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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,

I hope that among your decisions for the New Year is that you will read a lot more, a lot more books in fact. Because this first issue of the eNews for 2023 is a book! I invite you to read it.

First in the President's Prof. Khosrow Adeli message you will learn a lot about the ambitious and interesting IFCC plan. And then if you go through the articles, as I did, you will learn so much about AI in general, AI from the beginning till now, and in particular its applications in Laboratory Medicine. You will find out that there is a software that can write even papers instead of you!!!

You will learn about evidence-based laboratory medicine as well and you will meet more wonderful scientific groups, UNIVANTS winners.

A lot of information about how several countries are dealing with the refugee crisis regarding their health issues can be found in this issue. The role of Laboratory is stressed in this important matter, concerning human lives.

It is really like reading a book, a very interesting book where our job plays a fundamental role.

Happy New Year, once more, dear colleagues!

Katherina



Katherina Psarra, MSc, PhD



26th International Congress of Clinical Chemistry and Laboratory Medicine

17th Congress of Arab Federation of Clinical Biology

10th Saudi Society for Clinical Chemistry Annual Meeting

THE VOICE OF IFCC

IFCC President's Message – January/February 2023



Prof. Khosrow Adeli
PhD, FCACB, DABCC, FAACC

by Khosrow Adeli
IFCC President

Happy New Year to everyone in the IFCC family! We have an exciting year ahead, full of new priorities to further our mission of “advancing excellence in laboratory medicine for better healthcare worldwide” as well as the IFCC major scientific event, the **XXV IFCC-EFLM WORLDBLAB EUROMEDLAB ROME 2023**.

As our first new priority this year, IFCC will focus on breaking silos by enhancing collaboration with all major bodies involved in laboratory medicine and *in vitro* diagnostics. We have already started discussions with several organizations to build stronger relationships that will ultimately foster innovation and minimize the overlap/duplication in our scientific and educational activities. New memorandums of understanding (MOU) are being signed with EQALM, BCLF, WASPALM, and FIFBCLM.



Another key priority is **promoting the web presence of the IFCC organization and its affiliates**, which will increase the visibility of IFCC within the clinical chemistry and laboratory medicine community as well as outside the field in the broader medical and healthcare community. Work involved in this priority includes development of a new IFCC website with a modernized look and feel as well as improved navigation and functionality, which is already underway. Other improvements are also in the works, such as an update of the IFCC eAcademy website, redevelopment of the eNews and eJournal, and creation of new databases. The new IFCC website is almost ready and will be officially launched shortly.

Third, IFCC will be **developing and disseminating evidence based IFCC Clinical Laboratory Practice Guidelines** to support clinical laboratories around the world. These guidelines will provide practical recommendations to laboratory professionals based on evidence from a wide range of existing reputable guidelines, peer-reviewed publications, and expert consensus. All guidelines will provide specific implementation resources to ensure utility in clinical practice. Given that IFCC is home to leading experts in laboratory medicine, we will call upon our Committees, Task Forces, and Working Groups to help develop and disseminate these guidelines. A special meeting of the IFCC Executive Board with chairs of all divisions, taskforces and working groups is planned in early March to develop a roadmap for this important new program.

Article continued on next page

The fourth priority is **ensuring accreditation** for all IFCC educational programs including all IFCC Live Webinars and regional/international conferences. Continuing Education (CE) credits will be provided for the upcoming EuroMedLab/WorldLab 2023 with the support of EFLM and plans are underway to ensure accreditation of all future IFCC conferences.

On that note, we have a very exciting event planned later this year. The **IFCC-EFLM EuroMedLab/WorldLab 2023 Congress** will take place from **May 21–25** in the historic and beautiful city of Rome. An excellent **scientific program** is planned for this biannual congress, filled with innovative and diverse education opportunities, including lectures, symposia, recent advancements in clinical practice and science, poster presentations, and industry exhibits. There will also be many social and networking opportunities, as this leading forum brings together scientists, laboratory specialists, clinicians, industry colleagues, and other experts from around the world. In fact, we have already received **over 2000 abstract** submissions, indicating this is set out to be one of the most widely attended congresses in the IFCC history.

Ahead of EuroMedLab 2023, we have several important **satellite meetings** planned on May 20 and May 21 as well as a special IFCC Young Scientists Forum on Sunday May 21st. Stay tuned for more information on both the main congress as well as the satellite meetings and special forum.

As always, please feel free to email me at president@ifcc.org with any feedback, questions, or concerns you may have.

Khosrow

News from the IFCC Website

The eJIFCC adopts Editorial Manager (EM) system for manuscripts

János Kappelmayer, Editor-in-Chief, eJIFCC, and Harjit Pal Bhattoa, Assistant Editor, eJIFCC are glad to announce that the eJIFCC is adopting “Editorial Manager” for manuscript submission.



In the past years, the eJIFCC has become increasingly visible among laboratory specialists worldwide. This, on the one hand resulted in the increase of the number of downloads of papers published since the eJIFCC is a platinum open access publication, and on the other hand, it resulted in a considerable increase in the number of submissions. We detailed the progress in the advancement of the scientometric parameters of the journal in a review in the eJIFCC in Issue 4 of 2021. In order to cope with the increase in submissions we decided to advance our manuscript handling process, and recently subscribed for the Editorial Manager (EM) manuscript handling system. Editorial Manager is a long-established and one of the best-known editorial submission and manuscript processing program that belongs to Aries. It was founded in 1986 and is headquartered in North Andover, MA.

The introduction of the Editorial Manager, along with the use of Ithenticate, the most trusted plagiarism checker by the world’s top researchers, publishers, and scholars, will increase eJIFCC’s reputation among the Scientific journals.

Brief report on my visit to deliver lecture at the conference of Biomedical Society of Zambia



by Professor Adekunle Bashiru Okesina
EB Regional Federation Representative
African Federation of Clinical Chemistry (AFCC)
Department of Chemical Pathology and Immunology
College of Health Sciences
University of Ilorin, Ilorin, Kwara State
Nigeria

My initial challenge for this visit to Zambia was getting a flight from Lagos to Livingstone which was the venue of the conference. I therefore had to break my booking to first arrive in Lusaka and make a separate booking from Lusaka to Livingstone. Also, because of December congestion due to holiday travels the prices of flights in that region had gone up. Anyway, I eventually had a smooth travel, first to Lusaka and later to Livingstone. I spent 72 hours to go and my return journey had a similar duration.

I arrived on the evening of 13th December because the conference started on the 14th of December. I gave my first talk on the 14th and the second on the 15th of December. The local organizing committee for the conference did a good job by providing a comfortable accommodation and they were very hospitable.

I used the IFCC template for the 2 presentations and I also inserted the slides to acknowledge Abbott Diagnostics and IFCC at the beginning and end of my two presentations. Indeed, I gave a brief introduction of IFCC as an organization and what it stands for, not only the global spread across various parts of the globe in more than 92 countries, but also its readiness to assist developing countries most especially the young scientists in their carrier development in laboratory medicine. I gave this description of IFCC in a separate talk and also encouraged participants to take advantage of regular webinars. My second topic addressed the value of continuous professional development in the improvement of laboratory services. I was happy to observe that substantial efforts are already ongoing in Zambia, as displayed by the presentations in the conference, but there is always room for improvement. However, I pointed out the need to make it more organised and properly documented and spread across the 9 regions of the country.



Professor Adekunle Bashiru Okesina
giving one of his talks



Participants at the Conference of Biomedical Society of Zambia

A few participants approached me and informed me of their special interest in my talk on Monkey-pox which they found very useful. One of them said that they were planning a local survey to determine the prevalence of the disease in Zambia and my talk came very handy in assisting them in this project. Many young scientists were also happy to learn what IFCC stands for and what they can benefit from IFCC professional exchange programme and sponsorship of young scientists to attend conferences.

Zambia is also one of the countries currently participating in the global external quality assurance project of the IFCC. Presentation was made on how far they had gone with this project and there was palpable enthusiasm that they are eager to push the project forward. The Minister of health could not attend the opening ceremony but he was represented by a senior member of his Ministry.

Finally, the visit was a success and members of National Society i.e. Biomedical Society of Zambia expressed their gratitude for this support and they want more of such support to strengthen the society for rapid development.

News from the IFCC Website



IFCC Call for Nominations

The IFCC invites nominations for the following positions:

- Task Force on Ethics (TF-E) - one Member position. Replies by 15th February 2023.
- Committee Kidney Disease (C-KD) - two Member positions. Replies by 20th February 2023.
- New Task Force on Environmental Impact of Laboratory Medicine and In Vitro Diagnostics: call for nominations for Members positions. Replies by 20th February 2023.
- Task Force for Young Scientists (TF-YS) - two Member positions. Replies by 28th February 2023.

[Read more](#)

Workshop on Flow Cytometry Nov 15 to 17th, 2022 – Rabat, Morocco

by *Dr. Claude Lambert (FR)*

Chair of the IFCC Working Group on Flow Cytometry (WG-FC)



Cours International de l'IFCC sur la Cytométrie en Flux

Les lymphocytes en immunologie/hématologie

Rabat, Maroc les 15, 16, & 17 Novembre 2022.

In November 15 to 17th 2022, a new Workshop on Flow Cytometry under the umbrella of IFCC was held in Rabat, Morocco. The workshop was organized by the IFCC working group of flow cytometry from the Education and Management Committee and was sponsored by Beckman Coulter (Salma Benchekroun, [Amira Mokrane](#) and [Anica Remenar](#)) and Mabiotech ([Issam Driouch](#), [Hamza Laabouki](#)), the local representative.

The workshop focused on cell analysis of T cells and NK cells in clinical immuno-monitoring ([Claude Lambert](#), univ Hospital Saint-Etienne France, [Anis LARBI](#) Global Medical and Scientific Affairs, Beckman Coulter) and in lymphoproliferative syndromes ([Mikael Rousset](#) University Hospital Rennes France, representative of the CYTHEM French speaking Association on cell analysis in hematology).

The participants attended the 3 full days of the workshop composed of lectures (in French) in the morning and practicals in the afternoon with sample preparation, instrument settings and data interpretation of clinical cases. Twenty-three experienced participants came from the main universities, the National Institute of Hygiene (INH) and few other medical laboratories of the central area around Rabat and Casablanca.

Several laboratories are equipped with cytometers in Morocco. An active national network manages HIV monitoring while other laboratories are involved in diagnosis of immune disorders, including primary immunodeficiencies and hypersensitivities or hematological disorders like lympho-proliferative diseases, leukemias, bone marrow transplantation as well as monitoring organ transplantation with HLA typing and cross match. Over the past few years, we could observe a clear development in using flow cytometry in diagnosis although, like in most African countries, they are facing the needs for training and difficulties to get instruments and reagents in reasonable time and costs.

The workshop was held in a very nice ambiance. Many local participants had the chance to meet for the first time. Participation was very enthusiastic. Post workshop enquiry revealed that attendees found the workshop excellent (52%) or very good (42%) and asked a lot for more of these events to be organized in the future in their concluding comments.

Article continued on next page



Group photo of the participants



During the course, Prof. Lambert, sitting near the podium, gives further details



Participants during the one practical session of the course

The voice of Corporate Members shined at the 2022 IFCC Industry Forum: advancing excellence in laboratory medicine for better healthcare worldwide

Nadav Kaufman, Senior Director of Global Marketing, QuidelOrtho

Els Melis, EMEA Senior Marketing Manager, QuidelOrtho

Brendan Meyer, Associate Director, Medical Affairs EMEA, Integrated Diagnostic Solutions, Becton Dickinson Life Sciences

Alessandro Ortisi, Associate Director, Global Clinical Marketing, Laboratory Diagnostics, Siemens Healthineers

Joseph Passarelli, Senior Director - Scientific Relations Scientific Relations, Roche Diagnostics Solutions

Tricia Ravalico, Global Director, Scientific Leadership and Education, Abbott

Anne Skurup, Senior Medical Advisor at Radiometer Medical

Frank Vitzthum, Managing Director and Vice President Pre-Development & Advanced Technologies Siemens Healthcare Diagnostics Products GmbH



(L-R) Moderators: Joe Passarelli (Roche) and Tricia Ravalico (Abbott)

Discussants: Anne Skurup (Radiometer Medical), Frank Vitzthum (Siemens Healthcare Diagnostics Products GmbH), Els Melis (QuidelOrtho) and Brendan Meyer (Becton Dickinson Life Sciences)

For over 50 years, corporate members have been influential in supporting the mission of the IFCC. Until recent years, however, the voice of corporate members were often dwarfed or unheard. This paradigm has changed substantially with the development of the IFCC Task Force of Corporate Members (TF-CM) which has been thriving since its inception 5 years ago.

Initially led by **Joe Passarelli**, Roche Diagnostics, the TF-CM tackled early topics of joint corporate interest. Upon his subsequent transition to serve on the IFCC Executive Board, his position as chair of the Task Force was replaced by **Tricia Ravalico** from Abbott. Collectively and with the support of the IFCC, Joe and Tricia had led multiple industry-workshops including their recent success in Brussels at the IFCC General Conference.

With special thanks to Khosrow Adeli for the invitation, Joe and Tricia hosted an educational forum that spanned 4 brilliant speakers from industry including **Anne Skurup**, Senior Medical Advisor at Radiometer Medical, **Dr. Frank Vitzthum**, Managing Director and Vice President Pre-Development & Advanced Technologies Siemens Healthcare Diagnostics Products GmbH, **Els Melis**, EMEA Senior Marketing Manager, QuidelOrtho, Belgium, and **Dr. Brendan Meyer**, Associate Director, Medical Affairs EMEA, Integrated Diagnostic Solutions, Becton Dickinson Life Sciences.

Their forum tackled emerging trends both pre and post COVID, highlighted the opportunities and challenges associated with the enhanced regulatory demands for clinical studies and included best practices associated with industry partnerships. A more detailed summary from each talk is summarized below with call to action for all teams, committees and/or interested colleagues to leverage the IFCC TF-CM as a collective industry voice that can enhance triple wins for the IFCC, companies and the patients we all serve.

The title of the first presentation (Anne Skurup) was “**Meeting the Demand for Clinical Studies: A Joint Effort for IFCC and IVD Industry**,” was based on the observation that the need for clinical studies in the in-use environment in hospitals required for regulatory approval has increased. The complexity regarding documentation and execution of associated studies is also on the rise. At the same time, challenges exist due a world-wide lack of health care staff and post Covid effects. Consequences include longer times to market for new and innovative products, despite the potential to improve patient care and reduce workloads.

During the Industry Forum, live poll results amongst representatives from the audience indicated a strong interest in engagement in future clinical studies. Excitingly, this translates to the triple win mentioned earlier in that safe and effective IVD solutions become more readily available through partnerships enabled by the IFCC with the strength and insight to mitigate and/or solve some many of the current challenges that companies are challenged with, while also embracing the confidentiality associated with these needs. Long term, deepened collaborations can lead to faster release of new technology that not only meets current health care challenges but fosters additional benefits both within and outside off Laboratory Medicine. Opportunities in the near term include but are not limited to the potential establishment of an IFCC expert advice committee with a passion to support this valued initiative.

In the second presentation, “**Emerging Trends**”, Dr. Frank Vitzthum outlined transformational changes, like demographics, consumerism, etc. and how they drive current and emerging trends. There is still a growing need for in-vitro diagnostics. However, cost pressure forces us rightfully so to achieve more with less. At the same time, we must provide clinical value through new and improved assays as well as digitalization. Healthcare is becoming more and more digital combining information applying data management, algorithms, and clinical decision support including artificial intelligence to add significant clinical value. Intelligent machines will support precision decision making and eventually connected Intelligence will expand healthcare availability.

In the third presentation, Els Melis commented on **“What Have We Learned from the COVID Experience?”** For almost 3 years, the COVID-19 pandemic put unprecedented pressure on society, people, hospitals, and healthcare systems, causing over 6.5 million deaths worldwide. Her presentation argued that everyone should reflect on the impact which the COVID pandemic has had, take learnings, and assure a better preparedness for the future.

Looking at the Healthcare System, the pandemic heavily disrupted access to early detection, screening, diagnosis, care, and treatment for people living with acute and chronic non-COVID related diseases. This dramatically impacted their day-to-day life, leading to a worsening of their conditions and often increased mortality. It is important to build back better and more resilient healthcare systems, with screening programs which support risk stratification and as such enable improved access to early screening and diagnosis.

As an Industry, we learned that it is possible to go fast when the world health is at stake. Crisis creates natural alignment and assay development times, which typically take 2-3 years, could be achieved in as little as a few weeks. We observed collaboration between governments and regions. Rapid publication of new insights enabled continuous progression and learnings.

From the laboratory’s perspective, the staffing and supply shortages have emphasized the need for mitigation plans to enable rapid response, rapid addition of capacity, accelerated on-boarding of new vendors for critical supplies and updated processes to implement new tests.

The pandemic also demonstrated a lot of flexibility from the regulatory bodies. Emergency authorizations eliminated normal burdens and enabled faster development and product releases. However, they were facing resource issues too as they needed to rapidly expand capability to review many more filings than ever before. Should regulatory bodies create a group of additional reviewers as a contingency plan?

The crisis has definitely put diagnostics in a positive light. As we are adjusting to the new normal, we need to continue striving for efficient and agile processes to improve patient outcomes and to ensure no one is left behind in case of future health emergencies.

Brendan Meyer discussed the opportunities and challenges of **“IFCC Partnership with the IVD Industry”**. Together with the ongoing sponsorship of IFCC activities, such as Divisional work, scholarships, awards and conferences, there are clear examples where IVD partnerships are supporting best-practice changes in clinical laboratory practice. While prerequisites such as compliance requirements and long-term budgeting may be challenging, these can be overcome through planning and change management. The IVD industry looks forward to continuing and growing partnerships.

Tricia Ravalico closed the session with a spotlight on the UNIVANTS of Healthcare Excellence award program, a global award for all healthcare teams who have achieved measurably better healthcare performance through teamwork and avant-garde use of insights from laboratory medicine. His award program was featured as a best practice among industry with multiple IFCC leaders as award winners over the past 4 years. Learn more about the UNIVANTS awards and/or their associated best practices at www.UnivantsHCE.com.

In summary, the IVD industry is active and excited to advance the mission of the IFCC and Laboratory Medicine. For any IFCC team and/or committees who is seeking further insight about the IVD industry, please leverage the IFCC Task Force of Corporate Members as supportive partners in your respective efforts. We are in this together and excited for the future.



Joe Passarelli (Roche), Anne Skurup (Radiometer Medical), Brendan Meyer (Becton Dickinson Life Sciences), Tricia Ravalico (Abbott), Els Melis (QuidelOrtho) and Frank Vitzthum (Siemens Healthcare Diagnostics Products GmbH)

VLP Report, ACBICON 2022: Assessing AI technologies and ethics in healthcare services



by **Bernard Gouget**, Chair IFCC-CMHBLM, IFCC Abbott VLP
Pradeep Kumar Dabla, Member IFCC C-MHBLM
Department of Biochemistry, G.B.Pant Institute
of Postgraduate Medical Education & Research (GIPMER)
Damien Gruson, EB IFCC- ETD, IFCC-C MHBLM Liaison
Sergio Bernardini, Chair IFCC ETD

On the occasion of the 48th annual conference, ACBICON 2022 (New Delhi, Nov 24-26, 2022) organized by the Association of Clinical Biochemists of India, the topic Artificial Intelligence and its ethical challenges in Lab Medicine was the subject of several presentations. As disruptive technology advances, that interacts more directly with the digital sphere, the healthcare and lab medicine sectors are transforming themselves on a daily basis, characterized by better clinical diagnosis. Across the healthcare sector, technological and product advances are supporting patient diagnosis and care. Lab Medicine is affected significantly by 4.0 technologies, which include machine learning and artificial intelligence, Internet of Things and automation, data mining as well as multi-omics and POCT devices improving healthy lifestyle. The integration of these new technologies is perhaps one of the most essential developments in the Indian context.

A preconference full day hands-on workshop under the theme of “**Applied Artificial Intelligence Research**” was organized by **Prof. Pradeep Kumar Dabla** and IFCC C-MHBLM on November 23rd at the Govind Ballah Pant Institute of Post Graduate Medical Education and Research (GIPMER), Delhi, India. The workshop was unique and first of its own kind initiative in ACBI conference to bring hands-on training on **AI module** and data set along with series of lectures in lab medicine and AI applications. The one-day workshop aims to bring together beginners and interested members to identify the most pressing needs for AI measurement and its

evaluation to advance the state-of-the-art patient care.

The program was inaugurated by welcome speech of Director GIPMER, **Prof. Anil Agarwal**; Chair IFCC C-MHBLM, **Dr. Bernard Gouget** & ACBI EB, **Prof. Excellence V. K. Gupta**. In his opening speech, **Prof. Dabla** recalled that the primary duty of the specialist in Lab Medicine is to the patient, placing the welfare of the patient above his own needs and desires and ensuring that each one receives the highest quality of care according to current standards of medical practice. Laboratory medicine has always been one of the medical disciplines with the highest degree of digitalization. Since its emergence, automation, electronic transmission of results, and electronic reporting have becoming increasingly prevalent. High quality lab medicine services must be safe, effective, efficient, timely, equitable, and patient-centered. Specific knowledge of AI in the lab medical community is still poor and AI education is much needed. This was the challenge of the workshop. Education on the value of AI and research to prove its clinical utility are needed to integrate AI into laboratory medicine. AI in healthcare is the use of complex algorithms and software to mimic human cognition in the analysis of complex medical data. AI algorithms can only work properly with reliable and accurate laboratory data. As laboratory medicine enters the era of big data and artificial intelligence (AI), the ability to provide accurate, readily available and contextualized data is crucial. AI has the potential to improve diagnostics through more accurate pathology detection,

Article continued on next page

better laboratory workflows, better decision support, leading to greater efficiency.

Prof. Sergio Bernardini (Chair IFCC-ETD) precised that the AI employs quite different mathematical and algorithmic approaches, from operational research to constrained programming, and is therefore at the crossroads of neuro-computing, statistical inference, pattern recognition, data mining, knowledge discovery, and machine learning (ML). As a subfield of AI, ML is built upon statistical and optimization concepts. It can be described as the development of computer programs that learn from experience with respect to task and performance measures. AI and data science

have demonstrated success in image analysis in radiology, pathology, and genomics analysis for accelerating diagnosis speed, improving accuracy and enhancing medical expertise. Considering the growing quantity and diversity of data to which healthcare professionals are exposed as biological data, genomics, proteomics, clinical observations, and personal records, Data science with AI will no doubt prove useful for holistic interpretation of the wealth of information in lab Medicine.

Prof. Damien Gruson (EB, IFCC-ETD), attending online, explained that modern medicine generates a great deal of data stored in medical databases.



AT the GIPMER, GB Pant Hospital, New Dehli
L to R: Sergio Bernardini, Bhaswna Mahajan, Pradeep K. Dabla, Bernard Gouget

PRADEEP DABLA is currently host. Reclaiming host may disrupt breakout rooms, polls, and screen share

Reclaim Host Stay Participant

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As symbolic AI, connectionist AI is now able to help biologist to check reports at the validation step. In this study 80% fewer reports to checks than with an expert system

Using machine learning to develop an autoverification system in a clinical biochemistry laboratory

Hongchao Wang, Hongyang Wang, Jian Zhang, Xiaoli Li, Chengxi Sun and Yi Zhang
From the Journal Clinical Chemistry and Laboratory Medicine (CCLM)
<https://doi.org/10.1159/0005-2020-0755>

Published by De Gruyter November 26, 2020

AUC	PPV (%)	Specificity	Sensitivity
0.998	0.411	0.981	0.999

80% fewer reports to check than with an expert system

Diapositive 22 sur 37

Activate Windows
Go to Settings to activate Windows.

Dr. Pierre-Jean Lamy Online

Data mining, also known as knowledge discovery in databases, refers to the process of extracting potentially useful information and knowledge hidden in a large amount of incomplete, redundancy fuzzy, and random practical application data, and closely related to time and, medical data mining differs. Analyzing the quantitative and qualitative clinical data in addition to discovering relationships among a massive number of samples using data mining techniques can unveil hidden medical information in terms of correlation and association of apparently independent variables and discover new relationships among substantial data

sets. Data mining is a multidisciplinary field at the intersection of database technology, statistics, ML, and pattern recognition that profits from all these disciplines. Although this approach is not yet widespread in the field of medical research, several studies have demonstrated the promise of data mining in building disease-prediction models, assessing patient risk, and helping physicians make clinical decisions.

At the end of the morning session, **Dr. Manu Shetty**, MAMC, Delhi (IN), described a comprehensive life cycle for the design, development, and deployment of artificial intelligence (AI) systems and solutions.

The preliminary risk assessment will contribute toward an informed practice of AI, as well as the increased awareness, knowledge, and transparency of AI and its capabilities.

After a convivial lunch shared with the participants from Pan-India basis, the team of Data Scientists, Young Scientists computer team (**Mr. Srijan & Mr. Bhavya**) presented a practical guide and exercises to get the most out of Excel, using it for data preparation, applying machine learning models, including cloud services and understanding the outcome of the data analysis. The second afternoon session started with **Dr. Pierre-Jean Lamy, Montpellier (FR)**. He recalled the origins of the concept of Artificial Intelligence.

After the first developments initiated by the mathematician Alan Turing, modern AI was founded in 1956, at a conference at Dartmouth College, (New Hampshire, USA), where the term “artificial intelligence” was coined. Based on cybernetics and computer science, AI benefited from important research funds until 1974. After several reports criticizing progress in AI, government funding and interest in the field dropped off – a period from 1974–80 that became known as the “AI winter”. At this time, two AI began to compete: the symbolic AI and the connectionist AI. Symbolic AI is also known as expert systems is widely used in laboratory medicine. As connectionist AI tend to mimic more precisely human intelligence using neural network, its use to resolve complex problems has grown significantly since the 2000s. Machine learning and deep learning, which are a part of AI were developed for image recognition and exploration of Big Data. As laboratory medicine continues to undergo digitalization and automation, laboratorians will likely be confronted with the challenges associated with AI. Currently, the most common roles for AI in medical settings are clinical decision support and imaging analysis. Digital pathology, cytology and cytogenetics in hematology, genetics (NGS diagnostics), automated validation of clinical laboratory test results are some of the fields of laboratory medicine already impacted by AI development. The biggest challenge for AI in medicine is working on quality data with the best possible curation. It has a significant cost. Using AI in genomics is difficult to navigate, not only because

of the great variety and large amount of available data, not just to understand what question to ask and which equipment to use, but also because this field is highly sensitive to legal, ethical and moral aspects. AI opens many possibilities and the road that follows the development of AI is just beginning to unfold and bringing many promises. AI is just at the beginning of its potential applications in genomics, the path is still long but irreversible. AI presents an opportunity to improve the efficiency of lab medicine, health care delivery and the quality of patient care, but there is much work to do for using AI safely and ethically. AI in medicine has also its own challenges. Four major ethical issues must be addressed: informed consent to use data, safety and transparency, algorithmic fairness and biases, and data privacy are all key factors to consider.

AI triggers major ethical concerns and questions regarding the ability to disseminate their benefits in an equitable manner. During the preconference, **Dr. Bernard Gouget** first defined Ethics as the science of morale concerning principle of human duty in the society. It is the social value which binds the society by uniform opinion/consideration and enables the society to decide what is wrong and what is right. Ethics is engaging multiple disciplines, including philosophy, law, political science, and education. Ethics is not static, applicable for all times. What was considered good ethics a hundred years ago may not be considered the same today. The disruptive technologies confront us with many ethical questions: new genetic knowledge, AI, Big Data, precision medicine organ transplantation, new definition of death, sophisticated means of keeping people alive, anxiety about the costs of health care, and a more informed and educated public. These matters are moving well beyond the boundaries of medical ethics. The term bioethics generally refers to the study of ethical issues arising because of the development made in the field of medicine, biology, and technology, which might become a cause of concern for humans or detrimentally affect the association between human and their environment. Gouget recalled **the Core Principles of Bioethics**: - *Beneficence*: duty to help the patient advance their own good and to act in a patient’s best interest - *Autonomy*: duty to honor a patient right to

make their own decision and to be self-determining
- *Nonmaleficence*: duty to do no harm to the patient
- *Justice*: duty to be fair in how care is provided and in how resources are allocated. No single principle trumps the others; their relationship is dynamic and requires clinicians to carefully evaluate each situation on its own merits and patient needs.

As with any transformative technology, some AI applications may raise new ethical and legal questions, for example related to liability or potentially biased decision-making. AI must be developed and applied in an appropriate framework which promotes innovation and respects the human values and fundamental rights as well as ethical principles such as accountability, transparency and equitable healthcare delivery. The EU guidelines address issues such as the future of work, Informed consent to use data, fairness, safety, security, social inclusion and algorithmic biases and transparency, data protection and privacy, cybersecurity, and Intellectual property law. The insertion of an algorithm's predictions into the patient-physician relationship introduces a third party, turning it into one between the patient and the healthcare system. It changes the dynamics of responsibility and the expectation of confidentiality. Later on, during the congress, Prof. Jawahar Kalra (CN) shared his experience with the Delphi technique, a well established international protocol used to find consensus among experts and solutions to complex multidisciplinary challenges, that has identified key ethical issues pertaining and presented the SHERPA (Systemic Human Error Reduction and Prediction Approach) a consortium of eleven partners from six countries that analyzed how AI impacts ethics and human rights. Dr. R Dhananjayan, Chennai (IN), discussed on the several eras in Lab Medicine practice where the implementation of ethical guidelines presents challenges. They included: Consent from patients (i.e., consent for unforeseen complications, usage of leftover samples and bio-banking) - Considerations in genetic testing - Reporting implications in incidental findings - errors

disclosure - Role of laboratories in test utilization - Direct to consumer testing - Emerging diseases settings. IFCC-TF for Ethics, AACC, ISO have defined ethical recommendations for medical labs. The IFCC TF- E has streamlined documents available worldwide (<https://www.ifcc.org/taskforceethics/>). ISO 15189:2012 Its section 4.1.1.3 elaborated the ethical conduct required in laboratories. Its section 4.1.1.3 elaborated the ethical conduct expected in laboratories including topics like confidentiality, conflict of interest, undue pressures and influences and requirements.

Today, artificial intelligence plays a role in billions of people's lives. Sometimes unnoticed but often with profound consequences, it transforms our societies and challenges what it means to be human. AI has the real potential to provide real social, economic and environmental benefits making direct improvements to people's everyday lives. We only can agree with the WHO guidance of June 28th 2021: "While new technologies using artificial intelligence hold great promise to improve diagnosis, treatment, health research and drug development supporting governments carrying out public health functions, including surveillance and outbreak response, such technologies must put ethics and human rights at the heart of its design, deployment and use."

Congratulation to Prof. Pradeep K Dabla for the organization of the preconference at the GIPMER and for its participation at the ACBICON 2022. Training medical students in AI and Ethics must be acknowledged as an important need. The Team AI & IFCC-MHBLM made efforts to showcase the underlying research for measuring and assessing AI technologies in healthcare practices. The Team GIPMER also included Assistant Prof. Jitender Sharma & senior technical staff who were instrumental in making this program succeed. Thus, it was possible to familiarize students with the development of AI and Ethics in Lab medicine and to provide students with competence in the use of IT tools, AI theories and ethics principles as well as to familiarize students with disruptive technologies.



VLP Report, ACBICON 2022: It's time to look at the LabMed evidence!



The 48th Annual Conference of the Association of Clinical Chemists of New Delhi (November 23-26 2022) was held at the prestigious ICAR Convention center in New Delhi, India. This conference was focused on the multidimensional concept of patient centered care, illustrating how the medical biologists, the clinicians and other health professionals can collectively enhance patient care. It was a particularly opportune moment to explore the capacity of patient-centered innovations aimed at improving care processes and health outcomes. Each patient should reasonably expect reliable and error-free care in any situation at any time.

According to the protocol, Professor Seema Bhargava (IN) introduced the speakers at the international symposium on evidence based which was organized in the main auditorium. Two speakers were from India (IFCC-APFCB), one from Alexandria, Egypt (IFCC-AFCB) and another one from South Africa (IFCC-AFCC). They were invited to exchange ideas on “What is the evidence and how we can apply it” for making evidence based Lab medicine a priority in our daily practice in order to improve quality of care and health outcomes in any region of the world. The session was coordinated by Professor Arif Ali (IN), and as convenor and chaired by Bernard Gouget (FR).

The words evidence-based are used to describe lots of things in medicine, healthcare and beyond in different parts of society: evidence-based medicine (EBM), evidence-based practice, evidence-based policy, and evidence-based education, etc... Evidence Based Medicine seeks changes in the way in which health

by Bernard Gouget
IFCC-Abbott Visiting Lecturer
IFCC Chair Committee on Mobile Health (IFCC-C-MHBLM)

Ramy S.H. Assad Khalil
Member IFCC-C EBLM

Seema Bhargava
Vice President ACBI
Member IFCC-C-EBLM and IFCC VLP

professionals perform diagnosis and treatment, teach and learn medicine, and carry out research. The tools exist, we still need to know how to use them. The underlying principals are the same, the concept is about making sure that when decisions are made, they are made based on the most up-to-date, solid, reliable, scientific evidence. One of the greatest achievements of evidence-based medicine has been the development of systematic reviews and meta-analyses, methods by which researchers identify multiple studies on a topic, separate the best ones and then critically analyze them to come up with a summary of the best available evidence. According to Christopher Price, if clearly, EBM embraces the diagnostic modalities, Evidence-Based Laboratory Medicine (EBLM) focuses on the use of diagnostic tests and the goal of improving patient outcomes. A definition of EBLM, developed from the definition of EBM given by Sackett *et al.* is ‘the conscientious, judicious and explicit use of best evidence in the use of laboratory medicine investigations for assisting in making decisions about the care of individual patients’. EBLM integrates biological and clinical experience as well as patient values with the best available research information. In more concise terms: evidence-based lab medicine is the effective balancing of data, professional input, and patient preferences.

The IFCC Committee on Evidence based Laboratory Medicine (IFCC-C-EBLM) was represented by Pr. Ramy S.H. Assad Khalil, Lecturer of Chemical Pathology Medical Research, Institute Alexandria University (EG). The C-EBLM aims to raise awareness of the consistent implementation of evidence in the routine clinical

laboratory practices. He explained the EBLM current and future projects within the IFCC committee and its practical implications for endocrinology explaining what the “evidence base” is in EBLM. Considerable steps have been made in the improvement of laboratory endocrinology over the years. He underlined that the endocrine tests, as indispensable cornerstone for the diagnosis and the follow up of endocrine diseases, are subject to continuously updated evidence for their utilization. This includes evidence on the best to aim tests selection, according to diagnostic accuracy characteristics and limitations, appropriate timing and pre-pre analytical standards for sampling, also the best available method. He presented illustrative case studies by practicing evidence-based clinicians and medical biologists. Evidence-based lab medicine (EBLM) is making a clear contribution to medicine. Cutting-edge Evidence-Based Endocrinology not only spells out the high value of EBLM, but also its limitations, challenging endocrinologists and medical biologists to embrace its principles in the best interests of their patient practice.

Professor Arvind Kumar, Department of Medicine All India Institute Of Medical Sciences (AIIMS), New Delhi (IN) said that prognostication plays a pivotal role in the management of infection diseases medicine. He underlined that infectious diseases have been major threat worldwide and have a great impact on public health and the world economy. In bacterial sepsis leucocyte count, CRP, serum procalcitonin (PCT) Interleukins (IL1-IL6) are biomarkers to facilitate early diagnosis and guide therapeutic. Cryptococcal meningitis is one of the most common opportunistic infections among HIV/AIDS patients, estimating more than 220,000 cases and 181,000 deaths worldwide each year. Early detection and treatment of infection are key to reducing the mortality associated with this disease. The CrAg is highly sensitive and specific available as a POCT with a rapid turnaround time. Since 2015, the World Health Organization (WHO) has recommended a commercially available lateral-flow urine LAM test to assist in the diagnosis of tuberculosis in severely ill people living with HIV. None of the routine blood tests such as white blood cell count (WBC), erythrocyte sedimentation rate (ESR), C-reactive protein (CRP) or procalcitonin (PCT) have sufficient sensitivity

or specificity to diagnose or exclude periprosthetic joint infection (PJI). In PJI caused by low-virulence pathogens systemic inflammatory markers are often normal. CRP is increased after surgery, reflecting post-interventional inflammation. Serial measurements over time are needed for accurate interpretation. Different profiles of tests were described for the ascites etiology. It was also explained that a pleural effusion can be due to many different underlying diseases. Precise differential diagnostic categorization is essential, as the treatment and prognosis of pleural effusion largely depend on its cause.

Professor S Arulsevi, department of lab medicine Jai Prakash Narayan Apex Trauma Center, AIIMS, is in charge of the Blood Bank. She reported her experience in blood transfusion in the management of trauma patients. Rapid identification of patients at risks for Mass Transfusion (MT) is always challenging. The primary goal of her study was to compare three scores: the Trauma Associated Severe Hemorrhage (TASH), the Assessment of Blood Consumption (ABC) and the Emergency Transfusion Score (ETS) to identify a reliable predictor for the optimum management of the patient with trauma. The comparison of the three scores demonstrated that only TASH was clinically significant in predicting mass transfusion. TASH score is easy to use and predicts the probability of mass transfusion after multiple trauma. Emergency Transfusion Score (ETS) reduces the chance of mortality but not predict the probability of mass transfusion (MT). Understanding the pathophysiological changes associated with the severity of the trauma is a pressing priority to predict the outcome of these patients.

Professor Tahir Pillay, University Pretoria (ZA) , chair IFCC-CPD discussed the best practices approach to calculating LDL-C based on the available evidence. Low-density lipoprotein cholesterol (LDL-C) is an important biomarker for determining cardiovascular risk and regulating lipid lowering therapy. Therefore, the accurate estimation of LDL-C concentration is essential in cardiovascular disease diagnosis and prognosis. LDL-C has been traditionally calculated using the Friedewald equation ($LDL-C = TC - (HDL-C) - (TG/5)$), which requires the measurement of serum TC (total cholesterol), HDL-C, and TG (triglycerides). This equation for estimating LDL-C is also known to have many

limitations. It has been recognized that the equation tends to underestimate directly measured LDL-C when TGs is significantly elevated. With implementation of the novel factor, Martin-Hopkins formula shows higher accuracy as triglycerides trend higher and non-HDL cholesterol and LDL-C trend lower. The Martin-Hopkins performed well and had good applicability. Presently, the Martin/Hopkins method is available as a smartphone application and in multiple digital distribution platforms. Furthermore, it is technically easily feasible to add the Martin Hopkins estimation (MH-LDL-C) and remnant cholesterol (RC) values to the laboratory lipid report based on the Martin/Hopkins table after determining TC, HDL-C and TG.

So, where are we today in the practice of EBLM? The purpose of Lab medicine is to facilitate decision making in clinical practice. There is a need to integrate many educational and scientific tools to promote the

implementation of best practices. EBLM allows to advance clinical diagnosis by research and dissemination of new knowledge, and to combine methods from clinical epidemiology, statistics and social science with the traditional pathophysiological and molecular approach. Several elements must be taken into account to progress in the EBLM: audit practice, identifying the question, search for evidence, critically appraising the evidence, applying it to practice by modifying the practice, and constant practice audit. Guidelines based on the best scientific evidence will help in translating the results of good quality research into everyday practice and will help to promote an evidence based culture for a better effectiveness in lab medicine. The EBLM-oriented specialists in lab medicine of tomorrow have to use evidence summaries in laboratory practice and can help to develop and update selected systematic reviews or evidence-based guidelines in their area of expertise.



L-R: Sedef Yenice, Ramy S.H. Assaad Khalil, Jay Kalra, Praveen Sharma, Rajiv Timothy Erasmus, Maurizio Ferrari, Bernard Gouget, Alexander Haliassos, Tahir Pillay, Qing H.Meng, Rajiv Ranjan Sinha

The IFCC - Abbott VLP Program: VLP Report at the Annual Conference of the Association of Clinical Chemists of India



Ramy Assaad Khalil, VLP Lecturer

by Ramy Assaad Khalil

*Lecturer of Chemical Pathology, Alexandria University, Egypt
Collegiate Member of The Royal College of Physicians, London
Member of IFCC, C-EBLM*

The 48th Annual Conference of the Association of Clinical Chemists of India, ACBICON, was held on 23-26 November 2022, at the ICAR Convention center in India's capital city of New Delhi. The successfully organized and scientifically rich conference had the general theme of "Enhancing Patient Care" in alignment with the new era of patient-centered approach and goal of laboratory medicine.

I was honored to be invited, by the committee of the successful international conference, to represent the IFCC Committee on Evidence Based Laboratory Medicine (IFCC, C-EBLM) to participate in the symposium of Evidence based laboratory medicine.

EBLM aims to the evidently appropriate test utilization leading to the correct and accurate diagnosis and management in a patient-centered approach with consideration of an evidently rationalized resources utilization. IFCC/EBLM Committee, of which I am a member, aims to raise awareness of the consistent implementation of evidence in the routine clinical laboratory practice.

My talk titled "Evidence Insights on Routine Endocrine and Diabetes tests" was focusing on Endocrine tests, considered as an indispensable corner stone for the diagnosis of endocrine diseases and are subject to continuously updated evidence for their utilization. This includes evidence on the best to aim test(s) selection, according to diagnostic accuracy characteristics and limitations, appropriate timing and pre-pre analytical standards for sampling, and the best available method. Moreover, the adoption of evidence-based reference intervals and hence results interpretation and up to date clinical judgment.

I also participated with a talk in the symposium of Metabolic Syndrome. The presentation emphasized the substantial evidence of the relation of thyroid dysfunction, even if subclinical, with different components of metabolic syndrome as body mass index (BMI), waist circumference, blood pressure, triglycerides levels, glucose homeostasis and insulin resistance. At the second part, it highlighted the post-partum period as a critical period for the development of many pathologies affecting the thyroid function in different manners.

A comprehensive laboratory workup including thyroid and pituitary profiles as well as thyroid autoantibodies, is an indispensable tool to differentiate between the variable thyroid pathologies. As is the case with all endocrinal diseases diagnosis, special attention to the relation of different tests results to each other as well as the results timing are crucial to reach the appropriate diagnosis.

The presentations have been well received and I received positive feedback from the conference delegates and faculty. As well as at the personal level, the symposia I participated in and the others I attended were very enriching and enlightened many research and practical aspects. In addition, networking and connecting with different fields expertise was a highly valuable opportunity.

My participation in ACBICON 2022, which I truly appreciate, was only applicable owing to the IFCC – Abbott Visiting Lecturer Program (VLP), which sponsored the travel and in general aims to support the international exchange of lecturers to share knowledge and exchange variable experience between professionals from different parts of the world. I also acknowledge the great hospitality of the Association of Clinical Chemists of India (ACBI).



Ramy Assaad Khalil (center) receives a recognition of his participation



Ramy Assaad Khalil in a following moment of the ceremony



Group of participants at ACBICON 2022

IFCC Professional Exchange Programme: a great opportunity

by Prof. Nader Rifai

*IFCC, Education and Management Division Chair (EMD)
Boston Children's Hospital, Boston, MA, USA*

The IFCC Executive Board has made the decision to double the number of the Professional Exchange Programme (PEP) awards given every year to better serve our national societies. In this programme, a scientist visits a hosting laboratory for up to three months to learn a technique or a skill. The PEP covers the cost of travel of the visiting scientist and the living expenses (fixed amount) during that period (<https://www.ifcc.org/ifcc-education-division/pep-professional-exchange-programme/>).

The PEP consists of two distinct programmes:

- 1. Professional Scientific Exchange Programme (PSEP)**, whose mission is to exchange or develop high level scientific information or skill
- 2. Professional Management Exchange Programme (PMEP)** whose mission is to develop appropriate quality management skills in order to improve the performance and quality of service offered to patients by the base laboratory

Although there are no geographic restrictions for the PSEP and the scientist can go anywhere in the world to acquire a particular skill, the PMEPE is restricted to regional areas with the reason being that laboratory management is somewhat region-specific. Historically, only those under the age of 40 years of age were eligible to take advantage of this programme. However, these rules have been relaxed for the following reasons:

- a. Because of family situations and economic hardships, an individual may not be able to complete their formal training before they reach the age of 40 y. So, it is unfair to punish such an individual for circumstances beyond their control
- b. In certain cases, a senior person could acquire an advanced training from a highly specialized laboratory and because of their influential position they may be able to affect clinical practice locally and potentially regionally. It was felt that the potential clinical impact of such a visit would be great and worth supporting

Every application, when the applicant age is over 40 y of age, would be evaluated on a case-by-case basis.

Going forward, there would be two calls for applications, one in the Fall and another in the Spring. In order to facilitate the process and assist the applicants in finding a suitable hosting match, the PEP compiled a list of laboratories from around the world that are willing to host visiting scientists indicating their areas of specialties and their ideal period of time to host the scientist. At the present time, the list includes 63 laboratories from 19 countries. This list is expected to continue to grow and is hosted on the IFCC website:

<https://www.ifcc.org/media/479713/ifcc-pep-hosting-labs-fall-2022.pdf>.

In 2022, the PEP made 11 awards; 4 from Asia, 2 from Africa, 3 from Latin America, 1 from the Middle East and 1 from Europe. In addition, 10 have already been approved for 2023; 3 from Asia, 2 from Africa, 1 from Latin America, 1 from the Middle East and 3 from Europe. The selection of the successful applications is competitive;

Article continued on next page

approximately 30% of applications were successful in the Fall 2022 Call. Applicants are encouraged to take the process very seriously and prepare the best possible application to increase their chances of success.

Those who participated in the PEP had a very positive experience, both mentors and mentees.

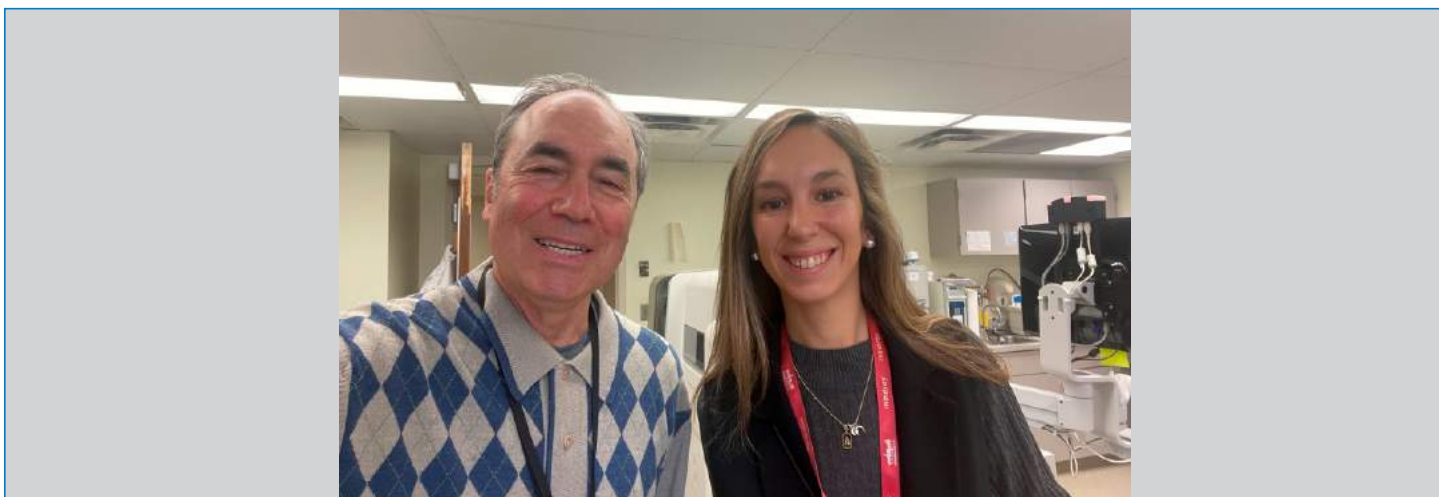
Comments from and photos of mentors and mentees, one who received PSEP and another who received PMEP, are presented below to serve as examples of how they perceived the impact of this program on young people's careers and its value for their professional development.

- Prof. Fred Apple, a renowned researcher, is hosting Dr. Blanca Fabre Estremera from Spain through the PSEP. Prof. Apple commented:

"I fully support the outstanding IFCC PSEP and currently have a visiting scientist from Spain, Blanca Fabre Estremera, in my laboratory. This program provides educational and research opportunities to scientists, allowing interactions through a global perspective, challenging the scientist to think beyond their comfort zone. It is a fun way to bring the scientific world closer together."

- Dr. Fabre Estremera, his mentee, also shared her thoughts about her experience:

"I am deeply grateful for spending 3 months at the Hennepin County Medical Center in Minneapolis, supported by the IFCC PSEP scholarship. I am having the opportunity to learn how a clinical laboratory operates in the USA and to expand my knowledge regarding cardiac biomarkers working closely with Prof. Fred Apple, an excellent professional and an exceptional person. This program is exceeding all my expectations, personally and professionally. I definitely encourage other fellows and young scientists not to miss the chance of learning abroad."



Dr. Blanca Fabre Estremera
with her mentor and host, Prof. Fred Apple

- Prof. Annie Zemlin, not a stranger to the PEP, hosted Ms. Tiyezye Gondwe from Zambia through the PMEP. Prof. Zemlin indicated:

"I support the IFCC PMEP and am honoured to be a host laboratory. Ms. Tiyezye Gondwe from Zambia recently rotated at our laboratory, and we have hosted numerous candidates, mainly from Africa, in the past. Our programme includes numerous activities including a weeklong Laboratory Management module, writing up a

protocol for a quality improvement project and various aspects of quality improvement. Previous candidates have successfully published their studies in peer-reviewed journals. This is an important project and candidates can use the knowledge and skills gained to improve and prepare their laboratories for ISO15189 accreditation, which leads to improved patient care. The programme can also be used to improve their careers and previous candidates have been promoted to senior positions in their national societies.”

- Ms. Gondwe shared below the positive impact of the PMEP on her ability to better perform her current duties and how it prepared her to take on the implementation of ISO 15189 requirement. She said:

“Before this training, I had a lot of doubt about the activities we would carry out to implement the ISO 15189 requirements at Kabwe Central Hospital (KCH) Laboratory in Zambia. The IFCC PMEP enabled me to witness how ISO 15189 requirements are incorporated in the day to day laboratory activities and has greatly boosted my confidence in executing my duties. I have created a network of colleagues at Tygerberg Academic Hospital that can assist as I carry on with my duties. With the knowledge and experience I have gained and the dedication of my team, we will be able to attain accreditation status at KCH. More importantly, I will be able to help other laboratories in the country to implement the ISO 15189 requirements.”



Ms. Tiyenze Gondwe, third from the left, and her mentor and host, Prof. Annie Zemlin, second from the left, in a group photo at the Tygerberg Academic Hospital laboratory in Cape Town

I ask all members of the IFCC family to take advantage of this excellent opportunity and urge the representatives of the national societies to encourage their constituencies to benefit from this potentially career-changing experience. I also ask the IFCC corporate representatives to present this programme to their companies and to not only encourage them to support it financially but also to consider hosting scientists in their own research laboratories.

Only by working together and supporting one another our profession will continue to flourish.



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IFCC: THE YOUNG SCIENTISTS

The Latin American Confederation of Clinical Biochemistry (COLABIOCLI)
– Young Professionals Working Group present in CALILAB 2022

CALILAB
SHERATON
MAR DEL PLATA
7, 8 y 9 NOV. **2022**



30
ANIVERSARIO



by Santiago Fares-Taie
Chair IFCC TF YS

Rosa Sierra-Amor
Member WG eNews, IFCC NC Member

At the CALILAB 2022 Congress, there was representation of young professionals from the Latin American region with as coordinator, Santiago Fares-Taie, chair IFCC TF-YS.

The objective of the Symposium within the CALILAB 2022 congress was to communicate to young scientists - participants, all the different activities and opportunities in the clinical biochemistry and laboratory medicine field, where they are building their future.

The idea was that all groups of young scientist attending CALILAB 2022 could interact and learn from each other. The program included the participation of: 1) young scientists from the International Federation of Clinical Chemistry (IFCC TF-YS), 2) the regional groups from Latin-America (Young professionals COLABIOCLI), 3) the national group (COREBIO) and, 4) the local group of Biochemistry fellows/residents of the city of Mar del Plata, Argentina.

Therefore, on this occasion, they had the opportunity to share different perspectives of the profession in a local, national, regional and international level.

Speakers of the Symposium were Manuela Garcia Arca and Marlene Zayat, who talked about the internship in clinical biochemistry, sharing their activities and explained how the system of internships works in Mar del Plata city. After that, Sabrina Pradedá, president of COREBIO, explained the benefits of the internship training for the profession and showed the results of a survey done to past interns with very positive results regarding their academic training. Immediately after, Rosario Benesperi from “Young professionals COLABIOCLI” presented the

Article continued on next page

newly formed group and showed in detail all the activities for and by the young scientist in the last two years. Santiago Fares Taie, chair of the IFCC TF-YS, talked about the IFCC Task Force activities and opportunities for networking, training and exchanging with colleagues from all around the globe.

In summary, the symposium was the perfect atmosphere to interact with young colleagues, exchanging ideas, bringing new opportunities for training in laboratory medicine, opening doors to those interested in participating, and guiding other young scientist in the development of their career for patient care.

Hopefully, in Latin America, we can encourage other young scientist to replicate these important and useful activities in their countries, so that more colleagues can make use of these programs and opportunities available in COLABIOCLI and IFCC for young scientists.

Group of Young professionals attending the Symposium on “Activities and Opportunities for Young Biochemists”, held at CALILAB 2022, chaired by Santiago Fares-Taie, IFCC TF-YS, and co-chaired by Rosa Sierra-Amor, PhD, IFCC NC Member.



Group of Young professionals attending the Symposium on “Activities and Opportunities for Young Biochemists”, held at CALILAB 2022, chaired by Santiago Fares-Taie, IFCC TF-YS, and co-chaired by Rosa Sierra-Amor, PhD, IFCC NC Member

IFCC FORUM for YOUNG SCIENTISTS – Rome (IT), 21st May, 2023

SAVE THE DATE!



The poster features a central white diamond shape containing the text: "IFCC Task Force Young Scientists FORUM Italy, Rome - May 21st, 2023". To the left of the diamond is the IFCC logo (International Federation of Clinical Chemistry and Laboratory Medicine) and a box labeled "TF-YS". To the right is a collage of images: a modern white dome structure, a night view of a city with bridges and lights, and the Colosseum in Rome. At the bottom left is the logo for "WORLDLAB · EUROMEDLAB ROMA 2023".

Don't miss the IFCC FORUM for Young Scientists!

Join us in Rome on 21st May 2023

- ➔ **FORUM online registrations will open soon**
- ➔ **Be ready to book your place at the FORUM**

Young Scientists (YS) are the future of laboratory medicine and comprise the major workforce of laboratory professionals. Future leaders need to be trained and encouraged to succeed in their role, ideally with the support of experienced leaders. To make this feasible, the IFCC Task Force for Young Scientists (TF-YS) invites you to register to the "IFCC Young Scientists FORUM", where YS will have opportunities of training and improve communication and networking. The scientific program at the FORUM will provide the young scientists an excellent opportunity for an open discussion platform about scientific and personal experiences, exchange of ideas among colleagues and best practices. Young Scientists will present and discuss their activities in laboratory medicine and benefit from career skills development.

The IFCC is pleased to offer up to 30 IFCC Travel Scholarships (sponsored by IFCC and Roche) to allow Young Scientists (under 40 years), presenting an abstract, to attend the FORUM and the XXV IFCC WORLD-LAB - IFCC-EFLM EUROMEDLAB Congress Rome 2023 (21 - 25 May 2023). Please refer to your National Representative for any further information.

- ➔ **The FORUM Scientific Program is in preparation**

IFCC Professional Scientific Exchange Programme (PSEP): My experience in Fares Taie Biotecnología, Mar Del Plata, Argentina



by Ana Sofía Duarte Acuña
Guatemala, Central America
TF-YS COLABIOCLI



Dr. Santiago Fares Taie,
Technical Director Fares Taie Biotecnología,
Dr. Ana Sofía Duarte Acuña

I had the opportunity to visit: Fares Taie Biotecnología at Mar del Plata Argentina, with an emphasis on Immunology and Autoimmunity, from September 16 to December 8, 2022, for 12 weeks.

Immunology and Autoimmunity oversee the study, diagnosis, and monitoring of the treatment of patients with diseases caused by alterations in the immunological mechanisms, as well as situations in which immunological manipulations are part of the treatment and prevention.

The objectives of the exchange program were training in specific techniques and methodologies with their respective interpretation and application to develop a high level of analysis and scientific skills of clinical diagnosis for the interpretation and application of the use of immunological and Autoimmunity tests.

In Guatemala, finding laboratories with specialists in autoimmune diseases and immunology is challenging. For this reason, in Fares Taie Biotecnología, I was able to learn the techniques, methodologies, protocols, and processes, together with their interpretation and application, to contribute to the diagnosis and treatment of autoimmune pathologies in my country.

Autoimmune pathologies are rising globally, and Guatemala is not exempt from this. That is why highly trained professionals are crucial for our patients' care. Moreover, I want to be one of these trained professionals working and developing new strategies to address current and new health problems.

The techniques and tests I became familiar with for Immunology and Autoimmunity are:

- Techniques: Indirect Immunofluorescence, Radial Immunodiffusion, FlowCytometry, ELISA, LIA, and Chemiluminescence.
- Test for: allergy studies, Autoimmune diseases (Collagenopathies, Celiac disease, Autoimmune Liver Disease, Gastric pathologies, Vasculitis), Cystic Fibrosis, Lymphocyte subpopulations.
- During my visit, I had the opportunity to participate in other activities such as:
- Rotation in the Endocrinology area, the application and clinical correlation of patient management protocols are essential in an interdisciplinary way.

Article continued on next page

- Rotation in the Coagulation area with the objective of knowing the management protocols for antiphospholipid syndrome (APS) and their implementation.
- Immunology case, with a presentation and discussion of the topic “Clinical Utility of Antinuclear Antibodies (ANA) and its relationship with ENA” with biochemical professionals and rotating residents of the Fares Taie Biotechnology Laboratory.
- Participation in the VIII Jornadas Gastroenterológicas del Atlántico “Enfermedad celíaca y trastornos relacionados”; which took place on October 22, 2022, in the City of Mar del Plata, Argentina, by the Mar del Plata Society of Gastroenterology and Coloproctology. The event allowed the interdisciplinary exchange of knowledge about celiac disease between biochemists, doctors, and nutritionists.
- CALILAB 2022, as Guatemalan delegate from the Asociación de Químicos Biólogos de Guatemala (AQBG) and President of the Confederación Latinoamericana de Química Clínica (COLABIOCLI) Young Professionals Working Group (LATAM TF-YS), with the opportunity to support the Youth Forum and participate in academic enrichment in Immunology, Endocrinology, Hematology, and Quality Management.
- Organization of the 1st. Latin American Conference of Young Professionals of the Clinical Laboratory of the TF-YS of COLABIOCLI and IFCC held from December 9 to 10, 2022, in Cochabamba, Bolivia.

This enriching experience would not have been possible without the support of Dr. Alba Marina Valdés de García (AQBG) and Dr. Santiago Fares Tai (Chair TF-YS IFCC) throughout the application to gain the IFCC PSEP.



Dr. Santiago Fares Taie (Chair TF-YS IFCC), Prof. Khosrow Adeli (IFCC President), Dr. Ana Sofía Duarte A. (TF-YS COLABIOCLI), Dr. Álvaro Justiniano Grosz (COLABIOCLI President) and Dr. Fernando Altunez (ABU President)

I want to thank sincerely to Dr. Hernán Fares Taie (General Director), Dr. Santiago Fares Taie (Technical Director), Dr. Patricia Gentili (Immunology and Autoimmunity) and Dr. Romina Ranocchia (Immunology and Flow Cytometry) for opening the doors of their Laboratory, their area of expertise, training, and giving me a unique educational opportunity that I will never forget, which I will be able to bring to my country.

A special thanks to each of the people who are part of Fares Taie Biotecnología; they taught me something unique about teamwork and their willingness to teach.

Special thanks to Daiana Mayo, Clinical Laboratory Technician, who gave me her technical knowledge in immunology and Autoimmunity.

Finally, I would like to thank Prof. Khosrow Adeli (IFCC President) especially and each of the IFCC members for their commendable work in supporting young people for scientific and academic development; thank you for giving me an opportunity of incalculable value.



Approach to
Clinical Chemistry

Approach to
Clinical Chemistry

Lorenzo Prencipe

Approach to
Clinical Chemistry

Lorenzo Prencipe

Lorenzo Prencipe acquired his professionalism at the Clinical Biochemistry Laboratory of the Maggiore Hospital of Milano-Niguarda, directed by Prof. Giulio Vanzetti. Here he had the opportunity to develop analytical methodologies related to blood components, then adopted worldwide. He has published over thirty works in international journals.

The dominant themes of his publications have been: development and improvement of analytical methodologies, quality control, evaluation of analytical methods. The method for the determination of uric acid, today globally accepted, was conceived and developed in collaboration with Piero Fossati. The papers on uric acid, triglyceride, and creatinine methods are cited in clinical chemistry authoritative texts.

The uric acid method has obtained the "Classical Citation" in the prestigious American journal Clinical Chemistry, while another one had over 2400 bibliographical citations. One of his books, *Equilibrio Acido Base: Teoria e Pratica*, has been translated into English, Spanish and Japanese. He directed the Vimercate Hospital Laboratory and has taught at the University of Milan and the University of Milan-Bicocca.

Quality laboratory testing starts with operator training.
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Lorenzo Prencipe

Candidates for Corporate and for Regional representatives members positions within the EB

The IFCC Nominations Committee has completed its assessment of nominations and presents the received candidacies for the election of the:

IFCC Corporate Members' Representative to the IFCC Executive Board.

Nominees	IVD Company
Tricia RAVALICO	ABBOTT DIAGNOSTICS

The candidate's full details including a personal statement are available by clicking this [link](#).

The voting will be held electronically from **February 1st to 28th, 2023**.

IFCC Regional Federations' Representatives.

Nominees	Regional Federation
<p>Rajiv ERASMUS</p> <p>Nominated by: South African Association for Clinical Biochemistry and Laboratory Medicine (SAACB)</p>	<p>African Federation of Clinical Chemistry (AFCC)</p> 
<p>Osama NAJJAR</p> <p>Nominated by: Palestinian Medical Technology Association (PMTA)</p>	<p>Arab Federation of Clinical Biology (AFCB)</p> 
<p>Tony BADRIK</p> <p>Nominated by: Australasian Association for Clinical Biochemistry and Laboratory Medicine (AACB)</p>	<p>Asia-Pacific Federation for Clinical Biochemistry and Laboratory Medicine (APFCB)</p> 
<p>Mario PLEBANI</p> <p>Nominated by: Italian Society of Clinical Chemistry and Clinical Molecular Biology (SIBioC)</p>	<p>European Federation of Clinical Chemistry and Laboratory Medicine (EFLM)</p> 
<p>Carolina CUCHO ESPINOZA</p> <p>Nominated by: Asociación Médica Peruana de Patología Clínica (AMPPC)</p>	<p>Latin-American Confederation of Clinical Biochemistry (COLABIOCLI)</p> 
<p>Eduardo FREGGIARO</p> <p>Nominated by: Confederación Unificada Bioquímica de la República Argentina (CUBRA)</p>	<p>North American Federation of Clinical Chemistry and Laboratory Medicine</p> 
<p>To be nominated (no election will be held for this position)</p>	<p>NAFCC North American Federation of Clinical Chemistry & Laboratory Medicine</p>

The candidates' full details including a personal statement are available by clicking this [link](#).

The voting for Corporate and the Regional Federations' Representatives is held electronically from February 1st to 28th, 2023.

The Corporate and the Regional Federations' Representatives will commence their time in office on January 1st, 2024.

CONTRIBUTE TO IFCC eNews



Increased Bone Biomarker Monitoring Enables Measurably Improved Care for Chronic Kidney Disease Mineral Bone Disorder Patients

University Hospital Centre Zagreb and Polyclinic Avitum



From left to right: Draško Pavlović, Sanda Jelisavac Čosić, Boris Kudumija

Article continued on next page

Chronic kidney disease–mineral and bone disorder (CKD-MBD) is a significant and debilitating disease in patients undergoing hemodialysis. For patients undergoing hemodialysis, CKD-MBD occurs due to dysregulation of minerals (calcium and phosphate), enzymes (alkaline phosphatase), and hormones (parathyroid hormone (PTH) and calcitriol) that are critical to bone health. Thus, close monitoring of biomarkers of bone health can enable early detection and initiation of preventative therapies. Current guidelines such as Kidney Disease: Improving Global Outcomes (KDIGO), recommend routine bone biomarker monitoring every three to six months in patients on haemodialysis treatment.

Recognizing the opportunity to improve bone health monitoring in patients with CKD, an integrated clinical care team from University Hospital Centre Zagreb developed a new best practice focused on early detection and intervention, if needed. The new protocols consisted of testing alkaline phosphatase and parathyroid every 4 to 5 weeks in all patients on calcimimetics and vitamin D (or vitamin D analog) treatment plans. They also perform monthly PTH testing for all children on dialysis with CKD with MBD.

The outcomes of this initiative positively affected patient care. In patients eligible for enhanced monitoring, over 60% received accelerated intervention. Dr. Ninoslav Leko, Head of Nephrology GH Slavonski Brod/Prim. Dr. Nephrologist, remarked, “More frequent monitoring of PTH contributes to better calcimimetic and vitamin D analog titration, slowing down the development of secondary hyperparathyroidism, and prevention of calcium bone loss. This increased information makes us more confident in providing better and more accurate therapy.”

The effects of this initiative have also been a significant cost saver for the institution, as earlier and more accurate treatment titrations achieved a remarkable 61% (\$10,300/annum to \$4,012/annum) cost reduction per patient requiring bone-saving therapy.

For their success in measurably improving health outcomes for patients with CKD-MBD, the integrated clinical care team received recognition with achievement from the distinguished 2021 UNIVANTS of Healthcare Excellence Award Program. Congratulations to the integrated clinical care team from University Hospital Centre Zagreb.

THREE KEY TAKEAWAYS:

- Chronic kidney disease - mineral bone disorder patients is a frequent and significant cause of morbidity and mortality.
- More frequent bone biomarker monitoring can enable early initiation of treatment, early assessment of treatment efficacy, and mitigate disease sequelae.
- Collaborative initiative and implementation of novel testing initiatives can significantly improve patient care, enhance clinical decision-making and mitigate healthcare costs.

TO learn more about this clinical care initiative and/or to learn more about UNIVANTS, please visit: www.UnivantsHCE.com.





Improving Cancer Patients Safety, Confidence and Clinical Care Through Screening Healthcare Workers for Neutralizing COVID-19 IgG Antibodies and Establishing a COVID-19 Convalescent Plasma Bank

King Hussein Cancer Foundation and Center



From left to right: Mohammad Owdeh, Asem Mansour, Maher Sughayer, Alaa Al Shoreman, Lina Souan, Hala Al Salahat

The COVID-19 pandemic has been attributed to over 6.6 million deaths and greater than 630 million infections. While we are all vulnerable to the effects of COVID-19, including death, no one is more vulnerable than immunocompromised patients, such as patients with cancer. These vulnerable populations are not only more vulnerable to COVID-19, but also more likely to be exposed due to the nature and location of their treatments. Thus a very real challenge exists, how immunocompromised patients with cancer continue to receive their life-saving treatments, without increased risk associated with COVID-19.

Article continued on next page

Recognizing the increased risk to their patients, King Hussein Cancer Center (KHCC) formed a multi-disciplinary team to implement a comprehensive health care workers (HCW) COVID-19 screening initiative. This initiative enabled an understanding of the protective immune status of its HCWs and offer evidence-based guidance to HCWs to protect both the HCWs and their vulnerable patients. Using IgG antibodies against the SARS-CoV-2 spike protein, the team was able to identify HCWs in need of additional vaccinations. Until a sufficient immune response was elicited, HCWs were required to provide COVID-19 PCR negative test results every 72 hours to be allowed to work. The team also established a COVID convalescent plasma (CCP) database and biobank to treat COVID-19 patients.

Dr. Osama Abu Ata, Section Head of Infectious Diseases remarks on the importance of this initiative. Physicians “never want to compromise the health of [their] patients, and the scary thing about SARS-CoV-2 is that health-care workers can unknowingly be infected. By knowing our respective antibody status, we can confidently and consistently engage with our patients in safe and meaningful ways”. This strategy to protect HCWs and vulnerable patients was proved successful in that 5.3% of HCWs were found to lack a protective antibody response to COVID-19. With this knowledge, mitigation activities enabled an estimated savings of JD 1,200 per day for every cancer patient who does not contract COVID-19.

Due to the powerful and inspiring improvement to healthcare afforded by this clinical care initiative, King Hussein Cancer Center received 2021 UNIVANTS of Healthcare Excellence recognition of Achievement.

THREE KEY TAKEAWAYS:

- Understanding and maintaining healthcare workers’ viral status is essential for infection control and prevention programs.
- Consistent, data-driven vaccination programs for healthcare workers can substantially reduce the risk of vaccine-preventable disease in healthcare workers and reduce nosocomial transmission of vaccine-preventable disease to vulnerable patients.
- Mitigating preventable transmission of infectious disease to patients can significantly reduce the burden of care for health systems.

To learn more about the UNIVANTS of Healthcare Excellence award program, please visit: www.UnivantsHCE.com.





Combating a Global Public Health Challenge through a Highly Governed Clinical Care Pathway: Leading Diabetic Care Best Practice

Zulekha Hospital Dubai



Pictured (from left to right): Muhammad Iqbal Khan, Madgy Allam, Mariam Adel Labib Younan, Eman Abdulla Yousef, Mohamed Abdelhamid

Diabetes affects an estimated at 450 million people globally, with experts expecting this burden to rise to 700 million people by 2045. When left uncontrolled, diabetes is associated with higher incidence of cardiovascular diseases, neuropathy, nephropathy, blindness, foot damage (amputations), infections, and even depression. Diabetes is also responsible for an estimated 4.2 million deaths/year, attributed to conditions such as diabetic ketoacidosis (DKA) and hyperosmolar hyperglycemic state (HHS).

Article continued on next page

Globally, challenges exist to earlier identify and treat patients with poorly controlled diabetes. Thus, understanding that recognition of poorly controlled diabetes is essential to improving patient outcomes, Zulekha Hospital Dubai formed a multidisciplinary team to optimize their diabetic care. Their team consisted of representatives from laboratory medicine, endocrinology, critical care, and diabetes education. The integrated clinical care team developed and implemented a standardized clinical care pathway, informed by evidence-based international diabetic care guidelines. The team implemented their standardized diabetic care pathway for all patients visiting the Diabetes Clinic of Zulekha Hospital Dubai beginning 1 Jan 2021.

Standardization of their diabetic care pathway substantially improved patient engagement, with a corresponding 11.5% reduction in overall HbA1c levels from baseline, suggesting overall that patients have better controlled diabetes. The additional monitoring has also enabled increased early detection of complications, including an 8% improvement in detection of nephropathy (from 11% to 19%), 22% improvement of neuropathy identification (from 14% to 36%) and an 8% increase in detection of retinopathy (from 6% to 14%). Consequently, no amputations related to diabetic complications were required within the first ten months post-implementation, rates of obesity, dyslipidemia and steatohepatitis in diabetic patients decreased by more than 6%, 21% and 32%, respectively.

Due in part to more controlled diabetes and earlier identified complication, rates of unplanned admissions to the hospital for acute care decreased substantially. Prior to implementing the initiative, 4% of diabetic patients required unplanned hospital admission due to moderate to severe hypoglycemia (and one case of DKA). In the ten months post-implementation, no patients presented with the aforementioned acute needs. This reduction in acute disease not only improves diabetic care but also frees up valuable hospital resources for other patients. Dr. Sharmila C. Jadhav noted, "Closely monitoring of diabetic patients through the Zulekha Hospital Diabetic pathway implementation had a considerable impact on mitigating preventable adverse outcomes with less morbidity and mortality, resulting from missed early diagnosis. Collectively, this saves costs for the patient and the overall health ecosystem including payers."

In recognition of their impressive success in measurably improving health outcomes for diabetic patients, the integrated clinical care team from Zulekha Hospital Dubai were awarded recognition of achievement from the 2021 UNIVANTS of Healthcare Excellence Award program. This prestigious global recognition program recognizes innovative, measurable improvements to healthcare to inform and inspire healthcare providers worldwide.

THREE KEY TAKEAWAYS:

- Highly governed, multi-disciplinary clinical care pathways can dramatically improve patient engagement and clinician satisfaction while reducing patient morbidity.
- Early detection of poorly controlled diabetes can enable effective therapies to mitigate downstream diabetes complications.
- Implementation of evidence-based care pathways to manage chronic conditions can reduce the incidence of unexpected acute episodes and subsequent hospitalizations, reducing the overall healthcare costs

To learn more about this initiative and the UNIVANTS of Healthcare Excellence award program, please visit: www.UnivantsHCE.com.



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24.1%
INCREASE

in preoperative
diagnostic accuracy¹

11%

INCREASE

in clinical satisfaction²



PATIENTS

50%
REDUCTION

in AKI (acute kidney
injury) complications³

3.9%

INCREASE

in number of patients
with controlled diabetes⁴



ADMINISTRATION

24%

REDUCTION

in hospital admissions
for patients who are not
experiencing a heart attack⁵

\$80K

INCREASE

of incremental
revenue over 3 years⁶



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and procedures⁷

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per annum in mitigated
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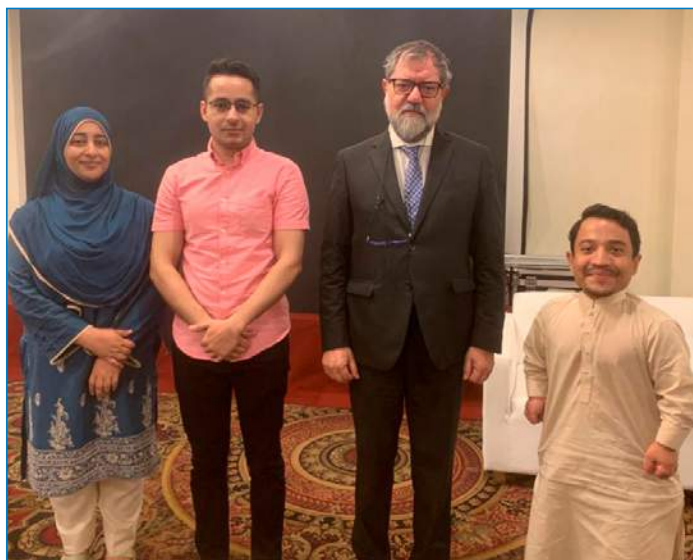
NEWS FROM REGIONAL FEDERATIONS AND MEMBER SOCIETIES



Metabolomics: revolutionizing chemical pathology in Pakistan through ChemCon 2022

by Dr. Sibtain Ahmed

Aga Khan University Hospital, Karachi



Chemical Pathology residents with Dr. Sergio Bernardini



Prof. Khosrow Adeli, President IFCC, visiting the clinical chemistry lab at Aga Khan University, Karachi, Pakistan

The 12th Annual Conference of Pakistan Society of Chemical Pathology (PSCP), ChemCon 2022, was organized by PSCP-Karachi Chapter under the auspices of International Federation of Clinical Chemistry & Laboratory Medicine (IFCC) from November 25th to 26th in Karachi Pakistan. The conference was led by the patrons; Dr. Adnan Mustafa Zuberi, Dr. Imran Siddiqui and Dr. Aysha Habib Khan with Dr. Lena Jafri and Dr. Hafsa Majid as the Organizing Committee and Scientific Committee Chairs respectively. The conference was honoured by the presence of Dr. Khosrow Adeli (President IFCC), Dr. Sergio Bernardini (Chair IFCC Emerging Technologies Division Executive Committee), whereas Dr. Elie Fux, Prof. Corrado Di Natale and Dr. David Friedecký participated online.

The first day of the congress featured a Workshop on Metabolomics that highlighted the recent technological advancements in state-of-the-art metabolic and profiling techniques and expert perspectives on the applications of metabolomics were shared. It was attended by Pathologists, research scientists, postdoctoral fellows, and students from across the country. The evening was marked by the inaugural event featuring keynote lecture by Dr. Khosrow Adeli, entitled as '*IFCC: 70 Years of Global Leadership with New Vision/Strategic Direction Post-pandemic*'. Day two comprised of keynote lectures from international speakers, scientific sessions on metabolomics horizon scanning for Chemical Pathology in Pakistan, oral paper presentation by young scientists in Pakistan and an interactive discussion session '*POW-WOW-Taking Metabolomics from Bench to Bedside*'. The day concluded with the awards distribution and ChemCon 2023 flag handover to the next congress organizing committee.

Article continued on next page

For the first time in the history of PSCP, a research award was announced, and applications were opened for young scientists. A special supplement of the Journal of Pakistan Medical Association featuring the conference abstracts was also published which can be accessed from: <https://pscp.org.pk/publication/jpma-chemcon2022-abstract-book/>).



Prof. Khosrow Adeli with PSCP members, visiting Aga Khan University Hospital, Karachi



Prof. Khosrow Adeli with organizing committee of ChemCon 2022 in Karachi, Pakistan



ChemCon 2022 - Organizing Committee



XXII Serbian Congress of Medical Biochemistry and Laboratory Medicine and The 16th Belgrade Symposium for Balkan Region

by *Snežana Jovičić*

IFCC eNews Liaison Member

The Society of Medical Biochemists of Serbia

Laboratory Medicine Management: Leadership Skills for Effective Laboratory

After the postponement of two years, caused by the global pandemic, on 12–14th September 2022, the Serbian Society of Medical Biochemists of Serbia (SMBS) had the pleasure to organize the 22nd Serbian Congress of Medical Biochemistry and Laboratory Medicine with international participation together with the 16th Belgrade Symposium for Balkan Region. The meetings were organized together with the University of Belgrade – Faculty of Pharmacy, and under the auspices of IFCC, EFLM, Balkan Clinical Laboratory Federation (BCLF), Ministry of Education, Science, and Technological Development, and Ministry of Health of the Republic of Serbia.



At the Opening ceremony (L-R): Prof. Snežana Jovičić (Congress Technical Organizing Board Chair), Dr. Iva Perović Blagojević (Congress Organizing Board Chair), Prof. Branislava Miljković (President of the Association of Pharmaceutical Associations of Serbia), Prof. Zorica Šumarac (President of SMBS), Prof. Nada Majkić-Singh (Executive Director of the SMBS), Prof. Vesna Spasojević Kalimanovska (Congress Scientific Board Chair), Prof. Snežana Savić (Vice Dean for Science and International Relations of the University of Belgrade, Faculty of Pharmacy), Dr. Wytze Oosterhuis, Prof. Evgenija Homšak, Prof. Mario Plebani, Dr. Gilbert Wieringa.

Article continued on next page

We had the pleasure to welcome Prof. Mario Plebani, President-Elect of EFLM, who greeted the audience on behalf of EFLM President and the Executive Board. His presence was enabled by the EFLM program “Invite an EFLM Executive Board Representative at your National Congress!”. SMBS was very happy to host prof. Plebani and is thankful to the EFLM for supporting our national congress in this way. Prof. Plebani opened the Congress with the remarkable plenary lecture “Laboratory medicine in the era of COVID-19: lessons for the future”.

Exceptionally, since the global pandemic interfered and affected our profession in a particular way, the Scientific Board decided to dedicate two plenary lectures to it. The second one, immediately following the lecture of prof. Plebani, described the local experiences and it was practically the opening lecture of the Symposium for Balkan Region. It was entitled “Laboratory management in the new normal”, presented by Prof. Dunja Rogić from the University Hospital Center Zagreb, Croatia.

After the plenary lectures, the Award of the Foundation “Magistra Milica Marković” was presented. The Foundation recognizes and awards medical biochemists or laboratories for promoting the technological and organizational work principles of clinical laboratories, improving the quality of laboratory services, and promoting the profession. This year’s laureate was the “Aqualab” laboratories.



Prof. Mario Plebani during the opening plenary lecture



Prof. Dunja Rogić during the plenary lecture

The 16th Belgrade Symposium for Balkan region drew a lot of attention from colleagues from the neighboring countries. This Symposium continued the fourteen years long tradition of EFLM Symposiums for Balkan Region. In 2019 it was renamed to Belgrade Symposium for Balkan Region, when the pandemic postponed the consecutive one for two years. The first session was dedicated to the professional challenges in the era of innovational technologies. The speakers in this session were Gilbert Wieringa, Wytze Oosterhuis and Snežana Jovičić. In his talk entitled “Meeting the leadership challenge of disruptive innovation”, Gilbert Wieringa indicated the emerging leadership challenges for specialists in laboratory medicine as the consequence of the 21st century artificial intelligence driven algorithms that are reducing the need for expert human resource. Wytze Oosterhuis presented the added value by interpretative commenting, as one of the activities that can support physicians and help to improve patient treatment outcomes, reflective testing, but also the challenges it is facing. Snežana Jovičić closed the first session by presenting the results of the EFLM Working Group on Patient Focused Laboratory Medicine study on reliability and benchmarking of smartphone applications that are using laboratory medicine data.

The second session was dedicated to the challenges in laboratory medicine management of effective laboratories. The Chair of the EFLM Profession Committee, prof. Evgenija Homšak, presented the possibilities for professional development of laboratory medicine



One of the past laureates of “Professor Ivan Berkeš” Foundation Award for the best student of the University of Belgrade, Faculty of Pharmacy, Prof. Miron Sopić, receives the copy of the monograph from Prof. Nada Majkić-Singh



Discussions between sessions: Prof. Mario Plebani, Dr. Gilbert Wieringa, Prof. Dunja Rogić, Dr. Wytze Oosetrhuis, Prof. Evgenija Homšak (bottom-left corner, sitted)

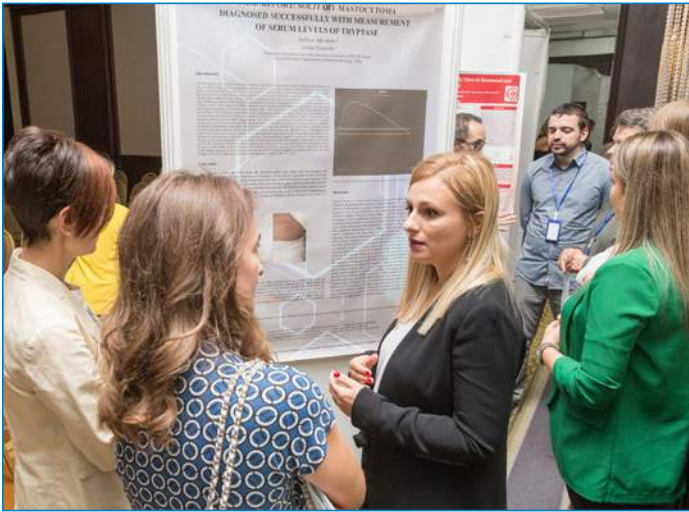
melitus (by Dr. Dragana Bojanin), to the laboratory diagnosis of allergies in children (by Dr. Iva Perović Blagojević). The closing session of the second day dealt with another specific topic, the role of the clinical laboratory in female reproductive health management. The particular issues, from the potential of use of biochemical parameters in risk assessment of pregnancy complications (presented by Dr. Daniela Ardalić) and the diagnostic accuracy of tests of ovarian reserve (by Prof. Aleksandra Stefanović), through the very controversial topic of the role of sexual steroids in women and men over 50 years of age (presented by the remarkable Prof. Svetlana Vujović), to the role of iron metabolism in pregnancy outcome (by Dr. Danica Čujić), kept the audience’s attention even in the late afternoon.

The closing day started with the discussion regarding the novel biomarkers in the era of personalized medicine. The lectures covered several fields of the current research in this domain, from the mighty of role of

professionals in and through EFLM countries, describing the tools and opportunities available. The current issues in accreditation in laboratories was presented by Prof. Dunja Rogić, while Prof. Nataša Bogavac-Stanojević (University of Belgrade – Faculty of Pharmacy), being the member of the EFLM Working Group Guidelines, talked about the importance of laboratory guidelines for medical laboratory practical work. The session was closed by Prof. Katerina Tosheska Trajkovska (University of Skopje – Medical Faculty, North Macedonia) with her inspiring talk about managing and leadership in medical laboratories.

The 22nd Serbian Congress of Medical Biochemistry and Laboratory Medicine started with a session dedicated to the use of patient results in medical laboratories. This session, dealing with the current and very much discussed issues, started with the introductory talk of Prof. Svetlana Ignjatović about the implementation of patient-based real time quality control. Dr. Vera Lukić demonstrated how the moving average procedure can be used as a continuous quality control in medical laboratories, while Prof. Neda Milinković presented the use of patient results for calculation of reference intervals.

The following session was dedicated to improving children’s health through laboratory medicine. This session covered a wide range of particular issues and challenges of medical biochemistry in pediatric medicine, from new biomarkers of acute kidney injury (presented by Prof. Dušan Paripović) and the diagnostic challenges in the delayed puberty (by Prof. Rade Vuković), through the applications of new biomarkers of sepsis in neonatology (by Dr. Ana Đorđević Vujičić) and the role of medical laboratory in the diagnosis and monitoring of co-morbidities in type 1 diabetes



Poster session discussions

pharmacogenetics in precision medicine in oncology (presented by Dr. Milena Čavić) and the advanced lipid status biomarkers in colorectal cancer (by Prof. Aleksandra Zeljković), to the potential and perspective of galectins as biomarkers (by Dr. Žanka Bojić Trbojević) and the challenges in laboratory diagnostics of thyroid disorders (by Prof. Bosa Mirjanić Azarić).

Traditionally, the last session was Forum of young researchers. Introduced three congress editions ago, this section aspires to be an ideal place for young scientists, laboratory professionals and students to interact and share ideas. This time, the Forum was dedicated to the opportunities and possibilities that PhD studies enable in professional achievements. Before presenting the results of the latest research of

PhD students at the University of Belgrade – Faculty of Pharmacy Department of Medical Biochemistry, the participants could learn about the expectations, possibilities, and potential for successful international career development of PhDs in IVD industry from Dr. Gordana Dmitrašinović (Product Manager at Makler d.o.o) and Dr. Tijana Krnjeta Janičijević (International Medical Affairs Manager at Roche Diagnostics International Ltd., Global Medical and Scientific Affairs CPS).

Between the sessions the promotion of two monographs, recently published by the SMBS, took place. One was “Scientific Foundation “Professor Ivan Berkeš”, dedicated to the life and work of the esteemed professor Ivan Berkeš, to the review of the previous scientific conferences organized to honor his legacy, also to the Foundation “Professor Ivan Berkeš”, and to the laureates of its annual award. All 48 laureates that received this award from 1998 to this day were invited and they received their copy of the book. The other monograph presented was “Professional Activities of Serbian Laboratory Medicine Specialists in Balkan Region”, dedicated to the history of Balkan Clinical Laboratory Federation and the role of SMBS as one of the founders and its *spiritus movens*. Both books were authored by Prof. Nada Majkić Singh and Prof. Snežana Jovičić.

During these three days Belgrade hosted almost 300 participants from Serbia and neighboring countries (Bosnia and Herzegovina, North Macedonia, and Montenegro). The Congress was held in the spirit of exchanging experience, vivid discussions during the lectures, but also at the poster session, showing how much the in-presence meetings and events were missed during the previous pandemic years. We all hope that these days are behind us.



The audience during one of the session

The V Forum of Academic Units training professionals in Biochemistry and equivalent degrees in Latin America and the Caribbean

Organized by the Latin American Confederation of Clinical Biochemistry (COLABIOCLI)



COLABIOCLI
Confederación Latinoamericana de Bioquímica Clínica

by *María Cecilia López*
Executive Committee Member of COLABIOCLI

With the participation of ten (10) member countries of the Latin American Confederation of Clinical Biochemistry (COLABIOCLI), Argentina, Bolivia, Colombia, Costa Rica, Ecuador, Mexico, Paraguay, Panama, Uruguay, Venezuela, the “V FORUM OF UNITS” was held with great success. Academic Trainers of Biochemist Professionals and Equivalent Titles of Latin America and the Caribbean” held on November 24 and 25, 2022, in the city of Carlos Paz, province of Córdoba, Argentina under the auspices of the International Federation of Clinical Chemistry and Laboratory Medicine (IFCC), the Latin American Confederation of Clinical Biochemistry (COLABIOCLI), the Unified Confederation of Biochemistry of the Argentine Republic (CUBRA), the Federation of Biochemists of the Province of Cordoba (FE.BI.CO).



President of COLABIOCLI Dr. Álvaro Justiniano Grosz congratulating the brand-new president of the Network of Academic Units Training People in Biochemistry and Equivalent Degrees in Latin America and the Caribbean Magister Federico Giraudo (ECUAFYB-Argentina)

The activity proposed by the Academic, Union and Management Commission of COLABIOCLI, this important activity was carried out on two consecutive days. On the first day of the forum, dissertations were carried out under the theme of contributions on the results of the analysis of curricular profiles of careers in clinical analysis in Latin America, by the Msc. Biochemist Cecilia Brisson (AR); the results of the survey carried out on behalf of COLABIOCLI “Questionnaire to census the curricular situation of Biochemistry majors and equivalent titles in Latin America and the Caribbean (LAC)” were presented and finally activities were carried out to harmonize the curricula in LAC, so as to subsequently generate consensus regarding the professional profiles to be demanded by the current society in each region, promoting the participation of representatives of the academic units present.

Article continued on next page

On the second day, work was done on the formation of the Network of Academic Units Training People in Biochemistry and Equivalent Degrees in Latin America and the Caribbean, after reviewing the document prepared in Venezuela in 2015 called "Declaration of Caracas". The president of ECUAFYB (Coordinating Entity of Academic Units of Pharmacy and Biochemistry) of Argentina presented the work carried out by the entity regarding the harmonization of the academic units of Argentina, work that is permanently carried out within this entity national, inviting and encouraging the other member countries of COLABIOCLI to create or promote these entities under the primary objective of strengthening the profession.

This activity, outlined as one of the main objectives of the COLABIOCLI Academic Union and Management Commission, was developed with the committed participation of its coordinator Dr. Carlos Navarro and the team that accompanies him, which has been of vital importance in the realization of one of the core missions of COLABIOCLI in its relationship with academic entities, which represents the spirit of sustainability in the



President of COLABIOCLI Dr. Álvaro Justiniano Grosz accompanied by representatives of academic entities from Latin America and the Caribbean

profession as one of the fundamental pillars in the positioning of biochemistry and equivalent titles Latin America and the Caribbean. The active participation of the President of COLABIOCLI Dr. Álvaro Justiniano Grosz, who always encouraged the creation of the 1st Network of Academic Units, has had its creation as a finishing touch, overseeing the presidency of the same in the president of ECUAFYB (Argentina).

The main objectives proposed by the network are:

- Unite efforts, resources and wills that promote the use of a wide possibility of generating greater effectiveness in the efforts with national and international organizations that fulfill functions of scientific, academic, technical and financial support for the benefit of the training of professionals.
- Strengthen links of cooperation, solidarity for the fulfillment of intrinsic objectives and functions in the teaching, research, extension and service scenarios in favor of the quality of university education.
- Harmonize study plans respecting the particularities of each region for professional training, where the titles awarded by the academic units are recognized at the LAC level
- The Network is granted the following functions: with the aim of making concrete actions viable:
 - Within 180 days, the formulation of a strategic plan
 - Design of the organizational structure of the Network
 - Design of sustainability models
- Guarantee the strategic alliance between academic entities in the activities that are developed in the future.

This activity is framed in the Strategic Plan of COLABIOCLI, where one of its main pillars is to strengthen relations with Universities and Institutions that train professionals linked to the Clinical Laboratory and other branches that are an integral part of the training of these human resources.



It is important to highlight the realization of such a long-awaited objective that has been worked on since 2013 in the Forums of Argentina in 2013, Colombia 2014 and also based on the resolutions of the VII Summit of the Americas in 2015. The presence of the member countries of the entity, through its academic representatives, has legitimized the formation of this Network, giving it an inclusive character as a whole and also makes the proposal a fundamental tool in linking and strengthening academic and union units throughout the region.

This management of COLABIOCLI has placed great emphasis on the effective participation of the working groups in conjunction with the national entities, closing thus a year of effective and committed management.

Dr. María Cecilia López (AR) Member of the Executive Committee of COLABIOCLI, President of COLABIOCLI Dr. Álvaro Justiniano Grosz (BO), Dr. Carlos Navarro, Head of the Academic, Union and Management Commission of COLABIOCLI



Authorities of the Network of Academic Units Training People in Biochemistry and Equivalent Degrees in Latin America and the Caribbean.

Sitting from left to right: Vice President: Dr. Ricardo Velazco Vélez , Colombian Association of Professional Programs in Bacteriology, Clinical Laboratory, Microbiology and Bioanalysis -APROBAMYB, Universidad de Antioquia, Colombia; President: Dr. Federico Giraud, ECUAFYB; Catholic University of Cordoba, Argentina; Secretary; Dr. Walter Montaña Pérez, Universidad Mayor de San Andrés (UMSA) La Paz, Bolivia.

Standing from left to right Vowels: Dr. Norman Rojas Campos, University of Costa Rica; Dr. Sandra Noemí Escobar, Higher Polytechnic School of Chimborazono, Ecuador; Dr. Blanca Arteaga, Christian University of Bolivia, UCEBOL. Bolivian; Dr. Pamela Josefina Mancuello Bernal, National University of Asunción, Paraguay; Dr. Patricia Esperón, Faculty of Chemistry-Universidad de la Republica, Uruguay.

COLABIOCLI carries out the “1st Latin American Conference of Young Clinical Laboratory Professionals” in a very emotional framework



COLABIOCLI

Confederación Latinoamericana de Bioquímica Clínica

by *Cristina Roda Cárdenas*
COLABIOCLI Communications Manager

FEDERACION INTERNACIONAL DE QUIMICA CLINICA (IFCC)
CONFEDERACION LATINOAMERICANA DE BIOQUIMICA CLINICA (COLABIOCLI)
SOCIEDAD BOLIVIANA DE BIOQUIMICA CLINICA (SOBOBIOCLI)

1º CONFERENCIA LATINOAMERICANA DE JÓVENES PROFESIONALES DEL LABORATORIO CLÍNICO

9 y 10 de diciembre 2022 COCHABAMBA- BOLIVIA

LUGAR: HOTEL COCHABAMBA

HORARIO Viernes 08:00 A 18:00
Sábado de 8:00 a 11:30

contacto: Jhannet Romero
+591 70372777

PARTICIPAN:

100 PLAZAS LIMITADAS

Official poster of the event

With the participation of 11 member countries of the Latin American Confederation of Clinical Biochemistry (COLABIOCLI), Argentina, Bolivia, Brazil, Chile, Colombia Spain, Guatemala, Mexico, Panama, Paraguay, the “1st Latin American Conference of Young Professionals” was held with great success on December 9 and 10, 2022, in the city of Cochabamba – Bolivia under the auspices of the International Federation of Clinical Chemistry and Laboratory Medicine (IFCC) and the Latin American Confederation of Clinical Biochemistry (COLABIOCLI) and the Bolivian Society of Clinical Biochemistry.

The activity had two parts, one directed to academic-scientific issues with the presentation of papers by the national representatives of the youth of the different member countries of COLABIOCLI that were addressed to 100 professionals from the Clinical Laboratory of Bolivia and the other part to activities administrative offices of the COLABIOCLI Young Professionals Working Group, where strategic planning and a schedule of activities for the 2023 administration were worked out. The presence of the IFCC Young Scientists Task Force representative Dr. Santiago Fares Taie and the President of the Latin American entity Dr. Alvaro Justiniano Grosz were very important for the meeting.

The objectives outlined in the 1st Latin American Conference of Young Professionals of the Clinical Laboratory” were:

GENERAL OBJECTIVE:

- Generate a space for discussion and meeting between the representatives of the Young Professionals of the Clinical Laboratory of the Latin American countries that are members of the Latin American Confederation of Clinical Biochemistry (COLABIOCLI), which allows to strengthen the ties of brotherhood of the young professionals of the sciences of laboratory of the region, expose their needs, experiences, present conferences on current central issues of Laboratory Medicine and carry out administrative meetings aimed at carrying out the strategic planning of the working group.

SPECIFIC OBJECTIVES:

- Planning of the 2nd Latin American Conference of Young Clinical Laboratory Professionals
- Strategic Planning of the COLABIOCLI Young Professionals Working Group projected for 2023 - 2024.
- Planning of the Congress of Young Scientists within the framework of the Latin American Congress of COLABIOCLI, Colombia 2024
- Schedule of various activities Management 2023

This activity is framed in the COLABIOCLI Strategic Plan, where the third pillar is established “Emphasis on the participation of young professionals”

It is important to consider that the member countries of the federated entity helped to achieve the success of this activity, ensuring the participation of their representatives, which leads to repositioning young professionals in laboratory sciences in the academic context and leadership within their countries within national entities, in order to link them more efficiently to the activities of the profession in an effective and committed manner.

Definitely, this management of COLABIOCLI has placed a lot of emphasis on the participation of young professionals in Biochemistry and equivalent titles in Latin America and the Caribbean, under the criteria of incorporating young professionals as collaborators in the activities carried out by national entities and the company itself. COLABIOCLI since we must necessarily work on the new leaders who lead and strengthen the national entities.



Alvaro Justiniano Cortez (BO), National Representative of young professionals of Bolivia



Santiago Fares Taie, IFCC Task Force for Young Scientists Chair



Jorge Hernandez (MX), Alvaro Justiniano Cortez (BO), Maria del Rosario Benesperi (AR), Johanna Isabel Giménez Palacio (PY), Jhenny Arenas (BO), Santiago, Daniela Méndez (BO), Álvaro Justiniano Grosz (BO), Santiago Fares Taie (AR), Natalia Serrano Quezada (CH), José Antonio Tesser Poloni (BR), Lizandra Morales (BO), Carlos Raúl Franceschi Rodríguez (PA)



Elmer Pereira (BO), Jhenny Arenas (BO), Carlos Raúl Franceschi Rodríguez (PA), Alvaro Justiniano Cortez (BO), Lizandra Morales (BO), María del Rosario Benesperi (AR), Álvaro Justiniano Grosz (BO), José Antonio Tesser Poloni (BR), Santiago Fares Taie (AR), Jorge Hernandez (MX)



Changing of the guard: Prof. Katell Peoc'h, SFBC President (Nov 2022 - Nov 2025)

by Dr. Bernard Gouget

*Chair IFCC C-MHBLM and TF History
SFBC International Committee*

On November 16, 2022, Professor Katell PEOC'H was elected as the new President of the French Society of Clinical Biology (SFBC) for a three-year term. She is a Biochemistry and Molecular Biology full professor at the Faculty of Medicine, Paris Cité University, France. She is chairing the Biochemistry and Molecular Biology Department at the Beaujon-Bichat Hospitals, Assistance Publique-Hôpitaux de Paris (AP-HP), one of the largest hospital complexes of the AP-HP.

Prof. Katell Peoc'h fulfills a tripartite responsibility: teaching medical students; directing a university hospital department; and participating in research at the Inflammation research center, UMRs 1449, coordinated by Prof. Renato Monteiro.



Katell Peoc'h, SFBC President, Jean-Louis Beaudeau, Dean of the Faculty of Pharmacy Paris Cité, Laurence Pieroni, Editor in Chief ABC

She also collaborates with the “Heme and Iron in oxidative stress” and inflammation (HIROS) team, directed by Laurent Gouya and Hervé Puy. HIROS brings together doctors and researchers specializing in heme and iron metabolism and related pathologies. The HIROS team is responsible for the Biochemistry & Metabolism platform (<https://cri1149.fr/en/equipes/gouya-puy/>) and the hepcidin assay by LCM/SMS mass spectroscopy.

She is a member of the laboratory of excellence GR-Ex on red blood cells directed by Prof. Olivier Hermine.

Prof. Katell Peoc'h obtained her doctorate in Pharmacy (PhD) in cellular biology in 2003 from the University of Paris Descartes. She served as an assistant professor in cellular biology (2004-2014) at the Faculty of Pharmacy, University Paris Descartes, and as an assistant professor in Biochemistry and Molecular Biology (2014-2020) at the faculty of medicine, University Paris Diderot.

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Prof. K Peoc'h co-chaired the SFBC scientific committee from 2013 to 2022. She is a Corresponding Member of the IFCC Committee on Molecular Diagnostic (C-MD).

She has published over 158 peer-reviewed papers. Her academic interests include heme and iron metabolism and pathophysiology, digestive diseases, and neurological diseases. She was awarded by the National Academy of Medicine with the "The Maurice Louis Girard Award (2008)". She received the "SFBC Young Scientist Award in 2004" and, in the same year, the "Internship Award" from the National Academy of Pharmacy.

Among the first actions as President, she will propose to update the SFBC statutes to federate within the SFBC all the expertise in Clinical Chemistry and Laboratory Medicine and to strengthen the links with the IVD, MD, IoT companies. SFBC will continue to play a pivotal role with the French institutional bodies and national health agencies and will reinforce its presence at European and international levels.



Celebrating the SFBC Presidential election at "La Coupole"
L to R : Delphine Collin-Chavagnac, Laurence Mouly, Vincent Sapin,
Bernard Gouget, Marie-Francoise Gaudeau Toussaint,
Carole Poupon, Marie-Hélène Tournoys, Bruno Baudin,
Anne Vassault, Cathal Dolan, Katell Peoc'h

Prof. Katell Peoc'h will encourage and support the culture of innovation, the quality of the service provided, and the added value of lab medicine in public health. Among the scientific, educational, and communication strategies, she will integrate disruptive technologies into the SFBC's functional units, create a winning external communication strategy via social networks, and establish new partnerships with other medical laboratory groups and medical societies.

SFBC has initiated a network of French-speaking countries: this cooperation will be strengthened on the basis of the complementarity of expertise to ensure the continuous advancement of excellence in laboratory medicine and contribute to meeting health challenges. SFBC strongly encourages Young Scientists; an SFBC Young Scientist prize is regularly awarded and the number of scholarships/grants to attend scientific events will be increased.

SFBC will set up a new website, which will be an interface platform for medical biologists in order to improve the SFBC's visibility and to better serve the membership. The *Annales de Biologie Clinique* will become the leading laboratory medicine journal for the French-speaking world with a particular educational and scientific focus on new technologies, innovative research areas, and clinical studies.

JIB Paris 2022: an iconic Congress in the iconic City of Lights



by Bernard Gouget
co-Chair IFCC TF History, Chair IFCC CMHBLM

Jean-Marc Giannoli
LABAC President, IFCC/EFLM affiliate member

Francois Blanchecotte
President JIB Paris 2022

The history of IFCC started with the Commission on Clinical Chemistry after the initiative of Earl J. King (UK), Warren Sperry (US) and Paul Fleury (FR), who were colleagues at the International Union of Pure and Applied Chemistry (IUPAC). On July 24th 1952, the International Association of Clinical Biochemists was founded during the International Congress of Biochemistry in Paris at the Sorbonne. The name of the International Federation of Clinical Chemistry (IFCC) was established on 25 September 1954 in Stockholm, Sweden. In 1997, the term Laboratory Medicine was added to the Federation name. IFCC also has French roots; two renowned biochemists were elected presidents, Jean-Emile Courtois (FR) from 1963 to 1967 and Gérard Siest (FR) from 1991 to 1996. In addition to that, Bernard Gouget was elected as EB member and later as treasurer from 2009 to 2014; Philippe Gillery has chaired the IFCC-SD from 2017 to 2022. For IFCC, it has been an incredible 70 years since then and, its founding mission: to advance excellence in laboratory medicine and apply innovations to everyday practice for better health care worldwide and, contributing to the training of excellent specialists in Lab medicine is still carried on.



Opening ceremony: Khosrow Adeli, Nader Rifai, Bernard Gouget, Tomris Ozben, Tony Badrick

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(Back): Jean Marc Giannoli, LABAC President,
Francois Blanchecotte, JIB President,
(Front): Nader Rifai, Chair IFCC-EMD,
Christian Haddad, AFCB President

To celebrate the 70th IFCC anniversary, Jean-Marc Giannoli, LABAC President with Bernard Gouget, EFLM LABAC representative and François Blanchecotte, JIB President, invited Professors KoshrowAdeli (CA), IFCC President and Prof. Tomris Ozben (TR), EFLM President-IFCC President elect, to the 65th edition of the Innovation Days in Biology (JIB-Paris 2022). At this meeting, Pr Nader Rifai, Harvard Medical School & Boston Children's Hospital, Boston, MA. (USA)-Chair IFCC-EMD together with Pr Tony Badrick, Queensland University and Royal College of Pathologist of Australasia (AU), eminent scientists and faithful friends of LABAC conferences spoke friendly at the inaugural session. JIB-Paris 2022 is the most influential congress in the field of lab medicine in France. It was the right place to discuss professional issues, health care and technological innovations with colleagues from Europe, the Mediterranean countries and North Africa, as well as from other parts of the world.

Beginning December 2022, just before the JIB congress, three highly contagious respiratory viruses were swarming in France, as in others countries, sparking talk of masks again. Experts were renewing to advice wearing high-quality medical mask in crowded public spaces. For the past three years, the viral enemy was clear: the coronavirus. Now, there were additional threats: influenza and respiratory syncytial virus, widely known as RSV. As the country headed into its third pandemic winter, Covid-19 cases were rising, the 2022-23 flu season was shaping up to be the worst in a decade. The need to be vaccinated against the flu and Covid was reminded as the indicators continue to point upwards as the holidays approach. This ninth wave of the epidemic is largely due to the new BQ.1.1 subvariant. More contagious and possibly more resistant to the vaccine; however, it would not be more dangerous than its parental BA.5, currently dominant. Still, vaccines remain a significant tool in the efforts to prevent severe illness and death. In this context, and with a general strike of general practitioners and private medical biologists due to controversies with the national health insurance, the JIB-Paris 2022 was organized under the high patronage of the Minister of Higher Education and Research, the Ministry of Health and Prevention and the IFCC-EFLM auspices.

At the opening, Francois Blanchecotte, JIB President, emphasized that the last few years have been of upheaval for French medical biologists. Few sectors have experienced such profound changes in a short time, under the successive effect of restructuring the health crisis. We can say that there is a new landscape of medical biology in France with public networks, territorial hospital groups and private groups with a strong structure and a level of equipment like the technical platforms never reached before, in particularly PCR. The JIB 2022, with conferences, workshops, meetings and exhibition, has grown internationally, and would have not been possible without LABAC, the contribution of IFCC/EFLM French and European people, of several scientific and medical societies and institutions that are always advocating for the contribution of France to the advancement of lab medicine at the international level. Many institutions were represented and/or participated at the scientific program: Institut Pasteur, National Agency for the Safety of Medicines and Health Products (ANSM), Agency of biomedicine (ABM), French blood establishments (EFS), big medical laboratory groups as Biogroup, Cerba, Eurofins and Uni-labs, the IVD companies and as usual the active participation of the French-speaking countries from IFCC-AFCB.

Professor Khosrow Adeli, IFCC President emphasized the potential of laboratory medicine in healthcare at the opening ceremony. In the coming years, IFCC will strengthen its leadership position by implementing innovative scientific and electronic communication strategies, encouraging and supporting a culture of innovation, developing an international IFCC external quality assurance program and innovative quality improvement strategies, working with member countries around the world to advance programs such as global newborn screening in collaboration with WHO, the Gates Foundation, and IVD industry. His plenary lecture was dedicated to “The Canadian Laboratory Initiative on Pediatric Reference Intervals” (CALIPER) which is a comprehensive data base of age and sex-specific reference intervals for over 200 tests in health and disease. It is a nation-wide health initiative to improve the diagnosis and monitoring of children and adolescents with medical concern. His presentation has attracted considerable public attention at a time when pediatric services in France are overloaded due to the early annual epidemic of bronchiolitis and the identification of co-infected cases of RSV and SARSCov-2 in young children, leading to hospitalization in critical care.

Prof. Tomris Ozben recalled that EFLM, formed in 2007, is the largest region of the IFCC with 41 countries. EFLM connects National Societies of Clinical Chemistry and Laboratory Medicine and creates a platform for all European “Specialists in Laboratory Medicine”. The European federation offers a wide range of concrete opportunities of collaborations with IVD companies for the advancement of Laboratory Medicine. The most recent



JIB Paris 2022: a group of participants

and relevant EFLM projects were presented as the EFLM-TF Green labs that was presented in a special JIB plenary session. The EFLM-TF European lab affairs aimed to guide the transition to the IVDR at a strategic level by creating a governance structure and by being “at the table” implicated in future EC regulations, meetings and consultations. A session was organized with Prof. Elizabeth MacIntyre, CHU Necker AP-HP, IVDR Task Force chair and President-elect Biomedical Alliance in Europe, this group has strong relationships with EFLM. The EFLM President encouraged the French colleagues to join the EFLM academy that is providing free access to EFLM courses, webinars, free on-line subscription to selected scientific journals as CCLM, and presented the sections of the EFLM syllabus. She stimulated the young scientists (YS) to join the TF-YS, to apply for bursaries, awards, and to benefit of LabX exchange program working with mentors. At the end of the presentation, she invited JIB participants to attend the WorldLab-EuroMedlab Roma 2023 congress next May.

In between a press conference, the opening of the IVD exhibition with coffee break allowed to rediscover the premises of the Palais des Congres before joining the LABAC Conference. Prof. Tony Badrick described the development of quality control in clinical chemistry. He focused on the fundamental assumptions made in creating models that are routinely used. The basis of a QC strategy is an understanding of the errors that can arise, the material used to identify an error that has occurred, an algorithm to flag when one of these errors is detected,

a process to follow is to correct the error and amend any compromised patient results. Generally, two main strategies have been used in QC over the last forty years, each differing in the material used as sample. Conventional QC uses a sample that substitutes a patient, whereas patient-based QC uses patient results straight. Both systems have advantages and disadvantages. In his lecture, he explored these differences to better understand Quality Control.

Jean-Marc Giannoli, chair LABAC international session, introduced Prof. Nader Rifai who gave a presentation on the evolution of the journal Clinical Chemistry and its potential future direction. Prof. Nader Rifai was Editor-in-Chief of Clinical Chemistry until the end of 2022, the Founder of Clinical Chemistry Trainee Council, Senior Editor of Tietz’s Textbook of Laboratory Medicine and Co-Editor-in-Chief of the Learning Lab. In the past decade, his main research interest shifted from biomarker research to dissemination of scientific information and particularly E-learning.

Reading is the second most ancient media that enables human to advance civilization and science. Clinical Chemistry is a leading journal in the field of laboratory medicine. Over the past 15 years, the journal has undergone a transformation to better serve the scientific community



Labac Group at the Drouant restaurant where the Goncourt academicians announce the Prix GONCOURT, the most famous literary award in France

and the field of laboratory medicine. Therefore, the journal focused on articles that dealt with novel technologies, large randomized clinical trials and population studies. Due to the evolution of knowledge and technological innovations, nowadays, the scientific content of journals and reading tools has changed drastically. Journals don't simply disseminate new knowledge about lab medicine practice, they also define the scope of the field and its concerns demonstrating the changing ways in which lab medicine knowledge is produced. Simultaneously, the editors work to preserve the reputation, financial stability, and editorial independence and integrity of the journal in a constantly changing publishing environment, among an avalanche of newly generated lab medical information.

The Covid crisis has challenged every journal including Clinical Chemistry for the need of a faster turn-around time for publication and in changing philosophical thinking about publishing incremental knowledge or awaiting the definitive study. In addition, journals in general had to face daunting logistical problems as a result of disruption in global workflow and supply chain issues. To remain the leader, it is necessary to reinforce the attractiveness of the publication and the positive impact of the journal for authors. It should meet their expectations by offering them the opportunity to learn and publish on current topics such as: liquid biopsy, cfDNA in prenatal diagnosis, NGS-WGS-WES, droplet digital PCR, tandem MS in newborn screening, clinical mass spectrometry, and harmonization studies. Other topics most likely to see emphasized in the coming years include multi-omics, DTC genetic testing, genetic modification, molecular infectious disease testing, transgender and race issues, informatics, machine learning and other AI applications.

Dissemination of information is a vital role for a journal. A successful journal must make the efforts to reach out to readers and deliver information in a way they can use it best. Furthermore, because of the diverse demographics of the parent society, AACC, the editors felt that a strong education program is needed to better serve our members. Thus, the editorial board of Clinical Chemistry has developed a panel of multilingual educational programs using modern means of communication (podcasts, audio summary, social networks) for increased distribution in an open source. Examples include Q&A articles, journal club, clinical case studies, clinical vignettes, and Clinical Chemistry trainee council (CCTC). The newest program is the Learning Lab for lab medicine, based on the concept of adaptive learning, the closest to personalized education (<https://area9lyceum.com/laboratory-medicine/>). Adaptive learning is an ingenious way to communicate information. Through sophisticated computer algorithms, the platform interacts with the learner and identifies the areas in which they are not proficient. It then provides targeted learning materials to remedy the deficiency.

As demand for more open access contents increases, journals will be under increasing pressure to find the right balance; it is a challenge that will remain with us for a while. Scientific journals need to maximize their presence and build their reputation as well as to increased impact for authors and submissions. Readers now expect a more innovative and interactive communication platform that strengthens communication among the members of our community. Attempting to predict the future requires an understanding of the past and the present. Navigating many obstacles, Clinical Chemistry persists in adapting to changing environments and in embracing new opportunities. Prospects for journals in the future depend on how, and how well, specialists in lab medicine value them. Their geographical origins as well as their professional affiliations have to be taken into account when the journal has a worldwide readership.

After those brilliant lectures, the JIB delegates had several choices to enrich their knowledge and to fulfill their personal goals by participating in workshops, industrial sessions, and visiting the exhibition. Several thematic routes were offered during the two days of the congress, being around pathways on prevention, diagnosis, clinic, research and feedback from international experiences. Prevention is on everybody's mind, and it was a key topic of the congress. Prevention is better than cure. Screening, vaccines, controls, examinations according to foreseeable risks are in developed countries an arsenal of essential measures. It was possible to take stock of the current state of the national sexual health strategy with non-prescription HIV testing in all medical biology

laboratories, which should facilitate the testing of the most exposed people. Community pharmacists constitute a local territorial network for excellence the pharmacy being a place of prevention and pharmacists showed their efficiency in screening for Covid and they are ready to screen for colorectal cancer, bacterial angina or urinary tract infections. These new duties are part of a more accessible and efficient health system. Collaborations between medical biologists and pharmacists need to be redefined and strengthened.

Alzheimer's disease, the new hematopoietic stem cell transplants, and diagnosis of tuberculosis were part of the « diagnostic pathway ». Prof. Florence Doucet-Populaire recalled that in France there are 5,000 declared cases of tuberculosis. The development of new techniques such as next-generation sequencing (NGS) allows earlier detection and identification of both mycobacteria and anti-tuberculosis drug resistance genes, facilitating rapid adapted patient care. In the section "clinical pathway", Professor Gilles Paintaud enlightened us on the therapeutic monitoring of monoclonal antibodies. The fight against cancer, the genomics plan, the revision of the ethics law, genomics and AI were at the heart of the research pathway. Under the friendly eye of Dr. Christian Haddad, AFCB President, Pr. L Chabraoui, President SMCC (MO) spoke about lysosomal storage diseases from pathophysiology to therapy, finally Prof. Manelle Chaabane President STBC (TU) led a nice session on zoonoses in Maghreb countries.

EuroMedlab Paris 2015, also held in 'The City of Light' will be remembered as one of the most productive and well attended IFCC events with world-class speakers, creative experiences, and elevated networking. We were very happy to welcome again IFCC / EFLM leaders and lab medicine community from the French speaking countries of the Arabic and African IFCC regional federations in our attractive capital to better understand some current and future issues in Lab Medicine, having cutting edge insights and to benefit of a unique in depth and breadth of expertise and innovation, delivering better patient outcomes. **JIB 2022 encountered a great success**, all the things we expected from an international JIB congress. Thank you all for being present!



Labac Group at the Drouant restaurant where the Goncourt academicians announce the Prix Goncourt, the most famous literary award in France



Serbian response to a Western Balkan refugee crisis

by Sanja Stankovic

*Director of Center for Medical Biochemistry
University Clinical Center of Belgrade, Serbia
Chair of Serbian Committee for Biochemistry
in Republic of Serbia Ministry of Health*

*IFCC and EFLM National representative of Serbian Society
for Clinical Laboratory Medicine and Science (SCLM)*



~ Presented at the JIB round table “Integrating lab medicine technologies and mobile health services for asylum seekers and refugees” (65th Edition) 02/12/22, hosted by Bernard Gouget, Chair IFCC-C MHLBM, Jean-Marc Giannoli, President Labac, IFCC affiliate member and François Blanchecotte, President JIB 2022 ~

Migrations are global reality. They represent a significant, complex and growing phenomenon. According to the United Nations High Commissioner for Refugees (UNHCR), the number of forcibly displaced people worldwide rose to 103 million people; 53.2 million are internally displaced, 32.5 million are refugees, and 4.9 million are asylum seekers. Refugees and migrants remain among the most vulnerable members of society. They have health problems like the general population, affected by their geographic origin, living conditions, their physical and psychological conditions. Risks to the health of migrants arise at every stage along their journeys, from before the migration process starts, during travel and at transit and destination points. Health issues will manifest at different stages and show different progression over time. Infectious diseases and injuries are treated early, until new diseases as non-communicable and occupational diseases increase over time; and mental health problems emerge and resurface at time intervals.

In accordance with the 2030 Agenda for Sustainable Development, health and sustainable development are inextricably linked. The need to address the health of migrant populations was highlighted by the 2016 United Nations Summit for Refugees and Migrants, including appropriate health care in arrival, transit

and destination countries for humanitarian and public health reasons. In 2020 WHO established the Health and Migration Programme to provide global leadership in health and migration issues in the context of WHO's own Global action plan: promoting the health of refugees and migrants 2019–23. In the co-creation and implementation of the Roadmap for health and well-being in the Western Balkan 2021–2025): European Programme of Work (2020–2025) – “United Action for Better Health”, WHO/Europe reaffirms its commitment to supporting the Western Balkan in leaving no one behind and strengthening the leadership of health authorities in the Region, presenting a cornerstone for health progress over the next five years in the Western Balkan (right to universal access to quality care, effective protection against health emergencies, appropriate public policies). And when it seemed that we had made a big breakthrough in this field in Western Balkan, we were faced with pandemic that threatened to jeopardize already achieved results. COVID-19 has posed additional challenges both in terms of increased risk of infection and death experienced by refugees and migrants and has highlighted existing inequities in access to and utilization of health services. They have also suffered the negative economic impact of lockdown and travel restrictions.

Article continued on next page

Since the beginning of the migrant crisis in 2015 until today, Serbia has been an important link in the process of reception and accommodation of refugees, migrants and asylum seekers on the Western Balkan route to the European Union. Over one million people have passed through Serbia since then.

According to the UNHCR's data, between January and September 2022, Serbia is facing with increase of 97% compared with the period January-September 2021. The average number of asylum-seekers, migrants and refugees accommodated daily is about 4000 people, with the biggest groups coming from Afghanistan, Pakistan and Iran. However, this population is not static and exit and entry numbers suggest a significant fluctuation in the migrant population. Some 135 unaccompanied and separated children were present in Serbia as of end September 2022.

The refugee and migration crisis along the Western Balkans route has exerted a particularly high pressure on Serbia and one of the main challenges for the Serbian migration management system has been to provide adequate health care for all migrants and refugees in Serbia. The Republic of Serbia, with significant assistance from international partners, managed this crisis using the considerable experience in particular regarding setting the legal and regulative conditions for protection of human rights related to the health care. Public health care institutions in Serbia are meant to provide health care for all migrants and asylum seekers (in compliance with the Law on Health Care), in the same way as for Serbian citizens. The Serbian health system has tried to cover most health care needs. During 2018, through the project "EU Support to Serbia in Migration Management" TF-MADAD/2017/T04.86, funds were provided to reimburse healthcare costs and the full scope of treatment provided by the Serbian public health care institutions to the migrant population.

All migrants and refugees housed in transit, reception or asylum centres receive medical care within these centres by medical teams. A system of monitoring in the reception centres has been carried out in order to coordinate activities on the implementation of effective health control measures among the migrant population, monitor disease trends and better estimate

the impact on the Serbian public health care system. In addition to the health services provided at the centre, patients are also treated in primary, secondary and tertiary health facilities. The Serbian public health care system provided health care to migrants at all three levels (primary, secondary and tertiary), namely: in 62 health institutions, out of which: 9 general hospitals, 17 health centres, 4 clinical hospital centres, 3 specialist hospitals, 3 clinical centres, 12 tertiary level institutions, 12 public health institutes, the "Torlak" Institute of Virology and Serums in Belgrade and the Institute for Biocide and Medical Ecology. The most commonly provided services were curative examinations (93%), preventive examinations (3%), medical transport (1%), laboratory services (2%), etc. In accordance with needs, refugees were referred to diagnostic procedures and further treatment in order to receive a higher level of health care in competent institutions.

Serbia has a solid surveillance system that records health-care services provided within the state health-care system to refugees and migrants and registers treated conditions. According to data of Institute for Public Health of Serbia "Dr. Milan Jovanović Batut" for 2021 from around 63 000 cases, the most commonly treated health conditions were respiratory (11 725; 18.7% of all registered conditions) and gastrointestinal (2885; 4.6%) diseases and injuries (7281; 11.6%); other conditions related to journeys in harsh and dangerous circumstances were body lice (3782; 6%), scabies (2432; 3.9%) and conditions associated with external temperature (869; 1.4%) or animal bites (364; 0.6%). Mental health distress and disorders also made up a significant share of conditions treated (1293; 2.1%).

Health assessment protocol of migrants and refugees includes laboratory diagnostic if necessary. The most frequently requested laboratory tests include: complete blood cell count, urinalysis, routine clinical chemistry tests, but also more specialized tests in accordance with doctor's request.

The MIPEX (Migrant Integration Policy Index), as a unique tool which measures policies to integrate migrants in countries across six continents is 50 for Serbia, placing it in 24th place out of 56 participating

countries. In close partnership and coordination with the Ministry of Interior of Serbia and Commissariat for Refugees, International Organization for Migration Serbia has supported Government efforts in managing migration challenges. Serbia has proven its readiness and ability to address these challenges in a comprehensive and holistic manner, respecting European standards.

Serbia was one of eight European countries who implemented the electronic Personal Health Record (ePHR) as health information system that efficiently collect health-related data to better address migrant health issues. Serbia was one of 24 European country who participated in Joint Action Health Equity Europe (JAHEE) (2018-2021) whose objective was to contribute to achieve greater equity in health outcomes across all groups in society in all participating countries and in Europe at large and to reduce the inter-country heterogeneity in tackling health inequalities, including a specific focus on migrants and vulnerable groups. Serbia became the first European country to vaccinate against COVID-19 people living in its refugee camps and asylum centres, it was really an important sign of support that Serbia provides to refugees, and it is a very good example of inclusion of refugees in Serbian society.

Laboratory diagnostics is very important part of migrants' and refugee's healthcare and play a major role in better health outcomes and positively affect their quality of life. Laboratory services are integral part of the migration health assessment process and differ in scope according to the receiving country protocol. The dilemma we face is whether laboratories should be in the camp. Today, we have an opportunity

to establish mobile laboratories in bigger camps. We are also witnessing improving healthcare accessibility through point-of-care (POC) technologies. In the camp, POCT could be a valid alternative to laboratory hospital-based testing. It is easy to use and can be done rapidly by personnel who are not trained in clinical laboratory medicine field. With increasing technological and analytical possibilities, an increasing number of analyses can now be carried out on POC instruments. But it must be performed in a good way to assure quality in all aspects in the different phases of the total testing process, considering that the POCT is carried out by different users, in remote areas, with personal with little knowledge about laboratory. Also, connectivity is very important. It must be clearly defined what to test in the camp by POCT and what in the central lab? If samples are collected in the camp and transported to central hospital labs, special attention must be focused on for mitigating preanalytical errors. During the presentation, the procedures, steps, risks, and requirements for collecting lab specimens were presented. The preanalytical aspects of sample transportation was emphasized, with special focus on critical phases of sample's journey, monitoring of sample integrity parameters and temperature surveillance, shipping specimens by drones (advantages and unresolved issues), etc.

As the laboratory profession, we must force integration of lab medicine technologies and mobile health services for migrants, refugees and asylum seekers, supporting the world that recognizes their needs, do our best to find solutions to the health problems they are facing until seeking a better life for themselves and their families, contributing in the fight to leave no one behind.





Kosovo – Spotlight on migrants and migration challenges

by Dr. Gramos Begolli

Clinic of Medical Biochemistry

University Clinical Center of Kosova

IFCC National representative

Kosova Association of Clinical Chemistry (KACC)



~ Presented at the JIB round table “Integrating lab medicine technologies and mobile health services for asylum seekers and refugees” (65th Edition) 02/12/22, hosted by Bernard Gouget, Chair IFCC-C MHBLM, Jean-Marc Giannoli, President Labac, IFCC affiliate member and François Blanchecotte, President JIB 2022 ~

The Western Balkans are at the heart of Europe, geographically surrounded by EU member states. **The Western Balkan route is one of the main migratory paths into Europe.** The region is a transit hub and key corridor for migrants heading for the EU, especially from the Middle East, Asia and Africa. The Republic of Kosovo which declared independence in 2008 and is recognised by a majority of UN member state, has been affected by migratory movements in several stages throughout history. Kosovo, is a small and developing country. In 2022 estimation, its population was ~1.95 million.

Migration is one of the most significant aspects of globalization, the reasons for migration are diverse. For some countries, their people migrate for economic, political, trade, or cultural reasons, while for other countries the high rate of migration is caused by long-term conflict. Although economic growth of Kosovo over the last decade was the highest among World Bank Group member countries, it is still insufficient to provide stable quality jobs and some Kosovars are seeking employment in the surrounding countries as Germany, Slovenia, and Croatia. By 2019, it was estimated that 1.96% of Kosovars lived abroad.

In this context, the Republic of Kosovo, situated in the middle of the Western Balkan migratory route, is one of the routes used as transit stop for migrants and refugees seeking passage to Western Europe. The strengthening of cross-border cooperation between the countries of the region, as well as cooperation with countries of origin, transit and destination is of particular importance and the exchange of experiences and information among relevant institutions and mechanisms is of key importance. Based on the UNHCR report for the period January to September 2022, 674 migrants arrived in Kosovo, which is 47% less than the same period last year. Since 2020, three centers for asylum seekers have been operating: one in Magure, located 20 km from Prishtina, the second in Vranidoll 10 km from Prishtina and the third is the Belvedere Center, located in Mitrovica 40 km from the capital Prishtina. This year, the Kosovar government agreed to take in a group of Afghan refugees housed in the US military camp at Bondstell. Migrants have free access to all infrastructure, including basic health services.

The competent authorities have developed a specific and comprehensive strategy for the detention of migrants. Due to the low number of refugees and

asylum seekers in Kosovo, all health care services are offered in public health institutions as well as for the general population, including laboratory services. Charitable associations such as Jesuit Refuge Service (JRS) are present in the centres, supporting asylum seekers in their daily challenges, analyzing needs and finding solutions with them for each asylum seeker. Newly arrived non-citizens can have access to medical examinations as much as possible, which is crucial to prevent the spread of diseases, including COVID-19, as well as to protect people in need of psychological support.

The medical laboratories are present in the public sector within the university hospital, the 7 regional hospitals and in the family medicine centers as well as in the private sector, hospitals and laboratories. Family medicine centers in Kosovo have well-equipped laboratories for general biochemistry and hematology; microbiology is performed in specialized labs. Among their functions, they must offer their services, in addition to services for the population, to the camps for asylum seekers in their region. If investigations are necessary, migrants are referred to general hospitals or to the teaching hospital of Kosovo. If the number of refugees and asylum seekers increase, the government will have to create specific health centers for migrants in order to better take care of the pathologies specific to their situation.

Another shortcoming of the health care system, the Republic of Kosovo faces so-called “brain drain”. Unstable economy forces the elite graduates to migrate to other countries in pursuit of better salary and opportunities. The migration of healthcare workers from developing countries to more economically developed countries is a long-standing and ongoing trend,

particularly to Germany. This has been emphasized as a concern at the level of the Government of the Republic of Kosovo, since medical personnel is leaving the country for employment purposes. Loss of medical qualified staff has a negatively impact on health-care system. After the pandemic, almost a quarter of the health professionals in Kosovo reported their increased intention to migrate.

Kosovo’s healthcare system already lacks resources and healthcare specialists, such as anesthesiologists as well as for other medical specialties, which limits the plurality of healthcare services available and furthermore an increase in expenses through the use of external service providers.

Kosovo has consistently shown its remarkable capacity for growth throughout its history. The Kosovo health system includes a primary, secondary and tertiary referral system, the implementation of which is essential to solve the health problems of citizens as well as to provide safe and quality health services, based on the principles of family medicine with the ultimate goal of promoting, preserving and improving health for all. The healthcare system is improving but still faces significant challenges. Kosovo still has a lot of obstacles to overcome before it can fully develop, not the least of which is migration. Further efforts are needed to focus on improving the quality of services in order to have public confidence in a higher quality care system and a better managed system. In addition of these measures, it is important to include a number of activities to raise public awareness of health issues and help people adopt healthier lifestyles, with a view to prevent and manage certain non-communicable diseases in the long term.



View from the Lab medicine department within University Clinical Center of Kosova where the green color is dominating as a symbol of prosperity, freshness, and progress!



Integrating lab medicine technologies and mobile health services for asylum seekers and refugees - Israel point of view -

by Dr. Marielle Kaplan

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IFCC National representative

for the Israel Society for Clinical Laboratory Sciences



~ Presented at the JIB round table “Integrating lab medicine technologies and mobile health services for asylum seekers and refugees” (65th Edition) 02/12/22, hosted by Bernard Gouget, Chair IFCC-C MHLBM, Jean-Marc Giannoli, President Labac, IFCC affiliate member and François Blanchecotte, President JIB 2022 ~

In Israel, in 2022, there are 25,000 adults asylum seekers that arrive in the country around 2006-2007: 20,500 from Eritrea; 4,000 from Sudan; 500 from the Democratic republic of Congo. Although they have not been recognized as refugees by the country, their living in Israel is regulated under a government policy of temporary protection and the State of Israel recognizes the danger to their lives if they return to their countries of origin. UNHCR's policy is that children should never be held in immigration detention. This can never be considered to be in the child's best interest, which must be a primary consideration under the Convention on the Rights of the Child. Indeed, unaccompanied children in Israel are exempt by law from both detention and mandatory residence facilities. Following their identification, unaccompanied children are to be released from detention and either accommodated in residential schools under the supervision of the Ministry of Education or to reside in the community with a guardian. There are 8,000 minors asylum seekers growing up in Israel, a substantial number was born in Israel and are integrated in public schools around the country. Most of the Asylum seekers population resides in South Tel Aviv, around 80% of the all population. This population has moved from being a mobile population to be a sedentary

population, therefore a substantial number of the population is able to work, thus allowing for a better integration of the population to receive basic services such as health and education.

The Department of Migrants & Refugees defends the right to health of people living in Israel without civil status & access to healthcare. It seeks to change public perception of challenges of migration & State's responsibility for health of all. Around 40% of adults have contracted private health insurance coverage. However, there was a need to build a healthcare system for asylum seekers that do not have health insurance coverage. Since 2008, the Israel medical association in collaboration with the ministry of health is operating a clinic in South Tel Aviv, for all asylum seekers that do not have a health insurance. Moreover, the emergency room in the Tel Aviv medical center, as well as in all public hospitals in the country, provides medical care for all patients with urgent and emergent conditions, regardless of health insurance status.

In Israel all citizens received a national health care coverage. Despite not being covered by the National health coverage, migrant asylum seekers have the opportunity to insure their children to a program that provides health services equivalent to those of Israeli

children (partially paid by parents and partially by the Israeli Ministry of Health). Therefore, a substantial part of the minor population, 72%, have health insurance coverage. In the first years, morbidity was characterized by various infectious diseases, HIV, hepatitis. Today morbidities are more general and chronic like the rest of the population in the country, since this is not a mobile population anymore. A sign of this change in morbidities is the fact that we are seeing more and more studies on chronic morbidities in this population, such as: Elkon-Tamir E, et al. Type 1 diabetes outcomes of children born in Israel of Eritrean asylum. *Acta Diabetol.* 2021 Feb;58(2):145-152. Mental health issues in asylum seekers population are a very crucial issue, since precarity, instability and lack of control of their future are relevant issues that they are dealing with. Migration is a process accompanied by significant socio-psychological pressures that affect migrants' mental state. Compared to local populations, migrants, including asylum seekers and work migrants, are at increased risk of physical and mental health issues. Therefore, the Israeli Ministry of Health has opened a free clinic for trauma and post-traumatic stress disorders [PTSDs] for asylum seekers.

Since the population of asylum seekers and refugees around the world is still mainly a mobile population, there are specific and cardinal issues to address to give proper healthcare services to this population:

- **Data Management issues:** There is a major need for building of a United Medical File for these patients that will include medical history across the different system. For this purpose, we must build a system to provide all the relevant population with an identity number for the purpose of patient records. This issue is relevant also when people are moving from country to country. Lack of unified medical file records is harming the healthcare of the asylum seekers, since the medical history and specifically laboratory results history are crucial for a proper medical care. The requirement for an ID Number could have some negative impacts for the cooperation of the patients fearing that the records could allow the country institutions to initiate deportation. The challenge is to disconnect the political issues from the

healthcare issues therefore allowing the refugee population to cooperate with the healthcare institutions without fear.

- **Mobile devices for Laboratory services:** Obviously, to give the first line of treatment on the field, there is a need to use point of care (POC) or mobile device without need for water of physic connection Lightweight, portable and easy to use blood analyzer that provides diagnostic information when and where it's needed. A relevant example of new technology is the use of CBC analyzers based on Artificial intelligence, such as the OLO-SIGHT system that is able to provide a CBC panel result from a few drops of blood by using a technology of picture analysis and artificial intelligence decoding to provide fast and accurate results. As previously mentioned, these devices should be connected to an integrated LIS system and able the release the tests results to a common system in order to update the patient medical file. The challenge in order to use this kind of device is the usual expensive cost/test, substantially higher than tests performed in a Clinical Laboratories.



OLO-SIGHT Device

Refugees and asylum seekers can have complex health needs; Holistic and person-centered care is essential to support resilience and help them adapt to life in Israel. Data Management integrated system is crucial for a proper healthcare system for a mobile population such as refugees/asylum seekers. Therefore, there is a need for building a united Medical File that will integrate the patient medical history across the different systems and the different countries. POC or mobile devices are important for laboratory testing of

the population when needed to be performed on the field or in the encountering point with the refugees/asylum seekers population. However, the coverage of the costs of the services remains an issue to be addressed by the relevant countries as well as by relevant international bodies. Hosting countries should act to transfer asylum seekers from a mobile population to a sedentary population, when possible. It allows the relevant population to be able to work and invest in health insurance coverage and the hosting countries should concentrate efforts on healthcare insurance coverage of children residing and growing up in the hosting country.



L-R: Camelia Grigore, Marielle Kaplan, Sanja Stankovic, Mariam Klouche, Myrna Haddad Germanos, Bernard Gouget, Gramos Begolli



Rambam Health Care Campus, Haifa, Israel



Paris-Italy JIB 2022: Leading AI innovation in genomics

*by Bernard Gouget
IFCC C-MHBLM*

JIB International Scientific program coordinator

*Guillaume Grzych and Jean-David Pekar, Chu Lille
Co-chairs of the session*

It's always important to learn to innovate in a disruptive and an Artificial Intelligence digital world for the specialists in lab medicine who want to build their capabilities to innovate, and translate these skills into a competitive advantage for their organization.

As a group, Dr. Francois Blanchecotte, JIB 2022 President, Jean-Marc Giannoli, Labac President-IFCC affiliate member and, within the framework of the international scientific committee of the Days of Innovation in Medical Biology (JIB 2022) with Dr. Marino Corrado (Salerno Italy), referent of international relations of the national Council of the Ordi Nazionale Biologi, Italy and V. Presidente ECBA (European Countries Biologist Associations), the IFCC-C-MBLM and Dr. Alexander Haliassos, President Greek Society of Clinical Chemistry-Clinical Biochemistry (GSCC-CB) and IFCC Treasurer, we invited Dr. Sara Botti, specialist biologist SMEL, Group of Integrative Biology, Parco Tecnologico Padano (PTP) to lecture about the potential of AI in healthcare and how to use this technology in genomics in the Age of Disruption. This Science Park is a non-profit consortium company established in 2018 as a spin-off of the activities of PTP. The session benefited from the presence and authority of Prof K Adeli, IFCC President, who has made AI applications in laboratory medicine a key point of his strategic plan.

Precision medicine and genomics are inextricably linked. Precision medicine is an emerging approach for disease treatment and prevention that takes into account individual variability among genes, environment, and lifestyle in each person. This approach will allow clinicians, specialists in Lab Medicine and

researchers to predict more accurately which treatment and prevention strategies will work for a particular disease and in which group of people, which is in contrast to a one-size-fits-all approach. Genomic medicine is a relatively new medical specialty that focuses on using genetic information about an individual in treatment for diagnostic or therapeutic purposes in association with health outcomes and policy implications. Precision and genomic medicine combined with AI have the potential to improve patient healthcare. AI provides insights through advanced computation and inference, enabling the system to sense and learn while enhancing physician decision making.

Biotechnologies have advanced tremendously in the last decades. We have recently witnessed a technological revolution that has led to the development of advanced systems in the analysis of DNA and RNA sequences, metabolites and proteins with the generation of a large amount of data (Big Data). Such AI techniques as machine learning and deep learning offer great potential to improve genomic medicine thanks to computational tools that handle, extract, interpret, process and integrate big datasets. AI based technologies have enhanced the clinical application of genomics thanks to algorithms for better identification of genetic variants (e.g. somatic and copy-number variants) or tools for extracting phenotype data (e.g. deep-learning driven facial images analysis) to help the diagnosis of genetic diseases. Moreover, AI based technologies have developed tools to predict the effect of mutations and their impact on the proteins structure or gene expression. Machine learning or deep learning can be successfully used for intelligent



Sara Botti, Jean-David Pekar, Guillaume Grzych, Koshrow Adeli

imaging analysis to improve diagnosis or prognosis in cancer diseases. AlphaFold and RoseTTAFold, two recent AI systems developed to predict the protein's 3D structure from its amino acids sequences, have allowed to obtain an innovative vaccine for COVID19. Application of AI presents a significant opportunity to resolve the complexity encoded in our genomes for health benefit, broadening applications from research to the clinic.

A significant amount of investment is being poured into growing AI for healthcare. To make the most of this investment, it is crucial for AI to be channeled effectively to address the most pressing problems together with those where AI is most likely to add value. This effort requires close collaboration between AI practitioners and genomics domain experts to identify the most appropriate questions in order to address, and determine which machine learning should be approached to apply, and to recognize limitations in datasets, methods, and current knowledge. However, AI alone will not advance genomic medicine. It certainly cannot do so without the necessary oversight, safeguards, validation, robust ethical appraisals, and public engagement.





12th Scientific Conference of the Palestinian Medical Technology Association (PMTA)

by Dr. Osama Najjar

*President of Arab Federation of Clinical Biology (AFCB)
President of Palestinian Medical Technology Association (PMTA)
Palestine*



Dr. Osama Najjar

Ramallah - The Palestinian Medical Technology Association (PMTA), held the twelfth scientific conference in Ramallah, with the participation of more than 800 members of the Syndicate's General Assembly from all governorates of the country, under the slogan of "continuous education and its role in advancing professions".

The need to follow up scientific developments in the field of medical examinations at the level of governmental, private and private sectors, and work to focus efforts in training laboratory technical cadres through a commitment to continuous education, due to its pivotal role in the processes of diagnosing diseases, which would guide the doctor in choosing the appropriate treatment for the patient.

On his part, Dr. Osama Najjar, President of the Palestinian Medical Technology Association (PMTA), referred to the need of continuous education as a consistent approach of the PMTA constants, through which it aims to keep track of scientific developments and train laboratory technical professionals, which form the basis of the laboratory medicine profession in Palestine and the basis of developing the Palestinian health sector.

The Lectures PROGRAMME was very impressive:

- Dr. Osama Najjar
– Laboratory Medicine in Palestine Reality and Challenges
- Dr. Robin Abo-Ghazala
–Antibody Testing for Viral Infection
- Dr. Mahmoud Ruzeyqat
–Clinical Bioinformatics and Genomes




IFCC'S CALENDAR OF CONGRESSES, CONFERENCES & EVENTS

Calendar of IFCC Congresses/Conferences and Regional Federations' Congresses

Feb 15, 2023	IFCC	<i>Metabolomics: Promises and Clinical Translation Challenges</i>	Live webinar
Mar 02, 2023	IFCC	<i>High sensitivity troponin point of care assays</i>	Live webinar
Mar 6 - 10, 2023	IFCC	<i>IFCC-WG-FC Winterschool of Cell Analysis in Immunology</i>	Geneva, CH
Mar 9 - 10, 2023	IFCC	<i>IFCC - C-POCT Symposium: "Point-Of-Care Testing: Bridging the Disparity Gap in Healthcare"</i>	Pakistan
Mar 15, 2023	IFCC	<i>Recent updates on SARS-CoV-2 biology and diagnostics</i>	Live webinar
Mar 22, 2023	IFCC	<i>Nitrous oxide abuse: clinical consequences and biological markers related</i>	Live webinar
Mar 29, 2023	IFCC	<i>Laboratory Medicine and its challenges</i>	Live webinar
May 20 - 21, 2023	IFCC	<i>Point-of-Care Testing: Home, Hospital and Beyond - Satellite Meeting</i>	Rome, IT
May 20, 2023		<i>XVI ICPLM - International Congress of Pediatric Laboratory Medicine - Satellite Meeting</i>	Rome, IT

Calendar continued on next page

<p>May 20 - 21, 2023</p>	<p>IFCC</p>	<p><i>Clinical Mass Spectrometry: Validation and Accreditation of IVD and Laboratory Developed Test (LDT) in the new "Regulation EU 2017/746" ERA - Point-of-Care Testing: Home, Hospital and Beyond - Satellite Meeting</i></p>	<p>Rome, IT</p>
<p>May 21, 2023</p>	<p>IFCC</p>	<p><i>The Road to Measurably Better Healthcare Performance: Integrated Clinical Care Workshop to Maximize Key Performance Indicators for Patients, Payors, Clinicians and Health Systems - Satellite Meeting</i></p>	<p>Rome, IT</p>
<p>May 21, 2023</p>	 <p>IFCC Task Force Young Scientists FORUM Italy, Rome - May 21st, 2023</p>	<p><i>IFCC FORUM for Young Scientists</i></p>	<p>Rome, IT</p>
<p>May 21 - 25, 2023</p>	 <p>21-25 May EUROMEDLAB ROMA 2023</p>	<p><i>XXV IFCC - EFLM WorldLab EuroMedLab - Rome 2023</i></p>	<p>Rome, IT</p>
<p>May 26 - 30, 2024</p>	 <p>IFCC WORLDLAB DUBAI 2024 MAY 26-30</p>	<p><i>XXVI IFCC WORLDLAB - Dubai 2024</i></p>	<p>Dubai, UAE</p>
<p>Jun 28 - Aug 31, 2024</p>		<p><i>XXVI COLABIOCLI 2024</i></p>	<p>Cartagena, CO</p>

Oct 31 - Nov 3, 2024	 APFCB CONGRESS <small>Asia-Pacific Federation for Clinical Biochemistry and Laboratory Medicine (APFCB) Congress 2024 19-22 October 2024 ICC Sydney, Australia</small>	<i>APFCB 2024 Sydney</i>	Sidney, AU
May 18 - 22, 2025	IFCC - EFLM	<i>XXVI IFCC-EFLM EUROMEDLAB 2025</i>	Brussels, BE
2026 Date TBA	IFCC	<i>XXVII IFCC WORLDLAB 2026</i>	<i>Venue to be selected</i>
2027 Date TBA	IFCC	<i>XXVII IFCC-EFLM EUROMEDLAB 2027</i>	<i>Venue to be selected</i>
2028 Date TBA	IFCC	<i>XXVIII IFCC WORLDLAB 2028</i>	<i>Venue to be selected</i>
2029 Date TBA	IFCC	<i>XXVIII IFCC-EFLM EUROMEDLAB 2029</i>	<i>Venue to be selected</i>
2030 Date TBA	IFCC	<i>XXIX IFCC WORLDLAB 2030</i>	<i>Venue to be selected</i>

Other events with IFCC auspices

Aug 1, 2022 - Apr 30, 2023	<i>5th International program in control of analytical quality in the clinical laboratory</i>	Quality Academics, online event
Jan 1 - Jul 31, 2023	<i>Inter-QC Topics</i>	Quality Academics, online event
Feb 15 - 18, 2023	<i>2nd International Laboratory Diagnostics Congress</i>	Online event, Tehran, IR
Feb 19, 2023	<i>8th International Conference of Chemical Pathology Department (CHEMPATH 2023)</i>	Alexandria, EG
Mar 2 - 3, 2023	<i>International Conference on Immunoassay</i>	Snibe, Kuala Lumpur, MY
Mar 4 - 18, 2023	<i>XXIII National Congress of Clinical Chemistry and Laboratory Medicine Expolab Veracruz 2023</i>	Pre-Congress Courses, Online event, Veracruz, MX
Mar 7 - 10, 2023	<i>CIM2023 - International Metrology Congress</i>	Lyon, FR
Mar 9 - 10, 2023	<i>BIOMEDJ 2023</i>	Paris, FR
Mar 10, 2023	<i>International Conference on Immunoassay</i>	Snibe, Milan, IT
Mar 16 - 19, 2023	<i>23èmes Journées Marocaines de Biologie Clinique</i>	Marrakech, MA
Mar 24 - 26, 2023	<i>XXIV Congreso Nacional Para el Análisis de la Garantía de la Calidad en el Laboratorio Clínico y Expoquim Puerto Vallarta 2023. CONAQUIC.</i>	Hybrid Event, Puebla, MX

Mar 30 - 31, 2023	<i>XX Meeting of the SEQCML Scientific Committee</i>	Madrid, SP
Apr 5 - 7, 2023	<i>VIII.Türkiye in vitro Diagnostic (IVD) Symposium "Preclinical Modelling"</i>	Izmir, TR
Apr 26 - 28, 2023	<i>II Peruvian International Congress of Clinical Pathology and Laboratory Medicine and the IX Peruvian Congress of Clinical Pathology "Dr. Oswaldo Hercelles"</i>	La Libertad, Trujillo, Peru
Apr 28 - 30, 2023	<i>XXIII National Congress of Clinical Chemistry and Laboratory Medicine Expolab Veracruz 2023</i>	Veracruz, MX
May 04, 2023	<i>11th European Symposium of Clinical Laboratory and In Vitro Diagnostic Industry: "THE LABORATORY OF HAEMATOLOGY: A 360° VISION"</i>	Barcelona, ES
May 11 - 13, 2023	<i>XIV Congreso Uruguayo de Bioquímica Clínica</i>	Montevideo, UY
May 16 - 19, 2023	<i>The 14th International & 20th National Congress on Quality Improvement in Clinical Laboratories</i>	Tehran, IR
Oct 12 - 13, 2023	<i>5th Symposium – Cutting Edge of Laboratory Medicine in Europe – CELME 2023</i>	Prague, CZ
Jun 20 - 21, 2024	<i>9th International Symposium on Critical Care Testing and Blood Gases</i>	Saint-Malo, FR





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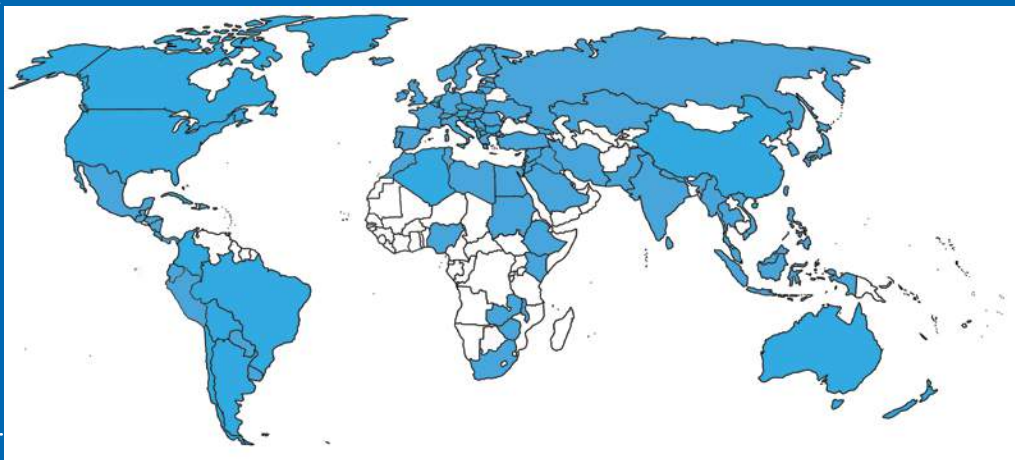
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Labtronic	Thermo Fisher Scientific
LumiraDx	Tosoh Corporation
Maccura Biotechnology Co., Ltd.	Labor Dr. Wisplinghoff
MedicalSystem Biotechnology Co., Ltd.	Wuhan Life Origin Biotech Joint Stock Co., Ltd.

Affiliate Members

Botswana: Institute of Clinical Laboratory Professionals
 Brazil: Sociedade Brasileira de Patologia Clínica / Medicina Laboratorial (SBPC/ML)
 China: Lab Medicine Committee, China Association of Medical Equipment (LMC)
 Egypt: Egyptian Association of Healthcare Quality and Patient Safety
 France: French National Network of Accredited Laboratories of Medical Biology (LABAC)
 India: Association of Medical Biochemists of India (AMBI)
 Iran: Iranian Association of Clinical Laboratory Doctors (IACLD)
 Jordan: Society for Medical Technology & Laboratories (SMTL)
 Kazakhstan: Public Association - Federation of Laboratory Medicine (FLM)
 Mexico: Federación Nacional de Químicos Clínicos (CONAQUIC A.C.)
 National Federation of Professional Colleges of Clinical Chemistry, AC (FENACQC)
 Nepal: Nepalese Association for Clinical Chemistry (NACC)
 Philippines: Philippine Council for Quality Assurance in Clinical Laboratories (PCQACL)
 Romania: Order of the Biochemists, Biologists, Chemists in Romanian Health System (OBBCSSR)
 Serbia: Serbian Society for Clinical Laboratory Medicine and Science (SCLM)
 Spain: Andalusian Society for Clinical Analysis and Laboratory Medicine (SANAC)
 Asociación Española de Biopatología Médica - Medicina de Laboratorio (AEBM-ML)
 Asociación Española de Farmacéuticos Analistas (AEFA)
 Sri Lanka: College of Chemical Pathologists of Sri Lanka (CCPSL)
 Turkey: Society of Clinical Biochemistry Specialists (KBUD)
 Ukraine: Association for Quality Assurance of Laboratory Medicine (AQALM)
 United Arab Emirates: Genetic Diseases Association (UAEGDA)

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