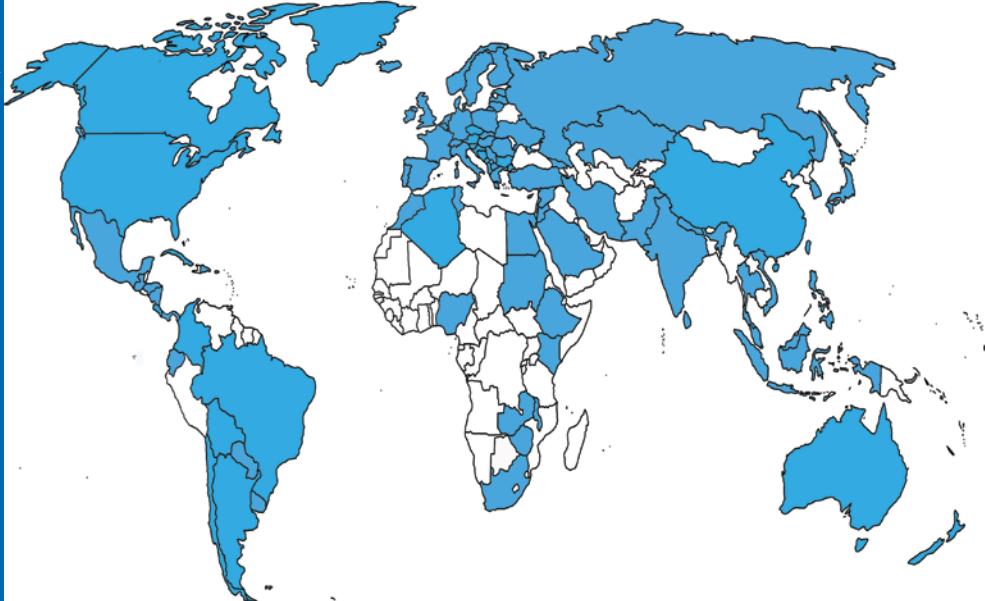
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| Nepal: Nepalese Association for Clinical Chemistry (NACC) |
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| Serbia: Serbian Society for Clinical Laboratory Medicine and Science (SCLM) |
| Spain: Asociación Española de Farmacéuticos Analistas (AEFA) |
| Turkey: Society of Clinical Biochemistry Specialists (KBUD) |
| Ukraine: Association for Quality Assurance of Laboratory Medicine (AQALM) |



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